U.S. Fish & Wildlife Service

Comprehensive Conservation Plan

Togiak National Wildlife Refuge

U.S. Fish and Wildlife Service Mission Statement

The mission of the U.S. Fish and Wildlife Service is working with others to conserve, protect, and enhance fish, wildlife, plants, and their habitats for the continuing benefit of the American people.

Refuge Mission Statement

The mission of the National Wildlife Refuge System is to administer a national network of lands and waters for the conservation, management, and, where appropriate, restoration of the fish, wildlife, and plant resources and their habitats within the United States for the benefit of present and future generations of Americans.

—National Wildlife Refuge System Improvement Act of 1997

The comprehensive conservation plan details program planning levels that are substantially greater than current budget allocations and, as such, is for strategic planning and program prioritization purposes only. This plan does not constitute a commitment for staffing increases or funding for future refuge-specific land acquisitions, construction projects, or operational and maintenance increases.

Comprehensive Conservation Plan

Togiak National Wildlife Refuge

September 2009

Prepared by

U.S. Fish and Wildlife Service
Region 7
Anchorage, Alaska

Togiak National Wildlife Refuge
Post Office Box 270
Dillingham, AK 99576

U.S. Fish and Wildlife Service
1011 East Tudor Road, MS-231
Anchorage, AK 99503

United States Department of the Interior
FISH AND WILDLIFE SERVICE
Regional Office, National Wildlife Refuge System-Alaska
Division of Conservation Planning & Policy
1011 East Tudor Road
Anchorage, Alaska 99503
(907) 786-3357

Dear Reader:

This Revised Comprehensive Conservation Plan (Plan) for Togiak National Wildlife Refuge will guide management of the Refuge for the next 15 years. The Plan provides a vision, goals, and objectives for future management of the Refuge. It addresses the issues raised during public scoping and comments received during public review of the draft plan. Based upon comments received, we adopted Alternative 1 (Proposed Action) from the draft plan.

Comments received during the public review of the draft plan and our responses to them are included in this document in Appendix J. The environmental assessment and draft plan are on file with our offices in Dillingham and Anchorage.

Draft compatibility determinations for Togiak National Wildlife Refuge were included in the draft comprehensive conservation plan and comments were accepted as part of the review of this plan. Our responses to comments on those draft compatibility determinations can also be found in Appendix J. The final signed compatibility determinations are in Appendix D. A discussion of compatibility deteminations can be found in Chapter 2, section 2.4.6. More information on compatibility process can be found at the refuge office or at http://Alaska.fws.gov/nwr/planning/completed.htm.

You may obtain a copy of the Plan, a summary, or a compact disk containing both at the offices listed below. You may view the Plan online at http://www.r7.fws.gov/nwr/planning/plans.htm.

Requests for copies, CD-ROMs or further information should be directed to:

U.S. Fish & Wildlife Service
1011 E. Tudor Road, MS-231
Anchorage, AK 99503
fw7_Togiak_planning@fws.gov
(907) 786-3393

Requests for further information about the refuge should be directed to

Refuge Manager
Togiak National Wildlife Refuge
Post Office Box 270
Dillingham, AK 99576

Table of Contents

Appendices

Figures

Tables

1. Introduction

This document is the Final Comprehensive Conservation Plan (Plan) for the Togiak National Wildlife Refuge (Togiak Refuge, Refuge). For the purposes of this plan, the Togiak Refuge includes both the 4.1-million acre Togiak National Wildlife Refuge and the 73,080-acre Hagemeister Island portion of Alaska Maritime Refuge, located in southwestern Alaska. This document represents the combined effort and input of the State of Alaska, local residents, the general public, and U.S. Fish and Wildlife Service (Service) staff.

Chapter 1 of this Plan describes the purpose for the Comprehensive Conservation Plan revision, various mandates considered in its writing, and how the process was carried out. Chapter 2 describes the course of action for future overall management of the Refuge.

Chapter 3 describes the physical characteristics of the Refuge, its fish, wildlife, wilderness, cultural and archaeological resources, the local economy and its relationship to the Refuge, the public use and recreation on the Refuge, and how these resources and their uses have changed since 1985.

Chapter 4 describes how the Comprehensive Conservation Plan will be implemented.

Following the Comprehensive Conservation Plan Revision, the reader will find a number of appendices that provide additional information on the refuge and this planning effort, including responses to public comments on the draft plan.

1.1 Purpose and Need

In 1980, the Refuge was established under the Alaska National Interest Lands Conservation Act (ANILCA). Section 304(g)(1) of ANILCA requires that a comprehensive conservation plan be prepared and, from time to time, revised. The purpose of this Plan is to help the Refuge achieve its purposes; help fulfill the National Wildlife Refuge System mission; and establish goals and objectives that will help maintain and, where appropriate, restore the biological integrity, diversity, and the environmental health of the Refuge.

In general, a Comprehensive Conservation Plan serves to do the following:

- Ensure the purposes of the Refuge and the Mission of the National Wildlife Refuge System are being fulfilled
- Ensure that national policy direction is incorporated into the management of the Refuge

- Ensure that opportunities are available for interested parties to participate in the development of management direction
- Provide a systematic process for making and documenting decisions affecting the Refuge
- Establish broad management strategies for refuge management programs and activities
- Provide continuity in the management of the Refuge
- Provide a basis for budget requests
- Provide a basis for evaluating accomplishments

This document represents a combination of a revision of the 1987 Togiak Refuge Conservation Plan and that portion of the 1988 Alaska Maritime Comprehensive Conservation Plan affecting Hagemeister Island. This Plan will provide management direction for Hagemeister Island, which remains part of Alaska Maritime Refuge but is administered by the Togiak Refuge. Unless otherwise stated, management direction in this Plan applies to both the Togiak Refuge and Hagemeister Island. This document will serve as a management plan for the Refuge for the next 15 years or until a significant action or event occurs that would require the Plan be revised. This document should not be considered an unchangeable plan. Instead, it will be modified as changes occur, and other more specific plans will be written to address specific resources and uses of the Refuge.

1.2 Planning Context

The Refuge is part of a great assemblage of refuges across the nation. The management of the Refuge reflects the National Wildlife Refuge System (System) mission and direction provided for managing the System. The revised Plan for the Refuge reflects how meeting the purposes of the Refuge contributes to meeting the overall System mission and goals.

1.2.1 The U.S. Fish and Wildlife Service and the National Wildlife Refuge System

The National Wildlife Refuge System comprises more than 93.8 million acres of Federal lands that are incorporated within more than 540 refuges, 3,000 waterfowl production areas, and 50 coordination areas located in all 50 states and the territories of the United States. The System was created to conserve fish, wildlife, plants, and their habitat, while at the same time providing opportunities for Americans to participate in compatible wildlife-dependent recreation.

There are 16 national wildlife refuges in Alaska (see Figure 1-1). They are made up of a wide range of habitats with varied terrain that includes mountains, glaciers, tundra, grasslands, wetlands,

lakes, woodlands, and rivers. Together, the 16 refuges span nearly 83 million acres and make up more than 82 percent of the National Wildlife Refuge System.

1.2.1.1 Service and System Missions

Certain basic principles are fundamental to the management of national wildlife refuges. The missions of the U.S. Fish and Wildlife Service and the National Wildlife Refuge System are the cornerstones of these principles.

U.S. Fish and Wildlife Service Mission

The mission of the U.S. Fish and Wildlife Service is working with others to conserve, protect, and enhance fish and wildlife and their habitats for the continuing benefit of the American people.

National Wildlife Refuge System Mission

The mission of the National Wildlife Refuge System is to administer a national network of lands and waters for the conservation, management, and, where appropriate, restoration of the fish, wildlife, and plant resources and their habitats within the United States for the benefit of present and future generations of Americans.

1.2.2 Principles of Refuge Management

The National Wildlife Refuge System Administration Act, as amended, states that each refuge shall be managed to fulfill both the mission of the System and the purposes for which the individual refuge was established. It also requires that any use of a refuge be compatible with refuge purposes. Therefore, any use of a refuge will not materially interfere with nor detract from fulfillment of the mission of the System or the purposes of the refuge.

The 1997 amendments to the National Wildlife Refuge System Administration Act identified a number of principles to guide management of the System. They include the following:

- Conserve fish, wildlife, and plants, and their habitats within the System
- Maintain the biological integrity, diversity, and environmental health of the System
- Coordinate, interact, and cooperate with adjacent landowners and state fish and wildlife agencies
- Maintain adequate water quantity and water quality to meet refuge and System purposes and acquire necessary water rights
- Maintain hunting, fishing, wildlife observation, wildlife photography, interpretation, and environmental education as the priority general public uses of the System
- Provide opportunities for compatible priority wildlife-dependant public uses within the System

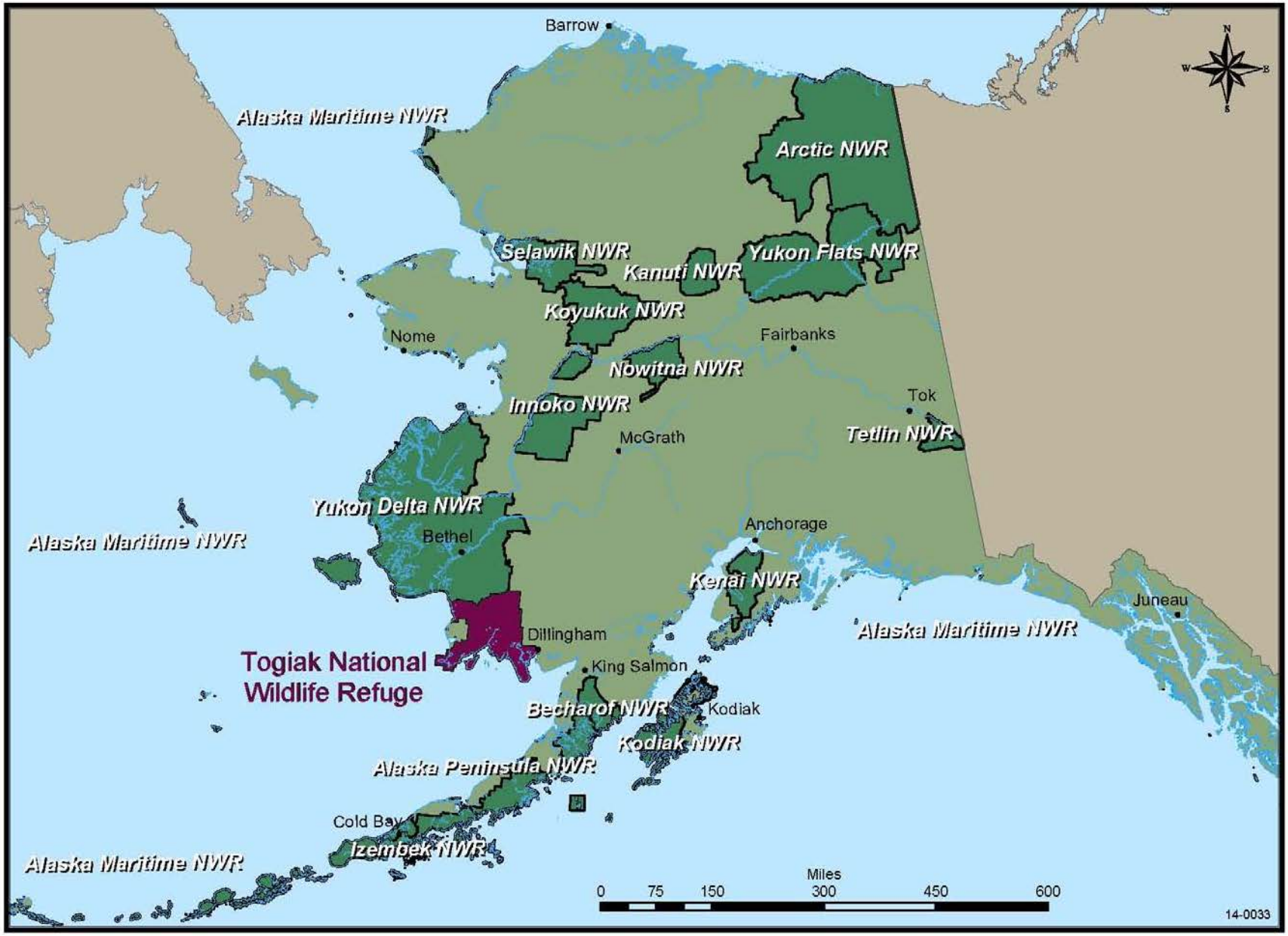


Figure 1-1. National wildlife refuges in Alaska

- Provide enhanced consideration for priority wildlife-dependant public uses over other general public uses in planning and management
- Provide increased opportunities for families to experience priority general public uses, especially traditional outdoor activities such as fishing and hunting
- Monitor the status and trends of fish, wildlife, and plants in each refuge

In order to maintain the health of individual refuges and the National Wildlife Refuge System as a whole, managers must anticipate future conditions. Managers must endeavor to avoid adverse impacts and take positive actions to conserve and protect refuge resources. National wildlife refuges exist within larger ecological systems and land-ownership patterns. Effective management depends on acknowledging these larger systems and resource relationships. Refuge managers will work together with partners—including other refuges, Federal and state agencies, tribal and other governments, Native organizations and entities, and nongovernmental organizations and groups—to protect, conserve, enhance, or restore all native fish, wildlife (including invertebrates), plants, and their habitats whenever possible.

1.3 Refuge Establishment

Prior to 1969, the area that is now the Togiak Refuge was part of the public domain. On January 20, 1969, the Secretary of the Interior issued Public Land Order (PLO) 4583, withdrawing approximately 249,022 acres to establish Cape Newenham National Wildlife Refuge. With this order, the Service assumed its first refuge management responsibilities in the area: to protect and preserve Cape Newenham's outstanding wildlife values, including bird colonies and important habitat, for other terrestrial and marine wildlife.

The area that was combined with the Cape Newenham National Wildlife Refuge to form the Togiak National Wildlife Refuge was first withdrawn by PLO 5179, signed March 9, 1972 (Section 17(d)(2) of the Alaska Native Claims Settlement Act (ANCSA). In addition, PLO 5180, signed March 9, 1972 (Section 17(d)(1) of ANCSA), withdrew additional land "for study to determine the proper classification of lands under section 17(d)(1) of ANCSA."

On November 16, 1978, PLO 5653 withdrew approximately 110 million acres of land from the public domain, in an Emergency Withdrawal (Section 204(e) Federal Land Policy and Management Act (FLPMA) (90 Stat. 2743, 2753), "to protect resource values that would otherwise be lost." PLO 5653 was amended one day later (November 17, 1978) with clarification language in PLO 5654, which

included legal descriptions of land withdrawn. Two years later, on February 11, 1980, PLO 5703 established the Togiak National Wildlife Refuge under Section 204(c) of FLPMA; thus, the area became part of the National Wildlife Refuge System under the management by the U.S. Fish and Wildlife Service.

In December 1980, Congress enacted the Alaska National Interest Lands Conservation Act (ANILCA; 94 Stat. 2371). Among other things, this act rescinded PLO 5703 and redesignated the withdrawn lands as part of the Togiak Refuge. It also incorporated Cape Newenham Refuge as a unit of the Togiak Refuge and designated 2,381,095 acres of the refuge as Wilderness. Section 303(1) of ANILCA created the Alaska Maritime National Wildlife Refuge by redesignating 11 pre-existing refuges as units of the new refuge and adding other public lands on islands (including Hagemeister Island), islets, rocks, reefs, spires, and designated capes and headlands in the coastal areas and adjacent seas of Alaska. Today, the Togiak and Alaska Maritime refuges are two of 16 national wildlife refuges in Alaska. Management of Hagemeister Island has been transferred administratively to the Togiak Refuge, which shares similar resources.

This plan applies to the Togiak Refuge and Hagemeister Island of the Alaska Maritime Refuge. In this document, the two units will be referred to as Togiak Refuge or the Refuge. Management direction discussed in this plan will be applied only to lands under the jurisdiction of the Service within the boundaries of Togiak Refuge and Hagemeister Island.

1.4 Legal and Policy Guidance and State Coordination

Management of the Refuge is dictated, in large part, by the legislation that created the unit and by the purposes and goals described later in this chapter. However, other laws, regulations, policies, and agreements with the State of Alaska also guide the management of the Refuge. This section identifies the acts and policy guidance that were integral in the development of this Plan.

1.4.1 Legal Guidance

Operation and management of the Refuge is influenced by a wide array of laws, treaties, and executive orders. Among the most important are the National Wildlife Refuge System Administration Act, as amended by the National Wildlife Refuge System Improvement Act, the Refuge Recreation Act, the Endangered Species Act, and the Wilderness Act. These acts are described briefly in Appendix A along with other acts and legal guidance that influence management of the Refuge. For the national wildlife refuges in Alaska, ANILCA, as amended, provides key management direction. ANILCA sets forth the purposes for the refuges; defines provisions

for planning and management, and authorizes studies and programs related to wildlife and wildland resources, subsistence opportunities, and recreational and economic uses. ANILCA also provides specific direction for the management of designated Wilderness areas and Wild and Scenic Rivers in the State of Alaska beyond the direction provided in the Wilderness Act and in the Wild and Scenic Rivers Act. How ANILCA influences management of the Refuge is described throughout this Plan.

1.4.2 Policy Guidance

Programmatic guidance and policy documents provide additional direction for the management of national wildlife refuges throughout the System. These documents include the following:

- U.S. Fish and Wildlife Service Manual chapters
- Director's orders
- National policy issuances
- Handbooks
- Director's memoranda
- Regional directives

1.4.3 State of Alaska Coordination

The Alaska Department of Fish and Game (ADF&G) has responsibility for managing resident fish and wildlife populations in Alaska. On refuge lands, the Service and ADF&G share the responsibility for conservation of fish and wildlife resources and their habitats, and both are engaged in extensive fish and wildlife conservation, management, and protection programs. In 1982, the Service and ADF&G signed a Master Memorandum of Understanding that defines the cooperative management roles of each agency (see Appendix C). This memorandum sets the framework for cooperation between the two agencies.

At the direction of the Boards of Fisheries and Game, the State of Alaska establishes fishing, hunting, and trapping regulations throughout the state. These regulations apply to Federal public lands unless superseded by refuge specific regulations or Federal subsistence regulations. The state is divided into 26 game management units (GMUs); most of these are further divided into subunits. Management objectives are developed for populations within the GMUs. The Refuge overlaps with parts of GMUs 17B, 17C, 18, and almost all of unit 17A. Management objectives are discussed in Chapters 2 and 3.

The Alaska Department of Natural Resources (DNR) and its subdivisions are also key management partners. DNR manages all state-owned land, water, and surface and subsurface resources except for fish and game. The DNR Division of Mining, Land, and

Water manages the state's water and land interests within and adjacent to the Refuge. In addition, the DNR developed a Special Use Land designation for "…*State of Alaska shorelands and waters within the Togiak National Wildlife Refuge and lower Goodnews River.*" (Appendix C) See page C-10 for the State's current management guidelines.

Further discussion of coordination with the State of Alaska is included in Appendix C.

1.5 Refuge Purposes and Vision Statement

1.5.1 Refuge Purposes

That portion of the Refuge designated as the Cape Newenham National Wildlife Refuge in 1969 was given the broad purpose ". . . for the protection of wildlife and their habitat . . ." in Public Land Order 4583, dated Jan. 23, 1969. In addition, Sections 303(1)(B) and 303(6)(B) of ANILCA set forth the purposes for which Alaska Maritime and Togiak Refuge (including the former Cape Newenham Refuge) were established and shall be managed, including the following:

(i) To conserve fish and wildlife populations and habitats in their natural diversity, including the following:

- [Togiak Refuge] salmonids, marine birds and mammals, migratory birds, and large mammals (including their restoration to historic levels)
- [Alaska Maritime Refuge] marine mammals, marine birds and other migratory birds, the marine resources upon which they rely, bears, caribou, and other mammals

(ii) To fulfill the international treaty obligations of the United States with respect to fish and wildlife and their habitats

(iii) To provide, in a manner consistent with purposes set forth in subparagraphs (i) and (ii), the opportunity for continued subsistence uses by local residents

(iv) [Alaska Maritime Refuge] To provide, in a manner consistent with subparagraphs (i) and (ii), a program of national and international scientific research on marine resources

To ensure, to the maximum extent practicable and in a manner consistent with the purposes set forth in paragraph (i), water quality and necessary water quantity within the Refuge

[Togiak Wilderness Area] To secure an enduring resource of wilderness, to protect and preserve the wilderness character of areas within the National Wilderness Resource Preservation System, and to administer this wilderness for the use and

enjoyment of the American people in a way that will leave it unimpaired for future use and enjoyment as wilderness (Section 2(a) of the Wilderness Act of 1964).

1.5.2 Vision Statement

The Togiak Refuge will continue to be a healthy functioning ecosystem where fish and wildlife populations and their habitats exist in an environment primarily affected by the forces of nature. Current and future generations will have opportunities to participate in a variety of fish- and wildlife-dependent activities that emphasize self-reliance, solitude, and a close relationship with the environment. The public will gain an understanding of the Refuge on natural, cultural, and scientific levels in order to appreciate the importance of its protection and preservation for future generations.

1.6 Refuge Overview

1.6.1 Physical Environment

The Togiak Refuge is located in southwest Alaska, approximately 400 air miles from Anchorage. The Refuge is bordered to the south by Bristol Bay, to the west by Kuskokwim Bay, to the north by the Yukon Delta National Wildlife Refuge, and to the east by the Wood-Tikchik State Park. Of those 4.7 million acres within the boundary, about 11.36 percent is under private title or claim, leaving 4.24 million acres administered by the Service. The Ahklun Mountain Range creates the division between the Bristol Bay drainages and the Kuskokwim Bay drainages within the Refuge. This range is characterized by high, steep rocky peaks, glacial valleys, and mountain lakes. Three major watersheds that dominate the Refuge are drained by the Kanektok, Goodnews, and Togiak rivers. The coastal areas of the Refuge vary from sandy beaches to steep rocky cliffs. Much of the lowland tundra contains shallow lakes and ponds. Areas near the Refuge hold mineral resources, including gold and platinum.

1.6.2 Biological Resources

Togiak Refuge is home to at least 283 species of wildlife, including 33 species of fish, 201 species of birds, 31 species of land mammals, 17 species of marine mammals, and 1 amphibian. The fish species of greatest importance to people are rainbow trout, Arctic char, Dolly Varden, round whitefish, northern pike, and five Pacific salmon species (Chinook, coho, chum, pink, and sockeye). Mammals include Pacific walrus, harbor seal, Steller sea lions, caribou, brown bear, moose, lynx, wolves and other furbearers. Numerous species of seabirds, shorebirds, landbirds, migratory waterfowl, and raptors are also found within the Refuge, along with the wood frog. (See Appendix F for a complete list of animal species found on the Refuge.)

More than 500 species of plants grow on the Refuge in a variety of habitats that include fresh and saltwater wetlands, open water, meadows, mountains, tundra, and forests of spruce and cottonwood. Many plants found on the Refuge are important to the local people as sources of food and medicine. Wood used for household purposes is also a resource important to local communities.

The biological resources and ecological processes of the Refuge may change in response to changing conditions, including global climate change.

1.6.3 Human Uses

Lands administered by the Togiak Refuge have been inhabited by Alaska Native peoples for thousands of years. Today subsistence use of the Refuge remains important in terms of both amount of use and its importance to local residents. The salmon runs are the driving force for the region's ecosystem and the basis for both commercial and recreational fishing industries. More recently, the Refuge has become known around the world for outstanding angling and wildlife-viewing opportunities in a wilderness setting.

1.6.4 Special Values of the Refuge

From the 5,026-foot Mount Waskey to the broad coastal plains of the Kanektok and Arolik rivers, the Refuge is remarkable in its diversity of terrain, scenery, and wildlife. Perhaps the most important value of the Refuge is the amount and quality of fishery habitat. Several large river and lake systems located within the Refuge provide spawning and rearing habitat each year for millions of salmon. This habitat is the foundation of an ecological system that includes a variety of other fish, wildlife, plants, and habitats. These salmon runs are crucial to ecological processes, local people, and the local economy. In addition, fisheries' resources provide recreational fishing opportunities found few other places in the world.

The Togiak Wilderness Area is the second largest Wilderness Area managed by the Service, covering about half of the Refuge. It consists of pristine rivers, clear mountain lakes, and steep sloped mountains. It provides outstanding opportunities for solitude and primitive recreation. The rugged Ahklun and Wood River mountains, partly within the Wilderness area, are noteworthy for their scenic values. These are steep-walled mountains with sharp summits, sometimes with needle-like slate-gray pinnacles. Broad U-shaped glacial valleys separate the mountains. The Joint Federal-State Land Use Planning Commission recognized the Ahklun Mountains/Wood-Tikchik area as one of the outstanding scenic areas of the state (Gordon and Shaine 1978). Young and Walters (1982) also proposed the Wood-Tikchik area, including the eastern

part of the Togiak Wilderness, as an ecological natural landmark. This outstanding wilderness setting, coupled with world class fishing opportunities, provides a truly exceptional experience for the refuge visitor.

Cape Peirce and Cape Newenham are unique and special places within the Refuge. Because of abundant marine wildlife and migratory waterfowl, these capes, located at the southwestern tip of the Togiak Refuge (see Figure 1.2) have an important cultural role dating back thousands of years. Cape Peirce represents one of the few coastal areas in the United States where Pacific walrus consistently haul out. These areas also provide nesting habitat for some of the largest mainland-nesting seabird colonies in Alaska and continue to provide important habitat for a variety of shorebirds, waterfowl, and other wildlife.

Chagvan and Nanvak bays and their associated habitats are also special values of the Togiak Refuge. These bays provide important staging and feeding habitat for many migrating waterfowl, seabirds, shorebirds, anadromous fish, and marine mammals. The State of Alaska has designated Chagvan Bay as a State Game Refuge.

The Refuge is part of a much larger region that has its own special history. Much of the Refuge's character is defined by the Yup'ik Eskimos, Russian trappers, and later settlers whose descendants still live throughout the region and depend upon the Refuge for their livelihoods.

1.7 The Planning Process

The process used to develop this Plan is consistent with the planning requirements in ANILCA (Section 304[g]); the National Wildlife Refuge System Administration Act, as amended; the Service's planning policy (602 FW 1); National Environmental Policy Act (42 U.S.C.4321-4347); and the Council on Environmental Quality's Regulations for Implementing the Procedural Provisions of NEPA (40 CFR 1500-1508). The process being used to revise the plans includes eight major steps:

1) Design the planning process
2) Initiate public involvement and scoping
3) Determine significant issues
4) Develop and analyze alternatives
5) Prepare draft Plan and Environmental Assessment (EA)
6) Prepare and adopt a final Plan and Environmental Impact Statement
7) Implement Plan, monitor, and evaluate
8) Review and revise Plan

The publication of this draft Plan and EA is part of Step 5. The rest of this section describes what has been done at each step and what is anticipated to finish the Plan.

1.7.1 Design the Planning Process

In 1999, the Service determined that the existing Comprehensive Conservation Plan should be revised. Some of the management direction in the plan was out of date because of changes in laws, regulations, and circumstances. The Togiak Refuge had begun to revise its Public Use Management Plan but had not yet released a draft. To minimize the impact of two separate consecutive planning efforts, the Service chose to combine them.

The Service wanted residents of the local communities and the State of Alaska to have meaningful roles while developing this Plan. Six local tribes were invited to participate, as were two departments within the state government. Thus, five tribal representatives and two state representatives sat on the Core Planning Team with refuge management and staff representatives.

The Core Planning Team was responsible for:

- Reviewing public scoping comments and identifying issues to be dealt with in the plan
- Assisting with public involvement efforts throughout the planning effort
- Developing the conceptual framework for alternatives

In addition, tribal and state representatives were asked to do the following:

- Represent the views, concerns, and policies of their government entities
- Act as liaisons and pathways of information between their government entities and the Core Planning Team

The Technical Planning Team consisted of Refuge and other Service employees. Their responsibilities included the following:

- Gathering and presenting data to the core team
- Proposing appropriate details to the conceptual alternatives
- Analyzing the potential impacts of implementing each alternative
- Writing, editing, and publishing the Plan

Technical Planning Team members researched the relevant laws, regulations, policies, and other direction that needed to be considered during Plan development. They also reviewed previous planning documents and files to help identify other planning issues.

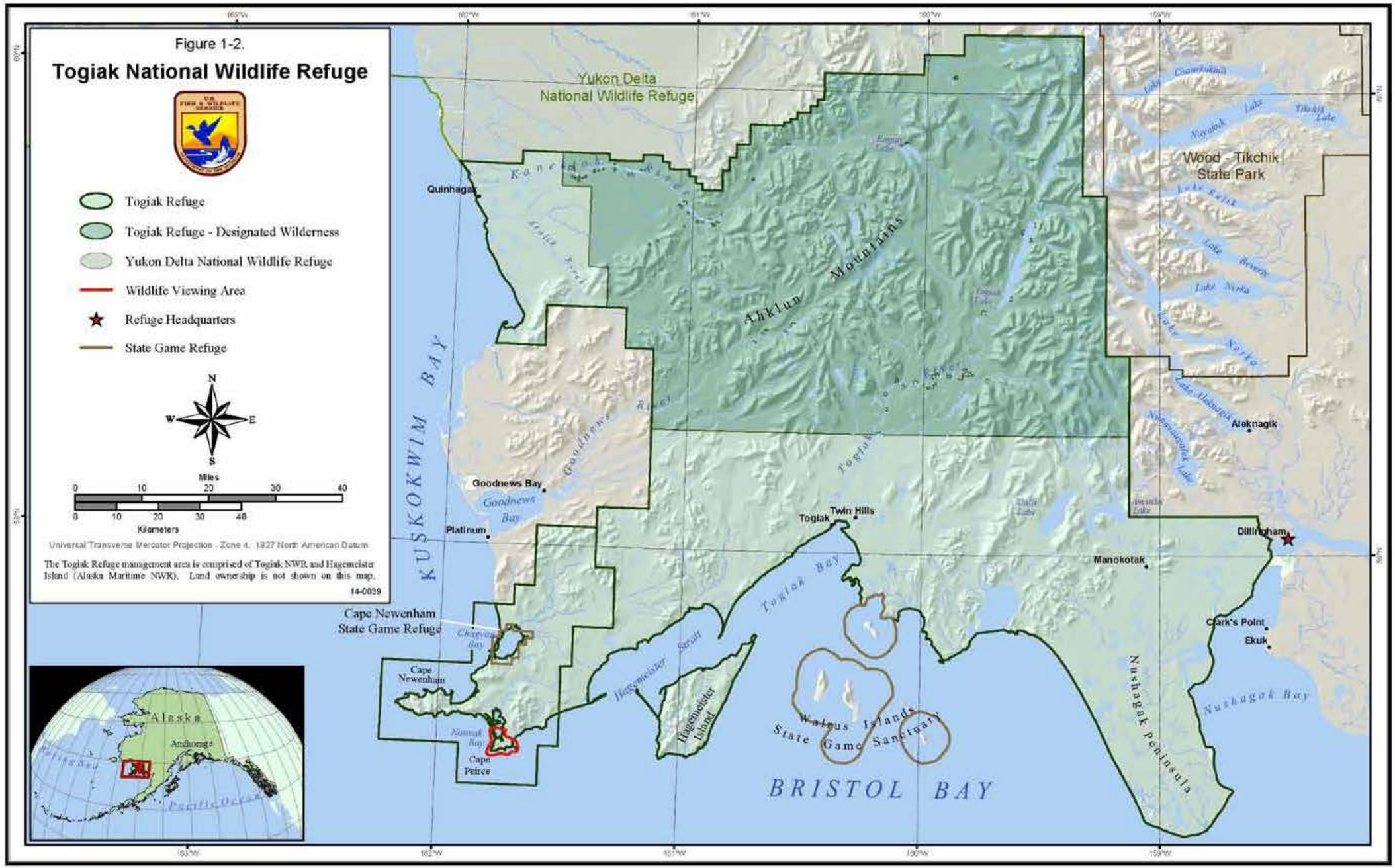


Figure 1-2. Togiak National Wildlife Refuge

1.7.2 Initiate Public Involvement and Scoping

The purpose of this step was to let people know the Plan revision process was beginning and to solicit ideas on what issues should be addressed in the revision of the plans. Formal scoping began with publication in the *Federal Register* on May 13, 1999 (Volume 64, Number 92), of a Notice of Intent to prepare an EIS. This notice was revised later (see section 1.7.5.).

In December 1999, more than 2,000 newsletters were sent to people throughout Alaska, the United States, and the world. The newsletter explained the planning process, requested information about issues that should be addressed in the Plan, and asked what people value about the Refuge. In response, we received 72 letters: 64 from individuals, three from local or state government, three from professional guides, and two from organizations. Eleven of the written comments were from local residents, 11 from non-local Alaskans, and 47 from the rest of the nation.

In addition, we held meetings in local communities and Anchorage, at which comments were received from the 67 people who attended. Eleven people attended the meeting in Goodnews Bay, 19 in Quinhagak, 12 in Togiak, 12 in Manokotak, two in Bethel, six in Dillingham, and five in Anchorage.

Newsletter responses and public meeting comments indicate what people value about the Refuge. Following are the values people identified:

- Wilderness character and environment (24)
- Fish and fishing opportunities (18)
- Ecosystem protection (15)
- Wildlife (13)
- Subsistence resources and uses (3)
- Continued motorized access (3)

People were also asked what they perceived as threats to those values. Their responses were as follows:

- Increasing human use and crowding (16)
- Conflicts between and among recreational and subsistence users (11)
- Recreational hunting and fishing (9)
- Guiding and commercialism (6)
- Water pollution and human waste (5)
- Motorized uses (5)
- Catch-and-release fishing (3)
- General or no specific threats mentioned (3)

- Litter (3)
- Offshore fishery (2)
- Lack of education or knowledge about nature (2)
- Development on adjacent lands (1)

1.7.3 Determine Significant Issues

During this step, we analyzed the comments we received and the concerns of the Service. We identified the issues for both the Comprehensive Conservation Plan Revision and the Public Use Management Plan Revision.

In June 2001, we mailed a second newsletter to more than 2,500 individuals and organizations. This update described the main issue areas that we had determined from the initial scoping process. We analyzed these issues, looking at a number of factors, including our legal authorities, available data, needed data, the significance of the concern, and possible solutions. This information allowed us to understand the issues better and provided us with background to decide which issues would be addressed in the Plan (See section 1.8 for a discussion of the issues).

1.7.4 Develop and Analyze Alternatives

In this step, the Core Planning Team considered each issue and brainstormed ideas for solutions. We referred to these as "building blocks for alternatives." In cases where there was only one clear approach, or one element would be implemented regardless of alternative, those actions were included in Actions Common to All Alternatives.

The Core Planning Team then arranged the building blocks into preliminary alternatives. Alternatives must meet the purposes and goals for the Refuge and must comply with the missions of the System and the Service.

Preliminary alternatives were sent to more than 2,300 individuals and organizations in the Fall 2001 newsletter, which was also posted on the Service's Alaska regional planning Internet Web site. Thirty-nine people provided written comments on the preliminary alternatives listed in the newsletter. The alternatives were adjusted to ensure that actions within an alternative were not contradictory. Refinements were also made to give each alternative a more consistent approach to clarify an action or address a specific comment. In each case, the Service attempted to keep a full range of options present within the alternatives. The State of Alaska and tribal representatives declined to identify a preferred alternative.

1.7.5 Prepare Draft Plan and Environmental Assessment

The Service, based on analysis of the proposed actions, revised the notice of intent to prepare environmental impact statements with the plan and announced that an environmental assessment would be prepared instead. The public notified in the *Federal Register* on July 25, 2006.

During this phase, the Service also made the decision to separate the issues and alternatives for the Comprehensive Conservation Plan from those of the Public Use Management Plan. This was done to provide the public with a clearer understanding of the actions being considered. Therefore, the draft document included a Comprehensive Conservation Plan; a Public Use Management Plan; and a State of Alaska Department of Natural Resources Special Land Use Designation for state lands, tidelands, and shorelands within the Refuge as separate documents bound together.

The Draft Comprehensive Conservation Plan revision described two alternatives, including current management. It included analysis of the potential impacts of implementing each alternative and described how the Service determined its preferred alternative. A public review and comment period was open from September 27, 2007, through January 18, 2008. During this period, the Service held public meetings in Anchorage, Dillingham, Quinhagak, Goodnews Bay, and Togiak, Alaska. A summary of the draft Plan was sent to more than 2,000 people. Compact discs and hard copies of the full Plan were available upon request. The Plan was also available for viewing or download on the Service's Internet site. Comments were accepted verbally in meetings and by mail, fax, or email. Fifty comments were received and analyzed. See Appendix J for a summary of comments and responses.

1.7.6 Prepare and Adopt a Final Plan

The Service has reviewed and analyzed all of the comments received on the Draft Plan and Environmental Assessment (EA) and modified the Plan as needed. A Finding of No Significant Impact (FONSI) was signed by the regional director on September 10, 2008. A Notice of Availability has been published in the *Federal Register,* and the Final Revised Plan and FONSI have now been made public. The State of Alaska Department of Natural Resources finalized the revised Special Land Use Designation for state lands, tidelands, and shorelands within the Togiak Refuge and the Lower Goodnews River on April 14, 2008. That plan is found in Appendix C of this document. The Final Revised Public Use Management Plan has not been finalized and will be released separately at a later time.

1.7.7 Implement Plan, Monitor, and Evaluate

Thirty days following approval of the FONSI and Revised Plan, refuge staff began implementing the management changes and actions called for in the revised Plan. A critical component of management is monitoring resource and social conditions to make sure that progress is being made toward fulfilling goals and meeting objectives. Monitoring also detects new concerns and opportunities that should be addressed. The Refuge will use information gained from monitoring to evaluate and, as needed, to modify objectives for the Refuge.

1.7.8 Review and Revise Plan

Agency policy directs that the Refuge review the Plan annually to assess the need for change. We revise the Plan when significant new information becomes available, when ecological conditions change, or when the need to do so is identified during the review. If major changes are proposed, public meetings may by held and new environmental assessments or environmental impact statements may be necessary. Consultation with appropriate state agencies, tribal governments, and the public would occur during any future revisions. Full review and revision of the Plan will occur every 10 to 15 years or more often if necessary. We continue informing and involving the public throughout implementation of the Plan by holding regular meetings in local villages at least annually and by publishing Refuge Updates.

1.8 Planning Issues

1.8.1 Issues Considered but Not Addressed in the Alternatives

This plan revision is focused on changes proposed to management categories and activities. The issues involved were identified primarily from within the Service, especially by Refuge staff. (Public comments focused on public use issues and are addressed in the Public Use Management plan.)

Certain issues have been identified that were not addressed in detail in this Plan. This may be because the issue was addressed by existing laws, regulations, policies or management actions; the issue will be addressed in the same manner regardless of alternative selected; or the issue was outside of the scope of this planning effort.

Following is a brief discussion of issues not addressed in this Plan.

1.8.1.1 Additional Areas for Wilderness Designation or Rivers for Inclusion in the National System of Wild and Scenic Rivers

After reviewing the requirements for Wilderness and for Wild and Scenic River reviews, we determined that the comprehensive

planning requirements of Section 304(g) of ANILCA were best satisfied by honoring the Wilderness recommendations of the 1987 and 1988 plans and by focusing our efforts on describing the wilderness values of the Refuge and providing better direction for how the Refuge could be managed to protect those values. A similar approach was taken for Wild and Scenic River values.

Wilderness values and river-related values are discussed in chapter 3 and in section 1.6 of this Plan. Programs and actions to protect all refuge-related values are discussed in the alternatives section and in management direction sections of chapter 2.

1.8.1.2 Hardened Campsites

The 1987 Comprehensive Conservation Plan stated that the Refuge would not provide hardened campsites in Minimal, Special River, or Wilderness management areas. Current management direction in Alaska allows hardened campsites consistent with the management category. Direction for Minimal, Wild River, and Wilderness management could allow hardening of campsites, but the application of those techniques would be very rare.

1.8.1.3 All Weather Roads

The 1987 Comprehensive Conservation Plan states that all weather roads would not be provided for public use. Current management direction would allow such roads in Intensive and Moderate management areas. These categories do not occur and are not proposed on the Refuge.

1.8.2 Significant Planning Issues Addressed in this Plan

Throughout the scoping process, public comments focused on management concerns with the three major rivers within the Refuge. Issues that were identified specific to management of these river systems are addressed in the Public Use Management Plan. The only issue identified for the revision of the Comprehensive Conservation Plan is the effect of management on activities and uses within the Refuge.

1.9 References Cited

Gordon, R.J. and B. Shaine. 1978. “Alaska Natural Landscapes.” Commission Study No. 33. Anchorage, Alaska: Joint Federal-State Land Use Planning Commission for Alaska.

Young, S.B. and J.C. Walters. 1982. “Proposed Geological and Ecological Natural Landmarks in Interior and Western Alaska.” Center for Northern Studies. Wolcott, VT. 2 vol. 647 pp.

2. Goals, Objectives, and Management Direction for Togiak National Wildlife Refuge

This chapter presents the management actions for the Comprehensive Plan for the Togiak Refuge and the Hagemeister Island portion of the Alaska Maritime Refuge. Section 2.1 identifies refuge goals and objectives to be implemented under this revised Comprehensive Conservation Plan. The management direction, detailed in the following text, reflects changes and clarifications in management direction made since the implementation of the original 1987 Conservation Plan and reflects the management direction the Service would like to continue into the future.

2.1 Goals and Objectives

The Togiak Refuge vision statement and purposes (see chapter 1) provide the framework for developing goals and objectives for managing the Refuge. Goals are broad statements of desired future conditions. Objectives are concise statements of what the Refuge wants to accomplish. Strategies are specific actions, tools, or techniques used to meet objectives.

Objectives identified for one goal are often applicable to other goals. To avoid unnecessary duplication, each objective is listed only under the goal that represents the clearest connection. The ordering of the objectives is not intended to imply prioritization; rather, the many objectives listed beneath each goal have been clustered into rough categories.

Many of the objectives important for managing subsistence activities and public use of the Refuge require monitoring or improving our knowledge of the natural resources linked to these activities. For this reason, most of the objectives for subsistence or public use are listed beneath Goal 3 or 4, which are focused on improving our knowledge of the Refuge's biological resources and on conserving habitat for those resources.

Cooperation with state and Federal agencies and other organizations is a critical component to successfully meeting most of the objectives. This cooperation can take a variety of forms ranging from reviewing and revising study plans and reports to cooperation on data collection and report completion.

2.1.1 Ecosystem, Habitat, and Fish and Wildlife Management

Goal

1. Manage refuge habitats and wildlife to ensure the health and integrity of native ecosystems by developing long-term ecological inventory and monitoring programs and a collaborative research program, which incorporates data collection to evaluate the effects of climate change.

   Objectives:

   1.1 Complete the Togiak Refuge Fish and Wildlife Inventory and Monitoring Plan within three years of adoption of this plan.

   Rationale:

   The Togiak Refuge Fish and Wildlife Inventory and Monitoring Plan should be updated in three years to reflect new techniques, methods, protocols, and technology. Where possible, common approaches will be used to produce a synergistic effect in cooperative efforts with ADF&G, Native organizations, and others.

   1.2 Continue to update our Geographic Information System database management and mapping system with plant and wildlife communities and management layers.

   Rationale:

   It is critical that we store and analyze data in such a manner that it will be available to a wide variety of users now and in the future.

   1.3 By 2015, conduct an external biological review of the Refuge to determine if biological strategies in the Fish and Wildlife Inventory and Monitoring Plan are resulting in good science and sound management practices.

   Rationale:

   The integrity of the Service and the confidence of the public in management decisions depend on conducting good science. A peer review of our biological program will provide an objective evaluation of our strengths and weaknesses.

   1.4 Conduct annual reviews and evaluations of biological projects to determine their effectiveness in meeting refuge management and customer service needs.

   Rationale:

   Changing ecological conditions, including global climate change, and refuge management information needs

demand that we periodically review our biology program in order to make improvements, cease projects that are no longer needed, or add projects to address current situations.

1.5 Collect traditional ecological knowledge of historic wildlife occurrences to gain an understanding of past ecological conditions and provide a framework for current investigations.

Rationale:

The local elders with knowledge of the area before the Refuge was established are passing on, and this valuable source of information will soon be gone forever. Historical knowledge of species occurrence, abundance, and distribution will help focus and direct future studies. The data will be incorporated into a searchable database that will be available to other agencies and Native organizations.

1.6 Conduct surveys of vertebrates, invertebrates, plant species, and habitat associations; and monitor priority species.

Rationale:

A continuous flow of information is needed to ensure the maintenance of ecological health on Togiak Refuge. This is particularly important when ecological conditions appear to be in flux due to global climate change. Unknown ecosystem components must be inventoried and known components must be monitored for change. However, economic limitations require a careful husbandry of effort. The first focus must be on those elements of greatest importance. This includes those elements known to be at threat, as well as those species and environmental conditions known to serve as broader indicators of ecological health. Insofar as possible, other ecological elements will be inventoried and monitored. All ecological information will include a spatial aspect and will be maintained in the Refuge Geographic Information System.

1.7 Collect information on waterbodies within the Refuge needed to maintain the necessary water quantity and quality for fish, wildlife, and their habitats.

Rationale:

Clean water in sufficient quantities is critical for all species of plants and animals (including humans) found on

the Refuge. Nutrient recycling that occurs through refuge waterways is important to proper ecosystem functioning.

Strategies:

1.7.1 In cooperation with the Water Resources Branch, gather necessary hydrologic and biologic data to quantify stream flow on five representative river systems flowing through Togiak National Wildlife Refuge, and file for water rights with the State of Alaska.

1.7.2 Gather physical and biological information on the major lakes occurring on Togiak Refuge.

1.7.3 Gather physical and biological information on the major river systems of the refuge.

1.7.4 Obtain water quality information from waters within the Refuge having ongoing and past mining activity, and identify potential habitat degradation or other impacts due to mining or other human activities.

1.7.5 Collect sufficient information to detect changes in water quality in selected rivers.

1.7.6 Identify, monitor, and correct significant water quality problems associated with mining, contaminants, public use, and other human impacts.

1.8 Complete a revision of the Togiak Refuge Fisheries Management Plan within two years of adoption of this plan to reflect management goals and objectives.

Rationale:

The Togiak Refuge Fisheries Management Plan should be updated to reflect new techniques, methods, protocols, and technology. Where possible, common approaches will be used to produce a synergistic effect in cooperative efforts with ADF&G, Native organizations, and others.

1.9 Develop an Environmental Monitoring Plan that incorporates an ecosystems model for the Togiak Refuge and its surrounding environment to better illustrate relationships among fish, wildlife, plant, habitat, and public use.

Rationale:

Understanding climate change effects requires development of an Environmental Monitoring Plan that

incorporates an understanding of the refuge ecosystems and the best approaches to long-term data collection.

2.1.2 Public Use

Goal

2. Provide quality fish and wildlife oriented recreation, subsistence and, interpretive and educational opportunities that promote stewardship of southwest Alaska wildlife and its habitats.

Rationale:

Humans use the natural resources of the Togiak Refuge in a variety of ways, including subsistence hunting and gathering activities, commercial uses, and consumptive and non-consumptive recreational uses. All are legitimate uses authorized by various legal mandates, but all have the potential to negatively affect ecological health. Managers are charged with ensuring that human uses of Refuge resources do not result in long-term changes to ecosystem form, function, or structure. To this end, the Togiak Refuge will identify and monitor current human uses, analyze proposed uses, and monitor and manage these uses through education, regulation, and enforcement.

Objectives:

2.1 Complete revision of the Togiak Refuge Public Use Management Plan that will guide management of guided and unguided public use on the Refuge.

2.2 Complete a Public Use Monitoring Plan that will establish standards for social and biological impacts related to public uses. This plan should be completed within five years of adoption of the comprehensive revised Public Use Management Plan.

Rationale:

The Togiak Refuge Public Use Monitoring Plan should establish standards and the management actions needed to maintain those standards. It should reflect new techniques, methods, protocols, and information needs as use changes.

2.3 Provide the opportunity for rural residents engaged in a subsistence way of life to continue to do so.

Strategies:

2.3.1 Participate with local Fish and Game Advisory Committees, the Alaska Board of Fisheries, Alaska Board of Game, Regional Subsistence Advisory

Councils, and Federal Subsistence Board to facilitate information exchange and rule-making.

2.3.2 Maintain wildlife and fisheries subsistence coordinators on staff to ensure the best management of subsistence resources.

2.3.3 Develop a better understanding of subsistence needs, the locations of subsistence activities within the Togiak Refuge, the distribution of subsistence resources, and the capability of those resources to meet subsistence needs in order to provide subsistence opportunities for present and future generations.

2.4 Ensure that public use programs are consistent with maintaining the natural diversity of refuge resources and habitats.

2.5 Provide public use programs that minimize possible conflicts between and among subsistence, recreational, and commercial users.

2.6 Provide for a range of quality fish and wildlife-dependent recreational opportunities, including wilderness areas that emphasize naturalness, solitude, and primitive recreation.

Strategy:

2.6.1 Continue to manage all commercial guided recreational fishing and hunting operations through the Togiak Refuge competitive special use permit program.

2.7 Continue the development of a visitor contact station at the Dillingham Airport, including exhibits related to refuge resources, in partnership with local agencies and organizations.

Rationale:

Refuge Rangers need a location to contact visitors in Dillingham before they visit the refuge. Most non-local visitors fly through Dillingham on their way to the Refuge. Approximately six flights a day arrive in Dillingham, with visitors continuing on to the Refuge without ever leaving the airport. A contact station at the airport would facilitate providing information to refuge visitors about “Leave No Trace” camping, the location of private lands, wilderness ethics, local subsistence traditions, proper disposal of human waste, biological

studies, proper catch-and-release fishing techniques, river conditions, bear safety, approaching weirs, wildlife viewing, wildlife photography, history, geology, and many other refuge resources.

2.8 Develop and implement an environmental education program that will result in a greater understanding and appreciation of refuge flora, fauna, and habitats.

Strategies:

2.8.1 Continue environmental education programs and outreach activities that focus on the conservation of marine mammals, seabirds, salmonids, waterfowl, large mammals and their habitats.

2.8.2 Continue environmental education programs and outreach activities in cooperation with local agencies, community organizations and Native corporations, including but not limited to science camps, school classes, teacher workshops, lending library, Internet or other electronic media, radio public service announcements, and special programs.

2.8.3 Develop educational material such as films, brochures and Internet Web pages to increase refuge visitor appreciation and understanding of local culture, customs, traditional resource uses, conservation, and the six National Wildlife Refuge System priority wildlife-dependent public uses.

2.1.3 Resource Protection

Goal

3. Protect the integrity of the natural and cultural resources of the Refuge.

The lands and waters of the Togiak Refuge are healthy. Ecological processes are relatively intact, and the impact of man is relatively minor. Therefore, rather than focusing on the restoration of altered ecosystems, the management of Togiak Refuge relates to protecting existing conditions. Togiak Refuge will continue to actively work to assure ecological health by monitoring the state of individual components, such as water resources, plant communities, fish and wildlife species, and cultural resources. When threats develop that jeopardize elements of ecological health, management will work to mitigate those threats.

Objectives:

3.1 Identify and safeguard key areas.

Rationale:

All parts of the Togiak Refuge are not equally important in terms of ecological value. Some areas, even if relatively small, have tremendous importance to various plant and animal species, and thus warrant special attention. The Togiak Refuge will identify such areas and safeguard the critical resources they provide by means of land acquisition, education, regulation, and enforcement.

Strategies:

3.1.1 Continue to staff a field camp at Cape Peirce during walrus haulout periods to minimize significant disturbances to marine mammals and seabirds.

3.1.2 Identify and acquire, through purchase or conservation, easement inholdings within Togiak Refuge that have special ecological value.

3.1.3 Identify key ecosystem indicator species, and quantify their habitat needs on Togiak Refuge.

3.1.4 Identify spawning, rearing and overwintering habitat for rainbow trout, Arctic grayling, Dolly Varden, and five species of Pacific salmon.

3.1.5 Identify important wildlife habitats that may need special protection, e.g., caribou calving grounds, waterfowl staging and molting areas, marine mammal haulouts, seabird colonies, and shorebird staging areas.

3.1.6 Identify areas within Togiak Refuge where there is a potential for impact to vegetation, and ensure that human activities do not significantly affect those vegetation communities.

3.1.7 Work with the Division of Water Resources to aquire water rights for protection of refuge resources.

3.2 Protect fish and wildlife resources to prevent changes from their natural species diversity and abundance.

Rationale:

Human activities can have significant impacts on natural resources. Many people rely on refuge resources for their livelihood, from subsistence fisherman to big game guides. Protecting refuge resources from illegal harvest, over harvest, illegal guiding, and human induced degradation will help ensure that resources are available to use and enjoy in the future.

Strategies:

3.2.1 Monitor for and prevent the introduction of exotic species. Remove all exotic or feral species found on the Togiak Refuge.

3.2.2 Identify threats to ecological health, and ensure that all uses of the Refuge are compatible with the purposes for which it was established.

3.2.3 Work toward the recovery of the threatened and endangered species occurring on and in the vicinity of Togiak Refuge. These species currently include the Steller sea lion and Steller's eider.

3.2.4 Monitor and evaluate the effects of harvest of fish and wildlife within the Refuge.

3.2.5 Identify impacts to wildlife caused by non-consumptive human activities, including float and motorized boating, hiking, wildlife viewing, and refuge administrative activities.

3.3 Conserve and interpret the cultural and historic resources of the Refuge.

Rationale:

Conserving and interpreting the cultural and historic resources of the Refuge is not only required by law, but also allows the public to appreciate and value ancient and modern connections of humans to the land.

Strategies:

3.3.1 Provide Archaeological Resources Protection Act and National Historic Preservation Act training to all permanent refuge personnel every 2–5 years.

Rationale:

Training will provide all employees with information on their roles and responsibilities for managing cultural resources. Cultural resource trainers will become acquainted with refuge staff and better understand their specific issues and interests.

3.3.2 Prepare a Cultural Resources Management Plan by 2010.

Rationale:

A plan will assist the refuge staff in meeting legal requirements to manage, protect, and interpret cultural resources on the Refuge. The plan will include management needs and projects identified by the refuge staff in consultation with the regional archaeologist, in order to set priorities for future research. This will enable the Refuge and regional office cultural resource staff to derive the most benefits from scarce funding and personnel resources.

3.3.4 Identify sites at risk from vandalism and erosion, and monitor those sites with annual inspections to document physical condition.

Rationale:

Sites in the Bristol Bay region are at risk from a number of threats, including looting and increased erosion from climate change. Monitoring of selected sites will provide quantifiable data on site condition to allow the Refuge to address specific known threats.

3.3.5 Compile an atlas and directory of existing place name information

Rationale:

Place names contain an enormous amount of information on ecology, resource distributions, traditional uses, culturally significant places, historic camps and settlements, and other culturally important information. Resources for this work include published material and local knowledge. As elders pass away, their tremendous in-depth knowledge of local history and place names is lost to future generations. Cultural resource mapping is necessary to protect sites from fire, recreational use, and other refuge activities. The National Historic Preservation Act and Service policy require that the Refuge protect sites of cultural importance.

3.3.6 Identify priority areas to inventory for archaeological and other cultural sites and conduct surveys as time and personnel allow.

Rationale:

Perform surveys at a level sufficient to evaluate the eligibility of identified sites to the National Register of Historic Places. Nominate selected sites to the National Register of Historic Places. Identify sites or areas at risk for vandalism and monitor with periodic law enforcement patrols. The National Historic Preservation Act requires Federal agencies to inventory cultural resources and evaluate them for National Register eligibility.

3.4 Seek funding to acquire lands that were identified as high priority in the Togiak National Wildlife Refuge Land Protection Plan (USFWS 2000) to improve resource protection.

3.5 Contribute to local, regional, and global efforts for conserving migratory species of fish and wildlife.

Rationale:

The Togiak Refuge's role in conservation of natural resources extends beyond its borders. Togiak Refuge managers have a keen interest in the migratory pathways and the temporary destinations used by the transitory fish and wildlife species occupying the Refuge. The success of migratory species is a function of the weakest link in the chain of air, land, and water habitats through which they pass or reside. By maintaining the health and integrity of native ecosystems, Togiak Refuge will ensure its strength in this chain. However, this is not enough. The Refuge will also assist larger efforts in migratory species management by monitoring the use of the Refuge by those species and actively supporting and encouraging similar endeavors throughout the migratory pathways.

Strategies:

3.5.1 In conjunction with the National Marine Fisheries Service and the U.S. Fish and Wildlife Service Marine Mammals Management office, monitor marine mammal abundance and distribution to assist in maintaining healthy and stable marine mammal populations throughout the Bering Sea.

3.5.2 Monitor trends in the population and productivity of black-legged kittiwakes, common murres, and pelagic cormorants at Cape Peirce.

3.5.3 Work with international, national, state, local, and private entities to monitor migratory bird species abundance and distribution, and assist in maintaining healthy bird populations throughout the United States and the Western Hemisphere.

3.5.4 Monitor spring and fall migration and staging of waterfowl on Togiak Refuge.

3.5.5 Work with international, national, state, local, and private entities to monitor anadromous fish migration patterns and understand their ecological needs to assist in maintaining healthy populations.

2.1.4 Wilderness

Goal

4. Preserve the wilderness character of the Togiak National Wildlife Refuge Wilderness area.

Rationale:

Togiak Refuge manages the second largest Wilderness area in the National Wildlife Refuge System. Wilderness areas enjoy special protection under Federal law and Service policy, all of which is focused on ensuring a continuation of truly natural conditions. The Togiak Refuge will actively pursue its wilderness management responsibilities and will carefully consider the compatibility of all proposed access into or uses of the Togiak Wilderness area, including the administrative access by refuge staff.

Objectives:

4.1 Within three years of adoption of this plan, complete a Wilderness Stewardship Plan for the Togiak Wilderness.

4.2 Promote environmental ethics and "Leave No Trace" techniques so that visitors will understand the value of wilderness, and future visitors will enjoy an unimpaired wilderness experience.

4.3 Perform minimum requirements analyses of all administrative activities planned to occur within the Togiak Wilderness area when such activities have potential to affect wilderness values.

2.1.5 Refuge Operations

Goal

5. Develop and maintain support mechanisms and infrastructure to achieve management goals.

Rationale:

Stewardship of Togiak Refuge's natural resources requires a constantly changing infrastructure of personnel, materiel, and financial resources. This organizational structure has evolved over the past three decades, growing steadily as the demands on the Refuge's resources have grown. Anticipating requirements is crucial to proactive management; thus, it is essential that the Refuge actively work to develop strategies to maintain support from both within and outside the Service and to maintain and appropriately modernize its infrastructure.

Objectives:

5.1 Continue to fund the Refuge Information Technician program.

5.2 Continue a proactive safety program which surpasses legal requirements for administrative facilities and management operations at Togiak Refuge.

5.3 Provide regular technical training to develop and maintain the job competencies of all refuge staff.

5.4 Acquire and maintain adequate facilities, equipment, vehicles, watercraft, and aircraft to remain abreast of increasing demands from the public for information and services from Togiak Refuge.

5.5 Meet the refuge needs for pilots, biological staff, public contact staff, and administrative staff.

5.6 Direct construction of refuge field and headquarters facilities that foster efficient management of the Refuge and service to the public.

5.7 Maintain equipment and buildings used in all aspects of refuge management, including habitat, wildlife, and public use.

2.1.6 Cooperation

Goal

6. Maintain a leadership role in the management of native ecosystems in southwest Alaska.

Rationale:

The ecosystems comprising the Togiak Refuge do not end at the refuge borders; thus cooperation with surrounding land managers is essential. To this end, Togiak Refuge will continue to actively encourage the full participation of all interested parties in cooperative endeavors.

Objectives:

6.1 Organize and participate in local, regional, state, national, and international partnerships, groups, and associations pursuing common natural resource management goals.

6.2 Coordinate refuge activities with public and private entities (including tribal governments; educational systems; Federal, state and local governments; and private industry) within and adjacent to Togiak Refuge.

2.2 Management Direction Introduction

Management of the Refuge reflects existing laws, executive orders, regulations, and policies governing Service administration and operation of the National Wildlife Refuge System both nationally and within Alaska. Although refuge management is similar throughout Alaska, some deviations are likely to appear in each comprehensive conservation plan because of the specific situations existing on individual refuges. The following describes the management direction for the Togiak National Wildlife Refuge, including Hagemeister Island of the Alaska Maritime National Wildlife Refuge.

These sections contain the following:

- Descriptions of the management categories and their associated general management intent
- Policies and guidelines specific to each category
- A table that displays activities, public uses, commercial uses, and facilities by management category

2.3 Management Categories

Although five management categories, ranging from Intensive Management to designated Wilderness, are used to describe management levels throughout the refuges in Alaska, only two management categories—Wilderness and Minimal Management—

are applied to Togiak Refuge. A management category is used to define the level of human activity appropriate to a specific area of the Refuge. It is a set of refuge management directions applied to an area, in light of its resources and existing and potential uses, to facilitate management and the accomplishment of refuge purposes and goals. The Service could, in the future, designate refuge lands as Intensive or Moderate management through a plan amendment. The Wilderness and Wild and Scenic River management categories are reserved for congressionally designated lands. The management activities table (Table 2-1) shows those management activities, public uses, commercial uses, and facilities that may be allowed in each management category and under what conditions.

2.3.1 Intensive Management

This category is designed to allow compatible management actions, public facilities, and economic activities that may result in alterations to the natural environment. In Intensive management areas, the presence of human intervention may be very apparent. Roads, buildings, and other structures are likely to be seen. Intensive management is applied to the smallest area reasonable to accommodate the intended uses. When Intensive management is proposed for an area, the specific purposes for its establishment will be described.

Natural processes or habitats may be modified through human intervention. Habitats may be highly modified to enhance conditions for one or more animal species. For example, water regimes may be artificially controlled to improve habitat for waterfowl.

High levels of public use may be accommodated and encouraged through modifications to the natural environment such as paving, buildings, developed campgrounds, and other facilities that could alter the natural environment in specific areas. Public facilities are designed to provide a safe and enjoyable experience of the natural environment and an increased understanding of refuge resources for a wide range of visitors. Facilities may accommodate a large number of visitors while protecting refuge resources from damage through overuse.

Compatible economic uses of refuge resources that result in alterations to the natural environment may be authorized in Intensive management areas. All economic uses are subject to the compatibility standard, must contribute to the purposes of the Refuge, and require official authorizations such as special use permits.

2.3.2 Moderate Management

Moderate management is meant to allow compatible management actions, public uses, commercial uses, and facilities that may result in changes to the natural environment that are temporary or permanent but small in scale and that do not disrupt natural processes. The natural landscape is the dominant feature of Moderate management areas, although signs of human actions may be visible.

Moderate management actions will focus on maintaining, restoring, or enhancing habitats to maintain healthy populations of plants and animals where natural processes predominate. For example, prescribed burning may be used to convert mature forests to an early seral stage to enhance browse for moose. In general, management facilities, both temporary and permanent, will be allowed for the purposes of gathering data needed to understand and manage resources and natural systems of the Refuge. Structures will be designed to minimize overall visual impact.

Public facilities provided in Moderate management will, while protecting habitats and resources, allow the public to enjoy and use refuge resources in low numbers over a large area, or they will encourage the short-term enjoyment of the Refuge in focused areas. The emphasis is on small facilities that encourage outdoor experiences. Facilities such as public use cabins, rustic campgrounds, kiosks, viewing platforms, trails, and toilets may be provided. Facilities will be designed to blend with the surrounding environment.

Compatible economic activities may be allowed where impacts to natural processes and habitats are temporary (e.g., small-scale logging where an earlier seral stage meets management goals; facilities in support of guiding and outfitting services such as tent platforms or cabins that encourage enhanced public use). All economic activities and facilities require authorizations such as special use permits.

2.3.3 Minimal Management

Minimal Management is designed to maintain the natural environment with very little evidence of human-caused change. Habitats should be allowed to change and function through natural processes. Administration will ensure that the resource values and environmental characteristics identified in the Plan are conserved. Public uses, economic activities, and facilities should minimize disturbance to habitats and resources. Ground-disturbing activities are to be avoided whenever possible.

Management actions in this category focus on understanding natural systems and monitoring the health of refuge resources.

Generally, no roads or permanent structures are allowed (except cabins). Temporary structures may be allowed in situations in which removal is planned after the period of authorized use, and the site can be rehabilitated using plants native to the immediate area. Existing cabins may be allowed for administrative, public-use, subsistence, commercial, or economic (e.g., guiding) purposes. New subsistence or commercial cabins may be authorized if no reasonable alternative sites exist. Public-use or administrative cabins may be constructed if necessary for health and safety.

Public use of the Refuge for wildlife-dependent recreation and subsistence activities is encouraged. Public-use facilities are not generally provided. Mechanized and motorized equipment may be allowed when the overall impacts are temporary or where its use furthers management goals.

If a transportation or utility system, as defined in Section 1102 of ANILCA, is proposed to cross an area in Minimal management, the authorization process would incorporate a corresponding comprehensive conservation plan amendment to change the management category in the affected area from Minimal management to Moderate or Intensive management, as appropriate.

Compatible economic activities may be allowed where the evidence of those activities does not last past the season of use, except as noted in the preceding discussion of cabins. The primary economic activities are likely to be guiding and outfitting of recreation activities such as hunting, fishing, hiking, river floating, and sightseeing. All economic activities and facilities require authorizations such as special use permits.

2.3.4 Wilderness

This category applies only to areas designated by Congress as units of the National Wilderness Preservation System; areas proposed for Wilderness designation will be managed under Minimal management, consistent with ANILCA Section 1317(c) and Service policy. Designated Wilderness will be managed under the Wilderness Act of 1964 and the exceptions provided by ANILCA. Because Wilderness units are part of a nationwide, multi-agency system, the Service recognizes that responsibilities for managing refuge Wilderness go beyond the mission of the Service and that the purposes of the Wilderness Act are within and supplemental to the other purposes for which individual refuges were established. See section 2.4.19 for additional guidelines on management of Wilderness areas in Alaska.

The history and intent behind the Wilderness Act make Wilderness more than just another category of land management. Wilderness encourages having a broadened perspective of the refuge landscape,

one that extends beyond managing it solely as wildlife habitat. Wilderness is managed as an area "retaining its primeval character and influence." In addition, Wilderness provides human visitors with opportunities for solitude and a primitive and unconfined type of recreation, which may be characterized in terms of experiential dimensions such as discovery, self-reliance, and challenge.

Wilderness areas are managed to preserve their experiential values as well as aesthetic, scientific, and other related values. Research has shown that some values of Wilderness extend beyond their boundaries to people who may never visit but who benefit from the protection of natural ecological processes—benefits such as clean air and water and the knowledge that such places exist. In managing Wilderness, managers are encouraged to consider these off-site and symbolic values and tangible resource values.

Permanent structures are generally prohibited; examples of exceptions are historic and cultural resources and, in certain circumstances, administrative structures or cabins that predate ANILCA, cabins that are necessary for trapping, and public use cabins necessary for the protection of human health and safety. Facilities and structures are rustic and unobtrusive in appearance.

Compatible commercial uses of Wilderness areas are generally limited to those activities that facilitate enjoyment of the areas (e.g., guided fishing, hunting, and wilderness trips). All commercial activities and facilities require authorizations such as special use permits.

Actions such as prescribed fires or invasive species control may be conducted when necessary to protect life or property to restore, maintain, or protect wilderness values. Management activities in Wilderness must be found to be the minimum requirements for the administration of the area as Wilderness.

2.3.5 Wild and Scenic Rivers

The Wild and Scenic Rivers category applies to those rivers and corridors of the adjacent lands that have been designated by Congress as part of the Wild and Scenic Rivers System. This is a national system of designated rivers that possess outstandingly remarkable scenic, recreational, geologic, fish and wildlife, historic, cultural, or other similar values. All designated rivers on refuges in Alaska are classified as Wild Rivers. Wild Rivers are those rivers or sections of rivers that are free of impoundments, with shorelines or watersheds still largely primitive and waters unpolluted.

Within this management category, waterbodies are maintained in natural, free-flowing, and undisturbed conditions. Emphasis is placed on maintaining the natural function of the river system, and the appearance and sense of wildness are preserved. Evidence of

human activities is minimal. Each river within the Wild and Scenic Rivers System has particular values for which it was designated; the management of a Wild River must protect those specific values. Management actions focus on understanding, monitoring, and maintaining the resources, natural ecosystem function, and aesthetics of the river corridor.

Permanent structures generally are not allowed; examples of exceptions are historic and cultural resources and, in certain limited circumstances, subsistence or administrative cabins and associated structures. Cabins, temporary structures, and hardened sites will be visually shielded from the river wherever possible. Where shielding is not practical, facilities and structures are as rustic or unobtrusive in appearance as possible. Public use facilities would provide opportunities for primitive recreation experiences.

Compatible uses of a Wild River corridor will be allowed where those activities do not detract from the values for which the corridor was designated. Primary commercial uses are likely to be recreation services such as guided float, sightseeing, fishing, and hunting trips. A variety of management actions may be taken to maintain the values and classification of the corridor. All commercial activities and facilities require authorizations such as special use permits.

2.3.6 Special Management—Cape Peirce Wildlife Viewing Area

Special Management lands are managed within one of the categories described previously but have additional requirements because of their status.

The Togiak National Wildlife Refuge Public Use Management Plan established the Cape Peirce Wildlife Viewing Area. This area is managed consistent with the Minimal management category but has additional management guidance, primarily in regards to public use and facilities. Amendments and additional guidance are being considered for Cape Peirce in the Revised Togiak Public Use Management Plan which is currently in process. Contact the Togiak National Wildlife Refuge office for details on the management of Cape Peirce Wildlife Viewing Area.

2.3.7 Management of Selected Lands

The Service retains management responsibility for lands selected but not yet conveyed to Native villages and regional corporations or to the State of Alaska. The appropriate Native corporation or agency of the State of Alaska will be contacted and its views considered prior to implementing a management program or issuing a permit involving these lands. Fees collected for special use or right-of-way permits will be held in escrow until the selected lands are conveyed or relinquished. Management of these lands will be the same as for adjacent refuge lands.

2.3.8 Alaska Native Claims Settlement Act Section 22(g)

Section 22(g) of the Alaska Native Claims Settlement Act (ANCSA) provides that those refuge lands established prior to December 18, 1971, and conveyed under that act remain subject to the laws and regulations governing the use and development of the Refuge. Activities occurring on these lands are subject to the compatibility standard, as described in 50 CFR 25.21(b)(1). In addition, the Service retains the right of first refusal on village corporation lands if these lands are ever offered for sale.

Only lands within the area of the original Cape Newenham Refuge are subject to Section 22(g), which currently includes 9,510 acres. The Togiak Refuge will work with the landowner to balance the commercial development and use of 22(g) lands with the protection of resources important to the Refuge.

2.4 Management Policies and Guidelines

Refuge management is governed by Federal laws such as the National Wildlife Refuge System Administration Act of 1966 (16 U.S.C. 668dd), as amended, (Refuge Administration Act); the National Wildlife Refuge System Improvement Act of 1997, an amendment to the Refuge Administration Act (P.L. 105-57) (Refuge Improvement Act); and ANILCA; by regulations implementing these laws; by treaties; by Service policy; and by principles of sound resource management—which establish standards for resource management or limit the range of potential activities that may be allowed on the Refuge.

ANILCA authorizes traditional activities such as subsistence, the exercise of valid commercial fishing rights, hunting, fishing, and trapping in accordance with state and Federal laws. Under Service regulations implementing this direction, "public recreation activities within the Alaska National Wildlife Refuges are authorized as long as such activities are conducted in a manner compatible with the purposes for which the areas were established" (50 CFR 26.21[a]). Such recreation activities include but are not limited to sightseeing, nature observations and photography, hunting, fishing, boating, camping, hiking, picnicking, and other related activities. The Refuge Administration Act, as amended by the Refuge Improvement Act, defines" wildlife-dependent recreation" and "wildlife-dependent recreational use" as hunting, fishing, wildlife observation and photography, or environmental education and interpretation (16 U.S.C.§ 668ee[2]). These uses are encouraged and will receive emphasis in management of public use on refuges.

2.4.1 Management Emergencies

It may be necessary, when emergencies occur on the Refuge, to deviate from policies and guidelines discussed in this Plan. Activities not allowed on the Refuge or under a specific management category,

as shown in the Management Activities Table 2-1, may occur during or as a result of emergencies. For example, if naturally occurring or human-caused actions (e.g., landslides, floods, fires, droughts) adversely affect refuge resources, it may be necessary to undertake rehabilitation, restoration, habitat improvement, water management, fisheries enhancement, or other actions that would not otherwise be allowed to the same extent on the Refuge. Threats to human health and safety may also result during emergencies. In emergencies, the refuge manager is authorized to take prudent and reasonable actions to protect human life and to address immediate health, safety, or critical resource protection needs.

2.4.2 Boundary Adjustments (Administrative)

Alaska Maritime National Wildlife Refuge includes Hagemeister Island, which is located off the southern coast of Togiak Refuge in Bristol Bay. Hagemeister is a large island that shares many of the resources and features of the adjacent mainland. While these lands remain legally a part of the Alaska Maritime Refuge, daily management authority was transferred to Togiak Refuge in 2001.

2.4.3 Land Exchanges and Acquisitions

Under Section 1302 of ANILCA and subject to certain restrictions, the Service may acquire by purchase, donation, or exchange any lands within the boundaries of Alaska refuges. Proposed land exchanges or acquisitions must benefit fish and wildlife resources, satisfy other purposes for which the Refuge was established, or be necessary to satisfy other national interests. The Service can also purchase conservation easements or enter into cooperative management agreements to meet these objectives.

2.4.4 Land Protection Plans

Department of Interior and Service policies require development of a step-down plan (called a land protection plan) addressing priorities for habitat conservation within refuge boundaries. Land protection plans inform private landowners what land within refuge boundaries the Service would like to see conserved for fish and wildlife habitat. The plans do the following:

- Identify the private lands within the refuge boundary that the Service believes should be conserved
- Display the relative protection priority for each parcel
- Discuss alternative means of land and resource conservation
- Analyze the impacts of acquisition on local residents

The Service only acquires land from willing landowners. It is Service policy to acquire land only when other methods of achieving goals are not appropriate, available, or effective. Sometimes resource conservation goals can be met through cooperative management agreements with landowners or by similar means. The

Refuge will work with all landowners to ensure that overall fish and wildlife and habitat values within the Refuge are conserved.

A pre-acquisition environmental site assessment is required for all real property proposed for acquisition by the Service or for public domain lands returning to Service jurisdiction (Service Manual 341 FW 3).

A land protection plan for the Togiak Refuge and Hagemeister Island was completed in April 2000. The acquisition of small parcels in target areas remains one of the region's highest priorities for habitat protection. Acquisitions to date total 4,136.24 acres. The high priority areas for acquisition are within the designated Togiak Wilderness area, particularly along the major salmon spawning rivers and in the vicinity of Chagvan Bay. The acquisition of small parcels within Togiak Refuge will continue to be at appraised fair market value and only from willing sellers. Land acquisition is a viable tool for habitat protection as funding becomes available.

2.4.5 Appropriate Uses

All uses of a national wildlife refuge over which the Service has jurisdiction must be determined to be appropriate uses under the Appropriate Refuge Uses Policy (Service Manual 630 FW 1). An appropriate use of a national wildlife refuge is a proposed or existing use on a refuge that meets at least one of the following four conditions.

1. The use is a wildlife-dependent recreational use as identified in the Refuge Improvement Act (hunting, fishing, wildlife observation and photography, environmental education and interpretation.
2. The use contributes to fulfilling the refuge purpose(s), the Refuge System mission, or goals or objectives described in a refuge management plan approved after October 9, 1997, the date the Refuge Improvement Act was signed into law.
3. The use involves the take of fish and wildlife under state regulations.
4. The refuge manager has evaluated the use following guidelines in the Service Manual 603 FW 1.11 and found it appropriate as follows.

    a) Do we have jurisdiction over the use?

    b) Does the use comply with applicable laws and regulations (Federal, state, tribal, and local)?

c) Is the use consistent with applicable executive orders, Department of the Interior and Service policies?

d) Is the use consistent with public safety?

e) Is the use consistent with goals and objectives in an approved management plan or other document?

f) Has an earlier documented analysis not denied the use, or is this the first time the use has been proposed?

g) Is the use manageable within available budget and staff?

h) Will this be manageable in the future within existing resources?

i) Does the use contribute to the public's understanding and appreciation of the Refuge's natural or cultural resources, or is the use beneficial to the Refuge's natural or cultural resources?

j) Can the use be accommodated without impairing existing wildlife-dependent recreational uses or reducing the potential to provide quality, compatible, wildlife-dependent recreation in the future?

This plan identifies those existing and proposed uses that are found appropriate and compatible. Compatibility determinations are included as Appendix D of this plan. The following uses have been found appropriate: commercial transporter services, subsistence activities, commercially guided recreational fishing and hunting services, winter snowmachine trail marking and marker maintenance, Native allotment surveys, reburial of archaeological human remains, scientific research, State of Alaska management activities, and activities associated with priority public uses. Appropriate use documentation is on file with the refuge headquarters and the Alaska regional office. If additional uses not addressed in this plan are proposed for the refuge, the refuge manager will determine if they are appropriate uses following guidance in the Service Manual (603 FW 1).

2.4.6 Compatibility Determinations

The Refuge Administration Act states that "the Secretary of the Interior is authorized, under such regulations as he [or she] may prescribe, to . . . permit the use of any area within the Refuge for any purpose, including but not limited to hunting, fishing, public recreation and accommodations, and access whenever he [or she] determines that such uses are compatible . . . ."

A compatible use is a proposed or existing wildlife-dependent recreation use or any other use of a national wildlife refuge that, based on sound professional judgment, will not materially interfere with nor detract from the fulfillment of the Refuge System mission or the purposes for which the national wildlife refuge was established. Economic uses must contribute to achieving refuge purposes and the Refuge System mission.

Compatibility determinations are not required for refuge management activities except economic activities. They are also not required where statute directs mandatory approval of the activity, as in the case of facilities for national defense.

If a use is found to be incompatible, the Refuge would follow normal administrative procedures for stopping the action. If the use was a new use requiring a special use permit, the refuge manager would not issue a permit. If the use was an existing use already under permit, the refuge manager would work with the permittee to modify the use to make it compatible or would terminate the permit.

Ending incompatible uses that do not require a special use permit or other formal authorization, or that cannot be addressed by other Federal or state agencies, would require the Refuge go through the normal rule-making process. This would include publishing the proposed regulations in the *Federal Register* and providing opportunity for public comment.

Compatibility determinations for uses on the Refuge are found in Appendix D of this Plan. Public comment on the determinations has been addressed in the final determinations released with the final Comprehensive Conservation Plan.

Compatibility determinations for existing hunting, fishing, wildlife observation and photography, and environmental education and interpretation must be re-evaluated with the preparation or revision of a comprehensive conservation plan or at least every 15 years, whichever is earlier. Refuge compatibility determinations for all other uses must be re-evaluated every 10 years or earlier if conditions change or significant new information relative to the use and its effects becomes available.

To review completed compatibility determinations for all refuges in Alaska, go to http://alaska.fws.gov/nwr/planning/completed.htm.

Additional details on applying compatibility standards and completing compatibility determinations are found in the compatibility regulations at 50 CFR Parts 25, 26, and 29 and the Service manual (603 FW 2).

2.4.7 Mitigation

In the interest of serving the public, it is the policy of the Service, throughout the nation, to seek to prevent, reduce, or compensate for losses of fish, wildlife, and their habitats, and uses thereof, from land and water development. To that end, the Service developed a Mitigation Policy in 1981 that includes measures ranging from avoiding an activity that results in loss of such resources to seeking compensation by replacement of or substitution for resource loss.

The Service will promulgate regulations, develop stipulations, and issue permits to reduce or eliminate potential adverse impacts resulting from compatible activities that may be authorized under this Plan. These regulations, stipulations, and permits would mitigate impacts in a variety of means, as stipulated in the Mitigation Policy guidelines (Service Manual 501 FW 2.1). The means, in order of application, are as follows:

1. Avoiding the impact altogether by not taking a certain action or parts of an action
2. Minimizing impacts by limiting the degree or magnitude of the action and its implementation
3. Rectifying the impact by repairing, rehabilitating, or restoring the affected environment
4. Reducing or eliminating the impact over time by preservation and maintenance operations during the life of the action
5. Compensating for the impact by replacing or providing substitute resources or environments

When determining whether activities or uses are compatible, projects should be designed first to avoid adverse impacts. The Service generally does not allow compensatory mitigation on National Wildlife Refuge System lands. Only in limited and exceptional circumstances related to existing rights-of-way could compensatory mitigation be used to find an activity compatible. The Service Manual (501 FW 2 and 603 FW 2) provides more information.

Mitigation may consist of standard stipulations such as those attached to right-of-way permits; special stipulations that may be attached to leases or permits on a site-specific basis; and site-specific, project-specific mitigation identified through detailed step-down management plans or the environmental assessment process. In all instances, mitigation must support the mission of the Refuge System and must be compatible with the purposes of the Refuge. The degree, type, and extent of mitigation undertaken would

depend on the site-specific conditions present and the management goals and objectives of the action being implemented.

2.4.8 Coastal Zone Consistency

Although Federal lands, including lands in the Refuge System, are excluded from the coastal zone (16 U.S.C., Section 1453[1]), the Coastal Zone Management Act of 1972, as amended (PL 92-583), directs Federal agencies conducting activities within the coastal zone or that may affect any land or water use or natural resources of the coastal zone to conduct these activities in a manner that is consistent "to the maximum extent practicable"[1] with approved state management programs.

The Alaska Coastal Zone Management Act of 1977, as amended, and the subsequent Alaska Coastal Management Program, as amended, and Final Environmental Impact Statement (1979) establish policy guidance and standards for the review of projects within or potentially affecting Alaska's coastal zone. In addition, specific policies have been developed for activities and uses of coastal lands and water resources within regional coastal resource districts. Most incorporated cities, municipalities, and boroughs, as well as unincorporated areas (coastal resource service areas) within the coastal zone, now have state-approved coastal management programs.

Although state and coastal district program policies are to guide consistency determinations, more restrictive Federal agency standards may be applied. Federal regulations state that "(w)hen Federal agency standards are more restrictive than standards or requirements contained in the State's management program, the Federal agency may continue to apply its stricter standards . . ." (15 CFR, Section 930.39[d]).

Certain Federal actions may require a Federal Coastal Consistency Determination. Togiak Refuge will contact the Alaska Department of Natural Resources' Alaska Coastal Management Program for program applicability before beginning a project that may affect the coastal zone.

Appendix B includes a consistency determination covering the management of Togiak Refuge and Hagemeister Island of the Alaska Maritime Refuge.

---

[1] "To the maximum extent practicable" means "to the fullest degree permitted by existing law (15 CFR, Section 930.32)."

2.4.9 Cooperation and Coordination with Others

2.4.9.1 Federal, State, and Local Governments

The Refuge will continue to work closely with those Federal, state, and local governments and agencies whose programs affect, or are affected by, the Togiak Refuge; state and local government input will be sought during the development of regulatory policies addressing management of the Refuge System (Executive Order 13083, Federalism). When possible, the Service will participate in interagency activities (such as joint fish and wildlife surveys and co-funded research), cooperative agreements, and sharing data, equipment, and/or aircraft costs to meet mutual management goals and objectives.

The Refuge and the State of Alaska will cooperatively manage the fish and wildlife resources within Togiak Refuge. The Master Memorandum of Understanding between the Service and the Alaska Department of Fish and Game (dated March 13, 1982) defines the cooperative management roles of each agency (see Appendix C). In this agreement, the Alaska Department of Fish and Game agreed to "recognize the Service as the agency with the responsibility to manage migratory birds, endangered species, and other species mandated by Federal law, and on Service lands in Alaska to conserve fish and wildlife and their habitats and regulate human use." Correspondingly, the Service agreed to "recognize the right of the Alaska Department of Fish and Game as the agency with the primary responsibility to manage fish and resident wildlife within the State of Alaska." Further discussion of intergovernmental cooperation regarding the preservation, use, and management of fish and wildlife resources is found in 43 CFR 24 (Department of the Interior Fish and Wildlife Policy: State and Federal Relationships).

The Service does not require refuge compatibility determinations for state wildlife management activities on a national wildlife refuge pursuant to a cooperative agreement between the state and the Service where the refuge manager has made a written determination that such activities support fulfilling the refuge purposes or the System mission. When the activity proposed by the state is not part of a cooperative agreement or the state is not acting as the Service's agent, a special use permit may be required, and a refuge compatibility determination will need to be completed before the activity may be allowed. Separate refuge compatibility determinations addressing specific proposals will be required for state management activities that propose predator management, fish and wildlife control (with the exception of emergency removal of individual rogue animals), reintroduction of species, nonnative species management, pest management, disease prevention and control, fishery restoration, fishery enhancement, native fish

introductions, nonnative species introductions, construction of facilities, helicopter and off-road vehicle access, or any other unpermitted activity that could alter ecosystems on the Refuge.

The Service will cooperate with other state agencies such as the Department of Natural Resources and the Department of Transportation and Public Facilities on matters of mutual interest and may enter into informal and formal management agreements.

2.4.9.2 Tribes and Native American Organizations

The Service's Native American Policy (USFWS 1994) identifies general principles that guide the Service's government-to-government relationships with tribal governments in the conservation of fish and wildlife resources. Additional guidance has been provided by Executive Order 13084, Consultation and Coordination with Indian Tribal Governments, issued May 14, 1998, and the Department of the Interior–Alaska Policy on Government-to-Government Relations with Alaska Native Tribes issued January 18, 2001 (USDI 2001). The Togiak Refuge will maintain government-to-government relationships with tribal governments. The Refuge will also work directly with regional and village corporations and respect Native American cultural values when planning and implementing refuge programs.

This plan revision was developed with the assistance of representatives of five local Native American tribes.

2.4.9.3 Owners of Refuge Inholdings and Adjacent Lands

The Refuge will work cooperatively with inholders and adjacent landowners, providing information on refuge management activities and policies. The Refuge will consult periodically with them regarding topics of mutual interest; will respond promptly to concerns over refuge programs; and will participate in cooperative projects (e.g., water quality monitoring and fish and wildlife management).

2.4.9.4 U.S. Fish and Wildlife Service Jurisdiction over Waters within Togiak Refuge

Where the United States holds title to submerged lands beneath waters within the Togiak Refuge and the Alaska Maritime National Wildlife Refuge, the Service has jurisdiction over certain activities on the water.

In 1980, under ANILCA, the U.S. Congress established the Togiak and Alaska Maritime National Wildlife Refuges. These areas of land and water may contain both navigable and non-navigable waters. Where waterbodies are non-navigable within the Refuges' boundaries, the Service has management authority over most activities on non-navigable waterbodies where adjacent uplands are federally owned. State laws and regulations apply everywhere on

the lands and waters of the Refuge unless they conflict with or are preempted by Federal laws or regulations, or both.

The Service's statutory authority to manage these lands and waters comes from ANILCA; the Service manages these lands pursuant to the Refuge Administration Act. Under provisions of ANILCA, the Service manages the federal subsistence program on all inland waters within and adjacent to the external boundaries of the Refuge (50 CFR 100.3(b)).

2.4.9.5 Other Constituencies

The Refuge will inform local communities, special interest groups, and others who have expressed an interest in or are affected by refuge programs about refuge management policies and activities. Togiak Refuge will seek input from these constituents when issues arise that may affect how the Refuge is managed. When appropriate, local residents and other stakeholders will be asked to participate in refuge activities so their expertise and local knowledge can be incorporated into refuge management.

2.4.10 Ecosystem and Landscape Management

Species do not function alone; they function together in the environment as part of an ecosystem. The Refuge will manage the resources of Togiak Refuge by employing ecosystem-management concepts. Individual species are viewed as integral to the diversity of those ecosystems and are indicators of the healthy functioning of the entire ecosystem. When the Service identifies species to use as indicators of the health of an ecosystem, it will do so through a rigorous peer-reviewed scientific process involving experts from other federal agencies and the Alaska Department of Fish and Game.

Inventorying, monitoring, and maintaining a comprehensive database of selected ecosystem components are critical for making refuge management decisions and for ensuring the proper long-term ecosystem stewardship. This includes regular and recurring monitoring of status and trends of ecosystem components such as fish, wildlife, plants, climatic conditions, soils, and waterbodies. All monitoring will employ appropriate disciplines, new technologies, and scientific capabilities whenever practical.

2.4.10.1 Air Quality

The Service's authorities for air quality management are included in several laws. The most direct mandates to manage air resources are found in the Wilderness Act and the Clean Air Act.

The Service is required by the Clean Air Act to preserve, protect, and enhance air quality and air quality–related values on Service lands. Air quality–related values include visibility, plants, animals, soil, water quality, cultural and historical resources, and virtually all

resources that are dependent upon and affected by air quality. In addition, the Wilderness Act requires the Service to protect and preserve the Wilderness character, including the pristine air quality, of designated areas.

Class I air quality sites receive the highest level of protection. Very little deterioration is allowed in these areas, and the Federal land manager has an "affirmative responsibility" to protect air quality–related values on those lands. With the exception of three Class I air quality sites in designated Wilderness on the Alaska Maritime National Wildlife Refuge, all other lands managed by the Service in Alaska are classified as Class II and receive protection through the Clean Air Act. Moderate deterioration, associated with well-managed growth, is allowed in Class II areas.

If air quality or related resources are at risk, the refuge manager will work with the Service's Air Quality Branch; the regional air quality coordinator; the Alaska Department of Environmental Conservation; other state, local, and Federal agencies; and the public, as appropriate, in developing an air quality management plan as outlined in the Service Manual 563 FW 2.8.

2.4.10.2 Water Resources (Hydrology) Management

Every national wildlife refuge in Alaska shares the common purpose of ensuring that water resources are maintained and protected. ANILCA mandates that the Service safeguard water quality and necessary water quantity within the refuges and to conserve fish and wildlife populations and habitats in their natural diversity.

Although the Service has reserved water rights sufficient to accomplish the purposes of the refuges, the Refuge System Administration Act 16 and the Service Manual (403 FW 1 through 3) directs the Service to obtain, to the extent practicable, water supplies of adequate quantity and quality for Service facilities, for refuge purposes and as trust resources, and to obtain the legal right to use that water through state laws, regulations, and procedures.

The Alaska Region of the Service conducted a water resources threats analysis (Harle 1994) for the purpose of guiding water resource investigations and protecting water resources by acquiring instream water rights. Based on the results of the threats analysis, the Service's regional office developed a strategic plan for systematically quantifying the surface water on refuges within Alaska (Bayha et al. 1997).

Using existing data, or through the collection of hydrologic and biologic data, the Service applies to the State of Alaska for appropriative water rights, for instream water reservations, and

for water withdrawals to meet the Service needs. To date, no water rights have been quantified or filed for Togiak Refuge.

Establishing state water rights is only a part of a management strategy to protect refuge resources and to understand ecosystem processes. Collection of hydrologic data allows the Service to accomplish the following:

- Plan floodplain and riparian zone management
- Estimate flow for ungauged streams within the refuge
- Supplement historical or current fisheries and wildlife studies
- Detect and evaluate future natural or human-induced changes in the hydrologic system
- Provide stream profile and velocity data for the design of fish weirs or other structures
- Estimate the potential for future flooding and erosion
- Analyze the impacts of proposed projects on stream flow and water supply
- Provide a basis for decision making about commercial operations on important streams
- Provide baseline water quality information

All facilities and activities on refuges must comply with pollution control standards set by Federal laws (e.g., the Clean Water Act [33 U.S.C. 1251] and the Safe Drinking Water Act [42 U.S.C. 300f]); state laws where Federal law so provides; and the regulations, policies, and standards implementing these laws.

Little data for most water quality parameters have been collected for waters within the Refuge. Two primary water quality programs are used on refuges to gather water quality information: one designed to access inorganic chemistry of surface water (physical water parameters and nutrient content, major ions, and trace metals), and the other to document organic and metal contaminants (pollutants).

2.4.10.3 Visual Resource Management

Visual resource management has two primary purposes: (1) to manage the quality of the visual environment and (2) to reduce the visual impact of development activities. To accomplish these purposes, the Refuge will identify and maintain scenic values and will, within the constraints imposed by the comprehensive

conservation plan, minimize the visual impacts of refuge development and use. All activities and facilities on the Refuge will be designed to blend into the landscape to the extent practical. The Service will cooperate with other Federal, state, local, tribal, and private agencies and organizations to prevent significant deterioration of visual resources.

2.4.10.4 Cultural, Historical, and Paleontological Resources

The Service has long-term responsibilities for cultural resources on refuge lands. Cultural resources on refuge lands are managed under a number of laws, executive orders, and regulations, including the Antiquities Act; the National Historic Preservation Act, as amended; the Archaeological Resources Protection Act; the American Indian Religious Freedom Act; the Native American Graves Protection and Repatriation Act; Executive Order 11593, Protection and Enhancement of the Cultural Environment; Executive Order 13007, Indian Sacred Sites; and 36 CFR 800.

The 1980 amendments to the National Historic Preservation Act direct the Service to inventory and evaluate cultural resources for their eligibility for inclusion on the National Register of Historic Places. Pending a complete evaluation, all cultural resources will be considered potentially eligible for the National Register of Historic Places. All significant historic, archaeological, cultural, and paleontological resources on Togiak Refuge will be protected and managed in accordance with Federal and state law.

A cultural resource plan for the refuge will be completed by 2010. This plan provides guidance for cultural resource management on the Refuge. It outlines legal mandates and considerations, reviews current information about resources, and establishes goals and objectives for the program. The cultural resource plan should be updated every five years.

It is illegal to collect archaeological materials and/or paleontological remains on the Refuge without a permit. Historic aircraft and other World War II material will be managed in accordance with the policy published December 20, 1985, in the *Federal Register* (FR 50:51952-51953). These materials may be collected on refuge lands only as authorized by a permit issued to a qualified organization or individual. Cultural resource research permits will only be issued to qualified individuals operating under appropriate research designs. The Refuge will encourage archaeologists, historians, ethnologists, and paleontologists from educational institutions and other government agencies to pursue their research interests on refuge lands as long as these research interests are compatible with refuge purposes. Research that collects data from threatened sites and minimizes disturbance to intact sites will be encouraged.

When any federal undertaking—including any action funded or authorized by the Federal government and having the potential to directly or indirectly affect any archaeological or historic site—is planned, a consultation must be initiated with the State Historic Preservation Officer, under Section 106 of the National Historic Preservation Act. If sites that may be affected are found in the project area, their significance will be evaluated to determine their eligibility for inclusion in the National Register of Historic Places. For eligible sites, consultation will result in a course of action causing the least possible impact. Impacts may be minimized in a variety of ways, including relocation or redesign of a project, site hardening, mitigation through information collection, or cancellation of the project if no alternatives are feasible. To protect archaeological and historic sites, other uses may be precluded. Private interests proposing to conduct commercial uses on the Refuge will normally be required to fund studies necessary for consultation and for mitigation of impacts.

Togiak Refuge will implement Executive Order 13007, Indian Sacred Sites, allowing access to identified sacred sites and avoiding adversely affecting the physical integrity of these sites. Where appropriate, the Service will maintain the confidentiality of sacred sites.

Further information on cultural resources management can be found in the Service Manual (614 FW 1 though 5) and the Cultural Resources Handbook (USFWS 1992).

2.4.11 Fish and Wildlife Habitat Management

2.4.11.1 Habitat Management

Habitats are managed in keeping with the purposes, goals, and objectives of a refuge. In Alaska, this means habitats are largely managed to maintain natural diversity and natural processes. However, in some cases, habitats are manipulated to maintain or improve conditions for selected fish and wildlife populations, to control invasive plant species, or to manage fire fuels on refuge lands. These habitat management and manipulation activities will be carried out in support of the purposes, goals, and objectives of the Refuge. Generally, the Refuge will use the least intrusive management measures needed.

Where practical and economically feasible, habitat management practices should maintain a natural appearance on the landscape. Habitat management practices, even those carried out for the benefit of a single species or small group of species, will, to the extent possible, contribute to the natural diversity of native (indigenous) wildlife species and habitat types. In designated Wilderness, habitat management activities are subject to a minimum requirements analysis.

Habitat management and manipulation may be achieved by mechanical, chemical, or manual methods, including the use of fire, or by a combination of methods. Mechanical treatment could include mechanical removal, crushing, cutting, or mowing. When applicable, state and Federal guidelines for timber management will be followed. Mechanical treatment could also include the construction of fish passages, fish ladders, fish barriers, water impoundments, and structures such as fences or artificial nests, and raising or lowering of water levels to manage wildlife or waterfowl habitat. Riparian or aquatic habitat management and manipulation may be achieved by acquiring instream-flow reservations or making beneficial water diversions.

Chemical treatment would involve the use of chemicals to restore nutrient levels in a lake system (fertilization) for fisheries restoration, to reduce hazardous fuels, or to eliminate invasive plant and animal species, normally by killing them or destroying their ability to spread or prosper. Before chemical treatment is approved for use, the Refuge will analyze the need for action, the options for treatment, and the potential impacts of those options through the National Environmental Policy Act (NEPA) process. Pest control, including integrated pest management, is discussed in 2.4.12.

Manual treatment could include the use of hand tools to remove, reduce, or modify plants or to modify habitats (e.g., removal of beaver dams).

Aquatic habitat modification may include activities and structures such as streambank restoration, passage structures, and fish barriers or obstacles removal that result in physical modification of aquatic or riparian habitats to benefit fish species. These activities would be undertaken to maintain or restore native fish populations and may require appropriate NEPA compliance and refuge compatibility determinations.

2.4.11.2 Fire Management

Fire management is the full range of activities necessary to conserve, protect, and enhance habitat and to maintain desired ecological conditions for the benefit of fish and wildlife. Fire management activities include preparedness, emergency suppression operations, wildland fire use, fire prevention, education, monitoring, research, prescribed fire, hazardous fuel reduction, and mechanical treatments. All activities will be conducted in accordance with refuge, Service, and Department of Interior policies and approved interagency and refuge-specific fire management plans. Additional guidance on fire management can be found in the Service Manual 621 FW 1 through 3.

A fire management plan provides the basis for integrating fire as a critical natural process into other plans and activities on the Refuge

at a landscape scale. The refuge's fire management plan provides specific information on the application and management of fire on the Refuge. The Alaska Interagency Wildland Fire Management Plan provides a cooperative framework and operational guidelines for the suppression of wildland fires. The suppression of human-caused and unwanted wildland fires and the use of nature-caused wildland fires and prescribed fires as management tools are important management prerogatives.

Wildland Fire Suppression

Fire suppression activity is the work of confining, constraining, controlling, or monitoring a fire or portion of a fire to protect, prevent, or reduce the loss of identified values. Suppression takes place, with the highest priority being the safety of firefighters and the public, using the appropriate management response based on values to be protected. The Alaska Interagency Wildland Fire Management Plan, amended in October 1998, is the guiding document for suppression actions. The plan establishes four management options—critical, full, modified, and limited—that direct a range of wildlife fire management responses. Refuge lands have been classified by fire management zones for limited, modified, or full suppression, with all facilities mapped.

The Bureau of Land Management Alaska Fire Service (BLM AFS) provides emergency suppression services on refuge lands in Alaska (Departmental Manual 620 DM 2) as directed by the refuge manager. Through a cooperative agreement with BLM AFS, the State of Alaska Division of Forestry provides emergency suppression services on refuge lands in state protection zones as directed by the refuge manager.

Wildland Fire Use

Wildland fire use is the application of the appropriate management response to naturally ignited wildland fires to accomplish resource management objectives outlined in fire management plans. Wildland fires may be used to protect, maintain, and enhance natural and cultural resources; as nearly as possible, wildland fires will be allowed to function in their natural ecological role. Optional management is described in the Refuge's fire management plan.

Prescribed Fire

Prescribed fires are ignited by management action to meet specific wildland fuel, vegetation, and habitat management objectives. Prior to each ignition, a written, approved plan outlining prescription conditions is required. Use of prescribed fires must also comply with the Alaska Enhanced Smoke Management Plan for Prescribed Fire. The plan provides guidance and direction concerning smoke issues related to prescribed fire.

2.4.12 Fish and Wildlife Population Management

Conservation of habitat is a key element in maintaining the natural diversity of populations on the Refuge, and management of native fish and wildlife populations is an important component of maintaining a healthy ecosystem. The Refuge will be managed in accordance with its purposes and consistent with the Policy on Maintaining Biological Integrity, Diversity, and Environmental Health of the National Wildlife Refuge System (Service Manual 601 FW 3) to ensure native species are managed in their natural diversity and abundance.

The Refuge will work with the State of Alaska to conserve fish and wildlife populations, recognizing that populations may experience fluctuations in abundance because of environmental factors and may require management actions for conservation purposes. The Refuge will be managed to maintain the genetic variability of wild, native fish stocks. In designated Wilderness, fish and wildlife population management activities must be determined to be the minimum requirement for management of the area as Wilderness.

2.4.12.1 Wildlife Inventory and Monitoring Plan

To assess presence, relative abundance, distribution, and trends in populations of fish, wildlife, and plants, the Refuge will draft a wildlife inventory and monitoring plan (I&M plan). The I&M plan describes objectives, justification, methods, management implications, geographic scale, report schedules, and database management for studies on species targeted for inventory and monitoring. The I&M plan will include studies that address environmental parameters (e.g., weather) and hydrology, soils, and fire history to explain potential changes in the distribution, relative abundance, and populations of fish, wildlife, and plants. The I&M plan will be forwarded to the regional office for review by the regional refuge biologist and other professional staff prior to final approval by the regional refuge chief. The Refuge will update its I&M plan every two years but will only need regional review and approval every five to eight years.

2.4.12.2 Scientific Peer Review

Biologists, ecologists, botanists, and other refuge personnel conducting scientific investigations will adhere to refuge, regional, Service, and Department of Interior policies on scientific conduct, including scientific peer review. The overall goal of scientific peer review is to ensure that information collected, analyzed, interpreted, and reported to the public, and upon which policy and management decisions are based, meets established standards of the scientific community. To achieve this goal, study plans for projects longer than two weeks and reports to be disseminated to the public must be peer reviewed. The region's peer review procedure is available upon request. The type and level of review

shall be commensurate with the potential significance of the scientific information and its likely influence on policy and management actions.

2.4.12.3 Compliance with the Animal Welfare Act

The Animal Welfare Act of 1996, as amended, established legal standards for animal care and use. To prescribe methods and set standards for the design, performance, and conduct of animal care and use, research facilities and Federal agencies must establish an Institutional Animal Care and Use Committee (IACUC). Field studies conducted or authorized by refuge employees within the purview of the Animal Welfare Act will require review and approval of an IACUC. Any refuge study that involves an invasive procedure or that harms or materially alters the behavior of an animal under study should be reviewed and approved by an IACUC prior to implementing field work. Note that a scientific collection permit is also required from the Alaska Department of Fish and Game under 5 Alaska Administrative Code 92.033.

2.4.12.4 Marking and Banding

These activities include fish and wildlife capture, marking, banding, radio-collaring, release, tracking, and other information gathering techniques. Cooperation with appropriate partners, including the Alaska Department of Fish and Game, will be stressed, and specific protocols will be followed, taking advantage of all appropriate disciplines and new technologies when possible.

2.4.12.5 Threatened or Endangered Species

The Refuge will consult with the U.S. Fish and Wildlife Service Ecological Services field office on actions that may affect listed, proposed, or candidate species, or designated or proposed critical habitat. These actions include refuge operations, public-use programs, private lands and federal assistance activities, promulgating regulations, and issuing permits (USFWS and NMFS 1998).

Species in the vicinity of the refuge listed as threatened include Steller's eider and the Steller sea lion. Decisions made in this plan revision are not likely to adversely affect these species.

2.4.12.6 Reintroductions

A species may be introduced on a refuge only if that species is native to the refuge (i.e., a reintroduction). Nonnative species may not be introduced. Definitions of native and nonnative species are found in the glossary.

Reintroductions can be useful tools for restoring species to natural ranges and reestablishing a refuge's natural fish, wildlife, and habitat diversity. Reintroductions would require appropriate NEPA

compliance; a review to ensure consistency with the Policy on Maintaining Biological Integrity, Diversity, and Environmental Health of the National Wildlife Refuge System; an ANILCA Section 810 determination; and a refuge compatibility determination. Reintroductions also require extensive coordination with adjacent landowners and with the State of Alaska. In evaluating the project, the cause(s) of the extirpation should be evaluated and management actions taken to alleviate the cause(s) prior to reintroduction.

The environmental requirements of the species and the ecological dynamics of the area proposed for the reintroduction need to be thoroughly reviewed prior to a reintroduction. Some factors to consider include behavior, diseases, general ecology of the species, habitat requirements, inter- and intra-species competition, life history, genetics, management practices, population dynamics, and predators. Consideration should be given to whether there have been significant habitat changes since the species' extirpation (e.g., is the area still within the species' natural range?).

2.4.12.7 Fish and Wildlife Control

These activities involve the control, relocation, and/or removal of native species, including predators, to maintain natural diversity of fish, wildlife, and habitats. These management actions may be employed with species of fish and wildlife within their original range to restore other depleted native populations. These activities are subject to appropriate NEPA compliance, an ANILCA Section 810 determination, and a refuge compatibility determination.

Predator management includes the relocation, removal, sterilization, and other management of native predators to accomplish management objectives. The Service considers predator management to be a legitimate conservation tool when applied in a prudent and ecologically sound manner and when other alternatives are not practical. The key requirements are that a predator management program be ecologically sound and biologically justified. In keeping with the Service's mandate to first and foremost maintain the biological integrity, diversity, and environmental health of fish and wildlife populations at the refuge scale, a predator population will not intentionally be reduced below a level consistent with the low end of natural population cycles (Service Manual 601 FW 3).

A predator management program requires appropriate NEPA compliance, an ANILCA Section 810 determination, and, if conducted by other than the Service or an agent of the Service, a refuge compatibility determination. Alternative management actions must be evaluated prior to pursuing direct predator control activities. Any proposal to allow or implement a predator

management program on national wildlife refuges in Alaska will be subject to public review and closely coordinated with the Alaska Department of Fish and Game, local communities, tribal governments, and adjacent landowners and/or managers. Predator management activities must be monitored and evaluated for effectiveness and resource impacts.

Normal environmental education and population management activities such as trapper education programs and regulation changes that allow for increased harvests of predatory animals by licensed trappers and hunters are not considered to be "predator management." The control or extirpation of nonnative predators is not considered to be "predator management."

2.4.12.8 Management of Nonnative, Invasive, and Pest Species

In general, nonnative species (including feral domestic animals) are not compatible with refuge purposes or with Refuge System policies. When nonnative species (fish, wildlife, or plants) occur on a refuge, the Service may control or eliminate that species. Where a population of a nonnative species has already been established on a refuge and this population does not materially interfere with nor detract from the fulfillment of the mission of the Refuge System or the purposes of the refuge, the species may be managed as part of the refuge's diverse ecosystem.

Pests are defined as those organisms (vertebrates, invertebrates, plants, and microorganisms and their vectors) that are detrimental to fish, wildlife, human health, fish and wildlife habitat, or to established management goals. Pests also include noxious weeds and other organisms, which are classified as pests by law (Administrative Manual 30 AM 12).

Invasive species are nonnative species whose introduction causes or is likely to cause economic or environmental harm or harm to human health. The Federal government is prohibited by executive order, law, and policy from authorizing, funding, or carrying out actions that are likely to cause or promote the introduction or spread of invasive species in the United States or elsewhere (Service Manual 620 FW 1). Refuge managers conduct habitat management activities to prevent, control, or eradicate invasive species using techniques described through an integrated pest management plan or other similar management plan. Refuge integrated pest management planning will address the advantages and limitations of potential techniques, including chemical, biological, mechanical, and cultural techniques. Management of invasive species on refuges is guided by the National Strategy for Invasive Species Management and conducted within the context of applicable policy (Service Manual 620 FW 1).

By definition, invasive species cause significant impacts to the land and water resources or to the species of plants and animals that use these habitats. To manage invasive plants, the Refuge will include weed inventories as part of all habitat inventories. The Refuge will review the proposed action's potential to introduce or spread invasive plants and will take measures to reduce the hazards (e.g., require weed-free feed for pack animals).

Introduced vertebrates (e.g., fox and rats) may also adversely affect wildlife populations, particularly in island ecosystems where species historically occurred without vertebrate predators. Presence of these invasive species may interfere with attainment of refuge purposes and management goals.

Pests on refuges may also be controlled to prevent damage to private property, and routine protection of refuge buildings, structures and facilities is addressed in refuge policy (Refuge Manual 7 RM 14).

The Refuge will coordinate with other landowners and agencies and use integrated pest management practices to enhance the detection, prevention, and management of invasive species and other pests. Use of chemical control measures on refuge lands requires regional office review and approval of a pesticide- use proposal (Administrative Manual 30 AM 12 and Refuge Manual 7 RM 14).

2.4.12.9 Disease Prevention and Control

Certain disease organisms, viruses, or vectors of disease (e.g., rabies or parasites) may threaten human health or the health and survival of native wildlife or plant species. These threats may be managed or eliminated after consideration of all reasonable options and consultation with the State of Alaska and other concerned parties. This will normally only occur when severe resource damage is likely or when public health or safety is jeopardized. When possible, an integrated approach to pest management will be used in accordance with the Service's Administrative Manual (30 AM 12) and Refuge Manual (7 RM 14). If chemical controls are used, a pesticide use proposal must be approved.

2.4.12.10 Fishery Restoration

Fishery restoration is any management action that increases fishery resources to allow full use of available habitat or to reach a population level based on historical biologic data. Although the goal of restoration is self-sustaining populations, situations may exist in which some form of fishery management or facilities could continue indefinitely.

Where fishery resources have been severely adversely affected, the Refuge will work with the State of Alaska, local tribes, and other partners to restore habitats and populations to appropriate,

sustainable conditions. Restoration emphasis will focus on strategies that are the least intrusive to the ecosystem and that do not compromise the viability or genetic characteristics of the depleted population. This may include regulatory adjustments and/or evaluations of escapement goals. If the stocks have been reduced or are threatened, temporary restoration facilities may be allowed in designated Wilderness or Wild River areas, as long as the facilities will not significantly detract from the values for which those areas were established.

2.4.12.11 Fishery Enhancement

Fishery enhancement is any management action or set of actions applied to a fishery stock to supplement numbers of harvestable fish to a level beyond that which could be naturally produced based on a determination or reasonable estimate of historic levels. This could be accomplished by stocking barren lakes, providing access to barren spawning areas (fish passages), constructing hatcheries, outstocking in productive systems, or fertilizing rearing habitat.

Refuge management priorities will focus on conserving naturally diverse ecosystems. Fishery enhancement facilities for the purpose of artificially increasing fish populations normally will not occur within any management category.

Proposals for fishery enhancement projects will be subject to the provisions of NEPA regulations, an ANILCA Section 810 determination, and a refuge compatibility determination. Only temporary fishery enhancement facilities may be authorized in Minimal, Wild River, and Wilderness management areas. Proposals for facilities within designated Wilderness require a minimum-requirements analysis to determine if the facilities are necessary within the Wilderness area and would not significantly detract from the values for which those areas were established.

Fishery management facilities, including counting towers, weirs, and sonar sites located on major river drainages in the Togiak Refuge, will continue to be maintained until they are no longer needed.

2.4.13 Subsistence Use Management

Providing the opportunity for continued subsistence use by local residents is one of the purposes of Togiak and Alaska Maritime refuges, as stated in ANILCA 303(6)B(iii) [Togiak] and 303(1)B(iii) [Alaska Maritime]. It is also a purpose of every other refuge in Alaska except Kenai Refuge. Title VIII of ANILCA further provides that rural Alaska residents engaged in a subsistence way of life be allowed to continue using resources within the Refuge for traditional purposes. These resources include fish and wildlife, house logs and firewood, and other plant materials (berries, bark,

etc.). Many aspects of subsistence management are addressed outside of this Plan. The Federal Subsistence Board, through its rule-making process, addresses seasons, harvest limits, and customary and traditional use determinations, and has established Regional Subsistence Advisory Councils to provide for meaningful public input to the rule-making process.

The Refuge will work with others to monitor subsistence harvest, including monitoring conducted by other Federal land management agencies, the State of Alaska, tribal governments, Native organizations, or any other party. The Refuge will supplement the state's ongoing harvest and resource monitoring programs to provide additional information on the status of fish and wildlife populations harvested for subsistence uses. This monitoring is intended to identify potential problems before populations of fish and wildlife become depleted and to ensure preference is given to subsistence users as required by law. All information the Refuge gathers through subsistence monitoring will be shared with local state fish and game advisory committees, tribes, and other entities. Refuge staff attends various subsistence related meetings, including those of local fish and game advisory committees and Regional Subsistence Advisory Councils, and provides information on the status of subsistence resources and management as it relates to Togiak Refuge.

The noncommercial gathering by local rural residents of fruits, berries, mushrooms, and other plant materials for subsistence uses and of dead standing or down timber for firewood is allowed without a special use permit. Harvest of live standing timber for house logs, firewood, or other uses is allowed, although specific requirements vary by size and location. See 50 CFR 36.15 for specific details. Timber stocks subject to subsistence use will be monitored to ensure they remain available over the long term.

Under Section 816 of ANILCA, refuge lands may be closed to the taking of fish and wildlife if closure is deemed necessary for reasons of public safety, or administration, or to ensure the continued viability of particular populations of fish or wildlife. Emergency closure to subsistence taking generally would occur only after other consumptive uses competing for the resources were restricted or eliminated.

2.4.13.1 Access for Subsistence Purposes

Access to refuge lands by traditional means will be allowed for subsistence purposes in accordance with Section 811 of ANILCA, subject to reasonable regulation (50 CFR 36.12). Traditional means include snowmachines, motorboats, dog teams, and other means of surface transportation traditionally used by local rural residents engaged in subsistence activities. Use of these traditional means of

travel will be in compliance with state and Federal law in such a manner to prevent waste of harvested resources or damage to the Refuge and to prevent herding, harassment, hazing, or driving of wildlife.

2.4.13.2 Section 810 Evaluations

The Refuge will evaluate the effects of proposed activities on subsistence use to ensure compliance with Section 810 of ANILCA. The Refuge will work with the Federal Subsistence Board, Regional Subsistence Advisory Councils, local fish and game advisory committees, tribes, Native corporations, the Alaska Department of Fish and Game, and other appropriate local sources to determine whether a proposed activity would "significantly restrict" subsistence uses. If the Refuge determines that a proposal would probably result in adverse effects to subsistence use, the Refuge would follow the requirements identified in Section 810 before making a final decision on the proposal.

2.4.14 Public Access and Transportation Management

2.4.14.1 Snowmachines, Motorboats, Airplanes, and Nonmotorized Surface Transportation

Section 1110(a) of ANILCA allows the use of snowmachines (during periods of adequate snow cover and frozen river conditions), motorboats, airplanes, and nonmotorized surface transportation methods for traditional activities and for travel to and from villages and homesites. Such access shall be subject to reasonable regulations to protect the natural and other values of the Refuge (43 CFR 36.11). Specific areas may be closed, in accordance with these regulations, to such uses. The refuge manager is responsible for determining when snow cover is adequate to protect the underlying vegetation and soil from damage by snowmachine use.

2.4.14.2 Off-Road Vehicles

The regulations at 43 CFR 36.11(g) restrict use of off-road vehicles within the Refuge. The definition of off-road vehicles in 50 CFR 36.2 excludes snowmachines but includes air boats, air-cushion vehicles, and motorized wheeled vehicles. Off-road vehicles may be allowed only on designated routes or within Intensive and Moderate management area by special use permit.

2.4.14.3 Helicopters

The use of a helicopter in any area other than at designated landing areas pursuant to the terms and conditions of a permit issued by the Service, or pursuant to a memorandum of understanding between the Service and another party, or involved in emergency or search and rescue operations, is prohibited (43 CFR 36.11(f)(4)).

Helicopter landings for volcano monitoring, geologic hazards evaluations, and fisheries and wildlife management activities may

be authorized under special use permit or other authorization, subject to site-specific stipulations. Helicopter landings for initial-attack fire suppression must comply with operational guidance in the Alaska Interagency Wildland Fire Management Plan. Helicopter landings for recreational purposes are not allowed on Togiak Refuge.

2.4.14.4 Access to Inholdings

Section 1110(b) of ANILCA ensures adequate and feasible access for economic or other purposes across a refuge for any person or entity who has a valid inholding. An inholding is defined as state-owned or privately owned land, including subsurface rights underlying public lands, valid mining claims, or other valid occupancy that is within or effectively surrounded by one or more conservation system units. When a right-of-way permit is necessary under this provision (e.g., construction of permanent or long-term facilities), the Service will review and process the application in accordance with regulations at 43 CFR 36 and 50 CFR 29. Such permits are subject to terms and conditions as specified in the regulations.

2.4.14.5 Temporary Access

43 CFR 36.12(a)(2) defines temporary access as "limited, short-term (i.e., up to one year from issuance of the permit) access, which does not require permanent facilities, for access to state or private lands." Temporary access is limited to survey, geophysical, exploratory or other temporary uses of non-federal lands and where access is not otherwise provided for in 43 CFR 36.10 or 43 CFR 36.11.

The Refuge will evaluate applications for temporary access across the Refuge and shall issue a permit with the necessary stipulations and conditions to ensure that the access granted is compatible with the purposes for which the refuge was established, that it complies with the provisions of Section 810 of ANILCA, and that it ensures that no permanent harm will result to the resources of the Refuge.

2.4.14.6 Subsistence Access

See Access for Subsistence Purposes under Subsistence Use Management (section 2.4.13).

2.4.14.7 Transportation and Utility Systems

Transportation and utility systems include roads, highways, railroads, airports, pipelines, electrical transmission lines, communication systems, and related structures and facilities reasonably and minimally necessary for the construction, operation, and maintenance of such systems (Section 1102 of ANILCA). Anyone seeking to acquire a right-of-way across refuge lands for a transportation or utility system must, consistent with 43 CFR 36,

file an application with the regional office. Regulations at 43 CFR 36 and 50 CFR 29 establish specific procedures and time constraints for application review, compliance with NEPA, decision making, and appeals.

The Service will decide whether to approve or disapprove that portion of a transportation or utility system that would cross refuge lands, except for those on designated Wilderness. When the proposed transportation or utility system would cross a designated Wilderness area, the Service tentatively approves or disapproves the application subject to the President's subsequent decision. If the President approves, a recommendation is submitted to Congress for final approval.

A right-of-way for a transportation or utility system across Refuge lands can be granted only if the system meets the compatibility standard, the criteria outlined in Section 1104(g)(2) of ANILCA, and the regulations at 43 CFR 36.7(a)(2) and if there is no economically feasible and prudent alternative route for the system. If approved, permits issued for a transportation or utility system will contain terms and conditions as required under regulations at 43 CFR 36.9(b) and 50 CFR 29.21 through 29.24. Rights-of-way that cross any area within the boundaries of a Wild and Scenic River unit will assure that the stream flow of, and transportation on, such river are not interfered with or impeded and that the facility is located and constructed in an environmentally sound manner (Section 1107[b] of ANILCA and the regulations at 43 CFR 36.9[c] and [d]. Additional special requirements apply to rights-of-way for pipelines issued under the Mineral Leasing Act of 1920, 30 U.S.C. 185 (Section 1107[c] of ANILCA and the regulations at 43 CFR 36.9[d]).

When considering an application for a transportation or utility system, the authorization process would incorporate a corresponding comprehensive conservation plan amendment to update the desired management category(s) of the affected area if the system were to be approved.

2.4.14.8 State Transportation Planning

Federal transportation planning regulations require each state to develop a long-range statewide transportation plan in consultation and coordination with other government agencies and the public. In Alaska, transportation projects nominated for funding are evaluated and ranked by the Alaska Department of Transportation and Public Facilities. When appropriate, the Refuge will participate in the state transportation planning process and provide input regarding environmental considerations of proposed projects affecting refuge lands and resources. See Appendix G of this plan

for a discussion of state-identified potential transportation and utility systems that cross refuge lands.

2.4.14.9 RS 2477 Rights-of-Way

The State of Alaska asserts numerous claims to roads, trails, and paths across Federal lands under Revised Statute 2477 (RS 2477), a section in the Mining Act of 1866 that states, "The right-of-way for the construction of highways over public lands, not reserved for public uses, is hereby granted." RS 2477 was repealed by the Federal Land Policy and Management Act of 1976, subject to valid existing claims.

Assertion and identification of potential rights-of-way does not establish the validity of these claims nor the public's right to use them. The validity of all RS 2477 rights-of-way will be determined on a case-by-case basis, either through the courts or by other legally binding document. The State of Alaska has identified routes on the Refuge it asserts may be claimed as rights-of-way under RS 2477 (see Appendix G).

2.4.14.10 17(b) Easements

Section 17(b) of the Alaska Native Claims Settlement Act of December 18, 1971, authorizes the Secretary of the Interior to reserve easements on lands conveyed to Native corporations to guarantee access to public lands and waters. Easements across Native lands include linear easements (e.g., roads and trails) and site easements. Site easements are reserved for use as temporary campsites and to change modes of transportation.

The Service is responsible for administering those public easements inside and outside refuge boundaries that provide access to refuge lands. Service authority for administering 17(b) easements is restricted to the lands within the easement. The size, route, and general location of 17(b) easements are identified on maps filed with conveyance documents. Conveyance documents also specify the terms and conditions of use, including the acceptable periods and methods of public access.

2.4.14.11 Navigation Aids and other Facilities

Section 1310 of ANILCA authorizes reasonable access to and operation and maintenance of existing air and water navigation aids, communications sites, and related facilities. It authorizes existing facilities for weather, climate, and fisheries research and monitoring subject to applicable laws and regulations. Reasonable access to and operation and maintenance of facilities for national defense and related air and water navigation are also provided for, including within designated Wilderness areas.

New facilities shall be authorized after consultation with the head of the Federal department or agency undertaking the establishment,

operation, or maintenance and in accordance with mutually agreed to terms and conditions.

2.4.15 Recreation and Other Public Use

Public recreation activities compatible with refuge purposes are authorized unless specifically prohibited (50 CFR 36.31). Compatible recreation uses of the Refuge will continue. The Refuge Administration Act identifies compatible hunting, fishing, wildlife observation, photography, and environmental education and interpretation as priority public uses. These uses are encouraged and will receive emphasis in public use management.

Both consumptive (e.g., hunting, fishing, and trapping) and nonconsumptive (e.g., wildlife observation and photography) recreation uses are appropriate. Some recreational uses are incidental to others. Camping and hiking may be related to hunting, fishing, wildlife photography, or other recreational uses.

There is a fine line between subsistence and recreational use (e.g., berry picking). Subsistence uses are addressed under Subsistence Use Management (section 2.4.13). When it is necessary to restrict the taking of fish and wildlife on a refuge to protect the continued viability of such populations, the taking of fish and wildlife for non-wasteful subsistence uses on refuges shall be accorded priority over the taking of fish and wildlife for other purposes, in accordance with Title VIII of ANILCA.

The Togiak Refuge will be managed to provide recreation experiences in generally natural wildland settings. Recreation use is managed consistently with the designated management area category in each area. Intensive and Moderate management areas will be managed for greater concentrations of visitors than will be Minimal management and designated Wilderness areas. The Refuge will manage all recreation use to avoid crowded conditions and to minimize adverse effects to cultural resources, fish and wildlife, wilderness, and other special values of the Refuge. “Leave No Trace” will be the standard.

The least intrusive means of managing use will be employed. Education will be the primary management tool for recreation management, using brochures, maps, signs, and personal contacts. However, if voluntary methods fail, other actions may be taken. Actions that may be taken to manage recreation include limiting commercial guiding and outfitting; regulating use and access subject to the provisions of Section 1110(a) of ANILCA; and recommending changes in state and/or Federal fishing, hunting, and/or trapping regulations. When necessary, recreation opportunities may be seasonally or otherwise restricted to minimize user conflicts and to protect the natural or other values of the Refuge.

Any restrictions on public use will follow the public participation and closure procedures at 50 CFR 36, 43 CFR 36, or other applicable regulations. State management actions available through the Master Memorandum of Understanding (see Appendix C) and other state management tools will also be utilized where mutually desirable.

A Public Use Management Plan (PUMP) was developed for the Refuge in 1991. That plan is being revised concurrently with the revision of the Comprehensive Conservation Plan and will be available as a separate publication.

2.4.15.1 Public Use Facilities

Facilities may be provided to support certain recreation and other public uses. Recreation facilities may be located on refuge lands and at administrative sites. Visitor centers and highly developed environmental education and interpretive sites may be located off refuge lands at administrative sites or other appropriate locations. Public use facilities may include roads, trails, boat launch sites, airstrips, campgrounds, interpretive sites, environmental education sites, visitor centers, public use cabins, visitor contact facilities, and signs.

All new buildings (e.g., visitor centers, restrooms, public use cabins, and visitor contact buildings), some recreation facilities (e.g., fishing platforms), and additions and alterations to existing buildings will comply with current accessibility standards. Other non-building recreation facilities (e.g., campgrounds, trails) are not currently covered under these standards, although access for the disabled will be considered in the design of new or upgraded facilities. As funds are available, existing buildings will be updated to meet these standards.

The level of development and appearance of facilities will be appropriate for the management category of the area in which they are located. More intensive and sophisticated facilities will be constructed in the Intensive management category; more rustic and rudimentary facilities will occur in the other management categories.

Cabins

Special use permits are required for subsistence and commercial cabins. Management of existing cabins and review of proposals for construction of new cabins for traditional uses will be in accordance with the Service's cabin regulations (50 CFR 36.33) and regional cabin policy. Private recreation use cabins will not be authorized.

Public use cabins are intended to provide the public with unique opportunities to enjoy and use the Refuge. They also help ensure

public health and safety in bad weather and emergencies. There are currently no public use cabins on Togiak Refuge.

The two administrative cabins at Cape Peirce and two cabins under special use permit for ADF&G employees at the outlet of Togiak Lake are not available for public use except in emergency situations.

Temporary Facilities for the Taking of Fish and Wildlife

Per Section 1316 of ANILCA, the Refuge will allow the use of temporary campsites, tent platforms, shelters, and other temporary facilities and equipment directly and necessarily related to the taking of fish and wildlife, provided these facilities are not detrimental to refuge purposes. Special use permits may be issued for tent frames, caches, smokehouses, and other facilities. Appropriate stipulations will be included in the special use permits to ensure protection of refuge resources.

The following criteria will be considered in evaluating applications for temporary facilities:

- Where feasible, they will be located in a manner to not displace or compete with existing public uses.
- They will be located away from the vicinity of existing cabins.
- They will be located on sites that are not currently popular campsites.
- They will be located to minimize displacement of wildlife.

The following conditions may be imposed on temporary facility special use permits:

- The time of occupancy will coincide with the state and/or Federal hunting, fishing, and/or trapping season for the species for which the temporary facility is being used.
- At the end of the specified occupancy, tents and other readily portable materials will be removed.
- To the extent feasible, temporary structures will be built with materials that blend into and are compatible with the surrounding landscape.
- To the extent feasible, temporary facilities will be screened from water and located so that they are as unobtrusive as possible when viewed from trails and areas of significant public use.

2.4.16 Outreach

Outreach is two-way communication between the Refuge and the public to establish mutual understanding, promote public involvement, and influence public attitudes and actions. The Refuge will continue to take advantage of partnership opportunities in providing these services, including working with the Alaska Natural History Association; Alaska Public Lands Information Centers; Friends of Alaska National Wildlife Refuges; local, state, and other Federal agencies; local schools; tribal governments; Alaska Native organizations; and others.

Use of outreach as a management tool is key to the success of many of the management activities outlined in this Plan. Two outreach activities—environmental education and interpretation—are included in the six priority public uses identified in the Refuge Improvement Act. Many other activities are also available for use by the refuge staff in its outreach program, which may be developed in more detail as a step-down management plan. All outreach activities must be continually evaluated to determine whether they fulfill refuge management goals and objectives. Togiak Refuge will ensure that these services are available to all segments of the public, including those with disabilities and those who speak languages other than English.

Togiak Refuge will continue environmental education programs such as the Cape Peirce cultural camp. The River Ranger program and airport contacts will continue to provide interpretive and educational information to refuge visitors.

Refuge staff will work with the news media, attend public meetings and workshops, develop Internet home pages, invite the public to the Refuge (open houses), and foster one-on-one communication.

2.4.17 Commercial Use Management

Commercial uses are activities involving use of a refuge or its resources for a profit. Subsistence uses are not included in commercial uses. Refer to section 2.4.13 for policies related to subsistence.

Except for mining on valid claims under the 1872 Mining Law, other activities where specific property rights are held by entities other than the Federal government, or where specifically exempted by law, all commercial uses must comply with both NEPA and the compatibility requirements of the Refuge Administration Act. A written authorization (such as a special use permit) is required to conduct commercial activities on Togiak Refuge. Compliance with NEPA and a compatibility determination will be required prior to deciding whether to authorize a commercial use. Prior to authorizing any economic use of a natural resource, the refuge manager must

determine that each use, except for proposed activities authorized by ANILCA, contributes to the achievement of refuge purposes or the National Wildlife Refuge System mission (50 CFR 29.1). Except for commercial recreation services described in the following text, commercial enterprises are prohibited in designated Wilderness.

2.4.17.1 Commercial Recreation Services

Air-taxi and water-taxi operators, wildlife viewing guides, tour operators, wilderness guides, recreational fishing guides, big game hunting guides, and others providing recreation services are required, under 50 CFR 27.97, to obtain special use permits to operate on refuge lands. Where the number of special use permits is limited, refuge managers will award permits competitively (50 CFR 36.41). Special use permits require compliance with all applicable laws and regulations (e.g., U.S. Coast Guard licensing regulations). Permit stipulations ensure that camps; travel methods; storage of food, fish, and game meat; and activities are compatible with refuge purposes and reduce the potential for impacts to resources and to other refuge users. If problems arise relating to commercial recreation activities—such as disturbance of active nests, conflicts with subsistence use, chronic incidents of bears getting into food, or violations of state or Federal regulations—the Refuge may modify or terminate use under the special use permit stipulations. The Refuge will monitor the number and type of guides and outfitters operating in the Refuge and the number of their clients and will, if necessary, further regulate use.

Helicopter landings for recreational purposes are not allowed on Togiak Refuge, and permits for helicopter air taxis will not be issued.

Under Section 1307 of ANILCA, local preference is provided for all new commercial visitor services except guiding for recreational hunting and fishing. Regulations defining local preference are at 50 CFR 36.37.

2.4.17.2 Mineral Exploration and Development

Oil and Gas Assessment

Geological and geophysical studies, including subsurface core sampling and seismic activities, require special use permits with site-specific stipulations that ensure compatibility with refuge purposes and consistency with the management objectives of this Plan. Decisions to allow exploration will be made on a case-by-case basis. These activities will not be allowed in designated Wilderness.

Oil and Gas Leasing

Oil and gas leasing may be allowed only in Intensive Management areas. Oil and gas leasing will not be authorized until completion of the following:

- An assessment of potential
- A national interest determination
- A refuge compatibility determination, where applicable
- A Comprehensive Conservation Plan amendment

During this process, the Service will seek the views of state and local governments and other interested parties, in accordance with Section 1008(b)(2) of ANILCA.

If leasing is authorized, lease holders will be subject to Federal leasing regulations (43 CFR 3100) and appropriate state regulations. Leases will be subject to stipulations on access, seasonal use, and site revegetation; operators would be required to use technology that minimizes impacts on fish, wildlife, and habitat. The Refuge will work closely with leaseholders to minimize adverse effects of mineral exploration and extraction on refuge resources and recreation opportunities.

Sand, Gravel, and Other Common Variety (Saleable) Minerals

Common variety minerals—such as sand, gravel, stone, limestone, pumice, pumicite, cinders, and clay—may be sold pursuant to the Materials Act of July 31, 1947 (30 U.S.C. 601 and 602), as amended. Regulations are found at 43 CFR 3600. Disposal is also authorized under the Refuge Revenue Sharing Act (16 U.S.C. 715s). Also see 612 FW 1 of the Service Manual. Extraction may be authorized, where compatible, in Intensive and Moderate management areas to support construction and maintenance projects on or near refuge lands if no reasonable material sites exist off refuge lands. Extraction is not authorized in Minimal or Wilderness management areas.

Other Mineral Leasing

In general, mineral leasing is not allowed on refuge land. Geothermal leasing is not allowed on the Refuge under Section 1014(c) of the Geothermal Steam Act (30 U.S.C. 1014). Coal mining is also prohibited, subject to valid existing rights, under Section 16 of the Federal Coal Leasing Amendment Act of 1975 (30 U.S.C. 201 Notes) and the Surface Mining Control and Reclamation Act of 1977 (30 U.S.C. 1272.; 43 CFR 3400.2). In specific cases of national need, however, mineral exploration, development, or extraction may be permitted under Section 1502 of ANILCA. The President must determine that the national need for the mineral activity outweighs the other public values of the land. Any recommendation by the President would take effect only after enactment of a joint resolution by Congress.

2.4.17.3 Commercial Fishing and Related Facilities

Under Section 304(d) of ANILCA, the Service will continue to allow individuals with valid commercial fishing rights or privileges to operate on the Refuge. The use of campsites, cabins, motor vehicles, and aircraft on the Refuge in support of commercial fishing is subject to reasonable regulation. Section 304(d) provides for restricting commercial fishing rights if the use is determined to be inconsistent with refuge purposes *and* to be a "significant expansion of commercial fishing activities . . . beyond the level of such activities during 1979." The Service recognizes that fishery levels are cyclic and will take that into consideration when applying the 1979-level criteria. Any new fishery and related facilities and equipment will have to meet the compatibility standard.

Aquaculture and mariculture support facilities may be authorized in Intensive management, subject to provisions of state and Federal laws. They are not allowed in Moderate, Minimal, or Wilderness management areas. Seafood processing plants will not be allowed.

2.4.17.4 Commercial Harvest of Timber and Firewood

Commercial harvest of timber and firewood will only be authorized under a special use permit and when necessary to fulfill overall refuge management objectives. Within Moderate, Minimal, and Wild River management categories, commercial harvest of timber and firewood to accomplish management objectives will only occur when an approved refuge fire management plan identifies the need to reduce fuel loads in an area. Applicable Federal and State of Alaska guidelines for timber management will be followed. Commercial harvest of timber and firewood is not allowed in designated Wilderness areas.

2.4.17.5 Commercial Gathering of Other Resources

Commercial gathering of other resources (e.g., antlers and mushrooms) requires a special use permit under 50 CFR 27.51 and is allowed in Intensive and Moderate management.

2.4.17.6 Commercial Filming and Recording Activities

It is Service policy to provide refuge access and/or assistance to firms and individuals in the pursuit of commercial visual and audio recordings when they are compatible with refuge purposes or the mission of the Refuge System. Commercial films, television production, or sound tracks made within refuges for other than news purposes require a special use permit or authorization (43 CFR 5.1).

Commercial filming or recording activities such as videotaping, audio taping, and photography for the purpose of advertising products and services are subject to an A/V Production Permit (Refuge Manual 8 RM 16).

Permits are not required for still photography on refuge lands open to the general public, including commercial still photography, so long as no models or props that are not a part of the site's natural or cultural resources or administrative facilities are used (16 U.S.C.4601-6d[c]).

2.4.17.7 Other Commercial Uses

Generally, other commercial uses such as grazing, agriculture, and hydroelectric power development will not be allowed. An exception may be made for low-head or small run-of-the-river hydropower facilities. These may be authorized in Intensive and Moderate management areas on a case-by-case basis. See the section on Transportation and Utility Systems for transmission lines, pipelines, and other rights-of-way mentioned in Title XI of ANILCA.

2.4.18 Environmental Contaminants Identification and Cleanup

One goal of the Refuge Administration Act is to maintain the biological integrity, diversity, and environmental health of the System. In support of this goal, the Service studies environmental contaminants that may threaten trust species (i.e., those species for which the Service has primary jurisdiction) and other resources of the Refuge. This work will continue as new concerns are identified and as funding allows.

An assessment of known of suspected contaminant threats within Togiak Refuge was completed and published in 2004 as part of the National Contaminants Assessment Process. When contaminants are identified on refuge lands, the Service will initiate discussions with the responsible party or parties to remedy the situation. If the Service caused the contamination, funds will be sought to define the extent and type of the contamination and to remedy it. Appropriate environmental regulations—including the Resource Conservation Recovery Act, Comprehensive Environmental Response and Compensation Liability Act, Oil Pollution Act of 1990, and State of Alaska regulations (e.g., 18 AAC 75)— would be followed during remediation work.

All spills of petroleum products and hazardous materials must be reported to the Alaska Division of Environmental Conservation and to the National Response Center. Incidents also need to be reported to the U.S. Fish & Wildlife Service Regional Spill Response Coordinator. The Refuge will refer to the U.S. Fish & Wildlife Service Region 7 Spill Response Contingency Plan and other relevant plans when responding to spills.

2.4.19 Management of Designated Wilderness

Designated Wilderness will be managed in accordance with the Wilderness Act of 1964, as modified by provisions of ANILCA;

Service guidelines as found in (Refuge Manual 6 RM 8) and Part 610 of the Service Manual, when approved; and regional policy. Preserving the wilderness character of the area is the management focus for designated Wilderness. A minimum requirements analysis will be conducted for administrative activities proposed in Wilderness areas. This two-step process involves determining if an activity should be conducted in the Wilderness area and, if so, determining the minimum tool (the least intrusive tool, equipment, device, force, regulation, or practice) determined to be necessary to achieve a management objective.

Certain activities are legislatively prohibited in designated Wilderness, including oil, gas, and other mineral leasing, and most surface-disturbing activities. Section 4(c) of the Wilderness Act generally prohibits roads, commercial enterprises, motor vehicles, motorboats, other forms of mechanical transport, motorized equipment, aircraft landings, structures, and installations in Wilderness areas. Provisions of ANILCA, however, provide exceptions to some of these prohibitions for specific purposes, such as allowing motorized public access for traditional activities and for the continuation of pre-existing commercial and private use cabins.

Following are some of the ANILCA provisions and their applicable sections affecting public use of Wilderness areas:

- Access for subsistence purposes (Section 811)
- Access for traditional activities and to and from villages and homesites (Section 1110(a))
- Access to state or privately owned lands (including subsurface rights), valid mining claims, or other valid occupancy (Section 1110 (b))
- Construction and use of cabins for traditional and customary uses (Section 1303)
- Use of facilities associated with the exercise of valid commercial fishing rights (Section 304(d))

Other provisions of ANILCA affect the administrative uses of Wilderness areas, including the following:

- Access for mineral assessment purposes, as part of the Alaska Mineral Resource Assessment Program (Section 1010)
- Construction and maintenance of navigation aids and other facilities (Section 1310)
- Continuation of existing, and construction of new, public use cabins (Sections 1315(c) and (d))

Under 50 CFR 35.5(b), regional policy (RW-16) allows local residents engaged in subsistence activities to use chainsaws. Other motorized equipment not related to transportation (such as generators and water pumps) is not allowed.

Granting rights-of-way for transportation or utility systems through designated Wilderness requires a Presidential and Congressional approval (Section 1106(b) of ANILCA); see 2.4.14 Transportation and Utility Systems.

A step-down Wilderness stewardship plan will be prepared for Togiak Wilderness area to address in greater detail the resources, uses, and management. Specific details will be included on how the broad management direction provided in the Conservation Plan will be applied in designated Wilderness to preserve the wilderness character. The step-down plan will be prepared in cooperation with the State of Alaska and others and will include appropriate public involvement.

2.4.20 Administration of Togiak National Wildlife Refuge Administrative Sites and Visitor Facilities

Administrative sites include temporary and permanent field camps, residences, offices, and associated storage; communication; and transportation facilities. The type of administrative site and level of development will be consistent with the management intent of the management category in which they are constructed. Administrative field camps or other administrative facilities within Minimal, Wild River, and Wilderness management categories will only be allowed when required to meet management objectives, when no reasonable alternative sites exist, and when the facilities are essential to protect the health and safety of employees. New facilities would only be the minimum required to meet long-term needs.

Fuel storage or other hazardous material storage in conjunction with administrative sites will meet all Federal and state requirements for spill containment and storage. Hazardous materials stored within the Wild River and Wilderness management categories will be in small (55-gallon or less) containers.

Under Section 1306 of ANILCA, the Secretary of the Interior may establish administrative sites and visitor facilities, either within or outside the boundaries of a conservation system unit, in accordance with the unit's management plan and for the purposes of ensuring the preservation, protection, and proper management of said unit. Section 1306 further states that to the "extent practicable and desirable, the Secretary shall attempt to locate such sites and facilities on Native lands in the vicinity of the unit."

Department of Interior guidelines developed in 1995 implementing Section 1306 of ANILCA require that prior to initiating a search for

an administrative site or visitor facility, site-selection criteria be developed with public input and all proposals be evaluated according to the site selection criteria. If it is determined that Native lands satisfy the site selection criteria and are desirable and practicable for the intended use, the highest ranked Native lands shall be selected as the preferred site, subject to a specific site evaluation. If no Native lands satisfy the site selection criteria, the highest ranked parcel will become the preferred site. Public comments will be considered prior to making a final decision.

2.4.20.1 Applicability of Refuge Regulations to Off-Refuge Administrative and Visitor Facility Sites

Under 50 CFR 36.1(c), the Service is authorized to enforce regulations concerning public safety and protection of government property and State of Alaska fish and wildlife regulations on administrative and visitor facility sites that may be held in fee or less-than-fee title and are either inside or outside the approved boundaries of any Alaska national wildlife refuge.

2.4.21 Refuge Management Plans

Some management programs are addressed in sufficient detail in the Comprehensive Conservation Plan to be integrated directly into the budgetary process. For other programs, it may be necessary to prepare step-down management plans to implement general strategies identified in this Comprehensive Conservation Plan. Step-down plans needed to fully implement this Comprehensive Conservation Plan are described in Chapter 4. Other step-down plans may be developed as needed. Additional information on the step-down planning process can be found in 602 FW 3 of the Service Manual.

2.4.22 Alaska Mineral Resource Assessment Program

Section 1010 of ANILCA requires that all Federal lands be assessed for their oil, gas, and other mineral potential, although Section 304(c) prohibits new hardrock mining on refuges. Mineral assessment techniques that do not have lasting impacts—such as side-scanning radar, trenching, and core drilling—may be allowed throughout the Refuge. Special use permits issued to other government agencies or their contractors for assessment work would include stipulations to ensure that the assessment program is compatible with refuge purposes. For example, stipulations may limit access during nesting, calving, spawning, or other times when fish and wildlife may be especially vulnerable to disturbance.

2.5 Management Categories Table

2.5.1 Introduction

This table lists activities, public uses, commercial uses, and facilities by management category. In some cases, it provides very specific

guidance (such as for highway vehicles). In other cases (such as for research and management facilities), the direction is general. While facilities may be allowed in all management categories, the types of facilities and how they would be constructed and operated vary widely by management category. The descriptions of the management categories reflect a clear distinction in the level of action, type of action, and constraints that may be placed on activities or development within the management categories. They should be used to reflect the desired future condition of the area when site-specific proposals are being evaluated. Activities allowed or authorized within the different categories will be managed differently depending on the management category in which they occur.

2.5.2 Definitions for Management Categories Table

The following are definitions for terms used in Table 2.1.

Allowed—Activity, use, or facility is allowed under existing NEPA analysis, appropriate use findings, compatibility determinations, and applicable laws and regulations of the Service, other Federal agencies, and the State of Alaska.

May be allowed—Activity, use, or facility may be allowed subject to site-specific NEPA analysis, an appropriate use finding (when required), a specific compatibility determination (when required), and compliance with all applicable laws and regulations of the Service, other Federal agencies, and the State of Alaska.

May be authorized—Activity, use, or facility may be allowed; a special use permit or other authorization is required.

Not allowed—Activity, use, or facility is not allowed.

The following terms are used:

NEPA analysis—All activities, uses, and facilities proposed for a refuge that have the potential to result in significant effects on the environment require an analysis of potential environmental impacts under the National Environmental Policy Act. This analysis may be documented as a categorical exclusion (CE), an environmental assessment (EA), or an environmental impact statement (EIS), depending on the nature of the proposed project.

Appropriate Use—All uses over which the Service has jurisdiction must be determined to be appropriate following direction in Service Manual 630 FW 1. Hunting, fishing, wildlife observation and photography, and environmental education and interpretation are considered appropriate by national policy with no further analysis required. See section 2.4.5 for a description of the criteria used to determine if other uses are appropriate.

Compatibility—All activities, uses, and facilities allowed on a refuge, except management actions undertaken by or for the Service, must be compatible with the purposes of the refuge and the mission of the Refuge System. The analysis that occurs results in a refuge compatibility determination. Management activities undertaken by the Service or by volunteers, cooperators, or contractors working for the Service, with limited exception, are exempt from compatibility review (Part 603 of the Service Manual).

Regulations—All activities, uses, and facilities allowed on a refuge must comply with any applicable regulations, as published in the Code of Federal Regulations. Regulations are developed by the Service through a public process to implement the legal authorities under which the Service manages the Refuge System. For more information on these regulations, see the appropriate topic in the Management Direction and the Management Policies and Guidelines sections of this chapter. For some activities, other Federal agency and/or state regulations may also apply.

Temporary—A continuous period of time not to exceed 12 months, except as specifically provided otherwise. Special use permits or other authorizations may prescribe a longer period of time, but the structures or other human-made improvements need to be readily and completely dismantled and removed from the site when the period of authorized use terminates.

The following guidelines apply to all activities, uses, and facilities allowed on a refuge.

Area or time restrictions—All activities and uses allowed on a refuge may be restricted in certain areas or at certain times at the discretion of the refuge manager and with the appropriate level of public involvement by emergency (short-term) or permanent regulation, if necessary, to protect refuge resources or human health and safety.

Management emergencies—Activities, uses, and facilities not allowed on a refuge or in specific management categories may be allowed if naturally occurring or human-caused actions adversely affect refuge resources or threaten human health and safety.

Table 2-1 Activities, public uses, commercial uses, and facilities by management category

ACTIVITY	MINIMAL MANAGEMENT	MODERATE MANAGEMENT	INTENSIVE MANAGEMENT	MANAGEMENT of WILDERNESS	MANAGEMENT of WILD RIVERS
ECOSYSTEM, HABITAT, AND FISH AND WILDLIFE MANAGEMENT * All activities in designated Wilderness will be subject to a minimum requirements analysis.					
Ecosystem and Landscape Management					
Collecting Information on and Monitoring Ecosystem Components Data gathering, monitoring, and maintaining a comprehensive database of selected ecosystem components (plants, animals, fish, water, air). (See section 2.4.12 Wildlife Inventory and Monitoring Plan and Scientific Peer Review)	Allowed	Allowed	Allowed	Allowed	Allowed
Research and Management Access and collection of data necessary for management decisions or to further science by the Service. (See section 2.4.12)	Allowed	Allowed	Allowed	Allowed; see section 2.4.19*	Allowed
Access and collection of data necessary for management decisions or to further science by ADF&G.	Allowed	Allowed	Allowed	Allowed; see section 2.4.19*	Allowed
Access and collection of data necessary for management decisions or to further science by other researchers.	May be authorized	May be authorized	May be authorized	May be authorized; see section 2.4.19*	May be authorized
Research and Management Facilities May be permanent or temporary structures or camps including weirs, counting towers, and sonar counters. (See section 2.4.20 Administrative Sites and Visitor Facilities)	May be allowed	May be allowed	May be allowed	May be allowed; consistent with section 2.3.4 (wilderness)*	May be allowed

ACTIVITY	MINIMAL MANAGEMENT	MODERATE MANAGEMENT	INTENSIVE MANAGEMENT	MANAGEMENT of WILDERNESS	MANAGEMENT of WILD RIVERS
Fish and Wildlife Habitat Management * All activities in designated Wilderness will be subject to a minimum requirements analysis.					
Describing, Locating, and Mapping Habitats Development of quantitative, written, and graphic descriptions of fish and wildlife habitat, including water, food, and shelter components. (See section 2.4.12 Wildlife Inventory and Monitoring Plan)	Allowed	Allowed	Allowed	Allowed; see section 2.4.19*	Allowed
Habitat Management (See section 2.2.11) *Mechanical Treatment* Activities such as cutting, crushing, or mowing of vegetation; water control structures; fencing; artificial nest structures.	Not allowed; with exceptions consistent with section 2.1.2.	May be allowed	May be allowed	Not allowed; with exceptions consistent with section 2.3.4 See also section 2.4.19*	Not allowed; with exceptions consistent with section 2.3.4; 2.3.5.
Chemical Treatment Use of chemicals to remove or control nonnative species. (See section See section 2.4.12 Management of Nonnative, Invasive, and Pest Species)	May be allowed	May be allowed	May be allowed	May be allowed; see section 2.4.19*	May be allowed
Manual Treatment Use of hand tools to remove, reduce, or modify hazardous plant fuels or exotic plant species, or to modify habitats (e.g., remove beaver dams).	May be allowed	May be allowed	May be allowed	May be allowed; see section 2.4.19*	May be allowed
Aquatic Habitat Modifications Activities such as stream bank restoration, passage structures, fish barriers, or removal of obstacles that result in physical modification of aquatic habitats to maintain or restore native fish species. (See section 2.4.11 Habitat Management)	May be allowed	May be allowed	May be allowed	May be allowed; consistent with section 2.3.4; see also section 2.4.19*	May be allowed
Fire Management—Prescribed Fires Fire ignited by management actions to meet specific management objectives. (See section 2.4.11 Fire Management)	May be allowed	May be allowed	May be allowed	May be allowed; see section 2.3.4 *	May be allowed

ACTIVITY	MINIMAL MANAGEMENT	MODERATE MANAGEMENT	INTENSIVE MANAGEMENT	MANAGEMENT of WILDERNESS	MANAGEMENT of WILD RIVERS
Fire Management—Wildland Fire Use The planned use of naturally occurring fires to meet management objectives. (See section 2.4.11 Fire Management)	May be allowed	May be allowed	May be allowed	May be allowed*	May be allowed
Fire Management—Fire Suppression Management actions intended to protect identified resources from a fire, extinguish a fire, or alter a fire's direction of spread. (See section 2.4.11 Fire Management)	Allowed	Allowed	Allowed	Allowed	Allowed
Nonnative and Pest Plant Control Monitoring, extirpation, control, removal, and/or relocation and other management practices for pest and nonnative plant species. (See section 2.4.12 Management of Nonnative, Invasive, and Pest Species)	May be allowed	May be allowed	May be allowed	May be allowed; see section 2.4.19*	May be allowed
Water Quality and Quantity Management Monitoring of water quality and quantity to identify baseline data and for management purposes; includes installation of gauging stations. (See section 2.4.10 Water Resources)	Allowed	Allowed	Allowed	Allowed; see section 2.4.19*	Allowed
Fish and Wildlife Population Management * All activities in designated Wilderness will be subject to a minimum requirements analysis.					
Reintroduction of Species The reintroduction of native species to restore natural diversity of fish, wildlife and habitats. (See section 2.4.12 Reintroductions)	May be allowed	May be allowed	May be allowed	May be allowed; see section 2.4.19*	May be allowed

Fish and Wildlife Control The control, relocation, sterilization, removal, or other management of native species, including predators, to maintain natural diversity of fish, wildlife and habitats; favor other fish or wildlife populations; protect reintroduced, threatened, or endangered species; or restore depleted native populations. (See section 2.4.12 Fish and Wildlife Control)	May be allowed	May be allowed	May be allowed	May be allowed; see section 2.4.19*	May be allowed
Nonnative Species Management The removal or control of nonnative species (including predators). (See section 2.4.12 Management of Nonnative, Invasive, and Pest Species)	May be allowed	May be allowed	May be allowed	May be allowed; see section 2.4.19*	May be allowed
Pest Management and Disease Prevention and Control Relocation or removal of organisms that threaten human health or survival of native fish, wildlife, or plant species. Management practices directed at controlling pathogens that threaten fish, wildlife, and people, such as rabies and parasite control. (See section 2.4.12 Disease Prevention and Control)	May be allowed	May be allowed	May be allowed	May be allowed; see section 2.4.19*	May be allowed
Fishery Restoration Actions taken to restore fish access to spawning and rearing habitat, or actions taken to restore populations to historic levels. Includes harvest management, escapement goals, habitat restoration, stocking, egg incubation boxes, and lake fertilization. (See section 2.4.12 Fishery Restoration)	May be allowed	May be allowed	May be allowed	May be allowed*	May be allowed

ACTIVITY	MINIMAL MANAGEMENT	MODERATE MANAGEMENT	INTENSIVE MANAGEMENT	MANAGEMENT of WILDERNESS	MANAGEMENT of WILD RIVERS
Fishery Restoration Facilities Fisheries facilities may be permanent or temporary and may include hatcheries, fish ladders, fish passages, fish barriers, and associated structures. (See sections 2.4.12 Fishery Restoration and 2.4.21 Administrative Sites and Visitor Facilities)	May be authorized	May be authorized	May be authorized	May be authorized*	May be authorized
Fishery Enhancement Activities applied to a fish stock to supplement numbers of harvestable fish to a level beyond what could be naturally produced based upon a determination or reasonable estimate of historic levels. (See section 2.4.12 Fishery Enhancement)	May be allowed	May be allowed	May be allowed	May be allowed; consistent with section 2.4.19*	May be allowed
Fishery Enhancement Facilities May be permanent or temporary and may include hatcheries, egg incubation boxes, fish ladders, fish passages, fish barriers, and associated structures. (See sections 2.4.12 Fishery Restoration and 2.4.21 Administrative Sites and Visitor Facilities)	May be authorized	May be authorized	May be authorized	May be authorized*	May be authorized
Native Fish Introductions Movement of native fish species within a drainage on the Refuge to areas where they have not historically existed. (See section 2.4.12 Reintroductions)	May be allowed	May be allowed	May be allowed	May be allowed*	May be allowed
Nonnative Species Introductions Introduction of species not naturally occurring within the Refuge. (See section 2.4.12 Reintroductions)	Not allowed	Not allowed	Not allowed	Not allowed	Not allowed

ACTIVITY	MINIMAL MANAGEMENT	MODERATE MANAGEMENT	INTENSIVE MANAGEMENT	MANAGEMENT of WILDERNESS	MANAGEMENT of WILD RIVERS
SUBSISTENCE (See section 2.4.13)					
Subsistence Activities * All activities in Designated Wilderness will be subject to a minimum requirements analysis.					
Fishing, Hunting, Trapping, and Berry Picking The taking of fish and wildlife and other natural resources for personal consumption, as provided by law.	Allowed	Allowed	Allowed	Allowed	Allowed
Collection of House Logs and Firewood Harvesting live standing timber greater than 3 inches diameter at breast height for personal or extended family use.	May be authorized	May be authorized	May be authorized	May be authorized	May be authorized
Collection of Plant Materials Harvesting trees less than 3 inches diameter at breast height, dead standing or downed timber, grass, bark, and other plant materials used for subsistence purposes.	Allowed	Allowed	Allowed	Allowed	Allowed
Temporary Facilities Establishment and use of tent platforms, shelters, and other temporary facilities and equipment directly related to the taking of fish and wildlife. (See section 2.2.15 Temporary Facilities)	Allowed	Allowed	Allowed	Allowed	Allowed
Subsistence Cabins – See Cabins (See also section 2.4.15 Cabins)					
Subsistence Access – subject to reasonable regulations under provisions of Section 810 of ANILCA (See section 2.2.13 Access for Subsistence Purposes)					
Use of snowmobiles, motorboats, and other means of surface transportation traditionally employed for subsistence purposes.	Allowed	Allowed	Allowed	Allowed	Allowed

ACTIVITY	MINIMAL MANAGEMENT	MODERATE MANAGEMENT	INTENSIVE MANAGEMENT	MANAGEMENT of WILDERNESS	MANAGEMENT of WILD RIVERS
ACCESS (See sections 2.4.14 Snowmachines, Motorboats, Airplanes, and Nonmotorized Surface Transportation. and 2.4.15 Recreation and Other Public Use) Restrictions subject to provisions of Section 1110 of ANILCA as applicable; see also Subsistence Access section above.					
Foot	Allowed	Allowed	Allowed	Allowed	Allowed
Dogs and Dog Teams	Allowed	Allowed	Allowed	Allowed	Allowed
Other Domestic Animals Includes horses, mules, llamas, etc.	Allowed	Allowed	Allowed	Allowed	Allowed
Nonmotorized Boats Includes canoes, kayaks, rafts, etc.	Allowed	Allowed	Allowed	Allowed	Allowed
Use of snowmachine, motorboats, airplanes and nonmotorized surface transportation methods for traditional activities and for travel to and from villages and homesites.	Allowed	Allowed	Allowed	Allowed	Allowed
Highway Vehicles	Not allowed	May be allowed on designated roads	Allowed on all weather roads	Not allowed	Not allowed
Off-Road Vehicles (All-Terrain Vehicles) Includes air boats and air cushion vehicles. (See sections 2.4.13 Access for Subsistence Purposes and) Snowmachines, Motorboats, Airplanes, and Nonmotorized Surface Transportation	Not allowed; with exceptions consistent with section 2.2.14 Off-Road-Vehicles	May be allowed	May be allowed	Not allowed; with exceptions consistent with section. . 2.4.14 Off-Road Vehicles.	Not allowed; with exceptions consistent with section 2.4.14 Off-Road Vehicles.
Helicopters Includes all rotary-wing aircraft. (See section 2.4.14 Helicopters)	May be authorized	May be authorized	May be authorized	May be authorized; consistent with sections 2.3.4 and 2.4.19	May be authorized

ACTIVITY	MINIMAL MANAGEMENT	MODERATE MANAGEMENT	INTENSIVE MANAGEMENT	MANAGEMENT of WILDERNESS	MANAGEMENT of WILD RIVERS
PUBLIC USE, RECREATION, and OUTREACH ACTIVITIES Also see ACCESS and Commercial Recreation sections.					
Hunting, Fishing, Wildlife Observation, Wildlife Photography, Interpretation and Environmental Education Note: All activities listed are priority public uses (See sections 2.4 and 2.4.15)	Allowed	Allowed	Allowed	Allowed	Allowed
Trapping, Walking, Hiking, Camping at Undeveloped Sites, and Dog Sledding **(See sections 2.4 and 2.4.15)**	Allowed	Allowed	Allowed	Allowed	Allowed
General Photography See also COMMERCIAL USES. (See sections 2.4 and 2.4.15)	Allowed	Allowed	Allowed	Allowed	Allowed
Outreach Activities **(See sections 2.3 and 2.4.16)**	Allowed	Allowed	Allowed	Allowed	Allowed
Public Use and Recreation Facilities – level of development is consistent with management intent of the category (See section 2.4.15) * All activities in designated Wilderness will be subject to a minimum requirements analysis.					
All Weather Roads And associated developments including bridges	Not allowed	May be allowed	May be allowed	Not allowed	Not allowed
Unimproved Roads Note: while unimproved roads are not allowed in Minimal management and Wilderness, roads may exist. In these management categories, the roads would not be designated for use or maintained.	Not allowed	May be allowed	May be allowed	Not allowed	Not allowed
Designated Off-Road Vehicle (All-Terrain Vehicle) Trails and Routes	Not allowed	May be allowed	May be allowed	Not allowed	May be allowed
Roadside Exhibits and Waysides	Not applicable	May be allowed	May be allowed	Not applicable	Not applicable
Constructed and Maintained Airstrips	Not allowed	May be allowed	May be allowed	Not allowed	Not allowed

ACTIVITY	MINIMAL MANAGEMENT	MODERATE MANAGEMENT	INTENSIVE MANAGEMENT	MANAGEMENT of WILDERNESS	MANAGEMENT of WILD RIVERS
Cleared Landing Strips and Areas Includes unimproved areas where airplanes land. Minor brush cutting or rock removal by hand is allowed for maintenance.	May be allowed	May be allowed	May be allowed	Existing strips allowed to remain; new strips not allowed; see section 2.4.19*	May be allowed
Constructed Hiking Trails Includes bridges, boardwalks, trailheads, and related facilities.	May be allowed	May be allowed	May be allowed	May be allowed*	May be allowed
Designated Hiking Routes Unimproved and unmaintained trails; may be designated by signs, cairns, and/or on maps.	Allowed	Allowed	Allowed	Allowed	Allowed
Boat Launches and Docks Designated sites for launching and storing watercraft or tying up a float plane.	May be allowed	May be allowed	May be allowed	May be allowed*	May be allowed
Visitor Contact Facilities A variety of staffed and unstaffed facilities providing information on the Refuge and its resources to the public; facilities range from visitor centers to kiosks and signs. (See section 2.4.15))	May be allowed	May be allowed	May be allowed	Generally not allowed; see sections 2.3.4 and 2.4.19*	May be allowed
Campgrounds Developed sites accessible by highway vehicles.	Not applicable	May be allowed	May be allowed	Not applicable	Not applicable
Hardened Campsites Areas where people can camp that are accessible by vehicle or on foot but where the only facilities provided are for public health and safety and/or resource protection; may include gravel pads for tents, hardened trails, and/or primitive toilets. (See section 2.3)	Allowed	Allowed	Allowed	Allowed; consistent with section 2.4.19*	Allowed

ACTIVITY	MINIMAL MANAGEMENT	MODERATE MANAGEMENT	INTENSIVE MANAGEMENT	MANAGEMENT of WILDERNESS	MANAGEMENT of WILD RIVERS
Temporary Facilities Includes tent frames, caches, and other similar or related facilities; does not include cabins. See also Subsistence, Commercial Uses, and Administrative Facilities. (See section 2.4.15 Temporary Facilities)	May be authorized	May be authorized	May be authorized	May be authorized	May be authorized
Cabins – also other related structures such as outdoor toilets, food caches, storage sheds, and fish drying racks (See section 2.4.15)Cabins)					
Public Use Cabin A cabin administered by the Service and available for use by the public; intended only for short-term public recreational use and occupancy.	Existing cabins allowed to remain; new cabins may be allowed	Existing cabins allowed to remain; new cabins may be allowed	Existing cabins allowed to remain; new cabins may be allowed	Existing cabins allowed to remain; new cabins may be allowed; consistent with section 2.4.19*	Existing cabins allowed to remain; new cabins may be allowed
Administrative Cabin Any cabin primarily used by refuge staff or other authorized personnel for the administration of the refuge. (See section 2.4.20 Administrative Sites and Visitor Facilities)	May be allowed	May be allowed	May be allowed	May be allowed; consistent with section 2.4.19*	May be allowed
Subsistence Cabin Any cabin necessary for health and safety and to provide for the continuation of ongoing subsistence activities; not for recreational use.	Existing cabins allowed to remain; new cabins may be authorized	Existing cabins allowed to remain; new cabins may be authorized	Existing cabins allowed to remain; new cabins may be authorized	Existing cabins allowed to remain; new cabins may be authorized; consistent with section 2.4.19	Existing cabins allowed to remain; new cabins may be authorized
Commercial Cabin Any cabin which is used in association with a commercial operation including but not limited to commercial fishing activities and recreational guiding services.	Existing cabins allowed to remain; new cabins may be authorized	Existing cabins allowed to remain; new cabins may be authorized	Existing cabins allowed to remain; new cabins may be authorized	Existing cabins allowed to remain; new cabins not allowed consistent with section 2.4.19	Existing cabins allowed to remain; new cabins may be authorized
Other Cabins Cabins associated with authorized uses by other government agencies.	May be authorized	May be authorized	May be authorized	May be authorized; consistent with section 2.4.19	May be authorized

ACTIVITY	MINIMAL MANAGEMENT	MODERATE MANAGEMENT	INTENSIVE MANAGEMENT	MANAGEMENT of WILDERNESS	MANAGEMENT of WILD RIVERS
Administrative Facilities (See section 2.4.20 Administrative Sites and Visitor Facilities) * All activities in designated Wilderness will be subject to a minimum requirements analysis.					
Administrative Field Camps **Temporary** facilities used by refuge staff and other authorized personnel to support individual (generally) field projects; may include but is not limited to tent frames and temporary/portable outhouses, shower facilities, storage/maintenance facilities, and caches.	May be allowed	May be allowed	May be allowed	May be allowed*	May be allowed
Administrative Field Sites **Permanent** facilities used by refuge staff or other authorized personnel for the administration of the refuge. Includes administrative cabins and related structures (see Cabins) and larger multi-facility administrative sites necessary to support ongoing field projects, research, and other management activities. Temporary facilities to meet short-term needs may supplement the permanent facilities at these sites.	Use of existing sites allowed, including replacement of existing facilities as necessary; new sites may be allowed	Use of existing sites allowed including replacement of existing facilities as necessary; new sites may be allowed	Use of existing sites allowed, including replacement of existing facilities as necessary; new sites may be allowed	Use of existing sites allowed, including replacement of existing facilities as necessary; new sites may be allowed; consistent with sections 2.3.4 and 2.4.19	Use of existing sites allowed, including replacement of existing facilities as necessary; new sites may be allowed
Refuge Administrative Office Complex Facilities necessary to house refuge operations, outreach, and maintenance activities, and associated infrastructure; includes staff offices, storage, maintenance, parking lots, and other similar facilities.	Not allowed	Not allowed	May be allowed	Not allowed	Not allowed

ACTIVITY	MINIMAL MANAGEMENT	MODERATE MANAGEMENT	INTENSIVE MANAGEMENT	MANAGEMENT of WILDERNESS	MANAGEMENT of WILD RIVERS
Hazardous Materials Storage Sites, including appropriate structures and equipment necessary for the storage and transfer of fuels and other hazardous materials used for administrative purposes; must be in compliance with all Federal and state requirements.	May be allowed	May be allowed	May be allowed	May be allowed	May be allowed
Residences Residential housing for refuge staff and their families; includes single and multi-family dwellings.	Not allowed	Not allowed	May be allowed	Not allowed	Not allowed
Bunkhouses Quarters to house temporary and similar employees, volunteers, visitors, and other agency personnel.	Not allowed	May be allowed	May be allowed	Not allowed	Not allowed
Aircraft Hangars and Facilities for Storage of Aircraft	Not allowed	Not allowed	May be allowed	Not allowed *	Not allowed
Boat Launches and Docks Designated sites for launching and storing watercraft or tying up a float plane.	May be allowed	May be allowed	May be allowed	May be allowed*	May be allowed
Radio Repeater Sites Sites used to maintain radio communications equipment; may include helispots for access.	May be allowed	May be allowed	May be allowed	May be allowed*	May be allowed
COMMERCIAL USES Except as noted, a special use permit or other authorization is required for economic use of a refuge.					
Commercial Recreation – includes all forms of guiding, including those operated by nonprofit, educational, and other noncommercial groups (See section 2.2.17 Commercial Recreation Services)					
Guiding and Outfitting	May be authorized	May be authorized	May be authorized	May be authorized	May be authorized
Transporting	May be authorized	May be authorized	May be authorized	May be authorized	May be authorized
Fixed-Wing Air Taxis	May be authorized	May be authorized	May be authorized	May be authorized	May be authorized

ACTIVITY	MINIMAL MANAGEMENT	MODERATE MANAGEMENT	INTENSIVE MANAGEMENT	MANAGEMENT of WILDERNESS	MANAGEMENT of WILD RIVERS
Helicopter Air Taxis	Not Allowed; with exceptions consistent with section 2.4.14	Not Allowed; with exceptions consistent with section 2.4.14	Not Allowed; with exceptions consistent with section 2.4.14	Not Allowed; with exceptions consistent with section 2.4.14	Not Allowed; with exceptions consistent with section 2.4.14
Bus and Auto Tours	Not applicable	May be authorized	May be authorized	Not applicable	Not applicable
Mineral Exploration (See section 2.2.17 Mineral Exploration and Development) See section 2.2.23 for information on the Alaska Mineral Resource Assessment Program					
Surface Geological Studies Includes surface rock collecting and geological mapping activities (includes helicopter or fixed-wing access).	May be authorized	May be authorized	May be authorized	Not allowed	May be authorized
Geophysical Exploration and Seismic Studies Examination of subsurface rock formations through devices that set off and record vibrations in the earth. Usually involves mechanized surface transportation but may be helicopter supported; includes studies conducted for the U.S. Department of the Interior.	May be authorized	May be authorized	May be authorized	Not allowed	May be authorized
Core Sampling Using helicopter transported motorized drill rig to extract subsurface rock samples; does not include exploratory wells; includes sampling conducted for the U.S. Department of the Interior.	May be authorized	May be authorized	May be authorized	Not allowed	May be authorized
Other Geophysical Studies Helicopter-supported gravity and magnetic surveys and other minimal impact activities that do not require mechanized surface transportation.	May be authorized	May be authorized	May be authorized	Not allowed	May be authorized

ACTIVITY	MINIMAL MANAGEMENT	MODERATE MANAGEMENT	INTENSIVE MANAGEMENT	MANAGEMENT of WILDERNESS	MANAGEMENT of WILD RIVERS
Mineral Development (see section 2.4.17 Mineral Exploration and Development))					
Oil and Gas Leasing Leasing, drilling and extraction of oil and gas for commercial purposes. Includes all associated above and below ground facilities.	Not allowed	Not allowed	May be authorized	Not allowed	Not allowed
Sale of Sand, Gravel, and Other Common Variety Minerals Extraction of sand, gravel, and other saleable minerals for commercial purposes; includes commercial use by Federal, state, and local agencies.	Not allowed	Not allowed	May be authorized	Not allowed	Not allowed
Other Mineral Leasing Includes the extraction of coal, geothermal resources, potassium, sodium, phosphate, sulfur, or other leaseable minerals for commercial purposes. For cases of national need, see section 2.4.17 Mineral Exploration and Development).	Not allowed	Not allowed	Not allowed	Not allowed	Not allowed
Mining of Hardrock Minerals Development of valid (pre-ANILCA) mining claims (lode, placer, and mill sites) on refuge lands for the purpose of extracting hardrock minerals.	Allowed only on valid claims	Allowed only on valid claims	Allowed only on valid claims	Allowed only on valid claims	Allowed only on valid claims
Other Commercial Activities * All activities in designated Wilderness will be subject to a minimum requirements analysis.					
Commercial Filming, Videotaping, and Audiotaping (See section 2.4.17 Commercial Filming and Recording Activities)	May be authorized	May be authorized	May be authorized	May be authorized	May be authorized
Grazing (See section 2.4.17 Other Commercial Uses)	Not allowed	Not allowed	Not allowed	Not allowed	Not allowed
Agriculture (Commercial) (See section 2.4.17)	Not allowed	Not allowed	Not allowed	Not allowed	Not allowed

ACTIVITY	MINIMAL MANAGEMENT	MODERATE MANAGEMENT	INTENSIVE MANAGEMENT	MANAGEMENT of WILDERNESS	MANAGEMENT of WILD RIVERS
Commercial Fishery Support Facilities At or below 1979 levels. (See section 2.4.17 Commercial Fishing and Related Facilities)	Allowed	Allowed	Allowed	Allowed	Allowed
Commercial Fishery Support Facilities Above 1979 levels. (See section 2.4.17 Commercial Fishing and Related Facilities)	May be authorized	May be authorized	May be authorized	Not allowed	May be authorized
Seafood Processing (See section 2.4.17) Commercial Fishing and Related Facilities	Not allowed	Not allowed	Not allowed	Not allowed	Not allowed
Aquaculture and Mariculture Support Facilities (See section 2.2.17 Commercial Fishing and Related Facilities)	Not allowed	Not allowed	May be authorized	Not allowed	Not allowed
Commercial Timber and Firewood Harvest (See section 2.4.17 Commercial Harvest of Timber and Firewood)	May be authorized	May be authorized	May be authorized	Not allowed	May be authorized
Commercial Gathering of Other Refuge Resources (See section 2.4.17 Commercial Gathering of Other Resources)	Not allowed	May be authorized	May be authorized	Not allowed	Not allowed
Transportation and Utility Systems Includes transmission lines, pipelines, telephone and electrical power lines, oil and gas pipelines, communication systems, roads, airstrips, and other necessary related facilities. Does not include facilities associated with on-refuge oil and gas development. (See section 2.4.14 Transportation and Utility Systems)	May be authorized; would require a plan amendment	May be authorized	May be authorized	Must be authorized by Congress	May be authorized

ACTIVITY	MINIMAL MANAGEMENT	MODERATE MANAGEMENT	INTENSIVE MANAGEMENT	MANAGEMENT of WILDERNESS	MANAGEMENT of WILD RIVERS
Navigation Aids and Other Facilities Includes air and water navigation aids and related facilities, communication sites and related facilities, facilities for national defense purposes and related air/water navigation aids, and facilities for weather, climate, and fisheries research and monitoring; includes both private and government facilities. (See section 2.4.14 Navigation Aids and other Facilities)	May be authorized	May be authorized	May be authorized	May be authorized*	May be authorized
Major Hydroelectric Power Development Hydroelectric dams creating a change in streamflow with an elevation change and reservoir behind the dam. (See section 2.4.17 Other Commercial Uses)	Not allowed	Not allowed	Not allowed	Not allowed	Not allowed
Small Hydroelectric Power Development Hydroelectric generation by low-head or instream structures that do not change the flow of the river. (See section 2.4.17 Other Commercial Uses)	Not Allowed	May be authorized	May be authorized	Not allowed	Not allowed

2.6 References Cited

Alaska National Interest Lands Conservation Act Accessed: 21, November, 2008 Accessed at http://www.alaska.fws.gov/asm/anilca/toc.html

Bayha, K., S. Lyons, and M.L. Harle. 1997. "Strategic Plan for Water Resources Branch." WRB-97-1. Anchorage, Alaska: U.S. Department of the Interior, Fish & Wildlife Service, Division of Realty. 25 pp.

Harle, M.L. 1994. "Water resources threats analysis." Unpublished report. Anchorage, Alaska: U.S. Department of the Interior, Fish & Wildlife Service, Water Resources Branch. 30 pp. plus appendices.

Rocque, D.A. and T.A. S. Parson. 2004. Togiak National Wildlife Refuge Contaminant Assessment. U.S. Fish and Wildlife Service, Regional Office, Anchorage AK. 49 pp.

USFWS. 1992. "Cultural Resources Management Handbook."Accessed: November 21, 2008 Accessed at: http://policy.fws.gov/614fw1.html on the World Wide Web, produced by U.S. Fish & Wildlife Service.

USFWS. 2000. "Land Protection Plan, Options for the protection of fish and wildlife habitats, Togiak National Wildlife Refuge." Anchorage, Alaska: U.S. Fish & Wildlife Service, Region 7. 104 pages.

USFWS 2006. Service Manual 601 FW 1. Accessed November 21, 2008. Available at: http://www.fws.gov/policy/603fw1.html on the World Wide Web, produced by the U.S. Fish & Wildlife Service

USFWS and NMFS 1998, "Endangered Species Consultation Handbook" Accessed: November 21, 2008 Accessed at: http://www.fws.gov/endangered/consultations/s7hndbk/s7hndbk.htm

USFWS 1996, Service Manual 341 FW 3. Accessed: November 21, 2008. Accessed at: http://www.fws.gov/policy/341fw3.html on the World Wide Web, produced by the U.S. Fish & Wildlife Service

U.S. Department of the Interior (USDOI). 2001. "Department of the Interior—Alaska Policy on Government-to-

Government Relations with the Alaska Native Tribes." Washington, D.C.: U.S. Department of the Interior. 3 pp. (Policy signed on January 18, 2001.)

U.S. Fish and Wildlife Service. 1994. "Native American Policy." National Policy Issuance #94-10. Washington, D.C.: U.S. Fish & Wildlife Service. 11pp. (Policy signed on June 28, 1994; issued as national policy on August 24, 1994).

U.S. Government. 1966. "National Wildlife Refuge System Administration Act of 1966." (16 U.S.C. 668dd) Accessed: November 21, 2008. Available at: http://www4.law.cornell.edu/uscode/html/uscode16/usc_sec_16_00000668--dd000-.html on the World Wide Web, produced by the Cornell school of Law.

U.S. Congress 1972. "Coastal Zone Management Act of 1972" (16 U.S.C. 1451 to 1464) Accessed on: November 21, 2008. Accessed at: http://www.nrt.org/production/NRT/NRTWeb.nsf/AllAttachmentsByTitle/A-11factsheetonczma/$File/czma.pdf?OpenElement

U.S. Government, 1997. "National Wildlife Refuge System Improvement Act of 1997." (P.L. 105-57) Accessed: November 21, 2008. Available at: http://www.fws.gov/Northeast/planning/downloads/NWRSimprovementact.pdf on the World Wide Web, produced by the U.S. Fish & Wildlife Service

U.S. Government, Code of Federal Regulations (CFR) December, 2005. 50 CFR 25.21(b)(1)Accessed: November 21, 2008.Available at: http://vlex.com/source/1099

3. Affected Environment

3.1 Geographic and Ecosystem Setting

3.1.1 The Bristol Bay and Kodiak Ecosystem

The Togiak Refuge lies within the Bristol Bay and Kodiak Ecosystems. This ecosystem encompasses approximately 60,615 square miles of southwestern Alaska from the Kodiak Archipelago to the Togiak Refuge and includes the southernmost part of the Kuskokwim Bay area south of Bethel and Yukon Delta National Wildlife Refuge.

This ecosystem is one of Alaska's most productive regions for fish and wildlife. The ecosystem's large, diverse, and productive fishery resources are its driving force. Salmon are the principle mode by which nutrients from the ocean are transported to this system. As salmon return to spawn and die, their bodies provide the critical nutrients to support the primary producers in the food chain such as micro invertebrates, insects, and vegetation, which in turn provide food and shelter for the next generation of young salmon. At the same time, salmon supply food for animals much higher in the food chain such as bears, foxes, birds, and people.

These salmon are the driving force behind not only the ecosystem, but also the area's culture and economy. Local people have relied on, and continue to rely on, this ecosystem to provide not only food and income, but also a way of life. The region's commercial and recreational fisheries provides millions of dollars in income and thousands of jobs for people from Alaska, other states, and other countries throughout the Pacific.

The management of the Refuge plays an important role in the continuing function of the Bristol Bay and Kodiak Ecosystem by providing a healthy environment for fish, wildlife, and people.

3.2 Land Status

This plan applies to the Togiak Refuge and Hagemeister Island of the Alaska Maritime Refuge. In this document, the two units are referred to as Togiak Refuge or the Refuge. Management direction discussed in this plan applies only to lands under the jurisdiction of the Service within the boundaries of Togiak Refuge and Hagemeister Island.

The land status on Togiak Refuge continues to change because refuge lands selected by the State of Alaska, Native corporations, and individuals are in the process of being conveyed, rejected, or relinquished. In addition, some private lands within the boundary have been acquired from willing sellers, primarily within the Togiak Wilderness area.

Figure 3-1 shows, in general, the status of lands within the Togiak refuge and Hagemeister Island. Of the 4,899,000 acres of land within the Togiak Refuge boundary, approximately 4,124,000 acres are under Service jurisdiction. Approximately 2,000 acres are under the jurisdiction of other Federal agencies, primarily a military withdrawal at Cape Newenham under the jurisdiction of the U.S. Air Force.

The State of Alaska has approximately 3,200 acres of selected lands within the boundary that have not yet been adjudicated. In addition, the Alaska Department of Natural Resources developed a Special Use Land Designation for "…*State of Alaska shorelands and waters within the Togiak National Wildlife Refuge and lower Goodnews River*." (Appendix C) See page C-11 for the State's current management guidelines.

Currently, private entities, including Native corporations and individual Native Alaskans, have selected approximately 228,000 acres that have not yet been adjudicated and approximately 546,000 acres that have been conveyed. Included in those acres are 330 Native allotment parcels. The Alaska Native Allotment Act of 1906, as amended, allowed individual Natives to select as many as four parcels of land totaling 160 acres. At this time, 328 of those claims have been conveyed. There are five remaining parcels to be adjudicated. A 1998 amendment to ANCSA (Section 432 of Public Law 105-276 [43 U.S.C 1629g]) allowed for certain Alaska Native Vietnam veterans to have a renewed opportunity to apply for Native allotments. Eight allotments totaling 879 acres have been selected within the Togiak Refuge. One Alaska Native Vietnam veteran allotment of 82 acres has been conveyed on the refuge.

Hagemeister Island includes 73,884 acres within the Alaska Maritime refuge boundary. Of that, the U.S. Fish and Wildlife Service manages 73,080 acres. Native corporations have selected approximately eight acres that have yet to be adjudicated. There are five conveyed Native allotments on the island totaling 796 acres.

3.3 Physical Environment

3.3.1 Area of Influence

The Refuge's area of influence includes the Bering Sea, coastal lands and inland waters, and other lands adjacent to the Refuge, including lands within the Yukon Delta Refuge, the Wood-Tikchik State Park, and portions of the middle Kuskokwim River basin. The geology, water, and soils of the Refuge have a variety of physical features, including glacial lakes and moraines. Interior lands and waters are linked to the bays by several rivers. The refuge boundary encompasses all, or portions of, 35 major rivers, 25 major lakes, and hundreds of smaller lakes, ponds, and streams. These features, combined with the influence of the Bering Sea, affect the

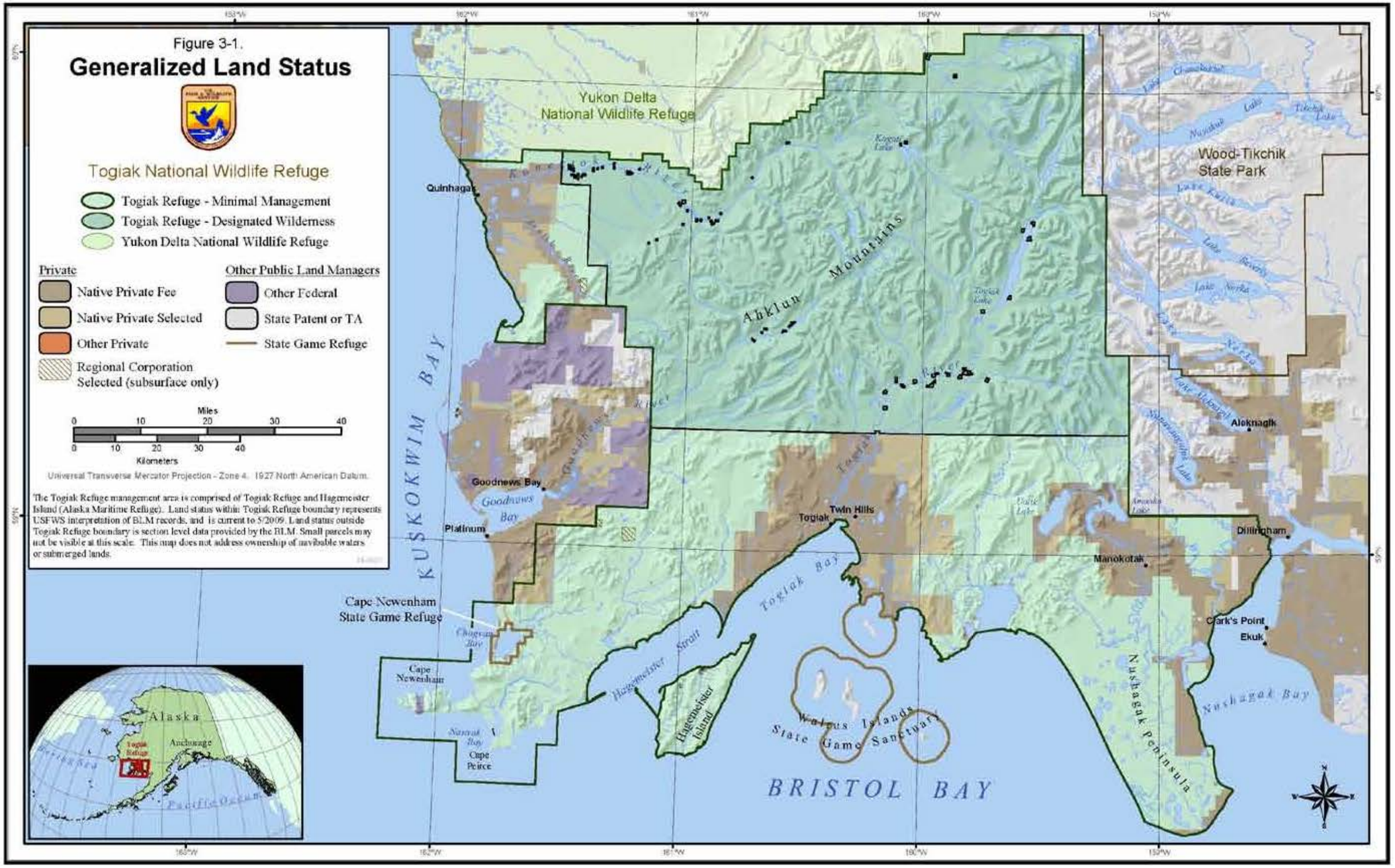


Figure 3-1. Generalized Land Status

climate and weather of the refuge and provide habitat and migration pathways for fish, wildlife, and plants.

3.3.2 Climate

The Refuge is located in a transitional climatic zone, and weather conditions are widely variable throughout the Refuge at any given time. Both the maritime climate of the Bering Sea and the continental climate of interior Alaska affect the Refuge, with the majority of the year being overcast or cloudy. Temperatures in the area range from an average minimum of four degrees Fahrenheit to an average maximum of 60 degrees Fahrenheit. Fall is the wettest time of year, while the least precipitation occurs in spring. Average annual precipitation averages 25 inches. Annual snowfall ranges from 60 inches along the coast to more than 150 inches in the mountains.

Major climatic changes have occurred in recent decades with visible and measurable consequences in Alaska. The effects of these changes on Alaskan flora and fauna challenge Service mandates to conserve the fish, wildlife, plant resources, and refuges in its trust. Forest, tundra, marine, and freshwater ecosystems are all vulnerable to a changing climate, which can influence Alaska's biodiversity in a myriad of complex and unpredictable ways, and will likely transform Service trust resources and lands in ways we do not currently understand. Alaska has experienced the largest regional warming of any state in the U.S. Temperature records for 25 stations across Alaska from 1949 to 1998 document seasonal mean temperature increases throughout the entire state. Seasonally, increases were highest in winter and spring and lowest in summer; fall was the only season in which slight decreases were observed. Much of this warming appears to have occurred during a sudden arctic atmospheric and ocean regime shift around 1977. Climate projections for Alaska suggest a continuation of the warming trends of recent decades. Changes are expected to be greatest during winter months. Because ice and snow have greater reflectivity, reduced snow and sea-ice extent reveals darker land and ocean surfaces, increasing absorption of the sun's heat and causing further regional warming. While northern and western Alaska may experience increases in precipitation, southeast Alaska may experience a decrease. Permafrost thawing is projected to accelerate under future warming, with as much as the top 30 feet of discontinuous permafrost projected to thaw by the end of the 21st century. The accelerated mass loss of Alaskan glaciers that began by the end of the 1980s is likely to continue into the future.

3.3.3 Landforms

A variety of landforms occur throughout the Refuge, including jagged peaks, cirque lakes, wide U-shaped valleys, broad coastal wetlands, and sea cliffs. The most prominent landforms are the

Ahklun and Wood River mountains; the Kanektok, Goodnews, and Togiak river basins; and the coastal lowlands of the Nushagak Peninsula.

3.3.4 Geology and Soils

A variety of events have shaped the landscape, rocks, soils, and minerals of the area. All of these physical features in turn affect fish, wildlife, and their habitats. Over the last two million years, ice sheets repeatedly covered much of the Refuge. Glaciers scoured the broad U-shaped valleys of the Kanektok, Goodnews, and Togiak drainages.

The glaciers deposited silt, sand, gravel, cobbles, and boulders on the Refuge, commonly in unsorted glacial drift. Moraines appear in many places as broad ridges curving across modern drainages, in places damming lakes behind them. Water and wind have transported and formed surficial deposits. Alluvium, consisting of floodplain mud, silt, sand, gravel, cobbles, and boulders, is found along streams. Colluvium, mainly loose, frost-broken rubble, is present throughout the Refuge.

The parent materials for refuge soils vary considerably: along valleys and floodplains, the parent material consists of glacial gravel and outwash; on the uplands, it is decomposed bedrock and colluvium; and along most of the coastal areas, the parent material consists of silty alluvium.

Several deposits of valuable minerals lie within and near the Togiak Refuge boundary, with only a few on refuge administered lands. Most of these deposits are of gold, mercury, and platinum, with the majority found in the upper Arolik basin, the lower Goodnews River and its tributaries, and near the Salmon River.

One of the unique geological features found within the refuge boundary is a dormant tuya located northeast of the village of Twin Hills. A tuya is a low, flat-topped volcano that forms as the volcano erupts beneath a glacier. Because of the thick layer of ice above the volcano, lava flows extend outward, rather than building up the more familiar volcanic cone-shaped mountain.

According to Bureah of Land Management (BLM) resource assessments for the region, it is unlikely that there are oil or gas deposits within the Refuge. Portions of the Nushagak Peninsula and the northwestern area of the Togiak Refuge near Quinhagak (much of which is privately owned) have been classified as having low potential for hydrocarbons. However, these areas of low potential are thought to comprise volcanic deposits and/ or igneous intrusions, which are not favorable for hydrocarbon generation and accumulation. The remaining refuge areas are classified as having no hydrocarbon potential (Gibson et al. 1988).

3.3.5 Water

3.3.5.1 Rivers and Lakes

Three major river systems (Kanektok, Goodnews, and Togiak rivers; see Figure 3-2) drain waters into Kuskokwim and Bristol bays. The Kanektok River (Figure 3-3) begins at Kagati Lake in the Ahklun Mountains and flows southwest for about 90 miles before emptying into Kuskokwim Bay. This river and its tributaries drain an estimated 870 square miles. The upper portions of the Kanektok River flow through a mountain valley, while the lower portion flows through flat tundra. Numerous gravel bars and islands occur along the length of the river, particularly where the channel meanders across the coastal plain.

The Goodnews River (Figure 3-4) consists of three river forks, which drain approximately 1,050 square miles. The North Fork flows from Goodnews Lake for approximately 25 miles before leaving the Togiak Refuge and an additional 22 miles before entering into Goodnews Bay. The Middle Fork is a 42-mile tributary that parallels the North Fork. The rivers have fine-to-medium gravel and cobble bottoms. Gravel bars and islands are not as numerous as on the Kanektok and are scarce when the water level rises. The South Fork is the shortest of the three forks at approximately 25 miles long.

The Togiak River (Figure 3-5) is the largest drainage basin in the Refuge, flowing southwestward from Togiak Lake about 55 miles before draining into Togiak Bay. This river's watershed covers an area of about 1,765 square miles. The river varies in size and depth, and is more than 500 feet wide in many places. The river is primarily a single channel, currents are swift, and occasional gravel bar islands are present. Five major tributaries drain into the Togiak River: the Gechiak, Pungokepuk, Nayororun (Kashaiak), Kemuk, and Ongivinuck drainages.

Lakes in the Refuge range in size from potholes and beaver ponds to the 13-mile long Togiak Lake. About 70 percent of the lakes are less than 100 acres in size, and 22 percent range from 100 to 500 acres.

3.3.6 Water Quality

Waters within the Refuge are known for their clarity and unspoiled conditions. Nutrients in the water increase for periods of time as spawning salmon decompose and when snowmelt or rain increase runoff from marsh and tundra vegetation. Runoff in the region varies widely depending on changes in topography and climate conditions. Freeze-up on the Refuge usually occurs between late October and late November; break-up usually occurs in early to mid-May.

Pollution from litter, motors, petroleum products, previous mining, and human waste may also occur on the Refuge. The amount of pollution from these sources is of concern to people who live in and visit the Refuge.

Sampling efforts have collected baseline physical, biological, and chemical data for waters throughout the Togiak Refuge. Analyses indicate water quality remains high and has been affected very little by human activities (MacDonald 1996; Collins 2001).

3.3.6.1 Heavy Metal Contamination

Areas within and adjacent to the Refuge have a long history of mining and mineral extraction. One of the largest platinum deposits in the United States is located south of Goodnews Bay. These deposits are privately owned and have been actively mined sporadically during the past 100 years. Because parts of these operations have taken place upstream from waters within the Togiak Refuge, the possible contamination of these waters from heavy metals associated with mining and metal extraction are of concern.

In 1990, the Service conducted a study to determine the level of contaminants from platinum mining in the Salmon River. This study found no significant increases in samples collected from mined areas or from fish samples (Jackson 1990). Additional water quality sampling is being conducted in the area by BLM and ADF&G. There are very few data for other portions of the Refuge, and it is unknown whether natural mineral deposits and/or historic mining activities within or upstream of the Refuge have contributed heavy metals to watersheds within the Refuge.

Human Waste Contamination—Potential degradation of Togiak Refuge water quality due to improper disposal of human waste by visitors along the Kanektok, Goodnews, and Togiak rivers has been a concern for many years.

Waste from warm-blooded animals (including humans) contributes a variety of intestinal bacteria that are pathogenic to humans. Fecal indicator bacteria are used to assess the quality of water because they are correlated to the presence of several waterborne disease-causing organisms. The presence of *E. coli* in water is direct evidence of fecal contamination from warm-blooded animals and indicates the possible presence of pathogens (Dufour 1977).

In 1990, Togiak Refuge staff collected water samples from several sites throughout the Togiak Refuge and had these analyzed by a private laboratory in Anchorage, Alaska. These tests were conducted to identify and enumerate fecal coliform and fecal streptococci bacteria. Results indicate that these bacteria were present but at levels well below allowable Environmental Protection

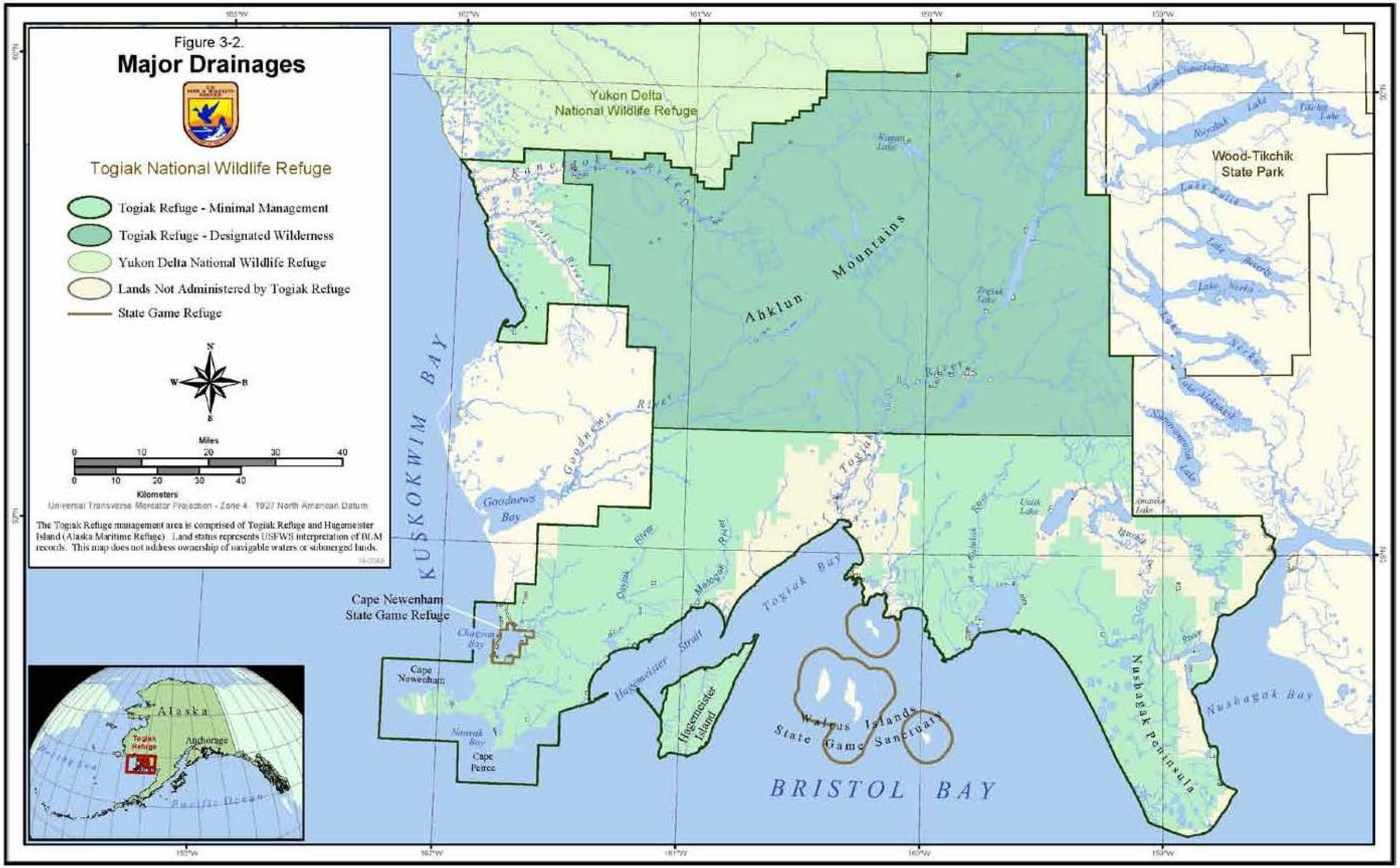


Figure 3-2. Major Drainages

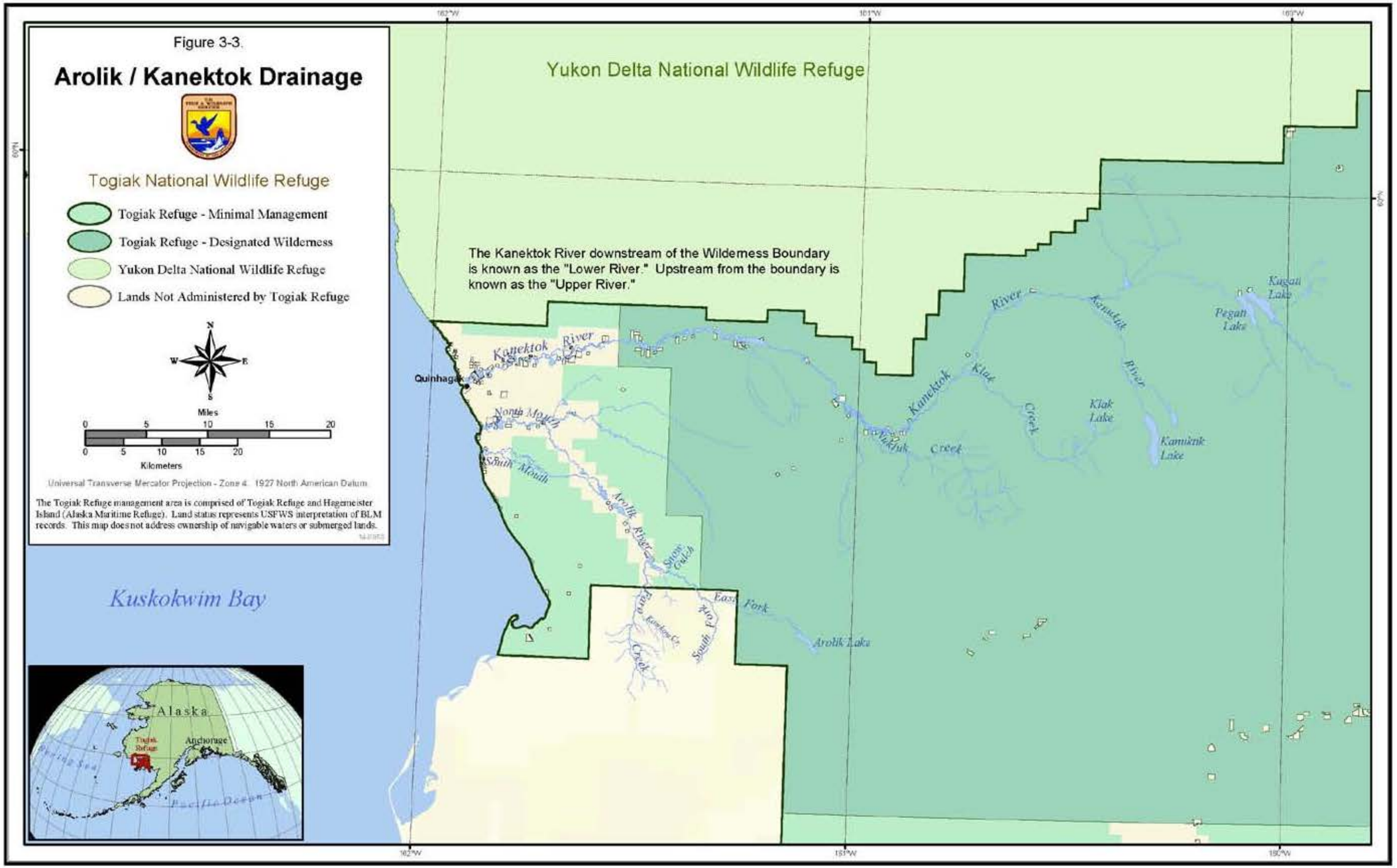


Figure 3-3. Arolik/Kanektok Drainage

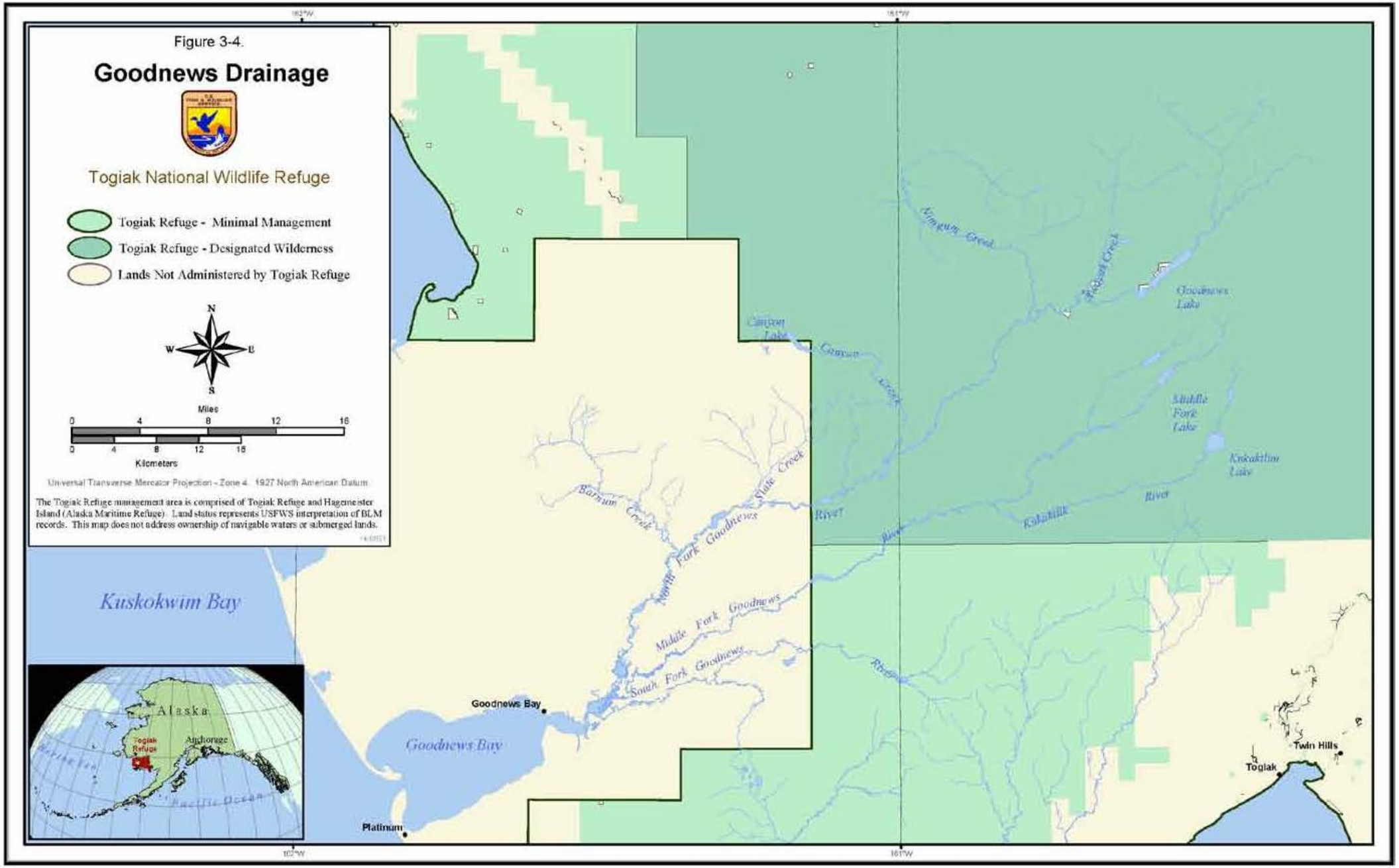


Figure 3-4. Goodnews Drainage

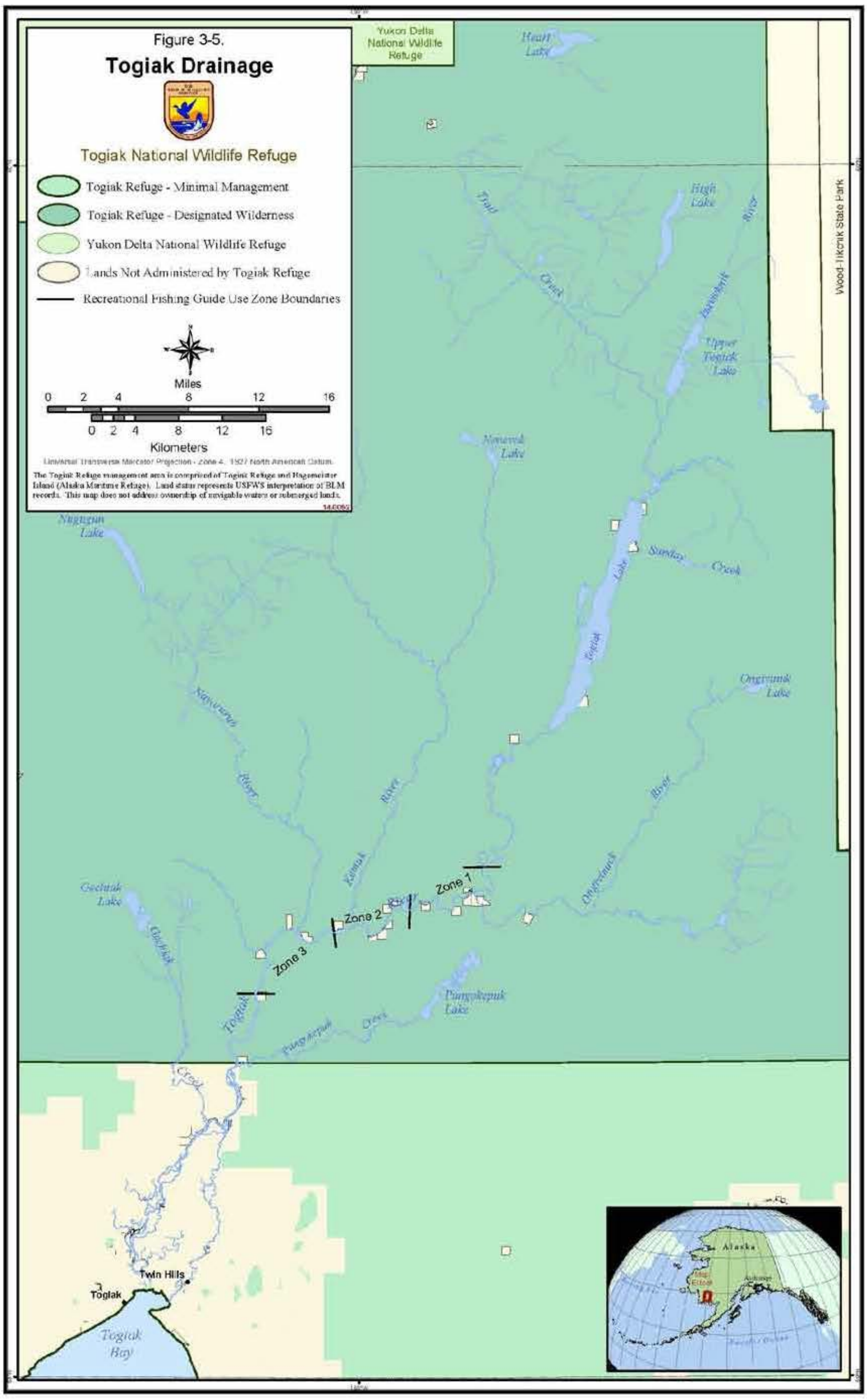


Figure 3-5. Togiak Drainage

Agency (EPA) water quality standards for recreational waters. Lab reports ranged from 0 to 29 colonies per 100 milliliter of water at various locations throughout the Togiak Refuge (Collins 2001).

From 1996 through 2000 and again in 2002, the Native Village of Kwinhagak (NVK), collected water samples from various locations along the Kanektok River within the Togiak Refuge and below the Wilderness boundary. NVK contracted a private laboratory in Anchorage to test for fecal coliform and enterococci bacteria. Tests were conducted throughout the summer use season and compared with estimated use of the Kanektok River from data collected by Togiak Refuge staff during the same time period. Results did not exceed EPA standards for recreational waters, although there continues to be local concern about water quality and increased levels of public use.

During the summer of 2001, additional water-quality samples were collected from the Kanektok River at the Wilderness Area boundary and analyzed by the Service. Results from these samples indicate that *E. coli* levels are very low and are at or below levels that occur in river systems with little or no human use (Collins 2001). Counts of bacterial colonies from samples collected ranged from 0 to 43 colonies per 100/mL.

Water quality is not the only concern regarding human waste disposal. The visual and aesthetic impacts are also a concern for all river users.

3.4 Biological Environment

3.4.1 Vegetation

The Refuge includes plants common to both arctic and subarctic regions. During the period of 1992 through 1995, more than 500 plant species were collected and documented representing 62 families and 202 genera. The major habitat type within the Refuge is moist tundra with low-growing shrubs, herbs, grasses, and sedges rooted in a continuous mat of mosses and lichens. Using satellite imagery, nine major cover types can be identified in the area. Table 3-1 lists these cover types and their estimated acreages.

3.4.1.1 Nonnative and Invasive Plants

There are at least 12 species of nonnative plants in eight taxonomic families occurring within the Refuge. Examples include dandelion (*Taraxacum officinale)* and clover (*Trifolium repens)*. While these plants are not native, they generally do not spread rapidly and pose less risk to native habitats than noxious weeds and other invasive species found throughout North America.

3.4.1.2 Fire

Wildfires occur infrequently with approximately 12,000 acres burned from 1984 through 2004. Lightning and people are the most common causes of fire within the Refuge. Due to the mostly treeless landscape, these fires burn through the tundra relatively slowly.

Table 3-1 Estimated vegetation area by general cover type

Cover Type	Approximate Acres	Approximate Percentage Total Cover
rine waters	217,185	5.0
Fresh waters	50,174	1.2
Barren ground	125,468	2.9
Grass and herbaceous marsh	25,313	.6
Peatland	805,402	18.6
Dwarf shrubland	1,065,193	24.6
Forest	7,610	0.2
Deciduous shrub	1,996,550	46.2
Snow, clouds, or light barren ground	28,617	0.7
Total	4,321,512	100.0

3.4.2 Fish and Wildlife

The geology and climate of the region influence the occurrence and diversity of vegetation and wildlife habitat within the Refuge. It is this diversity of habitats that supports the variety and abundance of wildlife found on the Refuge. Togiak Refuge is home to at least 283 species of wildlife, including 33 species of fish, 201 species of birds, 31 land mammal species, 17 marine mammal species, and 1 amphibian species (Appendix F).

3.4.2.1 Fish

Fisheries Data Collection

The ADF&G Sport Fish Division's mail survey is the primary tool used to monitor sport fisheries within the Refuge. Salmon escapements to Togiak Lake, Amanka Lake, and the Kanektok, Middle Fork Goodnews, and Ongivinuck rivers are monitored by ADF&G and the Service by means of counting towers at Togiak and Amanka lakes, fish weirs on the Kanektok and the Middle Fork Goodnews rivers, and aerial surveys on approximately 12 additional rivers. In addition, on-site creel and fishery survey projects are conducted periodically on the most active recreational fisheries such as the lower Kanektok and Togiak rivers during the peaks of chinook and coho salmon runs. ADF&G also tracks commercial harvest and subsistence harvest each year. A subsistence permit is required for all Bristol Bay Management Area drainages, including the Togiak Bay area. Additionally, in the Kuskokwim drainage where

subsistence use permits are not required, ADF&G annually conducts door-to-door surveys in all villages to collect subsistence salmon use information. When combined, these sources of information provide the most accurate estimates of fish harvest and escapement within the Kanektok, Goodnews, and Togiak River drainages.

We estimate the level of unguided angling effort is estimated by trip reports that are required to be completed by air taxis for each group they transport to or from the Refuge. Sport fishing guides report the number of clients fishing in a particular area, the number of hours fished, and the number of each species caught and kept. For smaller fisheries and tributary streams, guide use reports provide the most accurate estimate of guided angling effort, catch rates, and harvest.

Togiak Refuge River Rangers collect information on all recreational and subsistence activities occurring in the Kanektok, Goodnews, and Togiak river drainages. The information they collect translates into "use days," which would include anglers and the number of guides and pilots accompanying them and even the camp personnel present on the river. These estimates provide the level of effort per day and allow a breakdown between wilderness (upper river) and nonwilderness (lower river) levels of activity. This information provides the most accurate and reliable estimates of the type and level of pubic uses occurring throughout the Kanektok, Goodnews, and Togiak river drainages.

Anadromous Fish

Anadromous fish are those species that migrate up rivers from the ocean to spawn in fresh water. There are several anadromous species that occur within the Refuge. Five species of Pacific salmon—chinook, sockeye, chum, pink, and coho—and Dolly Varden char migrate up the numerous rivers throughout the Bristol Bay and Kuskokwim Bay regions. These species are key components of the ecosystem, the economy, and people's lifestyles.

Salmon—The salmon runs that return to the Refuge are the single most important driving force behind the region's ecosystem and economy. Because of this, commercial harvest, escapement past the fishery into the rivers, recreational harvest, and subsistence harvest of this resource have been well studied and documented. The estimates of returning and spawning populations presented here are based on an average of data reported by ADF&G from 1993 through 1999 (Burkey et al. 2001; Weiland et al. 2001). The spawning population is considered to be the average estimated escapement; the returning population is based on the average total run estimate (escapement and harvest) for each species. From 1980 to 2003 (years where complete estimates are available), estimates of

salmon bound for rivers within the Togiak Refuge showed the normal variability in abundance expected in wild fish stocks.

Other than the environmental factors encountered during their life cycle (predation, environment, availability of food), the largest factor affecting salmon abundance in the waters within the Togiak Refuge is the regulated commercial harvest in the near shore waters of the Bering Sea. This accounts for approximately 60 percent of the known run. Additional harvests by subsistence fishermen in both the rivers and the near shore marine area accounts for less than two percent of the total run. The recreational harvest (those fish intentionally harvested or that are estimated lost as a result of the recreational fishery) consist of less than one percent of the run. ADF&G, along with the cooperation and support of the Service and other organizations, has carefully monitored the commercial, subsistence, and recreational harvests of salmon and has implemented management plans and other actions over the years to ensure that these salmon populations remain healthy and viable (Burkey et al. 2001, Weiland et al. 2001).

Char—Three species of char are found within the Refuge: Dolly Varden, Arctic char, and lake trout. Dolly Varden are an important component of the subsistence harvest and recreational harvest throughout the Refuge. Most streams and lakes with ocean access contain both Dolly Varden and Arctic char, and certain streams on Hagemeister Island also support Dolly Varden (Gwinn 2005). Arctic char have not been found on Hagemeister. Dolly Varden migrate down the Togiak, Kanektok, Goodnews, and other rivers in late May. They reside in near shore marine areas and return to freshwater during July through September to spawn and overwinter. Dolly Varden do not necessarily return to their home waters to overwinter. Some fish may migrate from the ocean into one stream to spawn and then migrate back to the ocean and enter a different river to overwinter, usually in a lake. This complex life cycle means it is very difficult to determine population size or trends, or estimate likely effects of sport and subsistence fisheries. Recent genetic research strongly suggests tributaries of the Togiak River support genetically distinct populations of Dolly Varden (Crane et al. 2003).

More Dolly Varden are caught in the recreational fishery than any other species in Kanektok, Goodnews, and Togiak rivers. When the recreational and subsistence catch and harvest data are combined, it suggests populations are supporting large catches and annual average harvests of tens of thousands of fish for each of these three rivers (USFWS 1990; BBNA and ADF&G 1996; Dunaway and Sonnichensen 2001).

Resident and Freshwater Fish

Resident, or freshwater fish, are another important component of the ecosystem. Arctic char, rainbow trout, Arctic grayling, lake trout, pike, burbot, blackfish, and round whitefish are considered resident fish. These fish rely on the supply of nutrients that salmon bring from the ocean, nutrients that are consumed either by eating loose salmon eggs as they float downstream or by eating insects that have fed on dead salmon carcasses. In turn, these resident fish provide an important source of food for raptors (e.g., osprey and bald eagles), other fish (e.g., lake trout and pike), and local people who catch these fish year round.

Rainbow Trout—Rainbow trout are found in most waters within the Togiak Refuge, with major concentrations occurring in the Togiak, Goodnews, Kanektok, and Arolik river systems. Populations appear to be stable, but it is possible the average size of fish in the Kanektok and Goodnews river populations has decreased. These results may represent normal fluctuations in population structure, variations in sampling methods, or effects due to a fishery (Adams 1996).

Arctic Char—Little is known about these resident char within the Refuge except that they are most common in headwater lakes, in deep pools, and in mainstream rivers, and they spawn in lake tributary streams.

Lake Trout—Lake trout are known to exist in several deep lakes throughout the Togiak Refuge but primarily in the Kuskokwim drainage. Lake trout live and spawn in these lakes and are not known to migrate. There are very few data about lake trout populations within the Refuge. Between 2,000 and 7,000 lake trout were estimated to be in Kagati Lake during a 1989 and 1990 tagging study (Fair 1995; Lisac and MacDonald 1995).

Arctic Grayling—The majority of streams within the Refuge contain Arctic grayling. Annual movements between spawning, feeding, and wintering sites may be extensive. Juvenile and adult grayling migrate upstream just before or during spring break-up. Before freeze-up on the tributaries, Arctic grayling are thought to migrate to lakes and spring areas to overwinter.

Northern Pike—Pike are an important subsistence fish caught primarily through the ice on lakes throughout the Togiak Refuge. Many of the rivers, creeks, lakes, and ponds in watersheds on the Bristol Bay side of Togiak Refuge support pike. However, pike are less abundant in waters on the Kuskokwim Bay side of Togiak Refuge. Pike winter in lakes and near springs in rivers and creeks where the danger of oxygen depletion is minimal. As soon as the ice breaks up, the pike move inshore or upstream to marshy areas to spawn. Pike spend the summer and fall in the warm, slow-

moving water of shallow lakes and meandering rivers. Little information is available for populations within the Refuge, but they appear to be healthy and possibly expanding, according to local residents.

Kanektok and Arolik River Fisheries

The Refuge conducted a subsistence harvest survey in Quinhagak to collect harvest data on resident fish species (USFWS 1990). Of 84 households interviewed, 79 percent (66 households) reported harvesting fish other than salmon. Expanding these interview results to the 140 households in Quinhagak gives a rough estimate of a subsistence harvest for that year of 7,625 Dolly Varden and Arctic char, 2,585 rainbow trout, 543 Arctic grayling, and 22 lake trout.

Since 1983, when effort estimates were first available, participation in the recreational fishery increased rapidly to peak in 1988 (Figure 3-6). Approximately 60 percent of the total sport fishing effort occurs on the lower 20 miles of the Kanektok River, where anglers target chinook, chum, and coho salmon (Dunaway and Bingham 1992; Dunaway and Fleischman 1995). The upper 70 miles of the river primarily support recreational angling for rainbow trout, Arctic grayling, Dolly Varden, lake trout, and Arctic char.

Catches (including all fish released or harvested) of Dolly Varden and Arctic char from the Kanektok River are the largest among the non-salmon fish species, with an annual average recreational catch of more than 20,000 fish (Lafferty 2004). From 1996 through 2002, the seven-year average annual catch of other resident species was 11,684 rainbow trout, 120 lake trout, and 4,074 Arctic grayling. A small portion of the overall catch is actually harvested (killed). The seven-year average recreational harvests for 1996–2002 were 529 Dolly Varden and Arctic Char, 62 rainbow trout, 22 lake trout, and 59 Arctic grayling annually.

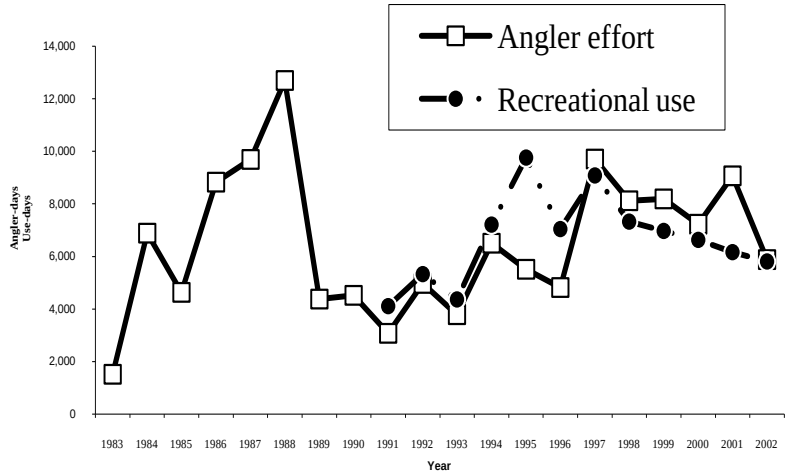


Figure 3-6. Kanektok River angler effort (USFWS 1991–2002; Lafferty 2004)

Studies conducted by the Service, ADF&G, and others have indicated that the impact of recreational and subsistence fisheries has the potential to change the length structure of rainbow trout populations in the Kanektok River (Adams 1996) and other rivers. The State of Alaska Board of Fisheries took action to reduce impacts of recreational fishing of rainbow trout in 1990 and in 1997 under the Southwest Alaska Rainbow Trout Management Plan. Recreational fishing for rainbow trout in the Kanektok River is restricted to catch-and-release only from June 8 through October 31, and tackle is restricted to unbaited artifical lures with a single hook. These actions are intended to reduce the potential for dramatic changes in the age structure of rainbow trout. Ongoing monitoring of fish populations should be adequate to detect and suggest necessary change to the management of these fish.

Available information suggests subsistence harvest represents the majority of rainbow trout mortality in the Kanektok River drainage. In 1990, the Service estimated rainbow trout harvest by Quinhagak residents was in excess of 2,000 fish. Using a maximum of 12 percent catch-and-release mortality (Taylor and White 1992) and the 1991 ADF&G sport fishing estimates reported by Dunaway and Sonnichsen (2001) of 5,856 rainbow trout caught and 182 fish harvested, total annual mortality due to sport fishing would be no more than 863 fish. This represents a maximum, and a catch-and-release mortality rate of three to five percent is probably more realistic for Kanektok River rainbow trout.

Goodnews River Fisheries

The Alaska Department of Fish and Game has estimated recreational catch of rainbow trout on the Goodnews River since 1991 (Figure 3-7). Estimated catch was variable from 1991 (2,776)

through 2002 (2,915), ranging from a low of 945 in 1994 to a high of 9,703 in 1997. The 1996–2002 annual average sport harvest of rainbow trout was approximately 103 fish (Lafferty 2004). Analyses of data collected indicate changes in the Goodnews River rainbow trout populations are similar to those described for the Kanektok River (Adams 1996). In her paper, Faustini (1996) suggested a change had occurred in the historic length-frequency and may be the result of sport fishing harvest, sport fishing hooking mortality, and subsistence fishing harvest.

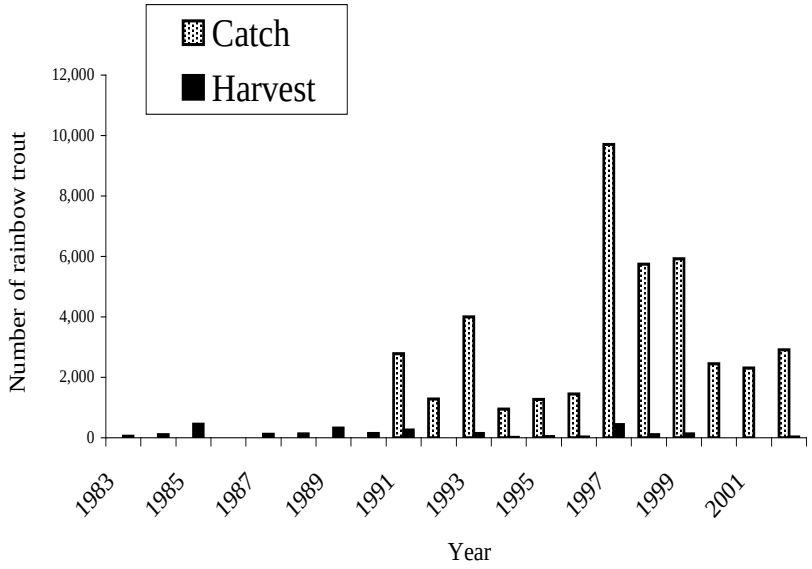


Figure 3-7. Goodnews River rainbow trout sport fishery harvest and catch (Lafferty 2004)

Other estimated annual average sport catches from 1996–2002 include 14,462 Dolly Varden and Arctic char, 227 lake trout, and 2,271 Arctic grayling. Annual average harvests during this same time period were 633 Dolly Varden and Arctic char, 16 lake trout, and 73 Arctic grayling. Similar estimates for subsistence harvest are not available.

Togiak River Fisheries

Dolly Varden and Arctic char have been captured in all tributaries of the Togiak River with the greatest concentrations being in the Izavieknik River (Lisac and MacDonald 1996; Lisac and Nelle 2000). More of these fish are caught in the recreational and subsistence fisheries than are any other species in the Togiak River. A household survey of Togiak area residents estimated the harvest of several non-salmon species of fish in 1994–1995 (BBNA and ADFG 1996) and in 1999–2000 (Coiley-Kenner et al. 2003). Estimated numbers of individuals harvested are shown in Table 3-2.

Table 3-2 Estimated subsistence harvest of non-salmon fish from the Togiak River during 1994–1995 and 1999–2000

Fish species	Estimated Number of Fish Harvested	
	1999–2000	1994–1995
Arctic grayling	50	124
Pike	593	1285
Dolly Varden and Arctic char	4,087	10,847
Lake trout	107	270
Rainbow trout	29	897
Whitefish	4,599	9350

Recreational catch estimates for the Togiak River have increased from 1994 through 1998, with a five-year average catch of 3,837 Dolly Varden and Arctic char (Dunaway and Sonnichsen 2001). It is unknown whether this is the result of angler preference, angler effort, or increases in stock abundance. Of the more than 3,800 Dolly Varden and Arctic char caught, an annual average of 437 fish was harvested by sport anglers during this time period.

Rainbow trout were not found to be present upstream of the Togiak Lake outlet and were primarily concentrated in lower tributaries (Lisac and MacDonald 1996). From 1993 through 1995, the Togiak Refuge conducted baseline fisheries inventories on Togiak River tributaries; these inventories provided the first documentation of age, weight, length, and species distribution for rainbow trout, Arctic grayling, pike, Dolly Varden, and Arctic char in the Togiak area (Lisac and MacDonald 1996). Recaptures of marked fish have shown movements of rainbow trout between the tributary streams and the main Togiak River, and additional work in 1998 and 2000 demonstrated rainbow trout in Gechiak and Pungokepuk creeks are distinct populations that overwinter in headwater lakes (Nelle and Lisac 2001; Krueger et al. 1999).

Recreational anglers caught an increasing number of rainbow trout during the 1990s. From 1994 through 1998, the average annual catch was about 1,900 trout, but most of these fish were released. The estimated average harvest during this time period was less than 25 fish per year (Dunaway and Sonnichsen 2001).

3.4.2.2 Birds

Waterfowl—The Refuge and the Cape Newenham State Game Refuge (of which Chagvan Bay is a primary feature) are host to a wide variety of migratory and resident waterfowl. Lakes, rivers, tundra ponds, and coastal wetlands combine to offer nourishment and resting areas for staging, breeding, and molting waterfowl.

Major areas of importance include the Nushagak Peninsula, Kulukak Bay, Osviak Slough, Nanvak Bay, Chagvan Bay, Carter Bay, and Jacksmith Bay. A large portion of the world's black brant population feeds or rests on Nanvak and Chagvan bays during migration. A large portion of the North American west coast populations of emperor geese, and king and Steller's eiders migrate through or adjacent to the Refuge. Significant numbers of common eiders, harlequin ducks, and black scoters also stop in the area. Less common, but still abundant, are migrating greater scaup, long-tailed ducks, and red-breasted mergansers. The Refuge also provides nesting habitat for several waterfowl and water bird species, including tundra swans and Canada geese. Common nesting species are mallard, northern pintail, green-winged teal, greater scaup, common eider, harlequin duck, black scoter, common merganser, and red-breasted merganser. Nesting populations in the lowlands of the Nushagak Peninsula and north of Goodnews Bay have been estimated at 31 ducks and 1.3 tundra swans per square mile (USFWS 1990).

One species of particular concern is the harlequin duck. The low reproductive success and specialized habitat requirements of harlequin ducks make them particularly vulnerable to human disturbance (Genter 1992). They appear to be most sensitive to disturbances during the early stages of nesting (Clarkson 1992). Public use levels within the Togiak Refuge are low or nonexistent during the sensitive early stages of nesting. There is no evidence that harlequin duck abundance has been negatively impacted on the Togiak, Goodnews, and Kanektok rivers.

Marsh and Water Birds—A large portion of the North American west coast population of Pacific loons migrates past the Refuge. Red-throated, Pacific, and common loons nest on the Togiak Refuge, as do red-necked and horned grebes. Based on their 1983 surveys, Pogson and Cooper (1983) concluded nesting densities of sandhill cranes on the Nushagak Peninsula are among the highest recorded in Alaska.

Shorebirds—At least 39 species of shorebirds use the bays and lowlands of the Refuge as staging areas enroute to and from the arctic. Eighteen species of shorebirds have been documented breeding on the Togiak Refuge, with the most common nesters being semipalmated plovers, greater yellowlegs, spotted sandpipers, western sandpipers, least sandpipers, common snipe, and red-necked phalaropes. Nushagak Bay's importance to shorebirds resulted in its designation as a regional site in the Western Hemisphere shorebird reserve network because at least 60,000 shorebirds have been documented in this area at one time.

Marine Birds—Cape Newenham, Cape Peirce, Bird Rock, and Shaiak Island support the largest population of cliff-nesting birds in

the eastern Bering Sea mainland. The birds nest and roost on the ledges and in the cracks of the cliff faces, and they forage at sea. The two most common species are the common murre and black-legged kittiwake. Other common species include tufted and horned puffins, pelagic and double-crested cormorants, parasitic and long-tailed jaegers, glaucous and mew gulls, pigeon guillemot, and parakeet auklet. Several hundred Aleutian terns nest in Goodnews Bay, and Arctic terns are abundant throughout the Togiak Refuge. The population and productivity of black-legged kittiwakes, common murres, and pelagic cormorants have been monitored annually at Cape Peirce since 1984.

Cliff-nesting seabirds along the coastline of the Refuge are affected by human-induced and natural disturbances that may reduce their breeding performance. Ecological factors relating to forage food availability, climatological factors, and predation can also affect breeding performance. Disturbances to seabirds are especially critical during times of egg laying, incubation, and chick rearing, when disturbances may cause flushed adults to dislodge eggs or chicks so that they fall to their demise. For these reasons, potential human disturbance is of particular concern.

Marine bird eggs are an important subsistence resource with gull and murre eggs most commonly gathered. It is estimated more than 10,000 eggs are gathered annually by residents of Togiak, Twin Hills, and Manokotak (Coiley-Kenner et al. 2003). Similar harvest estimates by Quinhagak, Goodnews Bay, and Platinum residents are not available.

Raptors—At least 21 species of raptors are known to occur on the Togiak Refuge, with 16 species known to breed here. The most common are bald eagles, northern harriers, rough-legged hawks, merlins, and short-eared owls. In addition, golden eagles, gyrfalcons, peregrine falcons, and northern hawk owls are seen every year.

Because bald eagles are a highly visible species found mainly in association with aquatic habitats, they are more vulnerable than many other species to human disturbance, especially at nest areas (Anthony et al. 1982). This sensitivity varies among individuals, but generally adult eagles are more sensitive during courtship, egg laying, and incubation, with sensitivity decreasing as young develop (Fraser 1981). Public use along rivers, including boating, camping, or fishing near nesting areas, can be a major disturbance and can alter normal raptor activity patterns by altering the distribution of raptors, disrupting nest attentiveness patterns, causing abandonment of breeding territories, reducing productivity, and affecting foraging (Knight and Skagen 1986).

Based on surveys conducted from 1984 through 1988, the Togiak Refuge bald eagle population was 80–90 individuals during the summer, with approximately 20 remaining through the winter. The population appeared stable and showed a small, steady increase (Hotchkiss and Campbell 1989).

Upland Birds—Spruce grouse and willow, rock, and white-tail ptarmigan all occur on the Togiak Refuge, and each is a confirmed breeder. Willow ptarmigan are the most common of these species, with flocks of several hundred or more birds occurring. Rock ptarmigan are found on mountain slopes throughout the Togiak Refuge, while spruce grouse occur on the eastern boundary of the Togiak Refuge where coniferous trees are found. These birds are an important subsistence resource throughout the Refuge, with several thousand harvested each year (Coiley-Kenner et al. 2003).

Passerines—The diverse habitats on the Refuge support a variety of landbird species. Numerous species common throughout the Refuge include alder flycatchers; black-billed magpies; common ravens; tree swallows; blacked-capped chickadees; Arctic warblers; gray-cheeked and hermit thrushes; American robins; yellow wagtails; orange-crowned, yellow, blackpoll, and Wilson's warblers; northern water thrushes; Savannah, fox, and golden-crowned sparrows; Lapland longspurs; and common redpolls. Other landbird species that are common in certain habitats scattered throughout the Togiak Refuge are bank and cliff swallows; ruby-crowned kinglets; Swainson's and varied thrushes; American pipits; yellow-rumped warblers; American tree and white-crowned sparrows; snow buntings; and gray-crowned rosy finches. Togiak Refuge participates in various local, regional, and global monitoring efforts for landbirds, which include breeding bird surveys, area searches, checklists, and public bird counts.

3.4.2.3 Land Mammals

Caribou—Several significant changes in caribou migration, population, and distribution have occurred since the original Togiak Refuge Plan was completed in 1985. At that time, there were seldom more than 50 caribou on the Togiak Refuge at any given time, despite the fact there was suitable habitat available (USFWS 1985). Caribou were abundant in the Nushagak, Togiak, and Yukon-Kuskokwim deltas prior to 1900 (ADF&G 1973; ADF&G 1976) but were eliminated from the area by over harvesting, competition with introduced reindeer herds, wildfire, or a possible shift in migration patterns (ADF&G 1973). A small remnant herd remained to the north of the Togiak Refuge in the Kilbuck Mountains, possibly because of the optimum habitat and the inaccessibility of the area to hunters (Skoog 1968). In 1980, the Kilbuck or Qauilnguut herd was estimated to be at least 50 animals; more accurate surveys in the mid-1980s showed the population to be 200–300 caribou. By 1995,

the population had grown steadily to more than 4,000 animals, and more caribou were being counted within the Togiak Refuge (Qauilnguut [Kilbuck] Caribou Herd Cooperative 1995; Miller 1995).

In the early 1980s, the range of another, much larger herd known as the Mulchatna herd was beginning to shift westward toward the Kilbuck herd and the lower Yukon-Kuskokwim Delta (Shepherd 1981). A large influx of Mulchatna caribou in the winter of 1994 may have contributed to the 1995 Qauilnguut (Kilbuck) population estimate. Near the end of 1994, approximately 30,000 caribou from this Mulchatna herd migrated through the area in which the Qauilnguut herd lived. As these caribou left, most of the Quailnguut herd went with them. This was the first known migration of Qauilnguut caribou from their traditional range in the Kilbuck Mountains into areas that were traditionally used by the much larger Mulchatna herd (Qauilnguut [Kilbuck] Caribou Herd Cooperative 1995). It is debatable whether or not the Qauilnguut caribou herd still exists as a separate herd. The Mulchatna herd was estimated to be approximately 200,000 animals in 1996 (ADF&G 1999). However, since 1996, it has steadily declined in numbers. In 2006, it was estimated at 45,000 animals. This herd often moves through the Togiak Refuge, especially near the upper Kanektok, Goodnews, Arolik, and Togiak rivers. Surveys have estimated as many as 30,000 caribou wintering in the Togiak Drainage (USFWS 2000). The migration of this herd ranges from the lower Kuskokwim River, east to Lake Illiamna, south toward the lower Nushagak and Kvichak rivers, and north to the area near McGrath.

In the southeastern portion of the Togiak Refuge, another change in caribou populations occurred in 1988. To more quickly restore caribou populations to their historic level, 146 barren ground caribou were reintroduced to the Nushagak Peninsula in 1988. Because of exceptional range conditions, low predation, and closed hunting season, this herd grew to more than 1,000 animals by 1993. In 1995, a limited Federal subsistence hunt was allowed and is estimated to be removing 3 percent of the population each year (Collins et al. 2003).

Management of this caribou herd is conducted through the Nushagak Caribou Herd Management Plan (USFWS 1994). Until February 2000, most individuals in this herd resided entirely on the Nushagak Peninsula, the exception being a small group of animals inhabiting the area between Twin Hills and the Kulukak River. More recently, temporary movements off the Nushagak Peninsula by a majority of the herd occurred on at least four occasions. Lichen utilization by caribou has become more noticeable, especially in the southern half of the peninsula. Population counts indicate the herd peaked around 1,300 animals in 1998–1999 (Aderman and

Woolington 2001) and then declined to less than 1,000 by 2003. Caribou from the Mulchatna herd move through and seasonally occupy many areas within and adjacent to the Refuge. In response, the Federal Subsistence Board and Alaska Board of Game have greatly expanded subsistence and recreational hunting opportunities. In addition, the Nushagak Peninsula caribou herd has also provided expanded subsistence hunting opportunities. Beginning in the mid-1990s, this herd became an important subsistence hunting resource to residents from Manokotak and Dillingham primarily, and secondarily to residents of Aleknagik, Clarks Point, Togiak, and Twin Hills. This use persisted until 2006, at which time the caribou population had declined in number to a point at which hunting was no longer sustainable.

Interviews with residents of Togiak, Twin Hills, and Manokotak indicate the combined total harvest (which included caribou taken from both within and outside the Togiak Refuge) from these three communities during the 1999–2000 hunting season was approximately 333 animals (Coiley-Kenner et al. 2003). Comparable information was not available for Quinhagak, Platinum, Goodnews Bay, and other communities adjacent to the Refuge.

Moose—Little written information is available about moose abundance on the Togiak Refuge prior to the 1970s. Generally, it is believed moose populations have historically been at low densities in areas of southwestern Alaska and that moose populations have expanded their range and increased in number in this region during the 20th century (Machida 1987; Van Daele 1992).

In 1981, the first major survey of Game Management Unit (GMU) 17A, (see Figure 3-8) the majority of which is within the Togiak Refuge, was conducted. During five and one-half survey hours, only three moose were observed, resulting in the Alaska Board of Game's decision to close the hunting season. When the first Togiak Refuge Plan was written in 1985, it was estimated that fewer than 35 moose lived within the Togiak Refuge (USFWS 1985). Through the 1980s, ADF&G aerial surveys indicated moose numbers along the eastern edge of the Togiak Refuge (Unit 17C) continued to increase, while just to the west in Unit 17A, densities remained low despite the availability of suitable habitat (Taylor 1990). Illegal harvest was thought to be the principal reason for the low moose population in Unit 17A (Taylor 1990; Van Daele 1993; Jemison 1994). In 1990, winter hunting in western Unit 17C was eliminated in an effort to promote moose expansion into Unit 17A. In the mid-1990s, aerial surveys confirmed large increases in the number of moose in the Togiak and Kulukak River drainages (Jemison 1994; Aderman et al. 1995). Table 3-3 shows the results of various surveys conducted in Unit 17A.

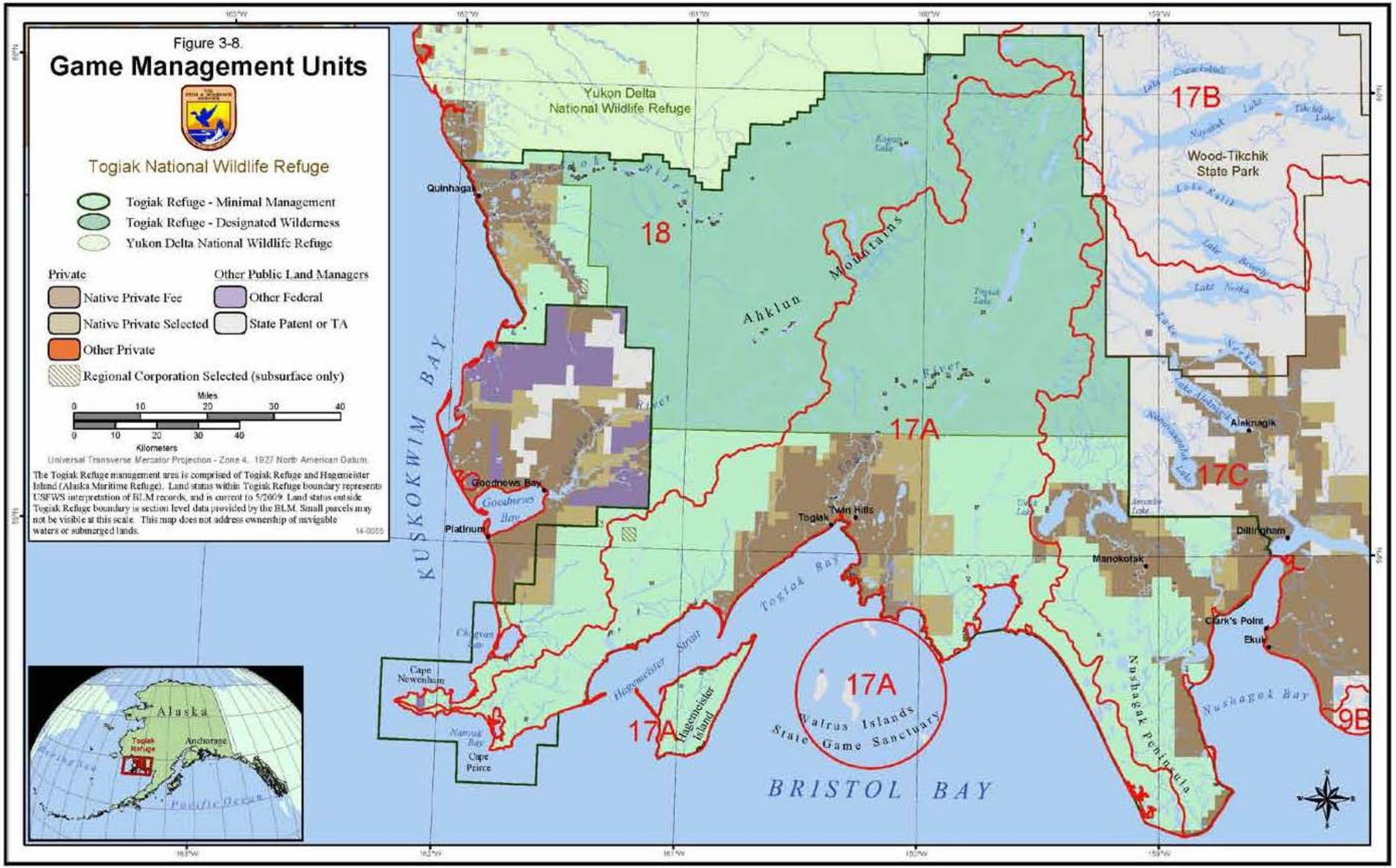


Figure 3-8. Game Management Units

Table 3-3. Number of moose observed during aerial counts within Game Management Unit 17A

Year	Number of Moose
1992	6
1994	84
1995	136*
1997	234
1998	429
1999	509
2002	652
2004	777
2005	1023

*estimate based on survey

The dramatic increase in numbers is attributed to a number of situations, including continued immigration from neighboring GMU 17C; regulation changes implemented by the Alaska Board of Game; an apparent reduction of illegal harvests as a result of poor travel conditions and changing attitudes of local residents; the availability of the expanding Mulchatna caribou herd in GMUs 17 and 18 for subsistence: and good productivity and survival of GMU 17A moose due to mild winters, few predators, and pristine habitat (Aderman et al. 1998; Aderman et al. 1999; Aderman et al. 2000).

In the fall of 1997, hunting was reestablished in GMU 17A, and hunters reported harvesting 15 moose. Fall hunting has continued, and hunt reports indicate 7 to 10 moose have been harvested annually. Interviews with residents of Togiak, Twin Hills, and Manokotak indicate the combined total harvest (which included moose taken from within and outside the Togiak Refuge) from these three communities was approximately 106 moose during the 1999–2000 hunting season (Coiley-Kenner et al. 2003). A winter hunt (as many as 14 days during the period December 1–January 31) was established for 2002–2003. Unfortunately, mild temperatures and lack of adequate snow cover precluded opening the hunt.

Until the late 1990s, moose were virtually absent in the western half of the Togiak Refuge (GMU 18), although suitable habitat occurs in all river drainages. The population began growing, primarily in the Goodnews River watershed, in the early 2000s (Table 3-4), and is expected to reach a harvestable level by approximately 2008. The population growth is a function of immigration of moose from GMU 17A, and high reproduction and survival of moose on the western half of the Refuge.

Table 3-4. Number of moose observed during aerial counts within Game Management Unit 18

Year	Number of Moose
1992	0
1994	0
1995	2
1997	1
1999	4
2002	5
2004	12
2005	25
2006	64

Furbearers—Beaver, fox, wolves, coyote, river otters, mink, marten, lynx, Arctic ground squirrels, weasels, muskrats, marmots, and wolverines are all known to occur within the Refuge. Beaver cache surveys monitor trends in relative abundance and distribution of beaver food caches, but no other studies have been conducted to determine the distribution, abundance, seasonal movements, or immigration of any other furbearers on the Refuge.

Beaver cache surveys have been conducted annually beginning in 2002 for several rivers, including the Kanektok, Ongivinuck, Togiak, and Weary rivers. Survey results indicate cache densities are highly variable over time, although recent results are within the range of cache density determined by ADF&G surveys results dating back to 1975 (Collins 2002).

Bear—Brown and black bears occur within the Togiak Refuge, with black bears considered rare and brown bears considered common throughout the area. Brown bears are seasonally abundant along salmon spawning areas, particularly along tributaries of the Togiak and Kulukak rivers, and encounters between bears and people are common in these areas. To date, few surveys have been completed on brown bear population in the Togiak Refuge; consequently, the density, population trends, key habitat areas, and other aspects of the population are not well understood. In 1884, brown bears were reported to be abundant in the Togiak River drainage (Petrof 1884). An aerial survey conducted by the Service and ADF&G in 1974 reported sighting 22 brown bears and 2 black bears after more than eight hours of flight time. This survey covered all of the major drainages in what is now the Togiak Refuge. Most of the reported sightings were in the drainages around Togiak Lake and those in the vicinity of Ualik and Amanka lakes (USFWS 1974). In 2003 and 2004, Togiak Refuge conducted a population estimate of brown bears

refuge wide. Estimated population density was 40.3 bears per 1,000 square kilometers.

3.4.2.4 Marine Mammals

The Bering Sea is the third largest semi-enclosed sea in the world and has one of the most extensive continental shelves (Williams et al. 1998). The broad shelf, enhanced by nutrient upwelling and intermixing of Pacific Ocean and Bering Sea waters along the Aleutian Chain, provides extremely favorable habitat for a host of marine birds, marine mammals, and fish that are of international and domestic importance.

The Refuge's 600 miles of rocky coast and sand beaches support a diverse and abundant marine mammal population. The Cape Peirce and Cape Newenham areas are particularly rich in marine mammals, providing haulout areas for Pacific walrus, harbor seals, spotted seals, and the endangered Steller sea lion.

At least 17 marine mammal species are known to occur within or near the Refuge. This list includes gray, sei, minke beluga, goosebeak, and killer whales; Pacific white-sided dolphin; harbor and Dall's porpoises; Steller sea lion; Pacific walrus; and northern fur, harbor, spotted, ribbon, ringed, and bearded seals.

The objective of the Refuge's marine mammal inventory and monitoring program is to estimate the abundance, haulout use, and production of marine mammals on the Refuge and in northern Bristol Bay. The main tasks of this program are to estimate the number of Pacific walrus at Cape Peirce and Cape Newenham, estimate the number of harbor seals and spotted seals at Cape Peirce, estimate the number of sea lions at Cape Newenham, and document behavioral responses of marine mammals to aircraft, subsistence, and visitor use.

Pacific Walrus—Male, female, and young Pacific walrus that winter in and near Bristol Bay and Kuskokwim Bay migrate north in the spring. Some of the males remain behind, however, and haul out at Cape Peirce and Round Island or Cape Seniavin (Frost et al. 1982; Fay 1982). Cape Peirce was historically used as a haulout but was abandoned sometime during the first half of the twentieth century. Pacific walrus began re-using the haulout in 1981. Walrus haulout history is listed in Figure 3-9 and is discussed in the following text.

Walrus eat a variety of prey, ranging in size from small crustaceans to adult seals, but primarily benthic mollusks (Fay et al. 1990; Sheffield 1997). Prey density is thought to be an important determinant of walrus distribution.

For walrus, coastal haulouts appear to be important principally as places to rest between feeding forays (Frost et al. 1982). Because terrestrial haulouts are few, they may be of particular importance. Probably the most important consideration for terrestrial haulout sites is isolation from disturbance. Proximity to feeding areas, social behavior, learning, and other factors as yet unknown play a part in determining those habitats the animals will actually use.

Pacific walrus counts from 1981 through 2000 show a high degree of variability. Figure 3-9 lists the peak counts for Pacific walrus at Cape Peirce from 1983 through 2006. The Pacific walrus population has remained relatively stable during this timeframe and cannot be used to explain this variability. The issue is complicated by not understanding the dynamics between the U.S. and Russian terrestrial Pacific walrus haul-outs.

Refuge staff has monitored the numbers of walrus hauling out at Cape Peirce since 1981. Counts have been variable (Figure 3-9). The variation in walrus numbers using Cape Peirce is not a function of overall Pacific walrus population size and is hypothesized to be related to local rather than population-wide conditions.

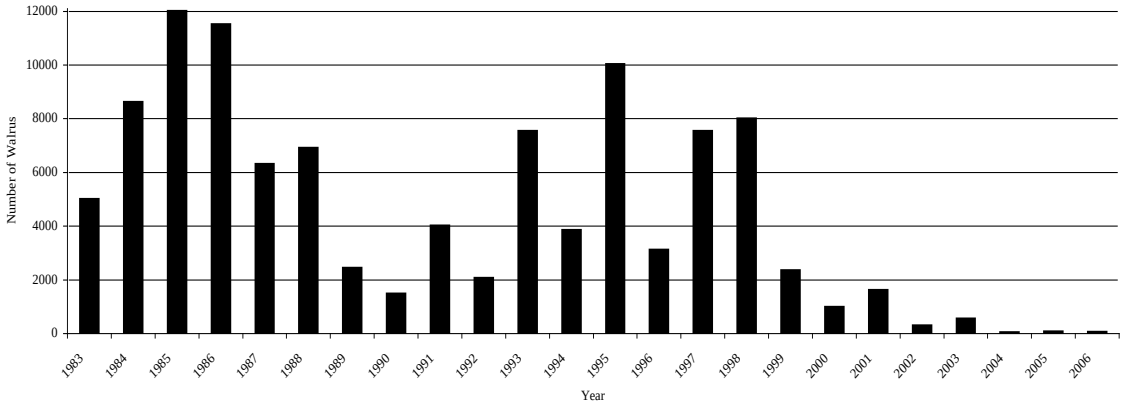


Figure 3-9. Peak Pacific walrus haulout counts at Cape Peirce, Alaska

Harbor and Spotted Seals—Harbor seals and some spotted seals haul out along the refuge coast, with the highest concentrations at Nanvak Bay (Cape Peirce) and Hagemeister Island. Nanvak Bay is the northernmost pupping area and the largest haulout for harbor seals in northern Bristol Bay (Frost et al. 1982). The number of seals hauling out in Nanvak Bay declined from the mid-1970s through 1990 (Jemison 1991). However, the numbers of seals at Nanvak Bay has remained relatively stable since 1990.

Causes for the decline in harbor seal numbers (in Alaska) have not been identified (Lewis 1995). Factors that may be affecting seal numbers include direct and indirect interactions with fisheries,

subsistence harvests, disease, predation, pollutants, and disturbance.

Coastal haulouts appear to be important for harbor seals principally as a place to rest, give birth, care for and nurture their young, and molt on land (Frost et al. 1982). There are indications that hauling out may be particularly important during the molt. Ready access to water, isolation from disturbance, protection from wind and wave action, and access to food sources have all been mentioned as prerequisites for haulout selection (Burns 1984).

Steller Sea Lions—Cape Newenham and Round Island support the two largest Steller sea lion haulouts in northern Bristol Bay. ADF&G has monitored sea lion populations at Round Island since the late-1970s. The Service began monitoring sea lions at Cape Newenham in 1990 and continued through 1993. From the late 1950s to the mid-1980s, sea lion numbers declined in Alaska (Hoover 1988), and Steller sea lion abundance has declined by more than 80 percent in the past 30 years in the southeastern Bering Sea (Williams, et al. 1998). On April 10, 1990, the Steller seal lion was designated as endangered in the population west of 144 degrees west longitude, which includes the coastline of the Refuge.

In 1991, Cape Newenham was identified as a Steller sea lion haulout. Steller sea lions usually begin using the Togiak Refuge haulout in April and are seen feeding along the coast during the herring spawning migration, which usually occurs in May. Pupping at this haulout is rare. They normally feed heavily on herring in Chagvan Bay during May and June. Average annual sea lion counts have ranged from 166 to 300 at Cape Newenham.

3.5 Human Environment

3.5.1 History

The Cape Newenham and Togiak region of southwestern Alaska has been continuously occupied for 9,000 years and possibly longer. Kusququagmiut Eskimos occupied the area from Chagvan Bay north to the Kuskokwim River. The Chingigumiut Eskimos were a subgroup of the Kusququagmiut Eskimos who occupied the area around Cape Newenham. Tuyuyarrmiut Eskimos lived within the areas between Cape Newenham and Nushagak Bay.

At the time of the 1880 census, approximately 2,300 Eskimos lived within what is now the Togiak Refuge. Elliot (1887) wrote that the Togiak River was remarkable for the density of population along its banks. At that time, 1,926 people lived in seven villages along the river from Togiak Lake to Togiak Bay—reflecting the abundance of fish and wildlife and size of this river system.

The Tuyuyarrmiut, unlike most coastal Eskimos, did not depend entirely on marine resources. In the spring and fall, they hunted moose, caribou, and brown bear in the interior mountains and valleys. In midsummer, they returned to their villages to harvest salmon.

Kusququagmiut, who occupied the area west and north of the Tuyuyarrmiut, depended more upon the sea and spent little, if any, time hunting land animals. The Chingigumiut people living in the vicinity of Cape Newenham, for example, obtained meat, blubber, and oil from seals, beluga whales, and Pacific walrus. Pacific walrus were especially prized for their ivory, which was used in tools and for trade. Seabirds provided meat and eggs, and feathers for clothing. Salmon and trout were also important items in the Kusququagmiut diet.

As forms of transportation in the Bristol Bay and Kuskokwim Bay regions began to shift from kayaks and dog sleds toward large sea-going ships owned by fishing and trading companies, the population of the region began to congregate near the coastal bays these ships used. This, along with the widespread epidemics that led to sharp population declines, caused many village sites throughout the region to be abandoned. Today, communities in and around the Togiak Refuge include Quinhagak, Goodnews Bay, Platinum, Togiak, Twin Hills, Manokotak, Aleknagik, Dillingham, and Clark's Point.

3.5.2 Cultural Resources

The Togiak Refuge has been inhabited for at least 9,000 years and includes hundreds of important cultural sites, many of which are likely to be located in areas where public use is concentrated. This concentration makes these resources particularly vulnerable to looting and damage. Illegal digging and looting are notable concerns in this area of Alaska.

Portions of the Refuge have been surveyed for cultural sites fairly extensively but with little excavation. Almost 200 sites have been documented within the Refuge, and another 50 sites have been documented nearby. Most sites documented are associated with major river drainages, lakes, and bays. It is assumed that some sites have been destroyed because of natural soil erosion along rivers and bays.

Distribution of remains on the Refuge is not uniform. Before 4000 BCE (Before Common Era), people living in what is now the Togiak Refuge were primarily inland caribou hunters. After 4000 BCE, inland hunting continued, but people in the area also began exploiting coastal resources, particularly in the Security Cove area. Dumond (1987) states the coastal area of the Refuge has been the center of human activities for the past 2,500 years, and he expects

most sites to be found there and along the major rivers. Interior site distribution is spotty, and the sites there are more ephemeral.

Natural areas and landscape features may be culturally significant. These sites are important in maintaining the cultural traditions and beliefs of local people.

3.5.3 Local Population and Economy

3.5.3.1 Population

Table 3-5 shows the population changes in the nine principle Refuge-area communities since 1960 (Goldsmith et al. 1998; DCED 2005).

Table 3-5. Local population census data for communities within and adjacent to the Togiak Refuge

	1970	1980	1990	2000	2005
Aleknagik	128	154	185	221	241
Clark's Point	95	79	60	75	65
Dillingham	914	1,563	2,017	2,466	2,370
Manokotak	214	294	385	399	437
Quinhagak	340	412	501	555	642
Togiak	383	470	613	809	779
Platinum	55	55	64	41	38
Goodnews Bay	218	168	241	230	238
Twin Hills	67	70	66	69	71
Total	2,414	3,265	4,132	4,865	4,881

The populations of these communities are predominantly Alaska Native, with most non-Native Alaskans living in Dillingham. The commercial fishing industry draws a very large nonresident population to the region each year. Dillingham is most affected by this seasonal influx of workers. Local residents are also drawn from outlying communities to Dillingham during the commercial fishing season. Government spending has been an attractive force, serving to keep populations in the region higher than they might otherwise have been.

3.5.3.2 Economy[1]

In the 1800s, Russian American Company traders established a fur trading fort on the Nushagak River, which was soon handling more than 4,000 pelts annually from brown and black bears, wolves, wolverines, beavers, martins, mink, marmots, muskrats, river otters, ground squirrels, lynx, seals, and foxes. The trade in furs waned around World War I, although some trapping continues today.

As the fur industry declined, mining and commercial fishing grew. Several placer gold mines operated near the Arolik River between 1900 and World War II. Platinum mining near Goodnews Bay began in 1926, continued until 1975, and has been intermittent since then. During the 1920s, 1930s, and into the 1940s, a number of placer mining operations were active in the Arolik, Goodnews, Eek, and Kanektok River systems, and on Trail Creek. Varying amounts of gold and platinum were recovered, with the most extensive operations within the Refuge occurring on a tributary of the Arolik River prior to establishment of the Refuge. Abandoned cabins, airstrips, tractor trails, rusting machinery, empty barrels, and tailing piles are evidence of these past operations scattered throughout the region. At present, there are approximately 20 unpatented mining claims held by two claimants on refuge lands.

For at least the past 30 years, commercial fishing and fish processing—supported by the highly productive Bristol Bay fishery—have dominated the Refuge-area economy. These activities are highly seasonal, with a very distinct peak from May through September. Government spending and tourism, built primarily around recreational fishing, are also important contributors to the local wage economy. Because most area communities are so small, the trade and service sectors are not well developed; the small villages depend on the regional center of Dillingham and on Anchorage to provide most support services and retail opportunities.

Commercial fishing and fish processing—From 1985 through 1996, the annual value of salmon harvested in the Bristol Bay-area commercial fishery fluctuated around $200 million (in 1997 dollars). A poor salmon harvest in 1997 marked the beginning of a reduction in the value of the fishery. Table 3-6 shows annual harvest and value of the Bristol Bay salmon fishery for 1985 through 2007.

---

[1]Except where otherwise noted, this section is derived from a report commissioned by the U.S. Fish and Wildlife Service: Goldsmith, O.S., A. Hill, T. Hull, M. Markowski, and R. Unsworth. 1998. *Economic Assessment of Bristol Bay Area Refuges: Alaska Peninsula/Becharof, Izembek, Togiak*. Institute of Social and Economic Research, University of Alaska Anchorage, and Industrial Economics Incorporated. Anchorage, Alaska.

The commercial fishery is a limited entry fishery, and many permits are owned by nonresidents who come to the state for only a few weeks in the summer. Moreover, many of the permits held by Alaskans belong to fishermen who live outside the region. Employment in fish processing is also dominated by workers from outside the region and outside the state; in a given year, usually less than 20 percent of processing employees are Alaska residents. The short fishing season, combined with the large nonresident share of permit holders, crew, and processing workers, means much of the economic impact of this harvest falls elsewhere, as dollars earned in the region are spent outside the region or outside the state.

Government—Government employment at all levels accounts for about one in three jobs in this part of Alaska. Most of these are local government jobs. The Federal and state government jobs tend to be concentrated in the regional service centers of Bethel and Dillingham. Most local government employment is with municipal governments or school districts. All of the financial support for rural schools, and much of the financial support for local municipal governments, comes from state government because local tax bases are small in most of the region's communities. Many government positions are relatively high-paying, year-round jobs, which provide some stability to the regional economy that otherwise depends heavily on commercial fishing.

Table 3-6. Annual Value of Bristol Bay Salmon Harvest

Year	Harvest (million of fish)	Value (million)	Value in $1997 (million)
1985	25.005	$120.731	$165.235
1986	17.680	$141.063	$189.480
1987	17.739	$135.667	$181.558
1988	16.662	$176.858	$235.811
1989	30.274	$177.787	$230.471
1990	35.215	$202.259	$246.940
1991	27.259	$106.384	$124.229
1992	33.560	$193.745	$218.832
1993	41.460	$154.411	$169.128
1994	36.530	$193.550	$207.600
1995	45.520	$190.810	$198.915
1996	30.740	$140.870	$142.943
1997	12.740	$66.400	$66.400
1998	10.720	$71.230	---
1999	26.390	$115.070	---
2000	21.120	$81.080	---
2001	15.060	$41.000	---
2002	11.200	$32.393	---
2003	15.790	$48.330	---
2004	27.286	$76.986	---
2005	26.077	$96,515	---
2006	31,069	$111,715	---
2007	31,830	$117,994	---

Source: Goldsmith et al. 1998 and Alaska Department of Fish and Game Division of Commercial Fisheries website: http://www.cf.adfg.state.ak.us/geninfo/finfish/salmon /salmhome.php accessed on August, 9 2005

State and Federal government grants and assistance also support a large number of jobs in social service delivery in Togiak Refuge area communities, particularly in the health care and day care fields. Federally supported rural housing authorities provide money for construction of housing.

State and Federal agencies provide construction grants through a variety of programs for economic development projects, water and sewer construction, transportation facilities, and other capital projects. These grants provide construction employment throughout the region.

Finally, Federal and state transfers to individuals are important components of household income in most of the region. These transfers include the Alaska Permanent Fund dividend, Social Security payments, unemployment insurance, and welfare benefits.

Tourism— Tourism is centered on the recreational fishery, which draws people from throughout the world to the lakes and rivers that flow into Bristol Bay. Wood Tikchik-State Park, to the east of Togiak Refuge, has a number of exclusive fishing lodges catering to catch-and-release anglers. Guests from these lodges are able to reach many sites by float plane and raft during their visits. As with the commercial fishery, the tourist season is short, so economic activity related to tourism tends to be conducted to a large degree by nonresidents. As a result, even though tourists may spend a lot of money to get to the Bristol Bay area and spend a lot more money while in the region, little of that money stays in the region. It escapes because most of the jobs in the tourism industry are taken by nonresidents and because the seasonality of demand makes it difficult for other economic activity within a community to build up around a tourist base.

Economic Significance of Togiak Refuge— Economic significance is a measure of the employment (in terms of average annual jobs) and household income generated by activities associated with the Refuge. These activities include refuge management, public recreation use (fishing, hunting, and non-consumptive activities), commercial fishing, and subsistence uses. In 1997, the total economic significance of Togiak Refuge was estimated at 560 average annual jobs and $20.4 million (Table 3-7).

Estimating the economic significance of the Refuge is difficult in part due to attribution challenges. For example, salmon caught in Bristol Bay may rely on spawning and rearing habitat within Togiak Refuge for part of their life cycle, but there is no single, "correct" method for determining what portion of the income generated by commercial fishing in Bristol Bay is attributable to Togiak Refuge. Likewise, travel and equipment expenditures made by recreational visitors and subsistence users are not wholly attributable to Togiak Refuge, so there is no single "correct" attribution.

For the purposes of this assessment, the Institute of Social and Economic Research at the University of Alaska Anchorage (ISER) reviewed the distribution of the Bristol Bay salmon harvest by river system. Based on that review, only the portion of the harvest associated with Togiak Refuge river systems was attributed to the Refuge. The estimates of economic significance presented here assume that if a fish is hatched in a Togiak Refuge stream, the Refuge receives credit for the entire economic impact generated by the harvest and processing of that fish. Harvest data used for calculations are from 1995, a year in which the value of the harvest

was better than the average value during the 1990s. Since 1997, the annual value of the harvest has been less than half what it was in 1995. Due to the highly variable nature of the commercial salmon fishing and processing industry, estimates of economic significance presented here (Table 3-7) should be viewed in context as a "snapshot" in time.

For recreational activities, economic significance is determined from visitation and expenditure data for four types of use: fishing, big game hunting, waterfowl hunting, and non-consumptive use (e.g., photography, kayaking). Visitation data used to calculate economic impacts are from mid-1990s records kept by Togiak Refuge and the Alaska Department of Fish and Game. Expenditure data are estimated for 1997, based on spending patterns identified in several studies conducted in the late 1980s and early 1990s.

The economic significance of subsistence activities is based solely on subsistence-related expenditures for equipment and fuel made by residents of communities within and adjacent to Togiak Refuge. Annual subsistence-related spending in these communities is estimated at $1.7 million in 1997 dollars.

The economic significance of refuge management activities is based on the three-year average annual operating budget for Togiak Refuge, which was estimated to be $1,327,000 (in 1997 dollars). Only the costs of normal operations and maintenance are included in this figure; large capital expenditures and expenditures made at the regional and national levels are not included.

Table 3-7. Estimated economic significance of activities associated with Togiak Refuge in 1997

Activity	Income ($1997)	Employment (annual average jobs)
Commercial Fishing	$14,840,000	333
Recreational Activities		
Fishing	$3,570,000	155
Big Game Hunting	$300,000	1
Non-Consumptive Use	$300,000	1
Refuge Management	$1,050,000	32
Subsistence	$880,000	38
TOTAL	**$20,940,000**	**560**

3.5.4 Access and Transportation

Mining Activities 1900–1980—By the early 1920s, mineral prospecting had occurred throughout the Bristol Bay and Kuskokwim Bay regions. As early as 1926, drilling activities were

occurring on claims along Kow Kow Creek (a tributary of the Arolik River), and shoveling operations were underway along Wattamus, Olympic, and Bear creeks (tributaries of the Goodnews River) (Holzheimer 1926).

In the summer of 1937, barges had delivered materials to construct an eight cubic foot dredge south of Goodnews Bay to work claims for the Goodnews Bay Mining Company. Freight for the company was being hauled by Caterpillar tractor from Platinum, along the coast to the mouth of the Salmon River, and then upriver to the mining camp. The Clara Creek Mining Company was operating a dragline in the area at that time, and the company was in the process of taking a drill inland from the north side of Goodnews Bay to Snow Gulch, a tributary of the Arolik River.

By November of 1937, the Goodnews Bay Mining Company had operated the dredge 40 days and was operating two draglines on Platinum Creek. At this time, a Caterpillar road led from Platinum around the northeast end of Red Mountain to the Clara Creek Mining Company camp. The road was being reconstructed into a permanent road by the Alaska Road Commission and was planned to reach the Goodnews Bay Mining Company camp at Squirrel Creek two miles further south. On a mining claim two miles up Fox creek from its junction with Slate Creek, an airplane drill was used in 1936 and a "small hydraulic outfit" was used the next year (USGS 1937). After hauling a drill overland from Goodnews Bay the previous year, the Goodnews Bay Mining Company reported considerable drilling along Snow Gulch. The Clendon Company also used an airplane drill to test claims along Trail, Faro, Deer, and Kow Kow creeks. (USGS 1937). This 1937 USGS report contains several photos of an open crawler tractor towing a fully erected wall tent on skids across open tundra.

In 1939, mining in the region was probably at its most active stage. Operations were located at Rainey Creek (a tributary of the Eek River), Trail Creek (a tributary of the Izavieknik River), Wattamus Creek (a tributary of the Goodnews River), Butte Creek, Kow Kow Creek, Peluck Creek, Snow Gulch, and Sulutak Creek. Placer mining also occurred along headwater streams of Kagati Lake, and an abandoned crawler type tractor remains in this area.

By 1939, the improved road had been constructed from Platinum southward to Clara and Squirrel creeks, and supplies were being hauled by truck instead of Caterpillar (Roehm 1937). Past and present day Clara Creek and Goodnews Bay Mining Company activities south of Platinum are outside the Togiak Refuge boundary.

Operations in the Arolik River drainage and overland transportation of equipment to this area took place on what are now State of Alaska lands, Bureau of Land Management lands, and

private lands within the Togiak Refuge boundary. However, if the 1939 planned bulldozing activity along Keno and Sulutak creeks (probably Flat Creek on USGS maps) did occur, these motorized activities would have occurred on selected lands within the Refuge and possibly Refuge lands further upstream as well. A cabin site noted on USGS maps near the confluence of Keno and Flat Creeks is located on selected lands and is within two miles of Refuge administered lands.

Resident Subsistence Activities 1940–1986. On January 1, 1960, 50 CFR 26.14 was revised to state "Travel in or use of vehicles is prohibited in wildlife refuge areas except on public highways and on roads, campgrounds and parking areas designated and posted for travel and public use by the officer in charge." On January 20, 1969, the Secretary of the Interior issued Public Land Order 4583, withdrawing approximately 265,000 acres from the public domain to establish Cape Newenham National Wildlife Refuge. At this time, there were no public roads, highways, campgrounds, or parking areas designated within the Cape Newenham Refuge. Therefore, the use of motorized vehicles within the Cape Newenham Refuge was prohibited under 50 CFR 26.14.

Annual narratives for the Cape Newenham National Wildlife Refuge completed in 1969, 1970, and 1971 mention the use of snowmachines and airplanes within the Refuge. No other annual narratives were written for the Cape Newenham Refuge.

Sometime around 1970, three-wheeled all-terrain vehicles became available to the general public. Their use did not become widespread in Alaska until the 1980s, but Bristol Bay area villages—which were relatively wealthy compared to many interior Alaska villages—were among the first places to adopt them (Sinnott 1990).

The 1974 Final Environmental Impact Statement (EIS) for the proposed Togiak Refuge is the most comprehensive pre-1980 documentation of natural resources, economies, subsistence, and other uses within the present day Togiak Refuge. The EIS suggests that snowmachines and motorboats were integral to subsistence activities at the time: "Cash expenditures that are now necessary in order to successfully compete for subsistence resources include guns, shells, nets, snowmachines, boats and motors, gas and oil and maintenance costs" (Alaska Planning Group 1974). Other portions of the EIS mention off-road vehicles. The "Description of the Environment" chapter describes transportation in the proposal area as follows: "Aircraft provide the primary means of transportation to the villages; other travel is by boat, dog teams, snowmachines and other off-road vehicles" (page 26). The impact discussion of the proposed action on page 81 states, "Ground transportation routes in the Togiak region are presently limited to sled trails and winter tractor haul trails… use of trails and

snowmobiles is expected to continue" (Alaska Planning Group 1974). The motorized vehicles mentioned in this document include boats, airplanes, snowmachines, and tractors. It is assumed that the tractors and tractor trails mentioned were associated with the mining activities described previously. There is no mention of tractors being used for subsistence or recreational purposes.

The 1981 Togiak Refuge Annual Narrative mentions the use of three-wheelers within the Togiak Refuge boundary on coastal beaches, uplands, and during winter months. No specific locations or uses are described (USFWS 1982).

In 1981, DOWL engineers and others working under contract for the Alaska Department of Community and Regional Affairs prepared village profiles for each Bristol Bay community, including: Togiak, Twin Hills, Manokotak, Dillingham, and Aleknagik (Alaska Department of Community and Regional Affairs 1982). These reports indicate three-wheeled ATVs were widely used in most Bristol Bay communities, and were primarily used only on roads within the communities, while boats, airplanes, snowmachines, and dog teams were used for travel between communities.

Profiles for Twin Hills and Manokotak indicate that "Three-wheel all-terrain vehicles (ATVs) are the primary method of motorized transportation within the village." It was noted that virtually every household in Aleknagik had a snowmachine, a three-wheel ATV, and/or a trail bike. While no specific uses of three-wheel ATVs were noted in Togiak, a photograph in the village profile shows two three-wheel ATVs and a Jeep in front of the Togiak Village Co-op. The authors were specific in their discussion of transportation modes and appear to have made a distinction between ATV use within the villages and ATV use outside the village. Outside Togiak Refuge at New Stuyahok, for example, it was noted: "Skiffs are used to some extent for transportation to other villages, and during the frozen winter season snow-gos and 3-wheel all-terrain-vehicles are used extensively" (Alaska Department of Community and Regional Affairs 1982).

In the summer of 1982, 60 residents of Aniak, Sleetmute, Crooked Creek, and Chuthbaluk were interviewed, in part to delineate traditional subsistence use areas. Respondents indicated harvesting subsistence resources as far south as Aniak Lake, which lies in the mountains north of what is now Togiak Refuge. They also reported using 16 to 20 foot aluminum or wood boats powered by 15 to 35 horsepower outboard motors, some of which were equipped with jet units. In winter, travel was by dog team or snowmachine. Airplanes were reported to be rarely used for harvesting locally available resources (Charnley 1982).

A detailed report prepared by Robert Wolfe and others (1984) describes the 1982–1983 subsistence activities for residents of Quinhagak, Goodnews Bay, Platinum, and Togiak. At this time, three-wheeled ATVs were common, and four-wheeled ATVs began arriving in Togiak during the spring of 1983. Quinhagak residents were using three wheelers with trailers to haul drinking water. Wolfe and others (1984) noted that stores in Quinhagak, Platinum, and Togiak sold three wheelers in 1982. Togiak Natives Ltd. acquired a Suzuki franchise prior to 1983 and had sold 15 four wheelers by the summer of 1983.

From May 3 through June 1 of 1984, Togiak Refuge staff documented waterfowl numbers and subsistence hunting at Chagvan Bay. During their stay at Chagvan Bay, the staff observed 16 hunting groups. Five groups used boats, the other 11 groups used two-, three-, and four-wheeled ATVs, including one hunter who flew from Togiak to Platinum before riding to Chagvan Bay (Pogson et. al. 1984). A map included in the 1984 report shows the use of these ATVs occurred along beaches of the north spit of Chagvan Bay (not on refuge lands).

The 1986 Comprehensive Conservation Plan and Final Environmental Impact Statement for Togiak Refuge states: "Goodnews Bay, Quinhagak, and Platinum residents all travel by skiffs or 3-wheeler to hunt geese in spring at Chagvan Bay" (USFWS 1986). Another section of the document reads: "3-wheelers are commonly used in and around all of the villages, on adjacent local roads outside of the refuge, and on coastal beaches." The plan also states: "Access to refuge lands by traditional means will be permitted for subsistence purposes in accordance with Section 811 of ANILCA. Traditional means, as defined in Service regulations (50 CFR 36), include snowmachines and boats (excluding air boats) on Togiak Refuge." The consistent message from this collection of early 1980s subsistence reports and from Service documents is that three- and four-wheeled ATVs were common in villages and along certain coastal areas, but they were not used for subsistence on refuge lands.

Two documents from the second half of the 1980s indicate that ATVs were occasionally used in upland areas during periods of poor snow cover. Fall and others (1986) reported that of 153 Dillingham households surveyed, 28 percent had all-terrain vehicles. Dillingham residents who were interviewed reported using ATVs to access set net sites along Snag Point, and trappers who were interviewed in 1984 reported using snowmachines, although ATVs were sometimes used during periods of poor snow cover. The local trapping area defined for Dillingham residents who were interviewed included the Nushagak Peninsula. Schichnes and Chythlook (1988) reported that in 1986, travel within the Igushik fish camp was most frequently by all-terrain vehicle, which was also

essential to the commercial fishing operation. During interviews, Manokotak residents stated the most common method of transportation for trapping was snowmachine, but all-terrain vehicles were also used during periods of poor snow cover.

Contemporary Refuge Access—Access to the Refuge today is primarily by plane, boat, or snowmachine. Most visitors fly from Anchorage to Dillingham or Bethel. From there, visitors hire an air taxi to either take them directly into the Refuge by landing on one of the rivers or lakes or to one of the smaller communities. From there, visitors can use a motorboat to go upriver into the Refuge. Other visitors who stay at lodges outside the Refuge are taken by float plane to these same rivers and lakes.

Most people who live within Togiak Refuge use motorboats, snowmachines, or personal aircraft to access various parts of the Refuge, but they occasionally charter an air taxi to take them to more inaccessible locations. During winter months, local residents are able to travel over much greater areas of the Togiak Refuge by snowmachines. Hagemeister Island is rarely used by recreational visitors and infrequently visited by local residents.

Access to the Refuge is often influenced by weather. Wind, fog, water levels, and snow or ice conditions dictate where and when people are able to travel within the Refuge. Mountainous terrain confines travel to the wide U-shaped glacial valleys and coastal plains. Travel by foot is difficult due to thick alder and willow stands along rivers, and tundra and wetlands throughout the river valleys and coastal plains. There are a few well-known winter trails that can be used to travel across the entire Refuge.

There are no roads on lands administered by the Refuge. The majority of all public use during the summer months occurs by boat along the Kanektok, Goodnews, and Togiak rivers and their major tributaries. The lower reaches of the Kanektok and Togiak rivers are within the boundary of the Togiak Refuge, but the uplands along these reaches are privately owned by Alaska Native corporations and individuals, and the lands below the ordinary high water mark of navigable waters are owned by the State of Alaska. Use of these river sections is predominantly by motorboats for subsistence activities and recreational fishing. The Togiak Refuge manages the non-navigable upper reaches of these rivers, which also lie within the Federally designated Togiak Wilderness area. Several private inholdings are located along the Wilderness portion of these rivers. Use of these river sections within the Wilderness area is predominantly by guided motorized groups or rafting parties in the Kanektok, Goodnews, and Togiak river drainages. The upper Togiak River is primarily accessed by motorboat for subsistence and guided recreational use because of this river's low gradient and deeper water.

3.5.5 Subsistence

In 1980, the U.S. Congress passed the Alaska National Interest Lands Conservation Act (ANILCA), which established Togiak Refuge, among other conservation system units. One of the purposes of the act, and of the Refuge, is to provide the opportunity for rural residents engaged in a subsistence way of life to continue to do so (ANILCA sec. 101(c)). Subsistence is therefore regarded as a way of life rather than just an activity. The meanings of subsistence are based on family traditions, religion, relationships with particular places, and a preference for natural foods.

Several communities rely on the resources of the Refuge for subsistence purposes. Manokotak, Togiak, Twin Hills, Goodnews Bay, Platinum, Quinhagak, Dillingham, Aleknagik, and Clark's Point are all either within, or proximate to, the Refuge. The primary subsistence use areas within the Refuge are the Kanektok, Goodnews, Osviak, Matogak, Igushik, and Togiak rivers.

A wide variety of subsistence activities occur year round on or near the Refuge, and other activities last a short time, depending upon the resource. In late winter, spring, and fall, hunting for seals, Pacific walrus, beluga whale, and waterfowl is common. Fishing for herring, smelt, and char; gathering herring roe deposited on the kelp leaves; and collecting gull and murre eggs are also typical in late spring. As spring progresses and changes to summer, salmon fishing is in full swing, starting with chinook, sockeye, and chum, and then progressing to pink and coho salmon in late summer. Caribou and moose hunting, berry picking, firewood-gathering, and the gathering of other plants are primarily fall activities. As fall progresses, Dolly Varden, lake trout, Arctic char, rainbow trout, round whitefish, Arctic grayling, and pike are targeted; as lakes begin to freeze, jigging through the ice for these fish is common. Animals hunted include ptarmigan, ground squirrel, and brown bear. With winter comes trapping. Fox, mink, wolf, beaver, otter, wolverine, and lynx are the major species trapped. Several areas also have winter hunting seasons for moose and caribou.

Area residents use a variety of plants for food, medicines, and firewood. As an example, approximately 80 percent of households in Togiak, Twin Hills, and Manokotak are each estimated to harvest 22–31 gallons of wild berries annually. Over 50 percent of households in these three communities cut a combined total of roughly 632 cords of wood annually for smoking fish and other meat, home heating, and other household uses (Coiley-Kenner et al. 2003). Much of the wood cutting probably occurs on private lands near the communities.

Salmon, non-salmon fish species, large land mammals such as moose and caribou, and wild plants comprise 80–90 percent of all

subsistence resources harvested (on a usable weight basis) by residents of many communities within and adjacent to Togiak Refuge. The remaining 10 percent is mainly comprised of small land mammals, marine mammals, various bird eggs and bird species, and marine invertebrates (Coiley-Kenner et al. 2003).

Wolfe et al. (1984) reported that traditional rights to salmon fishing areas are influenced by customary law, and that communities view certain areas as their traditional territories. Drift and seine fishing areas are viewed as common property; a first-come basis of use appears to prevail. However, set net areas and salmon fish camps tend to be recognized as "traditional use areas of particular kinship groups or clusters of kinship groups." Several campsites along the Kanektok and Goodnews rivers are named after people, and even when not used for several years, these sites retain identification with the kinship group. Other members of the community may use these locations after requesting permission from the appropriate kinship group.

3.5.5.1 Kanektok River

Gill nets are the primary means of harvest used in Kuskokwim Bay (outside of the refuge boundary) and in the lower Kanektok River . Sweep seining and short set nets are used in the Kanektok River upstream of the Wilderness area boundary. Residents also use rod and reel gear for subsistence harvest of salmon (Wolfe 1987). Salmon harvested from summer commercial salmon fishing activities are also retained for subsistence use, as are Dolly Varden and rainbow trout. Residents of Quinhagak have identified 51 traditional use sites (fish camps, hunting camps, and other locations) along the Kanektok River (Wolfe 1987); 29 of these sites are located upstream of the Togiak Wilderness area boundary. Quinhagak residents reportedly travel to Kagati Lake more in winter than at any other time of the year. Kwethluk residents periodically visit Kagati Lake in fall for hunting and squirrel trapping and also during winter for trapping and hunting furbearers (Wolfe et al. 1984; Coffing 1991).

3.5.5.2 Goodnews River

Most subsistence fishing for char, whitefish, Arctic grayling, and rainbow trout in the Goodnews River occurs within the lower 10 to 15 miles of the river, which is outside of the Refuge boundary (Wolfe et al. 1984; Wolfe 1987). From late May through early July, chinook, chum, sockeye, and pink salmon are taken with gill nets along the shore of Goodnews Bay. Salmon are also harvested a short distance up the Goodnews River with drift, set, or seine nets. Most salmon are taken with subsistence nets in Goodnews Bay before commercial season begins (Wolfe 1987). Small quantities are taken throughout the summer from commercial nets in the ocean or the river (Wolfe 1987). Trips are made upriver in summer to gather firewood, hunt beaver and birds, and harvest freshwater fish.

In late summer, coho salmon are harvested in the river, and berries are gathered along the shores. Day trips are also made upriver to collect firewood and to harvest Arctic ground squirrel and waterfowl. Some hunters make longer trips far upriver for moose. After the river freezes, trips are made to gather firewood and to hunt small game and the occasional moose. Trapping occurs throughout the area. Jigging through the ice for char, round whitefish, Arctic grayling, and rainbow trout occurs throughout the winter until breakup (Wolfe et al. 1984). Subsistence use maps that include the community of Platinum suggest a harvest pattern similar to that of Goodnews Bay, but subsistence fishing sites have not been mapped specifically for the Platinum community.

3.5.5.3 Osviak and Matogak Rivers/Hagemeister Island

Much of the property surrounding the mouths of the Osviak and Matogak rivers is privately owned. Subsistence use is concentrated on the lower stretches of these rivers, particularly the Osviak, where several subsistence and commercial fishing cabins are located. Few data exist on the extent and intensity of use, but traditional sites are probably used primarily for fish camps during spring, summer, and fall. Of Togiak households interviewed, 23 percent reported using this area for freshwater fishing (BBNA and ADF&G 1996). Togiak residents use this area to harvest a small number of Dolly Varden during the summer and occasionally smelt and rainbow trout (BBNA and ADF&G 1996). Other associated subsistence activities occur opportunistically.

Hagemeister Island is only used occasionally for subsistence purposes. Distance and swift tidal currents of Hagemeister Straight deter frequent access by small skiff from Togiak. Other subsistence access is by airplane or larger boats, particularly during the herring fishery.

3.5.5.4 Togiak River

The Togiak is an important river system for residents of Togiak and Twin Hills, both located near the mouth of the river on Togiak Bay. Residents of both communities use the river drainage for subsistence activities such as fishing, hunting, berry picking, trapping, and firewood gathering (Wolfe et al. 1984). The lower river section, below the Wilderness area boundary, receives most of the subsistence net fishing for salmon (Wolfe 1987) and ice fishing in the winter for char.

Unlike other rivers in the Togiak Refuge, the entire Togiak River is accessible by motorboat as long as it is ice free. For this reason, there are a number of important subsistence sites located within the Togiak Wilderness (Wolfe 1987). The tributaries of the Togiak River are valued as important reserves for fish and fish habitat.

Wolfe (1989b) states that subsistence salmon and char fishing occurs primarily in the Togiak River, with some fishing also occurring in marine waters of the bay. Research conducted in 1987 documented subsistence net fishing at 95 sites along Togiak River and Togiak Lake. The greatest concentration of sites was along the lower 12 miles of the river (well below the Togiak Wilderness boundary) and averaged 4.6 sites per river mile. Early in the salmon season, day trips are made by elders accompanied by younger children to harvest chinook, sockeye, pink, and chum salmon. Adult males harvest coho and char from mid-August through mid-October.

Residents of Togiak and Twin Hills utilize the upper Togiak River for subsistence purposes. The 1987 study by the ADF&G Subsistence Division (Wolfe 1989a) documented 24 subsistence salmon net fishing sites in the 41 miles of the upper river in the Togiak Wilderness. Nine sites were documented along the shores of Togiak Lake. Refuge staff have identified 18 "fishing holes" on the upper Togiak River that correspond very closely with the 24 subsistence net sites. Some subsistence set net sites are within a very short distance of each other, thus potential still exists for some level of displacement.

Based on a 1996 report by Bristol Bay Native Association (BBNA) and ADF&G, more than 26 percent of Togiak households reported harvesting freshwater fish from the Pungokepuk Creek (a tributary of the Togiak River) area from 1985 through 1994. Harvests included pike, Dolly Varden, Arctic grayling, whitefish, and rainbow trout (BBNA and ADF&G 1996). More than 50 percent of Togiak households responding also reported fishing Togiak Lake and the upper Togiak and Ongivinuck areas during the same 10-year period. Subsistence harvests of salmon (other than spawned-out sockeye salmon harvested at Togiak Lake) are fewer in the upper river than in the lower part of the Togiak River, where fresher fish can be found. Some backwaters are seined for sockeye, chum, and coho salmon. Most of the Togiak River is fished with seines, drift nets, or set nets for chinook, sockeye, chum, and coho salmon. During late August and September, many parties from Togiak and Twin Hills travel to Togiak Lake to harvest freshwater fish and spawned-out sockeye salmon and to hunt furbearers, caribou, and brown bear (Wolfe et al. 1984).

3.5.6 Recreation

3.5.6.1 Overview

The Togiak Refuge provides opportunities for all of the "Big Six" wildlife-dependent recreational activities: hunting and fishing, wildlife observation and photography, and education and interpretation. Refuge visitors can observe, photograph, and learn about a variety of animals, including walrus, seals, seabirds, and

caribou; and they can hunt for various waterfowl and upland birds, and big game. Fishing, however, attracts the vast majority of visitors.

The river systems within Togiak Refuge and nearby Wood-Tikchik State Park attract anglers from around the world. The Kanektok, Goodnews, and Togiak River systems are the most popular fishing areas on the Refuge. The headwaters and upper stretches of these rivers are located within the remote Togiak Wilderness. Many visitors to Togiak Refuge are interested in multiple satisfactions from their trips in addition to good fishing (Whittaker 1996). Many of these satisfactions are associated with wilderness traits such as being in a natural place, viewing scenery and wildlife, and opportunities for solitude while boating, fishing, and camping (Whittaker 1996). Fishing trips on the Refuge typically involve several nights of tent camping, although fly-in, day-use opportunities are available as well. Commercial support services, including guiding, outfitting, and air taxis are well-established on the Refuge. The majority of recreational visitors rely on air taxis for access, and about half rely on guides.

Recreational fishing use on the Refuge increased substantially during the 1980s, and along with that increase came concerns about litter, levels of motorboat use, loss of wilderness values, and other issues. The Togiak Refuge Public Use Management Plan (PUMP), completed in 1991, was developed to address these issues. The PUMP restricts the number of permits available for guided fishing operations and calls for regulating the timing of guided trip starts, party sizes, and camping in the most popular fishing areas. The PUMP does not restrict the amount of unguided use, but it does indicate that long-term management should be directed toward a 50/50 allocation of guided and unguided use. In most areas of the Refuge, unguided fishing has increased as a proportion of all fishing so that, in a typical year, it accounts for at least 50 percent of total use days.

Although it only accounts for a fraction of the use days that fishing does, big game hunting is an increasingly popular activity on the Refuge since the State of Alaska made additional brown bear and caribou hunts available in 2002. Caribou hunting in the vicinity of Kagati Lake, which is also the launch point for popular Kanektok River float and fishing trips, increased substantially between 2002 and 2005. It now appears to be in decline, however, due to a shift in the number and location of caribou. It is likely that hunting use in this area will continue to cycle up and down in accordance with changes in caribou availability.

Big game hunting guide permits are allocated among exclusive guide use areas on the Refuge. These permits are awarded every 5 to 10 years through a prospectus system that is managed at the regional (statewide) level.

Another refuge activity that has increased in popularity is wildlife observation at Cape Peirce. Demand for this opportunity increased sharply beginning in 2000, mirroring an increase in the number of walrus hauled out at the site and the increased demand for wildlife viewing across Alaska and the nation. Since about 2005, visitation has dropped considerably as a result of much smaller numbers of walrus hauling out at the site and the reduction or discontinuance of commercial eco tourism operations by two companies that contributed to the bulk of the visitation.

Guided use, which is limited by permit availability and permit stipulations, has fluctuated around the same level for most of that time. In contrast, unguided use, almost all related to fishing, has increased well over 100 percent from 1,170 use days in 1990 to 4,507 use days in 2007. Figure 3-10 shows annual guided and unguided fishing use days from 1990 through 2007.

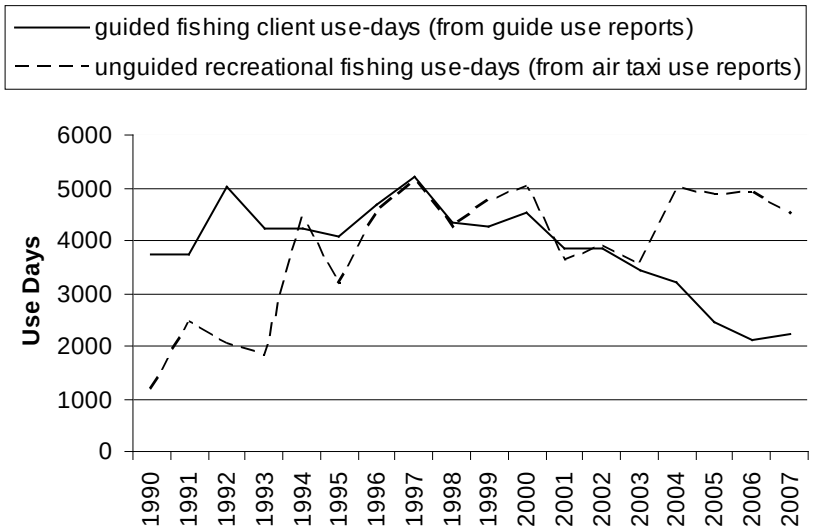


Figure 3-10 Togiak Refuge recreational fishing 1990–2007

3.5.6.2 Kanektok River

The Kanektok River has become known around the world as a premier recreational salmon and trout fishing destination. Few articles or books written about Alaska fly fishing fail to mention this remote 90-mile wilderness river. Like most other major rivers in southwestern Alaska, opportunities to fish Pacific salmon species and several resident fish species, spectacular scenery, and a variety of wildlife combine to make this river a popular attraction for recreational anglers. Fishing use on the Kanektok has been variable from year to year, but the river is consistently the most popular destination on Togiak Refuge.

Guided Recreation

Within the Togiak Wilderness, guided float operators are permitted to start at Kagati Lake every other day during the summer months. Specific float start dates for each permit are awarded through a competitive prospectus bid system. The annual average is about 20 guided float starts for the peak season, June through August. Annual guided float use has averaged close to 800 client use days from 1990 through 2007.

Guided motorized operations are also allowed within the Togiak Wilderness through a competitive prospectus bid system. All permits for the wilderness portion of the Kanektok River drainage limit the number of clients and the number of boats allowed at one time. These limits are likely a factor in the relatively consistent amount of guided use recorded within the Wilderness from 1990 to 1998 (Figure 3-11). There was a peak in guided use in 1999–2000; then, guided use stabilized in 2001–2004, and since 2004, guided use has decreased (Figure 3-11).

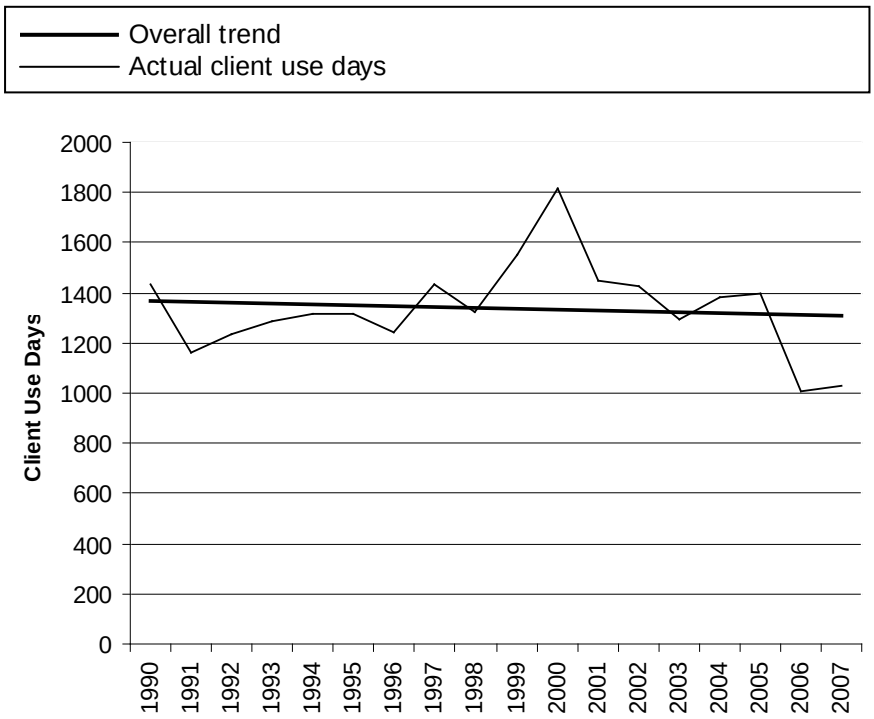


Figure 3-11. Upper Kanektok River Guided Fishing (Within Togiak Wilderness), 1990–2007

Guided motorized use within the Wilderness area has averaged 542 client use days since 1990. During peak use periods, there are typically three guided float groups on the river, using as many as 12 rafts, and five or six guided motorboat groups.

Recreational fishing opportunities along the lower Kanektok River (below the Togiak Wilderness boundary) are in high demand. Permits for guide camps along this portion of the Kanektok are not managed by the Refuge; rather, they are obtained through private land holders or through Qanirtuuq Incorporated, which is the Native village corporation in the village of Quinhagak. Observations by Togiak Refuge River Rangers and anecdotal reports from visitors indicate that use on the lower river may have increased over time, but multiple access points and limited jurisdiction make it difficult to obtain accurate assessments of the level of use by refuge visitors.

Unguided Recreation

Unguided fishing on the Kanektok River, which is not constrained by any permit requirements, has noticeably fluctuated over the last 18 years, from an average of 1,310 use days during 1990-1994 to an average of 1,900 use days during 1995-1999 to an average of 1,760 use days during 2000-2007[2]. Figure 3-12 shows an overall increasing trend for unguided use on the Kanektok River. On average, 40 unguided trips begin from the put-in at Kagati Lake each summer. In recent years, although some tapering off has occurred, an additional 6–10 unguided fall hunting trips have also begun from Kagati Lake. According to data gathered through the Refuge River Ranger program, unguided fishing now accounts for about 51 percent of recreational use along the Wilderness section of the Kanektok River. Ranger reports show that during peak fishing periods (during the chinook and coho salmon runs), there are typically 10–14 unguided recreational fishing groups along this 58-mile stretch of river at one time.

[2] These numbers, gathered from air taxi reports, represent use on both the upper (Wilderness) and lower (non-wilderness) portions of the river, so they may not be directly compared to the guided use figures, which represent upper (Wilderness) use days only.

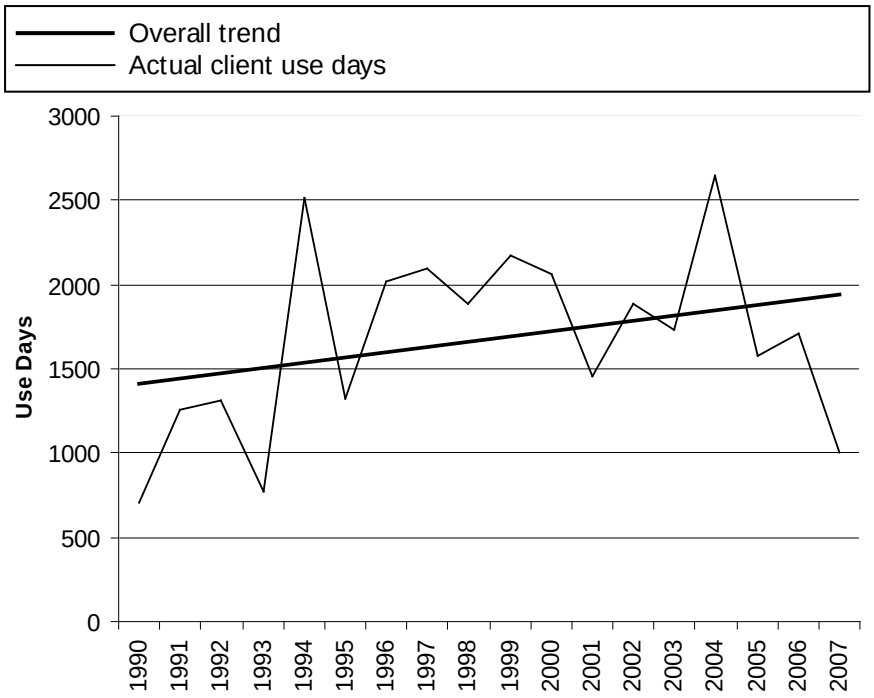


Figure 3-12. Upper and Lower Kanektok River unguided fishing, 1990–2007

3.5.6.3 Goodnews River

Most recreational fishing on the Goodnews River occurs on two major tributaries referred to as the North Fork and the Middle Fork. The North Fork receives the majority of use (guided and unguided combined). Most anglers seek opportunities to catch rainbow trout, coho salmon, and Arctic char in this river.

Unlike the lower sections of the Togiak and Kanektok rivers, the lower Goodnews River is not within the Togiak Refuge boundary. Recreational fishing pressure along the lower Goodnews River steadily increased until the late 1990s and has been variable since then. The Alaska Department of Natural Resources has primary management authority on the lower river, and its navigable channels below ordinary high water line. The Kuitsarak Native Corporation owns and manages the adjacent uplands.

Guided Recreational Fishing

Commercial guides operate both float and motorboat trips on the Goodnews River. The number of permits available for commercially guided recreational sport fishing on the Goodnews River within the refuge boundary has been limited since 1984. Visitor participation in guided fishing on the upper Goodnews River increased substantially through the 1990s, growing from about 200 client use days in 1990 to a high of over 500 use days in 2001. Overall use levels have not yet approached the maximum of 1,635 guided client use days allowed under current

management. Use days have declined slightly in recent years; there were 333 guided client use days recorded in 2007. However, Figure 3-13 shows an overall increasing trend for guided use on the Wilderness portion of the Goodnews River during the last 18 years[3].

Since 1990, motorized guided use of the Middle Fork Goodnews River and its associated summer guide camp has remained close to the maximum permitted level of 280 use days (spread over an average of 70 trips) per year. No guided float fishing is currently permitted on the Middle Fork.

Guided motorized use on the North Fork has averaged about 87 use-days (42 trips per year) since the mid-1990s. Guided float use has averaged just six trips per year during the same period, but these trips account for an average of about 72 use days per year. One guided float start is authorized per week, and these trips typically occur late in the summer during the coho salmon run.

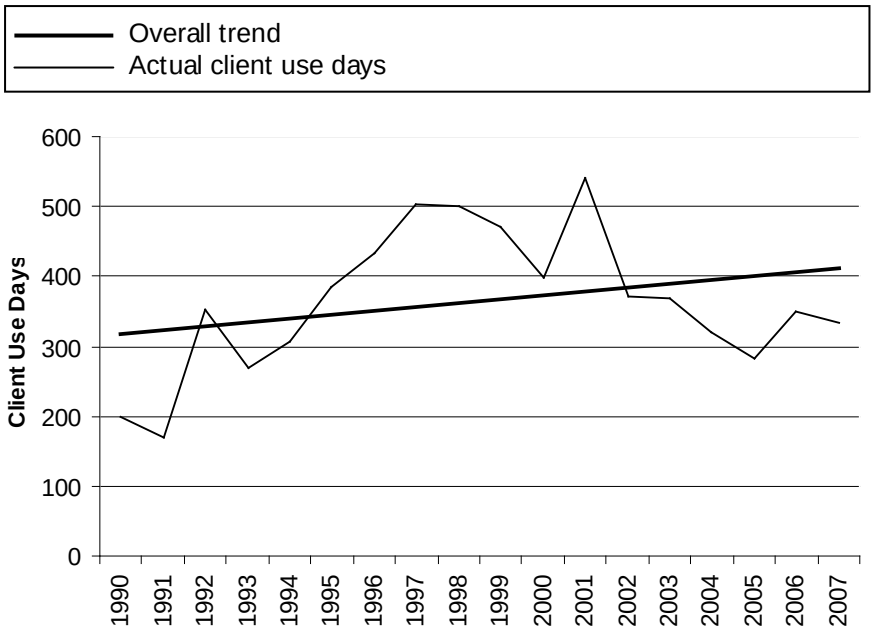


Figure 3-13. Upper Goodnews River guided fishing (within the Togiak Wilderness) 1990–2007

3 Data for 2005–2007 include the non-Wilderness area of the Middle Fork Goodnews River.

Unguided Recreational Fishing

There are no refuge restrictions on the amount of unguided fishing on the Goodnews River. Unguided use originates at Goodnews Lake, Middle Fork Goodnews Lake, or Kukaktlim Lake. Access is by float plane, and most groups are required to pull rafts through the shallow upper reaches of the rivers to reach water deep enough to float. Unguided use of the upper Goodnews River grew steadily through the early 1990s, reaching a peak of more than 2,600 use days in 1997. Since that time, unguided fishing has accounted for an average of 1,640 use days per year. Figure 3-14 shows an overall increasing trend for unguided use on the Goodnews River during the last 18 years[4].

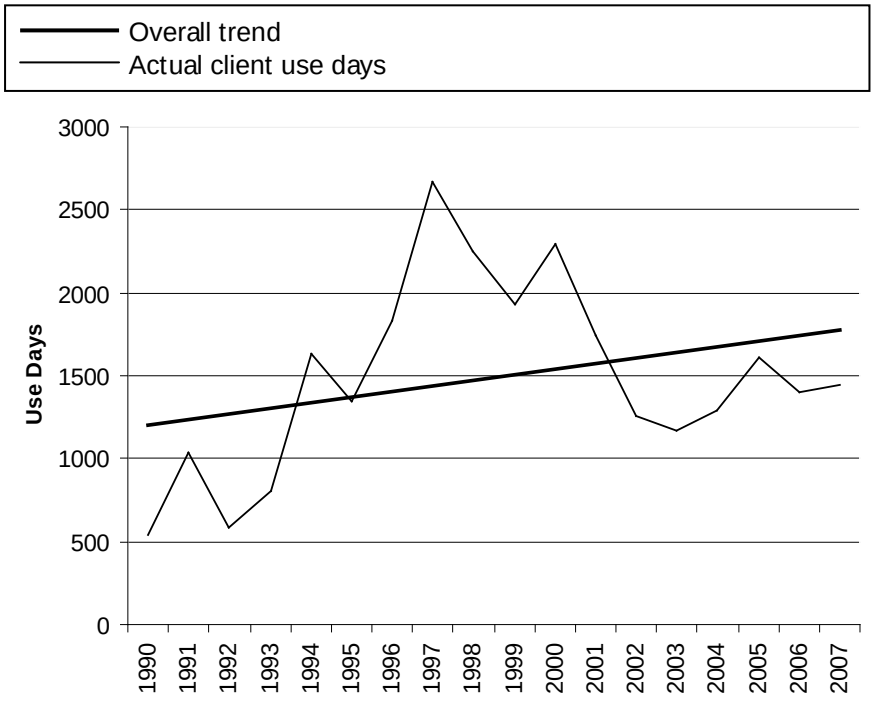


Figure 3-14. Unguided fishing on the Goodnews River (all forks, upper and lower sections) 1990–2007

[4] These numbers, gathered from air taxi reports, represent use on both the upper (Wilderness) and lower (non-wilderness) portions of the river, so they may not be directly compared to the guided use figures which represent upper (Wilderness) use days only.

3.5.6.4 Togiak River

There are numerous tributaries in the Togiak River drainage with headwater lakes accessible by float plane. These tributaries are generally shallow, small, and narrow, with many sweepers and other obstacles to navigation. The Togiak River itself originates from the largest lake in the Togiak Wilderness area. While the river is not difficult to navigate, and there are no difficult rapids, access through Togiak Bay can be hazardous because of braided tidal channels and often windy conditions. Most recreational fishing occurs from June through September. Opportunities to catch chinook, coho, sockeye, chum, and pink salmon are available. Fishing for coho and chinook salmon is the main attraction for anglers, with rainbow trout and sockeye targeted as well.

Due to the limited number of good fishing sites along the river and concerns about impacts from subsistence use and public recreational fishing, the 1991 Togiak Refuge PUMP designated three management zones for the upper Togiak River (within the Wilderness area). Within each zone, guided fishing is limited, but there are no limits on unguided fishing. Guided motorboat fishing accounts for most use on both the upper and lower portions of the Togiak River. Overall, the upper river receives less recreational fishing use than the lower river.

Guided Recreational Fishing

There are six commercial sport fishing permits granted for the upper (Wilderness) portion of the Togiak River. Three permits are for motorboats, allowing clients to be flown in by plane, and each are limited to one of the three zones; two permits are for non-motorized (float) boats and are not restricted to the zones; and one motorboat permit that accesses the river from below the refuge boundary does not allow clients to fly in and is not restricted to the zones. Since 1990, annual guided use along the upper river has averaged 428 client use days (Figure 3-15). Most of this use is concentrated in late summer during the coho salmon migration.

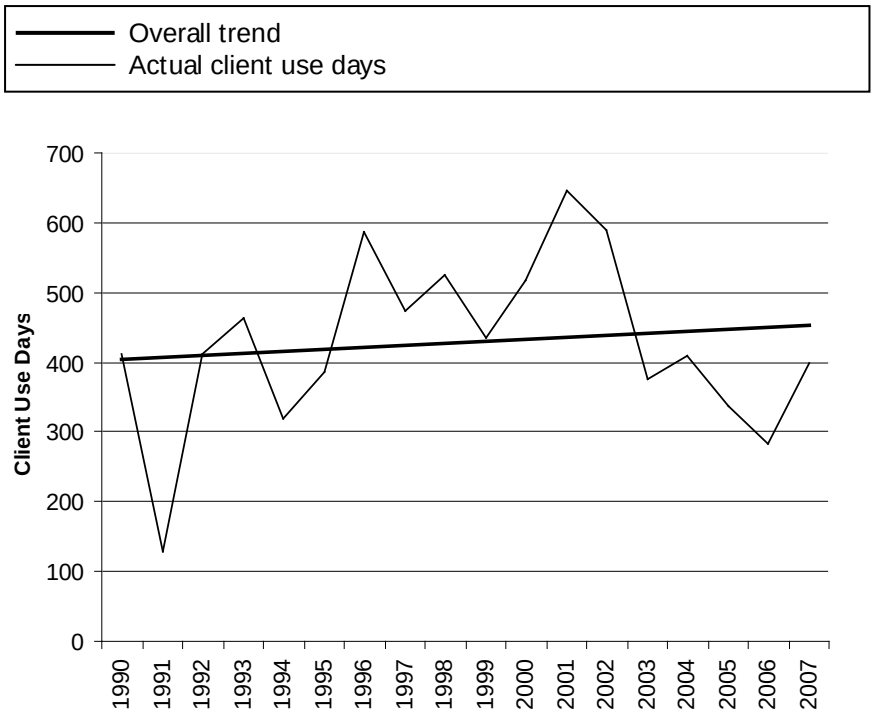


Figure 3-15. Guided fishing on the Upper Togiak River (within the Togiak Wilderness) 1990–2007

Unguided Recreational Fishing

Float groups typically access the Togiak drainage through Togiak Lake or Ongivinuk Lake. Floaters do not use the same waters until these two tributaries eventually meet, and from that point, many people continue down river to a popular pick-up located at the Wilderness area boundary. Available data indicate unguided use of the Togiak River has ranged from 50 to 176 use days since 1993, while unguided use of the Ongivinuck River ranged from 15 to 285 use days during the same time period. Because the Ongivinuck is a tributary of the Togiak River, its recreational use is added to that reported for the Togiak River to accurately represent unguided visitation below the confluence of the Ongivinuck and Togiak rivers. Overall, during the period from 1990–2007, there has been an annual average of nine unguided groups representing about 200 use days. Use levels have fluctuated from year to year with an average of 123 use days during 1990–1994, increasing to 246 average use days during 1995–1999, and slightly decreasing to 217 average use days during 2000–2007. Overall, unguided use on the Togiak River has slowly increased during the last 18 years.

3.5.6.5 Osviak and Matogak Rivers/Hagemeister Island

The Osviak and Matogak rivers flow south from headwater areas, emptying into Bristol Bay. The Osviak and Matogak rivers are floatable for most of their lengths, but a lack of aircraft landing areas within or adjacent to the rivers makes access difficult. Float-equipped aircraft may land in the bay. Otherwise, access is limited to small, wheeled planes landing on tundra ridges, river gravel bars, or ocean beaches at low tide. Access is also possible by boat from the village of Togiak, which takes several hours. Several privately held Native allotments are located along the lower reaches of these rivers and along the coast, making public access more difficult because permission from land owners is required for use of uplands.

Because of the access difficulties, recreational use of these rivers is negligible. Recreational use is estimated at 10 visitor days (or less) per year. This area is managed primarily for subsistence uses and is uniquely valuable because it receives so little use.

A few miles across Hagemeister Straight from the mouths of the Osviak and Matogak rivers lies Hagemeister Island. Recreational use of the island is sporadic, and people occasionally visit the island by boat or plane for beach combing.

3.5.6.6 Kulukak River

The Kulukak River is a remote river within the Refuge but mostly outside the Togiak Wilderness. Temporary tent camps are permitted for guided motorized recreational fishing through a competitive prospectus bid system. Commercial guide permits limit length of stay, the number of clients, and number of boats to ensure an uncrowded, remote fishing experience compatible with conserving the area's fishery resources. Largely because of limited access, use has remained relatively low, with only occasional visits by recreational anglers.

3.5.6.7 Wilderness Lakes

Five permits are currently issued for fly-in recreational fishing at a number of lakes throughout the Togiak Wilderness. To maintain subsistence opportunities, high-quality recreational opportunities, wilderness values, and healthy wild fishery stocks, several stipulations are included as part of these Wilderness Lakes guided sport fishing permits.

Many of these lakes are not used on a regular basis by guides often, only three or four times per year. Use of Kagati, Goodnews, Togiak, and Ongivinuk lakes is discussed in the Kanektok, Goodnews, and Togiak river sections of this chapter. Unguided use is also very sporadic.

3.5.6.8 Cape Peirce and Cape Newenham

This area encompasses the former Cape Newenham National Wildlife Refuge, which was established prior to ANILCA. The area was included as part of the Togiak Refuge under ANILCA and includes the majority of lands currently proposed for addition to the National Wilderness Preservation System, as described in the 1985 Togiak Refuge Plan. Cape Peirce has historically served as a walrus haulout and also provides opportunities for viewing a variety of other wildlife. Cape Newenham is a spectacular basalt promontory on a coastline comprised of 1000-foot volcanic cliffs.

Because many of the marine mammals, seabirds, and other wildlife found in this unique area are very sensitive to human disturbance, public use is managed to minimize that disturbance and to maintain the area's primitive natural character. The southeastern portion of this area has been identified as a "wildlife viewing area." The 1991 PUMP recommends that visitation within the viewing area be limited to no more than six people at one time through a first-come, first-served permit system in place from May 1 to November 30. At those times when either Pacific walrus are hauled out at Maggy Beach or seals are hauled out on sandbars in Nanvak Bay, boat and aircraft landings are limited. Instead, aircraft would be permitted to land just outside the wildlife viewing area at Sangor Lake or at the far northern end of Nanvak Bay. There are also a number of conditions as part of special use permits that minimize other potential wildlife viewing disturbances. Regulations to enforce the permit program have not been promulgated, although an informal permit program was in place for several years. At the current time, no permits are required to enter the wildlife viewing area.

Frequent inclement weather and long distances can make flying to and from Cape Peirce more difficult than other locations within the Togiak Refuge. This situation can affect levels of public use.

During the period from 2001 to 2004 there was a substantial increase in visitor use days relative to the prior period (1991–2000).In 2005 and following years, visitor use has decreased primarily because walrus have not been using Cape Peirce in large numbers. When walrus return to the area, visitation is likely to increase (Table 3-8).

Table 3-8. Visitor use at Cape Peirce

Year	Number of Flights	Number of Guides	Number of Clients	Total Use Days (Guides & Clients)
1991	3	0	11	49
1992	0	0	0	0
1993	1	0	3	15
1994	0	0	0	0
1995	1	0	4	4
1996	0	0	0	0
1997	3	0	6	12
1998	3	0	10	10
1999	1	0	5	5
2000	6	9	17	26
2001	15	24	60	108
2002	15	24	57	91
2003	19	30	60	90
2004	12	18	38	68
2005	5	7	20	27
2006	1	0	2	2
2007	2	1	6	36

3.5.7 Social Conditions and Visitor Experience in Popular Fishing Areas

Impacts on social conditions within the Refuge may not directly threaten wildlife or habitats, but they remain a concern because they do threaten the nature and quality of visitor and resident subsistence experiences. Within the Togiak Wilderness, experiential dimensions, including solitude or a "primitive and unconfined type of recreation," are protected by law; and throughout the entire Refuge, managers are compelled—at a minimum—to consider the safety of visitors and minimize conflict between user groups participating in appropriate activities.

The purpose of this section is to describe important characteristics of recreational visitors and the social conditions they encounter on the Refuge, as revealed by two principle studies. The first of these studies—a recreational angler survey conducted in 1995—was developed and conducted by a contractor with input and support from Togiak Refuge and the Alaska Department of Fish and Game (Whittaker 1996). The second study, conducted in 2001, was a replication of the 1995 effort, conducted to measure changes over

time. Relevant results from these studies are summarized here and discussed in more detail in Appendix E.

3.5.7.1 Visitor Motivations and Expectations

As noted previously, the majority of Togiak Refuge recreational visitors participate in fishing on one of three main river systems: the Kanektok River, the Goodnews River, or the Togiak River. The majority (90 percent) of anglers come from outside Alaska; they plan their trips months or even years in advance, and they place a high degree of importance on fishing in a natural, wilderness setting where they can view scenery and wildlife, and experience solitude. Most anglers surveyed in 1995 and 2001 indicated that they expected to find "primitive recreation" within the Togiak Wilderness, defined as a setting "where one can expect to find solitude and very few traces of previous use." On average, surveyed anglers expected a more primitive setting than what they actually encountered on the Refuge (Appendix E).

A research study commissioned by the Alaska Department of Fish and Game examined preferences and management attitudes of Alaskan nonresident anglers (Romberg 1999). Based on a small sample of nonresident anglers (n=41), Romberg (1999) showed evidence that some specialized anglers at Togiak Refuge consider aesthetic conditions, including scenery and solitude, to be important factors when choosing a fishing location, and they tend to support limits on the number of anglers who can participate in some fisheries in order to maintain quality fishing opportunities. Consistent with this general characterization, 44 percent of unguided anglers surveyed in 2001 indicated that they would support, or strongly support, limiting the number of unguided float trips allowed within the Togiak Refuge; levels of support for limits varied between different subgroups of anglers (Appendix E).

3.5.7.2 User Tolerances and Conditions of Concern

Within the broadly uniform Togiak Refuge angler population, it is possible to identify three distinct subgroups based on fishing style and closer analysis of specific motivations and expectations. *Guided float anglers* tend to place the highest importance on solitude and natural setting conditions and tend to be the least tolerant of impacts to those conditions. *Guided motorized anglers* tend to place the least importance on setting conditions and tend to be the most tolerant of impacts. *Unguided (float) anglers* usually fall between these two groups.

Among the various factors that could impact visitor experience, Togiak Refuge anglers identified litter, human waste, and competition for fishing sites and campsites as the things that would have the greatest negative influence on their trips. Togiak Refuge anglers have especially low tolerances for litter and human waste. Despite improvements over time, these items continue to negatively

impact their experiences. In 2001, about 55 percent of surveyed anglers indicated that they saw as much or more litter and human waste as they could tolerate before their experiences were diminished. While anglers on the Refuge's three main river systems frequently travel, fish, and camp near one another, outright competition for fishing and camping sites affects a somewhat smaller proportion of refuge anglers. About 40 percent of them indicated that the number of fishing sites they had to pass up was at or above their tolerance level, and about 25 percent responded similarly with respect to passing up campsites.

In addition to litter, human waste, and competition impacts, survey responses suggest that intergroup encounters on the lower stretches of the Goodnews and Kanektok rivers may warrant concern. While boat traffic in these areas is not directly managed by Togiak Refuge, visitors who begin their trips within the Refuge Wilderness do contribute to crowding on the lower rivers. About one-third of Goodnews anglers surveyed in 2001 indicated that their experiences were diminished by the number of motorboat groups they encountered on the lower river, and 24 percent indicated that they saw too many float groups as well. Similarly, 41 percent of Kanektok anglers indicated that they encountered too many motorized groups on the lower river, and 28 percent reported seeing too many float groups.

3.6 Special Area Designations and Resource Value

3.6.1 Wilderness Values

Section 304(g) of ANILCA requires the Service to identify and describe the special values of the Refuge, including wilderness values. The term "values" is often viewed synonymously with a range of similar terms, from subjective beliefs and preferences (e.g., family values) to more objective functions, services, and benefits (e.g., ecological values). Of interest here are the objective kinds of values, specifically those that are related to the condition and character of the natural environment.

The 1964 Wilderness Act (Act) recognized wilderness as a resource in and of itself and also established a mechanism for preserving that resource in a national system of lands. The definition of wilderness found in the Act provides a framework for identifying and describing wilderness values. According to the Act, the fundamental qualities of wilderness are: *undeveloped*, *untrammeled*, *natural*, and *outstanding opportunities for solitude,* or *a primitive and unconfined type of recreation*. In addition, The Act states that wilderness "may also contain ecological, geological, or other features of scientific, educational, scenic, or historical value."

Undeveloped—This is the most immediately observable and easily measured wilderness quality. Undeveloped simply means free from

roads, structures, and other evidence of modern human presence or occupation. The undeveloped quality strongly influences other core wilderness values, in particular experiential opportunities for solitude and primitive recreation. A lone structure may have only minimal impacts on natural processes while still serving as a constant reminder of human influence for recreational visitors. Certain kinds of structures or improvements may be considered desirable in a given wilderness setting (e.g., trails) or acceptable according to specific legislation, but that does not diminish their negative impact on the undeveloped quality.

Untrammeled—The Wilderness Act states that wilderness is "an area where the earth and its community of life are untrammeled by man." In other words, wilderness is essentially uncontrolled or unrestricted by purposeful human actions. Synonyms for untrammeled include unhindered, unencumbered, free-willed, and wild (Landres et al. 2005). The untrammeled quality of the wilderness resource is diminished when ecological events or processes are constrained or redirected to suit modern human ends (e.g., by suppressing naturally ignited fires or introducing nonnative plants or animals).

Natural—Naturalness is a measure of the overall composition, structure, and function of native species and ecological processes in an area. In contrast to the quality of being untrammeled, the natural condition of an area may sometimes be enhanced through purposeful human action (e.g., to restore an eroded stream bank or eradicate an invasive weed).

Outstanding Opportunities for Solitude—Solitude in the wilderness context is generally understood to mean freedom from sights, sounds, and other evidence of modern man (Landres et al. 2005). While the relative amount of freedom from these things necessary to *experience* solitude is highly personal and variable, the Wilderness Act states only that outstanding *opportunities* for solitude be provided. Accordingly, encountering other people, hearing mechanized sounds (from aircraft overflights, for example), or seeing the lights of a distant population center are all examples of things that may negatively impact solitude opportunities; while remoteness, low visitor density, and vegetative or topographic screening are things that may enhance solitude opportunities.

Outstanding Opportunities for a Primitive and Unconfined Type of Recreation— Primitive and unconfined recreation occurs in an undeveloped setting and is relatively free from social or managerial controls. Primitive recreation in wilderness has largely been interpreted as travel by nonmotorized and non-mechanical means. Primitive recreation is also characterized by experiential dimensions such as challenge, risk, and self-reliance. Dispersed use patterns, which frequently occur where there are no facilities to concentrate use, enhance opportunities for self-reliance and also

enhance opportunities for solitude. Conversely, some actions aimed at maintaining opportunities for solitude, such as restricting visitor access or behaviors, may negatively affect opportunities for unconfined experiences.

Other Special Features—Lands that exhibit the core wilderness values described previously may also contain additional special features with scientific, educational, scenic, or historic value. While the Wilderness Act makes it clear that these features are not wilderness qualities in and of themselves, their presence may distinguish one area with wilderness values from another. In the context of Alaska refuges, special features might include such things as active volcanoes, unique abundance or concentrations of a given species, fossil deposits, or evidence of prehistoric cultures.

As directed by Sections 304(g) and 1317 of ANILCA, all Refuge lands were reviewed during the first refuge planning process in the early 1980s "as to their suitability or nonsuitability for preservation as wilderness." Several recommendations for designating refuge lands as Wilderness were evaluated in the Final Comprehensive Conservation Plan and Environmental Impact Statement. The Record of Decision for the final plan included a recommendation that an additional 334,000 acres of the Togiak Refuge be designated as part of the National Wilderness Preservation System.

Refuge lands are either currently designated as wilderness or fall within the boundaries of the wilderness review units identified during the 1980s review. Those same boundaries are used here to facilitate description of the wilderness values found within Togiak Refuge. In general, all eight areas are largely undeveloped, untrammeled, and natural; and they provide abundant opportunities for solitude and primitive recreation. Therefore, only distinguishing or extraordinary features are described.

3.6.1.1 Togiak Wilderness Area

The 2.37 million acre Togiak Wilderness is the second largest Wilderness area in the National Wildlife Refuge System. It consists of all Refuge lands in the Kanektok, Kwethluk, Eek, and Togiak river watersheds; nearly all refuge lands within the Goodnews River watershed; and the headwaters of the Arolik River. By law, this area exhibits all of the core wilderness values. In addition, it has special value due to its long, unbroken history of indigenous human use. Evidence suggests people have hunted, trapped, fished, and participated in other subsistence activities within what is now the Togiak Wilderness for 9,000 thousand or more years (Dumond 1987). The long and continuing relationship between local people and the land was one of the primary reasons for the creation of the Togiak Wilderness (U.S. Congress 1978).

3.6.1.2 Oyak Creek-Arolik River Area

This area encompasses 151,468 acres in the northwestern corner of the Refuge and consists of three separate tracts. Two tracts are on either side of the Arolik River and are separated by Native conveyed private lands. The third tract lies north of the Kanektok River.

Undeveloped and Natural—These tracts are undeveloped and provide important habitat for various fish, waterfowl, furbearers, and large mammals such as bear, moose, and caribou.

Opportunities for Solitude or a Primitive and Unconfined Type of Recreation—During the summer, access to lands within these units is difficult due to the lack of aircraft landing sites and the distance of Jacksmith Bay from Quinhagak. Winter access is somewhat easier by snowmachine. The difficulty of access to these lands provides exceptional opportunities for solitude for visitors who do manage to get there.

3.6.1.3 South Fork of the Goodnews River Watershed

Along with the currently designated wilderness portion of the Goodnews River, the South Fork's 92,000-acre area is one of the three primary watersheds within the Refuge.

Undeveloped and Natural—This watershed supports Pacific salmon, Arctic char, Arctic grayling, Dolly Varden, rainbow trout, and lake trout. It also provides important habitat for raptors such as the goshawk, rough-legged hawk, bald eagle, gyrfalcon, and peregrine falcon. Brown bear, beaver, caribou, and moose also are found in this drainage. The only development in this unit is a small temporary summer camp.

Opportunities for a Primitive and Unconfined Type of Recreation—Upper portions of the Middle Fork Goodnews River provide one of the best combinations of accessibility and opportunities for wilderness angling within the Togiak Refuge. One commercial operator is permitted to use a small temporary summer camp along the Middle Fork Goodnews River that is accessible by float plane or motorboat. Commercial motorized use is limited to maintain opportunities for solitude.

3.6.1.4 Cape Peirce/Cape Newenham Area

This area of coastal headlands is approximately 242,000 acres in size.

Undeveloped and Natural—The Cape Peirce/Cape Newenham area provides some of the most important mainland nesting, staging, and haulout habitat on the North American continent for a number of waterfowl, marine mammals, seabirds, and shorebirds. A variety of fish and terrestrial wildlife species are also found. These wildlife species depend on the unique, undisturbed habitat in this area.

Other Special Features—This area also has an especially long history as a traditional hunting and fishing place for Native Alaskans. Local traditions, oral history, and archaeological sites provide evidence of the area's cultural and historical significance.

3.6.1.5 Osviak/Matogak Rivers Area

The lowland tundra, alpine tundra, and coastline of this southern part of the Refuge cover approximately 296,000 acres.

Other Special Features—Historically, this area contained several villages and was very important for local residents. Today, there are no year-round residents, but people from the community of Togiak continue to visit for subsistence activities. With the exception of a few small cabins, private lands remain primarily undeveloped. This coastal area of Togiak Refuge is used very little by people for recreation but remains a historically and culturally important area.

3.6.1.6 Hagemeister Island

This 73,890-acre island lies in Togiak Bay less than five miles from the Togiak Refuge.

Natural—The island provides important nesting habitat for seabirds and haulout areas for marine mammals; it is also home to many smaller mammals and landbirds. Hagemeister Island is one of the few parts of Alaska Maritime Refuge that supports runs of chum salmon and Dolly Varden.

Untrammeled—In the past, a herd of domesticated reindeer were grazed on the island. The reindeer were removed in 1993, and the vegetation is recovering from overgrazing.

3.6.1.7 Kulukak Bay

The Kulukak Bay area encompasses approximately 438,000 acres of the Togiak Refuge between the Nushagak Peninsula and the Togiak River on the Bristol Bay coastline. Except for a short period during the commercial herring fishing season, this area receives relatively little use.

3.6.1.8 Nushagak Peninsula

This coastal lowland area encompasses approximately 521,000 acres in the southeast corner of the Refuge.

Natural—The Nushagak Peninsula is important calving and grazing habitat for the Nushagak Peninsula caribou herd. Because of numerous tundra ponds, lakes, and other wetland habitats, the Nushagak Peninsula supports large numbers of migrating waterfowl. This area supports some of the highest nesting densities of sandhill cranes in Alaska (Pogson and Cooper 1983).

Opportunities for a Primitive and Unconfined Type of Recreation— The Nushagak Peninsula is visited primarily by subsistence users. A number of large ponds, lakes, and sand beaches make this area easily accessibly by plane for much of the year. During winters with adequate snow cover, access is also possible by snowmachine.

Existing Wilderness Recommendation

Several recommendations for designating refuge lands as Wilderness were evaluated in the final Comprehensive Conservation Plan and Environmental Impact Statements for Togiak and Alaska Maritime refuges. (USFWS 1985; USFWS 1988). The record of decision for the final plan included a recommendation that approximately 334,000 acres of the Togiak Refuge be designated as part of the National Wilderness Preservation System. This recommendation includes the Cape Peirce/Cape Newenham Unit and the Goodnews River Unit, which would include the remaining portions of the South and Middle forks of the Goodnews River currently not within the Togiak Wilderness (see Figure 3-16).

3.6.2 River Values

Rivers are among the most important features of the refuge environment: they both influence and reveal the Refuge's topography. In the rugged landscape, rivers serve as important transportation corridors for people and wildlife. They provide essential spawning and rearing habitat for resident and anadromous fish, which in turn support wildlife concentrations. Collectively, these resources have long supported human subsistence users, and they also attract modern recreational visitors.

Table 3-9. Rivers possessing outstanding values

River Segment	Segment Length (miles)	Outstanding Values
Kanektok River	90	Fish, wildlife, recreation, cultural importance
Arolik River	40	Fish, wildlife, scenic, recreation
Goodnews River	47	Fish, wildlife, recreation, cultural importance
Trail Creek	27	Fish, wildlife, scenic, geology/topography, recreation
Ongivinuck River	16	Fish, wildlife, scenic, recreation
Narogurum River (Kemuk River)	28	Fish, wildlife, geology/topography, scenic, recreation
Togiak River	30	Fish, wildlife, recreation, cultural importance

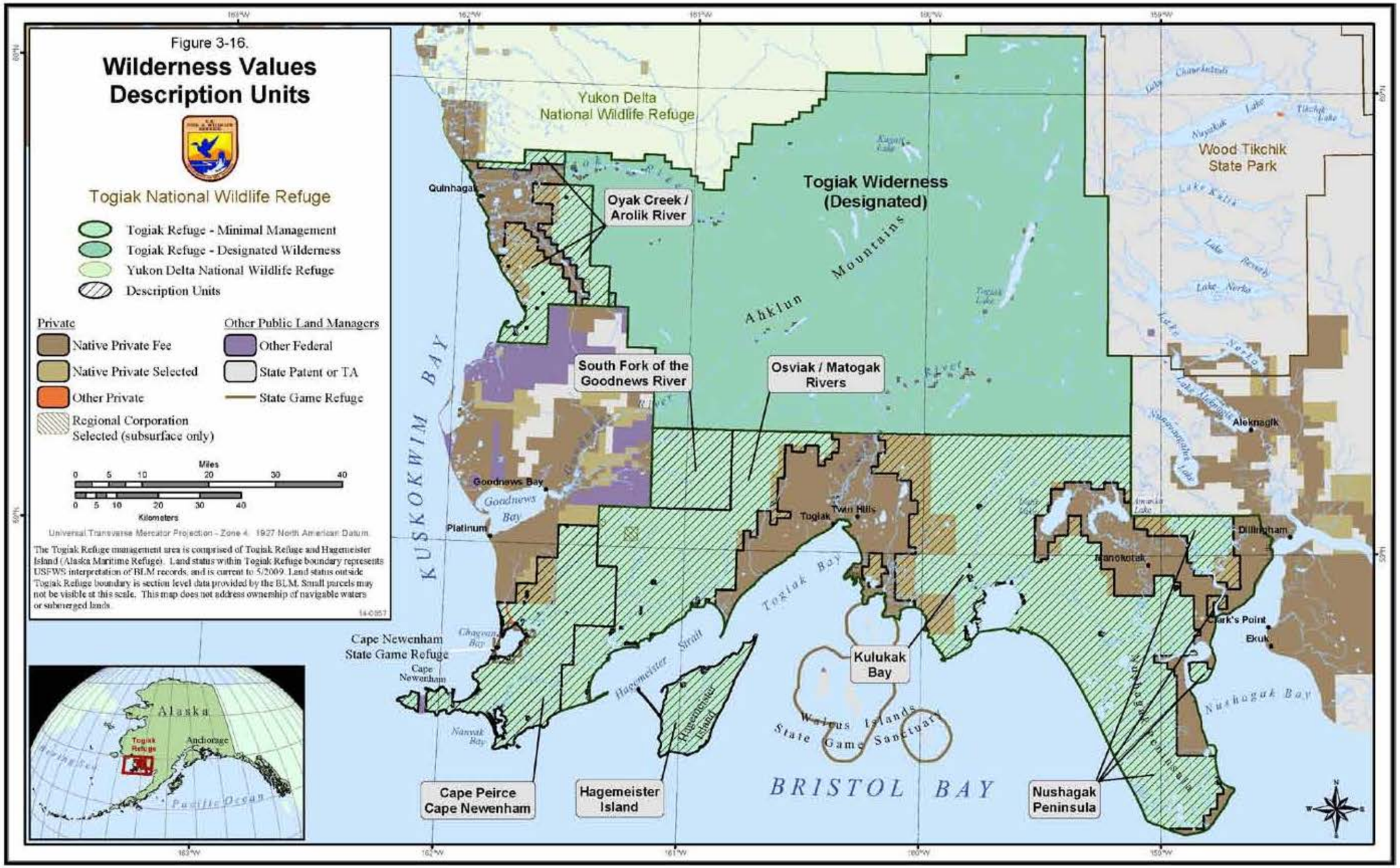


Figure 3-16. Wilderness Values Description Units

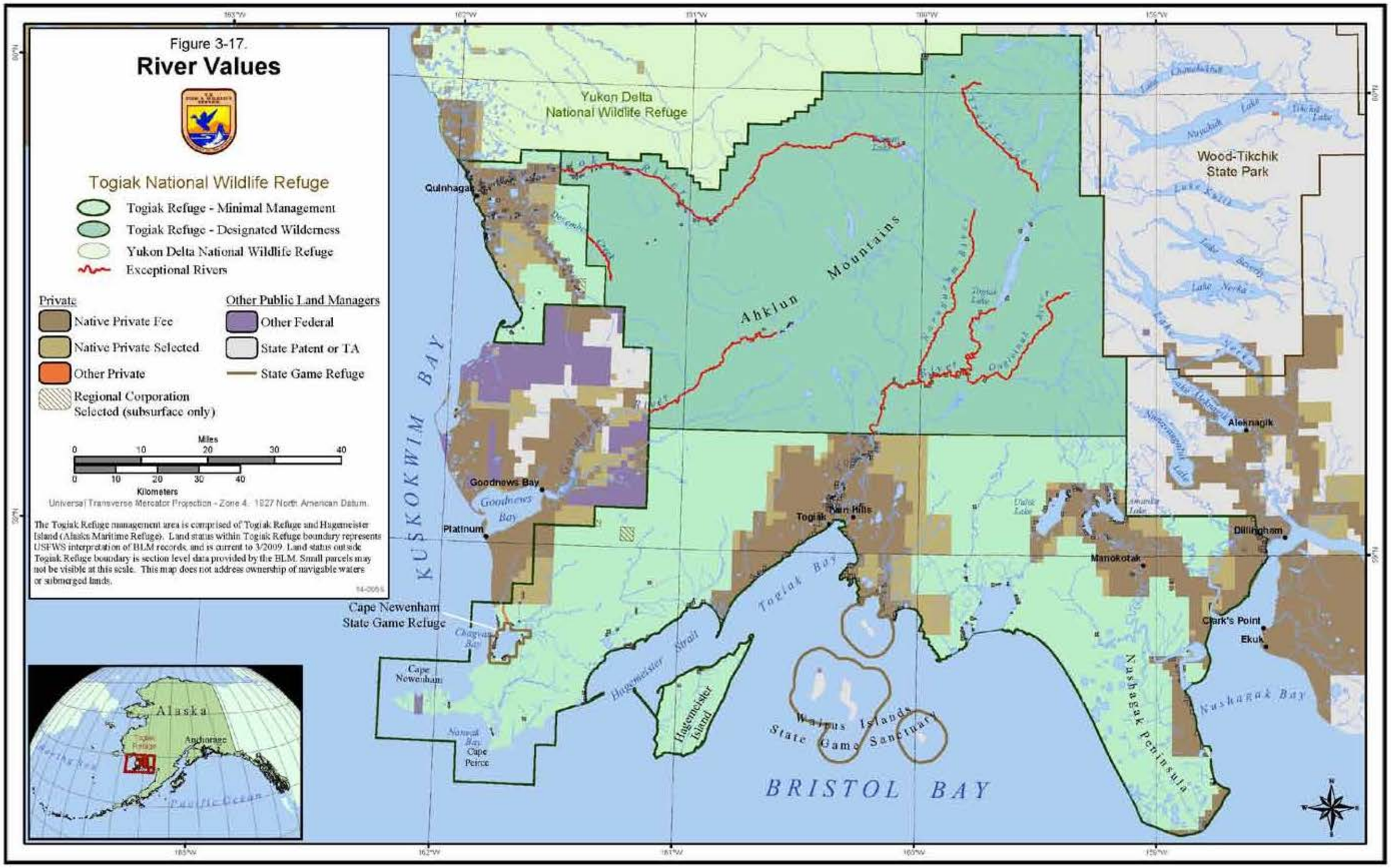


Figure 3-17. River Values

Based on the general attributes described previously—topography and geology, fish and wildlife populations, recreation opportunities, and cultural importance—seven river segments have been identified as exceptional examples of Togiak Refuge rivers. The outstanding values of these rivers are described in the following text. The river segments are depicted in Figure 3-17. Table 3-9 presents the rivers, their length, and the values identified for each river.

3.6.2.1 Kanektok River

The Kanektok River starts at Kagati Lake in the north central portion of the Refuge, where it flows through a glacial valley surrounded by mountains and continues 90 miles through a wide open tundra coastal plain and into Kuskokwim Bay. It is a shallow low gradient system with several braided channels in the lower half.

Fish and Wildlife Populations—Five species of Alaska native Pacific salmon, as well as rainbow trout, Dolly Varden, Arctic char, Arctic grayling, northern pike, sheefish, and round whitefish, all live in this river. Burbot and lake trout are found in Kagati Lake. Several wildlife species such as brown bear, caribou, peregrine falcon, harlequin duck, and beaver live in the river corridor.

Recreation Opportunities—Since the 1970s, the Kanektok River has become an increasingly popular recreational fishing destination. Today, the Kanektok has a world renowned reputation for its diversity of salmon, large trout, and spectacular scenery. The Kanektok River flows from Kagati Lake, which makes aircraft access possible for many float anglers and sport hunters. Motorboat access is also possible from the mouth of the river near the village of Quinhagak. Several commercial operators provide lodge and guide services along the Kanektok River. This mixture of transportation types, services, and activities creates a diversity of recreational opportunities along the Kanektok River from late May through September.

Cultural History—The Kanektok River has been and continues to be vitally important to the subsistence lifestyle of area residents. At Kagati Lake, where the Kanektok River begins, evidence has been found that indicates this river basin has been used continuously for approximately 9,000 years (Dumond 1987.) Today, subsistence use continues as people hunt, fish, trap, pick berries, and gather firewood along the Kanektok River. The village of Quinhagak at the mouth of the river is the largest population center in the area. Residents of Quinhagak use motorboats on the river to access subsistence fishing, hunting, and berry picking areas. A number of small cabins, fish racks, and set net sites scattered along the Kanektok River are evidence of its continuing role in rural Alaskan and Yupik Eskimo culture.

The upper Kanektok River was considered for inclusion in the National Wild and Scenic River System in 1983. The river was not designated because of local concerns and because the designated Wilderness status of the uplands affords a significant level of protection without the additional designation.

3.6.2.2 Arolik River

The Arolik River flows nearly 40 miles from Arolik Lake through part of the Togiak Wilderness and on to Kuskokwim Bay.

Topography and Geology—The Arolik River begins at Arolik Lake, a remote glacially formed lake wedged between two high ridges. Downstream is extremely shallow with a bed of coarse gravel and small cobble. It flows through a high plateau area of tundra with alder and willows along its banks. Below the confluence of East Fork and South Fork Arolik rivers, its volume nearly doubles but remains a narrow shallow stream of large gravel and cobble. After passing through Arolik Gap, the river enters the coastal plain and gradually turns into a slow meandering stream with sharp cutbanks on either side. Approximately 10 miles from Kuskokwim Bay, the river divides into its North and South mouths.

Fish and Wildlife Populations—The Arolik supports populations of Arctic grayling, rainbow trout, whitefish, lake trout, Arctic char, and Pacific salmon. A variety of wildlife are found along the Arolik. Most species found along the river are small mammals, furbearers, and birds. Brown bear, moose, and caribou occasionally use the area seasonally.

Recreation Opportunities—Unlike other rivers used by anglers in the region, the Arolik receives little use or fishing pressure. Available areas for camping on public lands are severely limited. All camping on Native corporation land is restricted by a permit system. The number of permits issued by Qanirtuuq Incorporated is very low. Due to this very low amount of use, the Arolik River provides some of the best opportunities for extreme solitude, self-reliance, and quality fishing found anywhere in America. This combination of recreational and wilderness values is found on few other rivers in the region.

3.6.2.3 Goodnews River

The Goodnews River lies between the two other larger drainages, the Kanektok and Togiak rivers, and flows approximately 47 miles from its headwaters at Goodnews Lake to Goodnews Bay.

Fish and Wildlife Populations—The Goodnews River supports Pacific salmon, Dolly Varden, rainbow trout, lake trout, Arctic char, Arctic grayling, and whitefish. Wildlife such as brown bear, caribou, raptors, waterfowl, landbirds, beaver, otter, mink, and fox are also found along the river.

Recreation opportunities—In many ways, recreational opportunities are similar to those found on the Kanektok River but on a smaller scale. Opportunities are characterized by a more remote setting with less evidence of and contact with other people.

Cultural history—The human population in the Goodnews drainage is less than that in Kanektok or Togiak drainages, but like those areas, this area has a long history of subsistence use by rural residents and Yupik Eskimos. While the lower 22 miles of this river are most heavily used for subsistence, the upper portion is important for fishing, hunting, trapping, berry picking, and other subsistence activities.

3.6.2.4 Trail Creek

Trail Creek is approximately 27 miles in length and flows from its headwaters in the Ahklun Mountains to the Izavieknik River, which then flows into Togiak Lake.

Topography and Geology—Trail Creek differs from most other rivers in southwest Alaska and is characterized by its steep narrow canyon with high cliffs on either side (up to 150 feet). It has a steep gradient with deep pools, followed by long riffles and small rapids. Particle size ranges from coarse sand to large boulders. There are very few gravel bars. Beyond the river canyon are the tall peaks of the Ahklun Mountains. These features combine to create scenery not found along any other rivers in the Refuge or the region.

Fish and Wildlife Populations—Trail Creek provides outstanding habitat for nesting raptors such as gyrfalcons, northern harriers, merlins, rough-legged hawks, sharp-shinned hawks, peregrine falcons, and bald eagles. The habitat that this river provides for harlequin ducks can be found on few other rivers in the region. In addition to wildlife such as caribou, moose, brown bear, fox, wolf, beaver, lynx, otter, and mink found along this and other rivers within Togiak Refuge, black bear have also been sighted along Trail Creek. Because black bear have not been documented in other parts of the Refuge, this is a unique wildlife value in the region. Fish species including chinook, sockeye, chum salmon, Dolly Varden, rainbow trout, Arctic grayling, and Arctic char are also found in this river.

Recreation Opportunities—Some recreation use does exist along Trail creek, but it is mostly confined to the lower reach, which can be accessed by jet boat at higher water levels. For the adventurous and determined visitor, Trail Creek offers some of the most remote and challenging recreational opportunities within Togiak Refuge. A remote rugged tundra landing strip located almost two miles from Trail Creek is the closest access.

3.6.2.5 Ongivinuck River

The Ongivinuck River flows from the outlet of Ongivinuk Lake 30 miles to its confluence with the Togiak River.

Topography and Geology—A single main channel with occasional deep holes and gravel bars characterizes this river. Particle size ranges from sand to large cobble and small boulders. Much of the bank is undercut on the outside bends of the river, with gravel bars along the inside bends. The river is surrounded by towering mountains and rolling foothills. Cottonwood, willow, and alder line the banks. There are several gravel bars and deep holes along the river. This type of scenery is found on few other rivers in the region.

Fish and Wildlife Populations—Pacific salmon, rainbow trout, Arctic grayling, Dolly Varden, Arctic char, and round whitefish are found in this drainage. Wildlife such as brown bear, caribou, moose, porcupine, weasel, ptarmigan, raptors, waterfowl, landbirds, and beaver all live along the river.

Recreation Opportunities—The use of motorboats is practical along the lower reaches, and anglers use float planes, rafts, and motorboats to access the river. Recreational use is typically from anglers flying to Ongivinuk Lake and floating this tributary of the Togiak River. Recreational opportunities are characterized by this river's isolation and scenery, which provide a rewarding experience for self-reliant anglers of all experience levels.

3.6.2.6 Naragurum (Kemuk) River

The Kemuk is one of the five major tributaries of the Togiak River and flows approximately 28 miles from it source at Nenevok Lake to its confluence with the Togiak River.

Topography and Geology—A steep narrow canyon with several sections of rock cliff and several gravel bars characterize this river. It has a relatively steep gradient, and particle size ranges from coarse sand to large boulders. The river varies from 40 to 80 feet in width but generally is narrow. Willow, alder, and cottonwood trees grow along the banks.

Fish and Wildlife Populations—Pacific salmon, rainbow trout, Arctic char, Dolly Varden, and Arctic grayling are found in this river. Wildlife species include moose, brown bear, caribou, fox, porcupine, beaver, wolf, and various raptors.

Recreation Opportunities—Only the lower few miles are accessible by jet boat; the rest is accessible only by floating from Nenevok Lake. This river offers opportunities for a challenging recreational experience characterized by remoteness and solitude.

3.6.2.7 Togiak River

This segment of the Togiak River flows approximately 30 miles from the outlet of Togiak Lake to the Togiak Wilderness boundary near the confluence of Pungokepuk Creek.

Topography and Geology—There are five major tributaries to the Togiak: the Gechiak, Pungokepuk, Nayorurun (Kashiak), Kemuk (Narogurum), and the Ongivinuck. A single main channel in the Wilderness area with occasional small islands, deep holes, and gravel bars characterize the river. Particle size ranges from sand to large cobble and medium size boulders. Much of the bank is undercut on the outside bends of the river with gravel bars along the inside bends.

Fish and Wildlife Populations—Pacific salmon, rainbow trout, Arctic grayling, Dolly Varden, Arctic char, northern pike, and round whitefish are found in this drainage. Wildlife such as brown bear, caribou, moose, porcupine, weasel, ptarmigan, raptors, and beaver all live along the river.

Recreation Opportunities—Guided and unguided anglers use float planes and motorboats to access the river. Unlike other rivers within the Togiak Refuge, the Togiak River is wide enough and deep enough for float planes and most types of motorboats. The large gravel bars along the river provide a number of suitable campsites for float anglers as well. This combination of access and transportation provides a diversity of recreational opportunities in an undeveloped and remote setting.

Cultural History—The Togiak River (Elliot 1887) historically was home to one of the largest populations of Yupik Eskimos in southwest Alaska. Today, residents live near the mouth of this river in the communities of Togiak and Twin Hills. People use motorboats to access traditional hunting and fishing site areas, cabins, and other areas up to and beyond Togiak Lake. Several small cabins, fish racks, and other associated structures are built on private property along the river.

3.7 References Cited

Adams, F.J. 1996. Status of rainbow trout in the Kanektok River, Togiak National Wildlife Refuge, Alaska, 1993. King Salmon, Alaska: U.S. Fish and Wildlife Service.

Aderman, A., M. Hinkes, and L. Van Daele. 1998. Moose capture summary in Unit 17A (Togiak and Kulukak drainages), Alaska, 30 March–7 April, 1998. Dillingham, Alaska: U.S. Fish and Wildlife Service, Togiak National Wildlife Refuge; and Alaska Department of Fish and Game. 39 pages.

Aderman, A., M.T. Hinkes, and J. Woolington. 1999. Population identity and movements of moose in the Togiak, Kulukak, and Goodnews River drainages, southwest Alaska, March 1998–April 1999. Progress report. Dillingham, Alaska: U.S. Fish and Wildlife Service, Togiak National Wildlife Refuge. 99-01. 21 pages.

Aderman, A., M.T. Hinkes, and J. Woolington. 2000. Population identity and movements of moose in the Togiak, Kulukak, and Goodnews River drainages, southwest Alaska, March 1998–April 2000. Progress Report. Dillingham, Alaska: U.S. Fish and Wildlife Service, Togiak National Wildlife Refuge; and Alaska Department of Fish and Game. No. 00-01. 26 pages.

Aderman, A., L. Van Daele, and M. Hinkes. 1995. Estimated moose population size in the Togiak River drainage (Unit 17A) and adjacent Wood River Mountains (western Unit 17C), southwest Alaska, 1995. Dillingham, Alaska: U.S. Fish and Wildlife Service, Togiak National Wildlife Refuge; and Alaska Department of Fish and Game. 17 pages.

Aderman, A., and J. Woolington. 2001. Togiak Refuge caribou population count records. Dillingham, Alaska: U.S. Fish and Wildlife Service, Alaska Department of Fish and Game. (Records on file in refuge office).

ADF&G. 1973. Alaska's wildlife and habitat. Anchorage, Alaska: Alaska Department of Fish and Game.

ADF&G. 1976. Alaska's wildlife management plans: western Alaska (draft proposal). Juneau, Alaska: Alaska Department of Fish and Game. 150 pages.

ADF&G, ed. 1999. Caribou: Federal aid in wildlife restoration annual performance report, survey-inventory activities, 1 July 1998–June 1999. Juneau, Alaska:

Alaska Department of Fish and Game, Division of Wildlife Conservation.

Alaska Commercial Fisheries Entry Commission. 1996. Permit and permit holder reports. Alaska Commercial Fisheries Entry Commission. Retrieved from World Wide Web: www.cfec.state.ak.us/gpbycen/1996/mnu.htm.

Alaska Department of Community and Regional Affairs. 1982. Village Profiles for: Manokotak, Togiak, Twin Hills Aleknagik, Clarks Point, Dillingham, Ekuk, Ekwok, New Stuyahok, Portage Creek, Levelock. Prepared by DOWL Engineers, with North Pacific Aerial Surveys and Bristol Bay Native Association under contract with the Alaska Department of Community and Regional Affairs.

Alaska Planning Group. 1974. Final Environmental Impact Statement: Proposed Togiak National Wildlife Refuge, Alaska. United States Department of the Interior, Alaska.

Anthony, R.G., R.L. Knight, G.T. Allen, B.R. McClelland, and J.I. Hodges. 1982. Habitat use by nesting and roosting bald eagles in the Pacific Northwest. Proceedings of the Trans. N. Amer. Wildl. Nat. Re. Conf.

BBNA, and ADF&G. 1996. The harvest and use of freshwater fish in Togiak and Manokotak, 1994–1995. Dillingham, Alaska: Bristol Bay Native Association.

Burkey, C., Jr.,, M. Coffing, J. Menard, D.B. Molyneaux, P. Salomone, and C. Utermohle. 2001. Annual Management Report for the Subsistence and Commercial Fisheries of the Kuskokwim Area, 2000. Regional Information Report. Anchorage, Alaska: Alaska Department of Fish and Game. 3A01-34.

Burns, J.J. 1984. Marine Mammal Species Accounts. Juneau, Alaska: Alaska Department of Fish and Game.

Charnley, S. 1982. Resource use areas in the Aniak and Oskawalik River drainages. Alaska Department of Fish and Game, Division of Subsistence. Technical Paper Number 50. Bethel, Alaska.

Clarkson, P. 1992. A preliminary investigation into the status and distribution of harlequin ducks in Jasper National Park. Proceedings of the Harlequin Duck Symposium, Northwest Section of the Wildlife Society Meeting Conference. April 23–24, 1992. Moscow, Idaho.

Coffing, M.W. 1991. Kwethluk Subsistence: Contemporary Land Use Patterns, Wild Resource Harvest and Use, and the Subsistence Economy of a Lower Kuskokwim River Area Community. Technical Paper. Juneau, Alaska: Alaska Department of Fish and Game. 157.

Coiley-Kenner, P., T.M. Krieg, M. B. Chythlook, and G. Jennings. 2003. "Wild resource harvest and uses by residents of Manokotak, Togiak, and Twin Hills, 1999/2000". Technical Paper No 275. Juneau, Alaska: Alaska Department of Fish and Game, Division of Subsistence

Collins, A.P. 2001 [unpublished]. Monitoring water quality of the Kanektok River, Southwest Alaska: Addressing issues and concerns in the Togiak Wilderness Area, Togiak National Wildlife Refuge. Dillingham, Alaska: U.S. Fish and Wildlife Service, Togiak National Wildlife Refuge.

Collins, Gail. 2002. Monitoring beaver cache abundance on Togiak National Wildlife Refuge. Annual Report, December 2002. U.S. Fish and Wildlife Service. Togiak National Wildlife Refuge. Dillingham AK.

Collins, G.H., M.T. Hinkes, A.R. Aderman, and J.D. Woolington. 2003. Population growth, movements, and status of the Nushagak Peninsula Caribou Herd Following Reintroduction, 1988-2000. Rangifer Special Issue 14:143-151.

Crane, P., M. Lisac, B. Spearman, E. Kretschmer, C. Lewis, S. Miller, and J. Wenburg. 2003. Development and application of microsatellites to population structure and mixed-stock analyses of Dolly Varden from the Togiak River drainage, Final Report for Study 00-011. U.S. Fish and Wildlife Service, Office of Subsistence Management. Anchorage, Alaska.

DCED. 2005. Alaska community database, detailed community data. Alaska Department of Community and Economic Development. Accessed April 15, 2006 from World Wide Web: www.dced.state.ak.us/mra/CF_BLOCK.htm.

Dufour, A.P. 1977. Escherichia coli- the fecal coli form. in Bacterial indicators/health hazards associated with water. A.W. Hoadley and B.J. Dutka, eds.: American Society for Testing and Materials. pp. 48–58. (ASTM STP 635).

Dumond, D.E. 1987. Prehistoric human occupation in southwestern Alaska, a study of resource distribution and site location. University of Oregon Anthropological Papers. No. 36.

Dunaway, D.O., and A.E. Bingham. 1992. Creek surveys on the chinook and coho salmon sport fisheries on the lower Kanektok River, Alaska, 1991. Fishery Data Series. Anchorage, Alaska: Alaska Department of Fish and Game. No. 92-23.

Dunaway, D.O., and S.J. Fleischman. 1995. Surveys of the chinook and coho salmon sport fisheries in the Kanektok River, Alaska, 1994. Fishery Data Series. Anchorage, Alaska: Alaska Department of Fish and Game. No. 95-22.

Dunaway, D.O., and S. Sonnichsen. 2001. Area management report for the recreational fisheries of southwest Alaska sport fish management area, 1999. Fishery Management Report. Anchorage, Alaska: Alaska Department of Fish and Game, Division of Sport Fish. 01-6.

Elliot, H.W. 1887. Our Arctic Province: Alaska and the Seal Islands. New York, New York: Charles Scribner's Sons.

Fair, L. 1995. Abundance estimate using the Jolly-Seber estimator for lake trout in Kagati Lake, based on data presented by Lisac and MacDonald (1995). Interagency memo.

Fall, J. A., J.C. Schichnes, M. Chythlook, and R. J. Walker. 1986. Patterns of wild resource use in Dillingham: Hunting and fishing in an Alaskan regional center. Alaska Department of Fish and Game, Division of Subsistence. Technical Paper No. 135. Juneau, Alaska.

Faustini, M.A. 1996. Status of rainbow trout in the Goodnews River, Togiak National Wildlife Refuge, Alaska, 1993–1994. Alaska Fisheries Technical Report. King Salmon, Alaska: U.S. Fish and Wildlife Service. No. 36.

Fay, F.H. 1982. Ecology and Biology of the Pacific Walrus, Odobenus rosmarus divergens Illiger. North American Fauna. Washington, D.C.: U.S. Department of the Interior. No. 74.

Fay, F.H., B.P. Kelly, and B.A. Fay. 1990. The Ecology and Management of Walrus Populations—Report of an International Workshop. Fairbanks, Alaska:

Institute of Marine Sciences, School of Fisheries and Ocean Sciences, University of Alaska Fairbanks.

Fraser, J.D. 1981. The breeding biology and status of the bald eagle on the Shippewa National Forest. University of Minnesota: Ph.D. thesis.

Frost, K.J., L.F. Lowry, and J.J. Burns. 1982. Distribution of Marine Mammals in the Coastal Zone of the Bering Sea During Summer and Autumn. Fairbanks, Alaska: Alaska Department of Fish and Game.

Genter, D. L. 1992. Status of the harlequin duck in Montana. Proceedings of the Harlequin Duck Symposium, Northwest Section of the Wildlife Society Meeting Conference. April 23–24, 1992. Moscow, Idaho.

Gibson, C., A. Seidlitz, D. Evans, and J. Borkoski. 1988. Yukon Delta and Togiak National Wildlife Refuges oil and gas assessment. Anchorage, Alaska: U.S. Department of the Interior, Bureau of Land Management.

Goldsmith, O.S., A. Hill, and T. Hull. 1998. Economic Assessment of Bristol Bay area national wildlife refuges: Alaska Peninsula/Becharof, Izembek, and Togiak. Final draft report prepared for the U.S. Fish and Wildlife Service, Washington, D.C. Institute of Social and Economic Research, University of Alaska Anchorage; Marla Markowski and Robert Unsworth, Industrial Economics, Inc., Cambridge, Massachusetts. December 3, 1998. (Contract #14-48009-95-005).

Gwinn, D. 2005. Fish species occurrence on four rivers and three ponds of Hagemeister Island, Alaska, 2003. U.S. Fish and Wildlife Service, Alaska Fisheries Data Series Number 2005-9.

Holzheimer, F. W. 1926. Prospecting proposed dredging ground, Arolic [sic] River District, Goodnews Bay region, Alaska. U.S. Geologic Survey. Juneau, Alaska.

Hoover, A.A. 1988. in Selected Mammals of Alaska. J.R. Twisset al, eds. Washington, D.C.: Marine Mammals Commission.

Hotchkiss, L.A., and D.M. Campbell. 1989. Nesting and production survey of bald eagles, Togiak National Wildlife Refuge. Dillingham, Alaska: U.S. Fish and Wildlife Service.

Jackson, R. 1990. Report of findings: Togiak National Wildlife Refuge placer mining study. U.S. Fish and Wildlife Service. 15.

Jemison, L.A. 1991. Abundance and Distribution of Marine Mammals in Northern Bristol Bay.. A Status Report of the 1990 Marine Mammal Monitoring Effort At Togiak NWR. U.S. Fish and Wildlife Service, Togiak NWR, Dillingham, Alaska.

Jemison, L. 1994. Distribution, movement, reproduction, and survival of radio-collared moose, southwest Alaska: A summary report of the moose collaring and monitoring effort by Togiak National Wildlife Refuge and the Alaska Department of Fish and Game. Dillingham, Alaska: U.S. Fish and Wildlife Service; Alaska Department of Fish and Game.

Knight, R.L., and S.K. Skagen. 1986. Effects of recreational disturbance on birds of prey: a review (Abstract). in Recreational-boating disturbances of National Communities and Wildlife: An annotated bibliography (1991). D. York, ed.: National Biological Survey. (No. 22).

Krueger, C,C,, M.J. Lisac, S.J. Miller and W.J. Spearman. 1999. Genetic Differentiation of Rainbow Trout *(Oncorhynchus mykiss)* in the Togiak National Wildlife Refuge. U.S. FWS. Alaska Fisheries Technical Report Number 55. Anchorage, Alaska.

Lafferty, Robert. 2004. Fishery management report for sport fisheries in the lower Yukon - lower Kuskokwim Management Area for 2002-2003. Alaska Department of Fish and Game, Division of Sport Fish. Fishery Management Report Series No. 04-03, Anchorage, Alaska.

Landres, Peter; Boutcher, Steve; Merigliano, Linda; Barns, Chris; Davis, Denis; Hall, Troy; Henry, Steve; Hunter, Brad; Janiga, Patrice; Laker, Mark; McPherson, Al; Powell, Douglas S.; Rowan, Mike; Sater, Susan. 2005. Monitoring selected conditions related to wilderness character: A national framework. General Technical Report-RMRS-GTR-151. USDA Forest Service, Rocky Mountain Research Station. Fort Collins, CO. 38 pp.

Lewis, J.P. 1995. Investigations of Harbor Seals in Alaska. Juneau, Alaska: Alaska Department of Fish and Game.

Lisac, M.J., and R. MacDonald. 1995. Biological characteristics of lake trout in Kagati Lake, Togiak National Wildlife Refuge, 1988–1990. Draft Report. Dillingham, Alaska: U.S. Fish and Wildlife Service.

Lisac, M.J., and R. MacDonald. 1996. Age, weight, and length statistics of Togiak River drainage resident fish species, Togiak National Wildlife Refuge, Alaska, 1993–1995. Fisheries data series. Dillingham, Alaska: U.S. Fish and Wildlife Service, Togiak National Wildlife Refuge. No. 96-3. 33 pages.

Lisac, M.J. and R.D. Nelle. 2000. Migratory Behavior and Seasonal Distribuion of Dolly Varden *Salvelinus malma* in the Togiak River Watershed, Togiak National Wildlife Refuge. Final Report. U.S. Fish and Wildlife Service. Dillingham, Alaska.

MacDonald, R. 1996. Baseline Physical, Biological, and Chemical Parameters of 21 Lakes, Togiak National Wildlife Refuge, 1984–1990. Dillingham, Alaska: U.S. Department of the Interior, Fish and Wildlife Service, Togiak National Wildlife Refuge. 53 pages.

Machida, S. 1987. Unit 18 moose survey-inventory progress report. in Annual report of survey-inventory activities, Part VIII, Moose. S. Morgan, ed. Juneau, Alaska: Alaska Department of Fish and Game. pp. 71–76. (Federal Aid in Wildlife Restoration Program Report Project W-22-5, Job 1.0).

Miller, G. 1995 [unpublished]. Kilbuck Mountains annual caribou census and composition count. Bethel, Alaska: Yukon Delta National Wildlife Refuge.

Nelle, R.D., and M.J. Lisac. 2001. Seasonal movement and distribution of rainbow trout (Onchorynchus mykiss) in the Togiak River watershed, Togiak National Wildlife Refuge. Dillingham, Alaska: U.S. Department of the Interior, Fish and Wildlife Service, Togiak National Wildlife Refuge. 18 pages.

Petrof, I. 1884. Report of the population, industries, and resources of Alaska. Washington, D.C.: U.S. Bureau of Census.

Pogson, T., and D. Cooper. 1983 [unpublished]. Lesser sandhill crane survey on the Nushagak Peninsula, Togiak National Wildlife Refuge, Alaska. Dillingham, Alaska: U.S. Fish and Wildlife Service.

Pogson, T., M. Lisac, and S. Johnson. 1984. Biology and subsistence hunting of geese at Chagvan Bay. U.S. Fish and

Wildlife Service, Togiak National Wildlife Refuge. Dillingham, Alaska. 17pp

Qauilnguut (Kilbuck) Caribou Herd Cooperative. 1995. Management Plan. 20 pages. (on file at Togiak National Wildlife Refuge).

Roehm, J.C. 1937. Summary report of mining investigation in the Goodnews Bay District to the Commissioner of Mines, Juneau, Alaska and Itinerary of J.C. Roehm, Associate Engineer, Territorial Department of Mines, July 6 to August 1, 1937.

Romberg, W.J. 1999. Market Segmentation, Preferences, and Management Attitudes of Alaska Nonresident Anglers. Virginia Polytechnic Institute and State University: M.S. thesis. 213 pages.

Schichnes, J. C., and M. Chythlook. 1988. Use of fish and wildlife in Manokotak Alaska. Alaska Department of Fish and Game, Division of Subsistence. Technical Paper No. 152. Juneau, Alaska.

Sheffield, G.G. 1997. Walrus Feeding: a Re-examination. University of Alaska Fairbanks: M.S. thesis.

Shepherd, P. E. K. 1981. Caribou Survey-Inventory Progress Report. *In* R.A. Hinman (ed.) Annual Report of Survey-Inventory Activities. Alaska Federal Aid in Wildlife Restoration. Project W-17-12, p.32-34.

Sinnott, R. 1990. Off-road vehicles and hunting in Alaska: a report to the Alaska Board of Game. Alaska Department of Fish and Game, Division of Wildlife Conservation. Anchorage, Alaska.

Skoog, R. 1968. Ecology of the caribou (Rangifer trandus granti) in Alaska. University of California, Berkeley: Ph.D. thesis. 699.

Taylor, K. 1990. Unit 17 moose survey-inventory progress report. in Annual report of survey-inventory activities, Part VIII. S. Morgan, ed. Juneau, Alaska: Alaska Department of Fish and Game. pp. 154 pages. (Federal Aid to Wildlife Restoration Program Report Project W-22-2, Job 1.0).

Taylor, M. J. and K. R. White. 1992. A meta-analysis of hooking mortality of nonanadromous trout. North American Journal of Fisheries Management 12:760-767.

U.S. Congress. 1978. Alaska National Interest Lands Conservation Act of 1978. Report of the Committee on Interior

and Insular Affairs, House of Representatives together with additional, dissenting, and supplemental views and additional comments to accompany H.R. 39. 95 Congress, 2nd Session. House Report No. 95-1045, Part I. April 7, 1978.

USFWS 1974. Togiak aerial bear survey trip report. Dillingham, Alaska: U.S. Fish and Wildlife Service; and Alaska Department of Fish and Game. (Togiak National Wildlife Refuge files).

USFWS 1982. Togiak National Wildlife Refuge Annual Narrative Report, Calendar Year 1981. U.S. Fish and Wildlife Service, Togiak National Wildlife Refuge. Dillingham, Alaska.

USFWS 1985. Togiak National Wildlife Refuge Final Comprehensive Conservation Plan, Wilderness Review, and Environmental Impact Statement. Anchorage, Alaska: U.S. Department of the Interior, Fish and Wildlife Service.

USFWS 1986. Togiak National Wildlife Refuge Final Comprehensive Conservation Plan, Wilderness Review, and Environmental Impact Statement. U.S. Fish and Wildlife Service. Anchorage, Alaska.

USFWS 1988. Alaska Maritime National Wildlife Refuge Final Comprehensive Conservation Plan, Wilderness Review, and Environmental Impact Statement. Anchorage, Alaska: U.S. Fish & Wildlife Service.

USFWS 1990. Togiak National Wildlife Refuge Annual Narrative Report, Calendar Year 1989. Dillingham, Alaska: U.S. Fish and Wildlife Service, Togiak National Wildlife Refuge.

USFWS 1991–2002 [unpublished]. Togiak National Wildlife Refuge River Ranger annual reports. Dillingham, Alaska: U.S. Fish and Wildlife Service, Togiak National Wildlife Refuge. (River Ranger annual reports for 1991–2002 are available at the Togiak Refuge headquarters in Dillingham).

USFWS 1994. Nushagak caribou management plan. Dillingham, Alaska: U.S. Fish and Wildlife Service, Togiak National Wildlife Refuge, Alaska Department of Fish and Game, Nushagak Peninsula Caribou Management Planning Committee.

USFWS 2000. Land Protection Plan, Options for the protection of fish and wildlife habitats, Togiak National Wildlife

Refuge. Anchorage, Alaska: U.S. Fish and Wildlife Service, Region 7. 104 pages.

USGS 1937. General report of mining and prospecting Activities, Goodnews Bay District, Alaska. 1937.

Van Daele, L. 1992. Moose management report, regulatory years 1991/1992–1992/1993, GMU 17. Dillingham, Alaska: Alaska Department of Fish and Game, Division of Wildlife Conservation.

Van Daele, L. 1993. Unit 17 moose survey-inventory progress report. in Annual report of survey-inventory activities: Moose. S. Abbott, ed. Juneau, Alaska: Alaska Department of Fish and Game. pp. 191–205 in 422 pages. (Federal Air in Wildlife Restoration Program Report Project. W-23-2 and W-23-4, Study 1.0).

Weiland, K.A, S. Morstad, J.B. Browning, T. Sands, C.J. Anderson, L. Fair, D. Crawford, D. Gray, F. West, L. McKinley, and K.A. Rowell. 2001. Alaska Department of Fish and Game, Division of Commercial Fisheries Annual Management Report, 2000, Bristol Bay Area. Regional Information Report. Anchorage, Alaska: Alaska Department of Fish and Game. No. 2A01-10.

Whittaker, D. 1996. Kanektok, Goodnews, and Togiak Rivers user survey findings and implications. Togiak National Wildlife Refuge.

Williams, D., S. Pennoyer, and F. Rue. 1998. Bering Sea Ecosystem—A Call to Action. Interagency Collaborative White Paper. Alaska Department of Fish and Game (Anchorage, Alaska); Office of the Secretary, Department of the Interior (Anchorage, Alaska); and National Marine Fisheries Service (Seattle, Washington).

Wolfe, R.J. 1987. Subsistence Fishing Along the Kanektok and Goodnews Rivers, Western Alaska. Report o the Alaska Board of Fisheries. Juneau, Alaska: Alaska Department of Fish and Game, Division of Subsistence.

Wolfe, R.J. 1989a. Subsistence-recreation conflicts along the Togiak, Kanektok, and Goodnews Rivers: A summary. Report to the Alaska Board of Fisheries. Juneau, Alaska: Alaska Department of Fish and Game, Subsistence Division.

Wolfe, R.J. 1989b. Territorial control by contemporary hunter-gatherer groups in Alaska, case examples of subsistence and recreation conflicts. Juneau, Alaska: Alaska Department of Fish and Game, Division of Subsistence.

Wolfe, R. J., J. J. Gross, S. J. Langdon, J. M. Wright, G. K. Sherrod, and L. J. Ellanna. 1984. Subsistence-based economies in coastal communities of southwest Alaska. Alaska Department of Fish and Game, Division of Subsistence and U.S. Department of the Interior Minerals Management Service, Alaska Region. Technical Paper No. 89. Juneau, Alaska.

4. Implementation and Monitoring

The Togiak Comprehensive Conservation Plan will be implemented through specific actions and various step-down plans (Section 4.1.2). Each of these plans has its own focus and revision schedule. Part of the implementation process is the Refuge's involvement with partners, as discussed in Section 4.1.3. Monitoring the outcome of implementation is affected by means of surveys, inventories, creel censuses, etc., and may lead to amendment or revision of the Plan (Section 4.1.4).

4.1 Implementation of the Conservation Plan

4.1.1 Goals, Objectives, Strategies, and Adaptive Management

The goals adopted in the Plan are intended to guide management of the Refuge for many years. The objectives and their associated strategies are concrete steps toward reaching those goals and are an integral part of the implementation of this Plan. Changing environmental conditions, policies, budget constraints, new technologies, and opportunities for partnerships are only a few of the areas where flexibility in management is beneficial. As objectives and strategies are met, opportunities and needs for others will arise. It is the intention of the Service that these parts of the Plan remain dynamic and responsive to changing management situations while also being a measure of real progress toward our goals.

4.1.2 Key Step-Down Plans

Step-down management plans deal with specific management subjects. They describe management strategies and implementation schedules and provide details necessary to fulfill management goals and objectives identified in the Comprehensive Conservation Plan. (Service manual 602 FW 1.5) Step-down plans for the Refuge include the following:

Fisheries Management Plan

The Fisheries Management Plan describes the fishery resource, the ways in which humans have used the resource, the history of fisheries management on the Refuge, and major issues and concerns. The plan provides for continued use of fishery resources by subsistence, commercial, and recreational users. It provides direction to ensure the conservation of fishery resources and habitat. It describes objectives and tasks to address the issues and concerns and assigns priorities and costs for Federal tasks. The Togiak Refuge Fisheries Management Plan was completed in 1991and is scheduled for review in 2010.

Wildlife Inventory and Monitoring Plan

A wildlife inventory and monitoring plan guides in the annual program of wildlife related surveys conducted on the Refuge. This plan supports Service policy to collect baseline information, monitor critical parameters and trends, and base management on biologically and statistically sound data. This plan guides collection of data on species of management concern. It identifies priorities for wildlife related surveys and describes the types of surveys that will be used, emphasis of the studies, sampling design and data standards, reporting requirements, how the data will be stored, and when data will be updated. A wildlife inventory and monitoring plan for the Refuge was completed in 2008.

Public Use Management Plan

In 1991, the Public Use Management Plan for the Togiak Refuge was completed and the Refuge began implementation. Since the implementation of the Public Use Management Plan, several studies have been completed, data have been collected, wildlife populations have changed, and public use of the Refuge has changed.

A draft revision of the plan was published in October 2007 in conjunction with the draft of this Comprehensive Conservation Plan. The final Public Use Management Plan revision is in progress.

Public Use Monitoring Plan

Due to the complex nature of public uses within the Refuge, a detailed system for measuring change over time is needed to evaluate the effectiveness of the public use program on the Refuge and the goals and objectives outlined in this Comprehensive Conservation Plan, as well as any actions taken as a result of the Public Use Management Plan revision. To accomplish this, the Refuge will work with cooperators to identify important indicators of subsistence and wildlife-dependent recreational opportunities. The Public Use Monitoring Plan will establish standards for each of these indicators and identify management actions to be taken should these standards be exceeded. Techniques to be used for measuring indicators will be identified through this step-down plan.

Cultural Resource Management Plan

This step-down plan provides guidance to refuge staff in meeting legal requirements to protect and manage the cultural resources of the Refuge. The Cultural Resource Management Plan provides a ready reference to the cultural resource guidance provided by law and regulation, by the Service Manual, and by the Cultural Resource Management Handbook. It outlines roles and responsibilities, summarizes legislation governing management of

cultural resources, and contains information of potential use to the refuge manager. It describes the current state of our knowledge of the prehistory and history of the region. It includes a list of projects that would fill in gaps in knowledge or would complete existing work. A cultural resource overview was completed in 1987. A cultural resource management plan for the Refuge is scheduled for completion in 2010.

Environmental Monitoring Plan

Refuge staff will develop an ecosystems model for the Togiak Refuge and its surrounding environment to better illustrate relationships among fish, wildlife, plant, habitat, and public use. Based on this model, the Refuge should design and implement a comprehensive environmental monitoring program, taking advantage of protocols and methods already accepted by the National Park Service and others in southwestern Alaska to address refuge questions and objectives. Upon review of available meteorological data from the National Oceanic and Atmospheric Administration, the Refuge could establish National Weather Service stations and/or remote automated weather stations within or adjacent to the Refuge.

Fire Management Plan

The Fire Management Plan describes the fire management activities that will occur on the Togiak Refuge. It is the framework for all refuge fire management decision making. It specifies the uses of fire that are consistent with national fire policy, Service national and regional direction, and refuge goals and objectives. Service policy requires all refuges with vegetation capable of sustaining fire to develop a fire management plan. The plan describes the relationship between land management goals and fire policy, wildland fire management strategies and components, organization and budget, monitoring and evaluation, public safety, reviews and coordination/collaboration. An approved fire management plan is a prerequisite to implementing prescribed fire and wildland fire use. Wildand fires occasionally occur within the Refuge, and a fire management plan was completed in 2007.

Land Protection Plan

A land protection plan focuses on private lands within the refuge boundaries with the goal of identifying and conserving high-quality habitat on those lands. The plan will guide the Refuge's land conservation activities and provide a framework for refuge and private landowner cooperation. Any course of action would require mutual consent. The plan does not obligate either the Refuge or the landowners to undertake any of the land conservation measures identified. The Refuge must consider management goals, priorities, and the availability of funds when approached by private

landowners with land conservation proposals. The Refuge's land protection plan was completed in 2000 and is scheduled for review in 2015.

Wilderness Stewardship Plan

This step-down management plan provides detailed strategies and implementation schedules for meeting the broader wilderness goals and objectives identified in the Comprehensive Conservation Plan. The wilderness stewardship plan will integrate portions of other step-down plans that affect the wilderness resource. The Togiak Wilderness Stewardship Plan will be completed within three years of adoption of the Comprehensive Conservation Plan.

Visitor Services Plan

A visitor services plan guides the management of recreational and subsistence uses, including hunting, trapping, fishing, guiding, camping, photography, sightseeing, hiking, and wildlife viewing. It summarizes how the public was involved in developing issues and alternatives and describes the alternatives that were developed to manage public use. The previously completed (1991) Public Use Management Plan and the revision of that plan, which is in progress, will be incorporated into the Visitor Services Plan. A Visitor Services Plan is scheduled to be initiated after completion of the Wilderness Stewardship Plan.

Water Resources Plan of Study

A water resources plan guides collection of hydrologic data on waters within and draining onto the Refuge. Objectives of this plan are to document the occurrence, quantity, distribution, and movement of surface waters and to quantify instream water rights needed to maintain and protect fish and wildlife habitats. The plan describes the water bodies of interest and the goals, objectives, priorities, and methods of study needed. A water resources plan for the Refuge was developed by the Water Resources Branch in 1997 and continues to be implemented.

Collection of water quality data was added after the initiation of the 1997 water resource plan. Measurement and analysis of physical, nutrient, and inorganic chemical water quality variables occurred in conjunction with operating stream gages and was guided by the Water Resources Branch Quality Assurance Plan for Inorganic Water Quality Assessment in Alaska Refuges.

Vegetation Inventory and Monitoring Plan

Present descriptions of the vegetation of Togiak Refuge are qualitative and general. A plan is needed to develop a quantitative understanding of the vegetation through field inventory. The objectives of such a plan are to: (1) describe major coastal plant

communities along representative gradients; (2) identify the main vegetation types using numerical classification; and (3) interpret the vegetation types in relation to selected site factors.

4.1.3 Partnership Opportunities

Partnerships with other organizations are among the ways in which the Service fulfills its mission, "Working with others to conserve, protect, and enhance fish, wildlife, and plants and their habitats for the continuing benefit of the American people."

The Refuge exists within a dynamic ecosystem. Fish, wildlife, and other resources do not respect artificial boundaries, and many of the resources within the Refuge are of national and international importance. The Service recognizes that the public, organizations, and other government agencies have interests in the Refuge. Implementation of many refuge programs requires community involvement and assistance.

Examples of existing, past, and potential partnerships include the following:

Biologists of Togiak Refuge and the Alaska Department of Fish and Game (ADF&G) routinely collaborate to assess status and trends of Mulchatna caribou, moose, salmon, Dolly Varden, and other species for which shared concerns for management exist.

The Nushagak Peninsula caribou herd, which was reintroduced in 1988, is managed in partnership with the Nushagak Caribou Planning Committee with representatives from the six village councils that were instrumental in making the reintroduction successful. The committee meets to discuss herd management, harvest allocation, and other issues related to the herd.

The Mulchatna caribou herd occupies range that in recent years has encompassed parts of the Togiak Refuge Lake Clark National Park and Preserve, the Becharof and Yukon Delta National Wildlife Refuges, and BLM land interspersed throughout the region. In addition to cooperating with ADF&G in the status assessment and management of this herd, the refuge partners with the other affected Federal agencies and refuges that share this resource.

The Natural Resources Department of the Bristol Bay Native Association (BBNA) works with the Refuge in accomplishing a number of mutual objectives. Summer interns employed by BBNA provide valuable assistance on refuge projects each year. A traditional and ecological knowledge project undertaken by the Refuge with funding provided by the Office of Subsistence Management has received broad support from BBNA, including funding and staff time to complete the project. A partnership with BBNA to complete Office of Subsistence Management funded

projects has been undertaken in the past and continues to be a component of any project for which the Refuge shares mutual objectives of information collection.

The Togiak Refuge serves as the setting for a number of Universities conducting studies on climate change. The Refuge has partnered with the University of Colorado, Northern Arizona University, Mount Holyoke College, and the University of Chicago to conduct analysis and long-term climate studies to help assess how flora and fauna may have changed over time in the region.

Education and outreach continues to be a central component essential to successful management of the Refuge. Partnerships with Southwest Regional Schools, Dillingham School District, and the Lower Kuskokwim School District, as well as all of the affected communities, allow this to be successful. Some of the elements of this partnership include the Bristol Bay Salmon Camp, Cape Peirce Marine Science and Yup'ik Culture Camp, and the Ecology and Outdoor Skills Camp held each summer. Classroom visits by refuge staff are made periodically during the school year to conduct environmental education programs, generate interest for the science camps, provide migratory bird calendar contest information, and other purposes.

A program of inholding acquisition has been taking place on the Refuge for a number of years. To implement this program, the Refuge works in partnership with the Southwest Alaska Conservation Coalition, which includes an array of Native interests, commercial operators, conservation groups, land managers, and others working together to protect natural resources of southwest Alaska.

The common occurrence of moose on many parts of the Refuge is a fairly recent phenomenon. Refuge staff work in partnership with ADF&G and the villages of Togiak, Twin Hills, Manokotak, and Dillingham through the Unit 17A Moose Management Working Group to monitor the status of the moose herd in that unit and develop management strategies. Work continues with the villages of Goodnews Bay, Platinum, and Quinhagak to develop management goals for expanding moose herds in drainages most used by those villages.

4.1.4 Comprehensive Conservation Plan Amendment and Revision

Periodic review and revision of this Plan will be necessary. As knowledge of the Refuge's resources and users improves, changes in management directions may be identified. Fish and wildlife populations, user groups, adjacent land uses, and other

management considerations change with time, often in unforeseen ways. Obstacles also may be encountered in implementing the Plan.

Revisions are a necessary part of the adaptive management approach used by the Refuge. This means that objectives and strategies to reach goals can be adjusted. Most of the resulting changes will fine-tune the plan. These changes will not require modification of this document because minor changes will be addressed in the more detailed refuge step-down and annual work plans. If a major change is required in the management of the Refuge, it will become necessary to develop a plan with a new environmental impact statement or environmental assessment.

To enable refuge users; adjacent landowners; local, state, and Federal agencies; and other interested parties to express their views on how the Refuge is being managed, the Refuge will periodically hold meetings—or use other techniques such as comment cards and surveys—to solicit comments for evaluation purposes. By encouraging continuing public input, the Refuge will be better able to serve the public, to determine potential problems before they occur, and to take immediate action to resolve existing problems.

Every three to five years, refuge staff will review public comments, local and state government recommendations, staff recommendations, research studies, and other sources of information to determine if revisions to the Plan are necessary. If major changes are proposed, public meetings may be held and new environmental assessments or environmental impact statements may be necessary. Full review and updating of the Plan will occur every 15 years.

Appendix A:
Legal and Policy Guidance

A. Legal and Policy Guidance

Management of the Togiak Refuge is dictated, in large part, by the legislation that created the unit, and the purposes and goals described in chapter 1. However, other laws, regulations and policies, and agreements with the State of Alaska also guide the management of the Refuge. This Appendix identifies the acts and policy guidance that are integral in the development of this Plan.

A.1 Legal Guidance

Operation and management of the Refuge is influenced by a wide array of laws, treaties, and executive orders. Among the most important are the National Wildlife Refuge System Administration Act, as amended by the National Wildlife Refuge System Improvement Act; the Refuge Recreation Act; the Endangered Species Act; and the Wilderness Act. These acts are described briefly along with other Acts and legal guidance that influence management of the Togiak Refuge and the revision of this Plan.

A.1.1 International Treaties

The international treaties that affect Togiak Refuge are migratory bird treaties with Canada, Mexico, Japan, and the Soviet Union, and the Convention on Nature Protection and Wildlife Conservation in the Western Hemisphere. These treaties differ in emphasis and species of primary concern, but collectively provide clear mandates for identifying and protecting important habitats and ecosystems, and protecting and managing individual species.

Treaties for migratory bird protection include management provisions such as:

- prohibiting disturbance of nesting colonies;
- allowing the Secretary of the Interior to establish seasons for the taking of birds and collections of their eggs by indigenous inhabitants of Alaska for their own nutritional and other essential needs;
- directing each nation to undertake, to the maximum extent possible, measures necessary to protect and enhance migratory bird environments and prevent and abate pollution or detrimental alteration of their habitats;
- requiring each nation to provide immediate notification to the other when pollution or destruction of habitats occurs or is expected;
- stipulation that each nation shall, to the extent possible, establish preserves, refuges, protected areas, and facilities for migratory birds and their habitats and manage them to preserve and restore natural ecosystems;
- stipulating that special habitats outside the jurisdictional boundaries (territorial limits) may be designated in which, to the maximum extent, persons under each nation's jurisdiction shall act in accordance with the principles of the treaty (for instance, this stipulation might require U.S. oil tankers to avoid or prevent pollution of special seabird areas on the high seas); and
- providing that protective measures under the treaty may be applied to species and subspecies not listed in the specific convention, but which belong to one of the families containing listed species. Of the migratory bird species of concern in the treaties, those that use the Togiak Refuge include loons, cormorants, swans, geese, ducks, hawks,

eagles, harriers, ospreys, falcons, cranes, plovers, sandpipers, jeagers, gulls, terns, alcids, owls, and passerines.

A.1.2 National Guidance

National Wildlife Refuge System Administration Act of 1966, as amended by the National Wildlife Refuge System Improvement Act of 1997, 16 U.S.C. 668dd-668ee (Refuge Administration Act).

This act serves as the "organic act" for the National Wildlife Refuge System. The act, as amended, consolidated the various categories of lands administered by the Secretary of the Interior (Secretary) through the Service into a single National Wildlife Refuge System. The act establishes a unifying mission for the Refuge System, a process for determining compatible uses of refuges, and a requirement for preparing comprehensive conservation plans. This act states, first and foremost, the mission of the National Wildlife Refuge System be focused singularly on wildlife conservation.

This act identifies six priority wildlife-dependent recreation uses, clarified the Secretary's authority to accept donations of money for land acquisition, and placed restrictions on the transfer, exchange or other disposal of lands within the Refuge System. Most importantly, this act reinforces and expands the compatibility standard of the Refuge Recreation Act. The Refuge Administration Act authorizes the Secretary, under such regulations as he may prescribe, to "permit the use of any area within the System for any purpose, including but not limited to hunting, fishing, public recreation and accommodations, and access whenever he determines that such uses are compatible with the major purposes for which such areas were established."

The Refuge Recreation Act of 1998 (16U.S.C.460k-460k-4, as amended)

This act requires that any recreational use on areas of the National Wildlife Refuge System be compatible with the primary purpose(s) for which the area was acquired or established. This act also requires that sufficient funding be available for the development, operation, and maintenance of recreational uses that are not directly related to the area's primary purpose(s).

Alaska Native Claims Settlement Act of 1971 (ANCSA)

This act provides for “a fair and just settlement of all claims by Natives and Native groups of Alaska, based on aboriginal land claims.” The law provided for grants of land and money and the establishment of Native corporations to maintain the economic affairs of Native organizations. In exchange for this settlement, all aboriginal titles and claims, including any fishing and hunting rights, were extinguished. Section 17(d)(2)(A) provided the basis for the enactment of ANILCA. Under Section 22(g), refuge lands conveyed to the village corporations remain subject to the laws and regulations governing use and development of the Refuge. This section applies only to lands which were designated as refuge lands at the time ANCSA was passed. Section 17(b) of the Act provided for public easement across Native lands for access to Federal lands.

Alaska National Interest Lands Conservation Act of 1980, as amended, 16 U.S.C. 140hh-3233, 43 U.S.C. 1602-1784 (ANILCA)

In addition to amending the Alaska Native Claims Settlement Act, the Alaska Statehood Act and, the Wild and Scenic Rivers Act, and modifying portions of the Wilderness Act as it applies to Alaska lands, ANILCA expanded the Federal conservation system throughout the state (including refuges, parks, forests, Wilderness Areas, and Wild and scenic rivers). ANILCA sets

forth the purposes of the Refuge, defines provisions for planning and management, and authorizes studies and programs related to wildlife and wildland resources, subsistence opportunities, and recreational and economic uses (such as oil and gas exploration and development, access, and transportation and utility systems). Section 1317 of ANILCA requires that all refuge lands that were not designated as wilderness be reviewed as to their suitability for wilderness designation.

Title VIII of ANILCA authorizes the State of Alaska to regulate subsistence uses on Federal public lands if several requirements are met. The State of Alaska managed statewide subsistence harvests until late 1989, when the Alaska Supreme Court ruled that the rural residency preference required by Federal law violated the Alaska Constitution. Despite repeated efforts, the state has not amended its constitution to bring its regulatory framework back into compliance with ANILCA.

The Federal government began managing subsistence hunting, trapping and fishing on Alaska's Federal public lands in July of 1990. For the purposes of Federal subsistence management, public lands are defined to include lands managed by the U.S. Fish and Wildlife Service, National Park Service, Bureau of Land Management, Bureau of Indian Affairs and the U.S. Forest Service; non-navigable waters on these lands; and some navigable and marine waters. On October 1, 1999, management authority of the Federal Subsistence Board was extended to include navigable water within and adjacent to exterior boundaries of Federal conservation units, in which the United States has an interest by virtue of the reserved water rights doctrine.

The Federal Subsistence Board (FSB) establishes regulations for the harvest of fish and wildlife for subsistence purposes by qualified rural residents on Federal public lands in Alaska. The Federal process involves substantial public input. Individuals and organizations submit proposals for regulations to the FSB that are reviewed by the Federal Subsistence Regional Advisory Councils (RACs), e.g., the Bristol Bay Federal Subsistence RAC and Yukon-Delta Federal Subsistence RAC. The regional councils, which are composed of local citizens, make recommendations on the proposals to the FSB. The Federal subsistence staff also advises the board on regulation proposals, providing data and analysis from local Federal managers and ADF&G.

The state's subsistence regulations continue to apply on all Federal lands unless superseded by Federal subsistence regulations. However, the FSB may establish Federal regulations to provide for use only by eligible rural residents in order to protect the ANILCA Title VIII preference for local rural users or to protect a wildlife population or fishery.

Wilderness Act of 1964 (P.L. 88-577)

This act established the National Wilderness Preservation System, provides the framework for designation by Congress of new units to the system, and prescribes policy for management of these areas. Section 702(10) of ANILCA designated about 2,372,744 acres (193,000 ha) in the Togiak Refuge as wilderness. Section 1317 of ANILCA requires the "review, as to their suitability or nonsuitability for preservation as wilderness, all land within... units of the National Wildlife Refuge System in Alaska not designated as wilderness by this Act..."

The Wild and Scenic Rivers Act (16 U.S.C. 1271-1287) Public Law 90-542, approved October 2, 1968, (82 Stat. 906)

This act establishes a National Wild and Scenic Rivers System and prescribes the methods and standards through which additional rivers may be identified and added to the system. Rivers in

the National Wild and Scenic Rivers System have outstanding scenic, recreational, geologic, fish and wildlife, historic, cultural, ecological, or other values, and are managed these in a way that protects these values for present and future generations. Rivers are classified as wild, scenic or recreational, and hunting and fishing are permitted in components of the system under applicable Federal and State laws. The Wild and Scenic Rivers Act states in section (d)(1) that, "In all planning for the use and development of water and related land resources, consideration shall be given by all Federal agencies involved to potential national wild, scenic and recreational river areas". This Plan is such a plan and therefore considers potential wild, scenic and recreational rivers within the Togiak Refuge.

Marine Mammal Protection Act of 1972, as amended; (16 U.S.C. 1361-1421h; 50 CFR 13, 18, 216 and 229 as amended)

This act established a Federal responsibility for conservation of marine mammals. Management of walrus was vested in the Department of Interior. The act established a moratorium on the taking and importation of marine mammals and products made from them. Alaska Natives who take marine mammals for subsistence purposes, however, were exempt form the moratorium.

Endangered Species Act of 1973, as amended; P.L. 93-205; (16 U.S.C. 1531-1544, et seq., as amended)

This act provides for the conservation of threatened and endangered species of fish, wildlife, and plants by Federal action and by encouraging the establishment of State programs. Among its provisions the Act authorizes the determination and listing of endangered and threatened species and the habitat critical to those species; prohibits unauthorized taking, possession, sale, transport, etc., of endangered species; provides authority to acquire land for the conservation of listed species with land and water conservation funds; and authorizes the assessment of civil and criminal penalties for violating the act or implementing regulations. Section 7 of the act requires Federal agencies to ensure that any action authorized, funded, or carried out by them does not jeopardize the continued existence of listed species or modify their critical habitat. Currently threatened or endangered species known to occur on the Togiak Refuge include the Steller sea lion, Steller's eider, and the spectacled eider.

The planned actions found in the Togiak Refuge Comprehensive Conservation Plan are not likely to adversely affect listed species or designated critical habitat. Therefore, the U.S. Fish and Wildlife Service finds the Plan to be fully consistent with Section 7 of the Act.

Antiquities Act (16 U.S.C. 431-433); Archaeological Resources Protection Act of 1979, P.L. 96-95; (16 U.S.C. 470as, et seq., as amended; 43 CFR 50-58; and the National Historic Preservation Act of 1966, (P.L. 89-665; 16 U.S.C. 470 et seq., as amended).

These laws make reference to cultural resources or govern the management of cultural resources on Federal lands. The various historic preservation laws, in general, do the following:

- Vest ownership of historic and prehistoric properties and of materials collected from such sites with the state and Federal government.
- Protect archeological and historic sites from unauthorized disturbance and prescribe penalties for individual who damage (or collect from) such sites. Provides for issuing of permits to qualified individuals and institutions to conduct scientific research.

- Mandate the inventory and evaluation of all sites on government owned and managed lands. Inventory is the responsibility of the individual Federal agency involved.
- Require that all projects with state or Federal involvement be conducted in such a way as to protect any significant cultural resources that may be present. This includes, but is not limited to, the performance of archeological surveys, site evaluations, and, if necessary, mitigation of adverse impacts on such resources.

National Environmental Policy Act (NEPA) of 1969, as amended, 42 U.S.C. 4321-4347, and the Council on Environmental Quality's (CEQ) Regulations for Implementing the Procedural Provisions of NEPA, 40 CFR 1500-1508

NEPA is the basic national charter for protection of the environment. The procedural provisions in CEQ regulations require Federal agencies to integrate the NEPA process with other planning at the earliest possible time whenever taking a major Federal action that may significantly affect the human environment in order to provide a systematic interdisciplinary approach; identify and analyze the environmental effects of their actions; describe appropriate alternatives to the proposal; involve the affected state and Federal agencies, Tribal governments, and the affected public in the planning and decision-making process; and fully integrate all refuge proposals that may have an impact on the environment with the provisions of NEPA (40 CFR 1501.2). Implementation of any one of the alternatives in this Plan for managing the Togiak Refuge is such an action. Therefore, this planning process is subject to NEPA requirements.

Federal Water Pollution Control Act of 1972, as amended by The Clean Water Act of 1977, P.L. 95-217; (33 U.S.C. 1251-1387, et seq., as amended; 33 CFR 320 ff; 40 CFR 15, 100-400, 220-233, 400-471)

This act regulates the discharge of pollutants into waters of the United States. The act protects fish and wildlife, establishes operation permits for all major sources of water pollution, and limits the discharge of pollutants or toxins into water. The act makes it unlawful for any person to discharge any pollutant from a point source into navigable waters unless a permit is obtained under the Clean Water Act.

A.2 Policy Guidance

Programmatic guidance and policy documents provide additional direction for the management of national wildlife refuges throughout the system. While it is not practical to provide information about all of these documents in this Plan, they are critical to management of the Refuges. Much of the management direction described in chapter 2, and throughout this Plan, is influenced by guidance from these programmatic and policy documents. Several of these documents provide guidance that an ecosystem approach be used in refuge management. In other words, we must consider the health of the entire ecosystem when managing the Refuges. This concept requires close coordination with others. In this section, we provide a brief description of this concept and of several of the national and regional management plans and programs that were considered during the development of this Plan. Other key policies such as the compatibility policy are described in later chapters as they provide guidance in this Plan.

A.2.1 Ecosystem Approach to Management

Ecosystem management recognizes the complex relationships that are present within an ecosystem. Any change in one part of an ecosystem affects the other parts of the ecosystem that it is related to. Any change in those parts affects their related parts and so on. Ecosystem

management also recognizes the boundaries of any particular ecosystem may not be confined within the boundaries of a wildlife refuge, a state, or country.

The goal of the Service's ecosystem approach is to constantly strive to contribute to "the effective conservation of natural biological diversity through perpetuation of dynamic, healthy ecosystems" while carrying out its mission and mandates, and by working closely with others. This is an ambitious goal; the only hope for success lies in the coordinated efforts of many public agencies, private organizations, landowners, and citizens. Many Service programs and initiatives contribute to the conservation of biological diversity. Most obvious are actions that lead to the protection of habitat and the recovery of fish and wildlife populations in jeopardy. Less obvious, but equally significant, are actions that restore important habitats, reduce environmental degradation and contamination, monitor the integrity of natural systems, regulate the harvest of migratory birds, and provide technical assistance to private landowners. The Service cannot fulfill this goal alone. Only through an ecosystem approach where the Service works with others to conserve the nation's biological heritage will the goal be realized.

A.2.2 National Management Plans

Nature is not constrained by the administrative boundaries that are used to determine ownership or management of specific areas of land. Without physical barriers, and with available habitat, fish and wildlife will freely roam through lands and waters regardless of ownership or management. To ensure the conservation of the many species that migrate over political and administrative lines, there are several national efforts designed to monitor and protect these species. These plans were reviewed during the revision of the Togiak Refuge CCP to ensure that the revised management direction is consistent with these national conservation plans.

Centennial Legacy Plan These plans were developed for refuges nationwide to mark the centennial anniversary of the National Wildlife Refuge System. They are intended to serve as a vision to provide resources for the Refuge System in the next 100 years. These plans prioritize and address only the Refuge System's most pressing needs in three main categories: essential staff, mission-critical projects, and major maintenance.

North American Waterfowl Management Plan This conservation plan seeks to restore waterfowl populations in Canada, the United States, and Mexico to the levels recorded in the 1970's. The international partnership has worked to identify priority habitats for waterfowl and has established goals and objectives for the waterfowl populations and habitats (North American Waterfowl Management Plan 1998).

Partners in Flight Conservation of the landbirds of the United States. Partners In Flight is a cooperative effort involving partnerships between Federal, state and local government agencies, philanthropic foundations, professional organizations, conservation groups, industry, the academic community, and private individuals. Partners in Flight was created in 1990 in response to growing concerns about declines in the populations of many land bird species and to emphasize the conservation of birds not covered by existing conservation initiatives. Bird conservation plans are developed in each region to identify species and habitats most in need of conservation, to establish objectives and strategies to meet them, and to implement and monitor progress on the plans.

U.S. Shorebird Conservation Plan (2000) This conservation plan seeks to stabilize populations of all shorebirds that are in decline due to factors affecting habitat in the U.S. At a regional level, the plan's goal is to ensure that shorebird habitat is available in adequate quantity and quality to support shorebird populations in each region. Ultimately, the goal of the Comprehensive

Conservation Plan is to restore and maintain shorebird populations throughout the Western Hemisphere through an international partnership.

North American Waterbird Conservation Plan For the Americas (2002). This plan provides a continental-scale framework for the conservation and management of 210 species of waterbirds, including seabirds, coastal waterbirds, wading birds, and marshbirds utilizing aquatic habitats in 29 nations throughout North America, Central America, the islands and pelagic waters of the Caribbean Sea and western Atlantic, the U.S.-associated Pacific Islands and pelagic waters of the Pacific.

Coastal Zone Management Act of 1972 This act was passed in recognition of the increasing and conflicting uses that were causing irreparable harm to both the biological and physical systems associated with coastal areas (Bristol Bay Coastal Resource Service Area Board 1987). The act directed states to complete comprehensive coastal management programs. It mandated that once a state's plan received Federal approval, that Federal actions (which includes this Plan) must be consistent with the state's plan.

A.2.3 Regional Management Plans

In addition to the national conservation plans, this plan considers the management of neighboring lands by reviewing regional conservation plans and other land management goals of the region. This list is not intended to be comprehensive, but demonstrates some of the major regional plans that were reviewed during the development of this draft. Where applicable, specific information from these plans is identified in the Affected Environment (Chapter 3).

Landbird Conservation Plan for Alaska Biogeographic Regions (Boreal Partners in Flight Working Group 1999) This bird conservation plan was developed through the Partners In Flight national initiative. It provides conservation priorities and objectives for landbirds in each region of Alaska.

Yukon-Kuskokwim Delta Goose Management Plan (USFWS 1999) This plan directed the Service to develop comprehensive management plans for four goose species nesting in western and arctic Alaska. The Refuge provides black brant and emperor geese important spring and fall staging habitat, and provides important nesting and staging habitat for Canada geese.

A Conservation Plan for Alaska Shorebirds (Alaska Shorebird Working Group, 2000) This plan identifies shorebird species of concern in Alaska and provides goals and objectives for shorebird conservation throughout the State.

Management Plan for Alaska Raptors (2001) This plan establishes priorities for and increases management emphasis on those species with suspected population problems in Alaska. In addition to setting species priorities, priorities will also be set for tasks and, to some extent, locations of key importance to species or where impacts are anticipated.

Alaska Seabird Management Plan (1992) This plan serves as the basis for completing operational plans for selected species in Alaska. The primary purposes of the plan are:

- To link the Service's national and regional policies and management directives for seabirds;
- To provide the basis for program planning, budgeting, and evaluating the seabird program in Alaska, and for completing operational plans for selected species and species groups;
- To promote internal and interagency communications and coordination regarding seabird management and information needs in Alaska; and
- To encourage public awareness of the management of seabirds in Alaska.

Conservation Plan for the Pacific Walrus in Alaska (1994) This plan was developed to describe management and research actions that will maintain the Pacific walrus population within its optimum sustainable population range, thus ensuring that walrus remain a sustained resource for coastal Native inhabitants of the Bering and Chukchi seas and a functioning component of the Bering-Chukchi shelf ecosystem.

Bristol Bay Cooperative Management Plan (Alaska Land Use Council, Draft 1984) In the early 1980s, public land managers in the Bristol Bay region developed a cooperative plan in collaboration with local governments and Native interests. The plan was prepared pursuant to ANILCA Section 1203. The plan melded direction for all public lands and took an integrated approach to issues such as cross-peninsula transportation corridors. The Regional Management Plan was never adopted as a consolidated plan. Instead, it formed the basis for the state's Bristol Bay Area Plan (1984), and provided the basis for management direction in the existing Togiak Refuge Comprehensive Conservation Plan.

Alaska Natural Heritage Program This program was developed by the Nature Conservancy. The mission of the Alaska Natural Heritage Program is "to document the distribution and abundance of ecologically significant plant and animal species, ecological communities, and natural features, and to assist in maintaining an ecologically healthy environment, while promoting the development of a sustainable economy in Alaska." The program has developed a Biological Conservation Database that provides information on species distribution, trends, and habitats for species in need of over 1,300 plants and animal species in Alaska.

Alaska Coastal Management Program/Bristol Bay Coastal Management Plan This program was established as a result of the 1972 Coastal Zone Management Act of 1972 and the Alaska Coastal Management Act of 1977, which directed the State of Alaska to implement a comprehensive coastal management program. The Bristol Bay Coastal Management Plan established broad goals and objectives for the entire Bristol Bay region, including the Togiak Refuge. Under these acts this Plan must be consistent with the Bristol Bay Coastal Management Plan.

The Alaska Coastal Management Program identifies 12 primary categories that are to be used in a consistency evaluation. The U.S. Fish and Wildlife Service finds the Comprehensive Conservation Plan for Togiak National Wildlife Refuge and the Hagemeister Island portion of Alaska Maritime Refuge to be fully consistent with policies of the Alaska Coastal Management Program, and the Bristol Bay Coastal Management Plan.

Natural Resources Plan South Coastal Long Range Radar Stations Plan This plan guides the land use, fish and wildlife management, and outdoor recreation management of three long range radar stations owned by the United States Air Force, including the Cape Newenham Long Range Radar Station located within the Togiak Refuge.

Wood-Tikchik State Park Management Plan (2002) This plan guides the management of the 1.6 million acre Wood-Tikchik State Park adjacent to the Togiak Refuge. The affects of management actions in both the state park plan and the Togiak Refuge Plan were considered during the revision of the Togiak Refuge Plan.

A.2.4 Togiak National Wildlife Refuge Plans

Finally, there are those plans which are beyond the scope and purpose of this Plan, but which are needed to help the refuge achieve its goals within the context of ecosystem management and other national and regional plans.

Land Protection Plan for the Togiak National Wildlife Refuge (1999) This plan sets priorities for acquisition or other land protection measures based upon the resource value of these private lands. This Land Protection Plan (LPP) is required by Service policy; however, it does not obligate the Service or the landowner to implement any land protection measure. Rather, it is a management tool that guides refuge land protection activities and provides the framework for refuge and private landowner cooperation. The goal of the LPP is to identify and conserve high quality habitat found on privately owned land within the refuge boundary.

Fisheries Management Plan (1990) The Fisheries Management Plan establishes strategies for accomplishing specific goals and objectives outlined in this Comprehensive Conservation Plan. These strategies generally include the types of operations, procedures, facilities, equipment, and costs associated with specific projects, and specific methods for inventory and monitoring of fisheries and habitats within the Togiak Refuge.

Wildlife Inventory and Monitoring Plan This plan serves a purpose similar to the Fisheries Management Plan described previously, but provides specific direction for accomplishing goals and objectives related to terrestrial wildlife, marine mammals, and bird species and their habitats throughout the Togiak Refuge. These goals and objectives are also included in this Plan. The Togiak Refuge Wildlife Inventory and Monitoring Plan was approved on September 2, 2008.

Nushagak Peninsula Caribou Management Plan (1994) This management plan was developed in cooperation with ADF&G and several local area representatives. The plan and the planning committee work to maintain a healthy caribou population on the Nushagak Peninsula through monitoring efforts and hunting recommendations.

Appendix B:

Consultation and Coordination with Others

B. Consultation and Coordination with Others

B.1 Consistency with the Alaska Coastal Management Program

Section 307(c) of the Coastal Zone Management Act of 1972, as amended (PL 92-583), states that "each Federal agency conducting or supporting activities directly affecting the coastal zone shall conduct or support those activities in a manner which is, to the maximum extent practicable, consistent with approved State coastal management programs." Federal agency consistency requirements are addressed in 15 CFR 930.

The Alaska Coastal Management Act of 1977, as amended, and the Alaska Coastal Management Program set forth general policies to be used for the review of projects. For coastal management purposes, most lands within the Refuge are within the Bristol Bay region.

The ACMP identifies 12 primary categories that are to be used in consistency evaluations. Following are the categories applicable to this Plan:

- Coastal development
- Recreation
- Subsistence
- Habitats
- Air, land, and water quality

The U.S. Fish and Wildlife Service finds the Comprehensive Conservation Plan for Togiak National Wildlife Refuge and the Hagemeister Island portion of Alaska Maritime Refuge to be fully consistent with policies of the Alaska Coastal Management Program, Ceñaliulriit Coastal Management Plan, and the Bristol Bay Coastal Management Plan.

B.2 Section 7 Compliance

The planned actions found in the Togiak National Wildlife Refuge Comprehensive Conservation Plan are not likely to adversely affect listed species or designated critical habitat. Therefore, the Fish and Wildlife Service finds the Plan to be fully consistent with Section 7 of the Endangered Species Act of 1973 (16 U.S.C. 1531 et seq: 87 stat 884, as amended). Documentation of Endangered Species Act Consultation are on file with the administrative record of this plan.

Appendix C

Coordination with the State of Alaska

C. Coordination with the State of Alaska

Consistent with the principles of ecosystem management and the laws and policies described in Appendix A, effective management of the Togiak National Widlife Refuge (Refuge) must be done in close coordination with the State of Alaska. This appendix is not intended to be a comprehensive list of state agencies, but rather describes the primary State agencies that share concern and responsibilities for fish, wildlife, and other natural resources.

C.1 Alaska Department of Fish and Game

The Alaska Department of Fish and Game (ADF&G) has the primary responsibility for managing resident fish and wildlife populations in Alaska. On refuge lands, the U.S. Fish and Wildlife Service and ADF&G share a mutual concern for all fish and wildlife resources and their habitats, and both are engaged in extensive fish and wildlife conservation, management, and protection programs. In 1982, the U.S. Fish and Wildlife Service and the ADF&G signed a Master Memorandum of Understanding (dated March 13, 1982) that defines the cooperative management roles of each agency. This memorandum sets the framework for cooperation between the two agencies.

Through the direction of the Boards of Fisheries and Game, the State of Alaska establishes fishing, hunting, and trapping regulations throughout the State. These regulations apply to Federal public lands unless superseded by Federal subsistence regulations. The State is divided into 26 Game Management Units (GMUs); most of these are further divided into subunits. Management objectives are developed for populations within the GMUs. Almost all Refuge lands lie within GMU 17(A), 17(C), and 18, with the exception of portions of Milk Creek and Nuyakuk drainages on the northern end of the Refuge which is in GMU 17(B).

The State process for developing regulations involves substantial public input to the Alaska Boards of Fisheries and Game concerning changes in regulations and allocations. Input may be directly to the Boards through testimony and proposals or indirectly through participation in local fish and game advisory committees. The advisory committees assist the Boards in assessing local fish and wildlife issues and proposed regulations. ADF&G biological staff also provides data and analysis of proposals to the Boards. Regulations may be changed by the Boards at regular meetings, by emergency regulation, or by emergency order.

Although many biologists within ADF&G have law enforcement authority, most enforcement of fishing and hunting regulation is carried out by Refuge law enforcement officers and officers of the Alaska Department of Public Safety, Division of State Fish and Wildlife Protection.

The Division of Wildlife Conservation works to conserve and enhance Alaska's wildlife and to provide for a wide range of uses for the greatest benefit of current and future generations of the people through management of wildlife populations and habitat, research, information transfer, regulatory activities, and public service.

The ADF&G Division of Commercial Fisheries manages, protects, rehabilitates, enhances, and develops fisheries and aquatic plant resources in the interest of the economy and general well-being of the State, consistent with the sustained-yield principle and subject to allocations established through public regulatory processes. It is responsible for management of the State's commercial, subsistence, and personal-use fisheries.

The Division of Sport Fish is responsible for the State's recreational fishery resource: the conservation of self-perpetuating populations of fish; management of sport fisheries in both salt and fresh water; and hatchery reproducing populations of sport fish species to provide a diverse mix of sport fishing opportunities and optimize the social and economic benefits of Alaska's recreational fisheries.

The Division of Subsistence is the research branch of ADF&G responsible for providing comprehensive information on the customary and traditional use of wild resources. Information is provided to meet management goals, aid in regulation development, facilitate collaborative agreements, assess environmental impacts, and describe the unique role of wild resources in Alaska.

C.2 Alaska Department of Natural Resources

The Alaska Department of Natural Resources (DNR) and its subdivisions coordinate with the Service and other federal and state agencies in managing the public lands (federal and state) in Alaska. The DNR manages all State owned land, water, and surface and subsurface resources except for fish and game. The DNR Division of Mining, Land and Water manages the State's water and lands interests, including any within National wildife Refuges. The division is responsible for development of plans for management of state lands, this includes the *Bristol Bay Area Management Plan (2005), The Wood-Tikchik State Park Management Plan (2002),* and management direction for the Togiak National Wildlife Refuge and Lower Goodnews River Special Use Area (1991). Coordination with adjacent landowners, including the Fish and Wildlife Service, was an important part of developing these plans.

MASTER MEMORANDUM OF UNDERSTANDING BETWEEN THE ALASKA DEPARTMENT OF FISH AND GAME Juneau, Alaska AND THE U.S. FISH AND WILDLIFE SERVICE DEPARTMENT OF THE INTERIOR Anchorage, Alaska

This Master Memorandum of Understanding between the State of Alaska, Department of Fish and Game, hereinafter referred to as the Department, and U.S. Fish and Wildlife Service, hereinafter referred to as the Service, reflects the general policy guideline within which the two agencies agree to operate.

WHEREAS, the Department, under the Constitution, laws, and regulations of the State of Alaska, is responsible for the management, protection, maintenance, enhancement, rehabilitation, and extension of the fish and wildlife resources of the State on the sustained yield principle, subjects to preferences among beneficial uses; and

WHEREAS, the Service, by authority of the Constitution, laws of Congress and regulations of the U.S. Department of the Interior has a mandated management responsibility for certain species or classes of wildlife and is responsible for the management of Service lands in Alaska, and the conservation of fish and wildlife resources on these lands; and

WHEREAS, the Department and the Service share a mutual concern for fish and wildlife resources and their habitats and both are engaged in extensive fish and wildlife conservation, management, and protections programs and desire to develop and maintain a cooperative relationship which will be in the best interests of both parties, the concerned fish and wildlife resources and their habitats, and produce the greatest public benefit; and

WHEREAS, it has been recognized in the Alaska National Interest Lands Conservation Act and subsequent implementing Federal regulations that the resources and uses of Service lands in Alaska are substantially different than those of other states; and

WHEREAS, the Department and the Service recognize the increasing need to coordinate resource planning and policy development;

NOW, THEREFORE, the parties hereto do hereby agree as follows:

THE DEPARTMENT OF FISH AND GAME AGREES:

1. To recognize the Service as the agency with the responsibility to manage migratory birds, endangered species, and other species mandated by Federal law, and on Service lands in Alaska to conserve fish and wildlife and their habitats and regulate human use.

2. To manage fish and resident wildlife populations in their natural species diversity on Service lands.

3. To consult with the Regional Director in a timely manner and comply with applicable Federal laws and regulations before embarking on enhancement or construction activities on Service lands.

THE FISH AND WILDLIFE SERVICE AGREES:

1. To recognize the Department as the agency with the primary responsibility to manage fish and resident wildlife within the State of Alaska.

2. To recognize the right of the Department to enter onto Service lands at any time to conduct routine management activities which do not involve construction, disturbance to the land, or alterations of ecosystems.

3. To cooperate with the Department in planning for enhancement or development activities on Service lands which require permits, environmental assessments, compatibility assessments, or similar regulatory documents by responding to the Department in a timely manner with requirements, time tables, and any other necessary input.

4. To manage the fish and wildlife habitat on Service lands so as to ensure conservation of fish and wildlife populations and their habitats in their natural diversity.

5. To consider carefully the impact of any proposed treaties or international agreements relating to fish and wildlife resources on the State of Alaska which could diminish the jurisdictional authority of the State and to consult freely with the State when these treaties or agreements have a primary impact on the State.

6. To review present U.S. Fish and Wildlife Service policies and any future proposed changes in those policies in consultation with the Department to determine if modified or special policies are needed for Alaska.

7. To adopt refuge management plans whose provisions- including provisions for animal damage control- are in substantial agreement with the Department's fish and wildlife management plans, unless such plans are determined formally to be incompatible with the purposes for which the respective refuges were established.

8. To utilize the State's regulatory process to maximum extent allowed by Federal law in developing new or modifying existing Federal regulation or proposing changes in existing State regulations governing or affecting the taking of fish and wildlife on Service lands in Alaska.

THE DEPARTMENT OF FISH AND GAME AND THE FISH AND WILDLIFE SERVICE MUTUALLY AGREE:

1. To coordinate planning for management of fish and wildlife resources on Service lands so that conflicts arising from differing legal mandates, objectives, and policies either do not arise or are minimized.

2. To consult with each other when developing policy and legislation which affects the attainment of wildlife resource management goals and objectives of the other agency.

3. To recognize that the taking of fish and wildlife by hunting, trapping, or fishing on Service lands in Alaska is authorized in accordance with applicable State and Federal law unless State regulations are found to be incompatible with documented refuge goals, objectives, or management plans.

4. To develop such supplemental memoranda of understanding between the Commissioner and the Regional Director as may be required to implement the policies contained herein.

5. That this Master Memorandum of Understanding shall become effective when signed by the Commissioner of the Alaska Department of Fish and Game and the Alaska Regional Director of the U.S. Fish and Wildlife Service and shall continue in force until terminated by either party by providing notice in writing 120 days in advance of the intended date of termination.

6. That amendments to this Master Memorandum of Understanding may be proposed by either party and shall become effective upon approval by both parties.

STATE OF ALASKA	U.S. DEPARTMENT OF THE INTERIOR
Department of Fish and Game	Fish and Wildlife Service
By / s/ Ronald O. Skoog	By / s / Keith M. Schreiner
Ronald O Skoog	Keith M. Schreiner
Commissioner	Regional Director, Alaska
Date / s / 13 March 1982	Date / s / 13 March 1982

Togiak National Wildlife Refuge and Lower Goodnews River Special Use Area

STATE OF ALASKA

DEPARTMENT OF NATURAL RESOURCES

OFFICE OF THE COMMISSIONER

SARAH PALIN, GOVERNOR

☐ P.O. BOX 111000
JUNEAU, ALASKA 99811-1000
PHONE: (907) 465-2400
FAX: (907) 465-3886

☐ 550 WEST 7TH AVENUE, SUITE 1400
ANCHORAGE, ALASKA 99501-3650
PHONE: (907) 269-8431
FAX: (907) 269-8918

The Commissioner of the Department of Natural Resources hereby adopts the guidelines in Appendix C (pages C-9 through C-14) of the Revised Togiak National Wildlife Refuge Comprehensive Conservation Plan and Public Use Management Plan Environmental Assessment for state-owned shorelands in the Togiak National Wildlife Refuge and lower Goodnews River as a state land use plan under AS 38.04.065 and 11 AAC 55.010-.030. The Department of Natural Resources will manage state-owned shorelands within the Togiak National Wildlife Refuge and lower Goodnews River consistent with the guidelines identified in the revised plan and listed on the following three pages.

Those state-owned shorelands within the Togiak National Wildlife Refuge and lower Goodnews River were designated as Special Use Lands at 11 AAC 96.014(b)(8) in 2002. The Commissioner finds that this designation remains consistent with the Department of Natural Resources' management authority and that this action continues to be in the best interest of the state.

This action rescinds the previous Special Use Lands Designation for this area, signed May 10, 1991.

Tom Irwin, Commissioner
Department of Natural Resources

April 14, 2008
Date

MANAGEMENT OF STATE SHORELANDS AND WATERS WITHIN THE TOGIAK NATIONAL WILDLIFE REFUGE AND LOWER GOODNEWS RIVER ADL 226851

The Alaska Department of Natural Resources has been engaged in a cooperative planning process with the United States Fish and Wildlife Service to revise the Togiak National Wildlife Refuge Comprehensive Conservation Plan. The Department of Natural Resources has prepared this appendix to describe the current management guidelines for the State of Alaska shorelands and waters within the Togiak National Wildlife Refuge and lower Goodnews River. The State of Alaska reserves the right to amend or change this portion of the plan as conditions change or future needs develop.

BACKGROUND

The State of Alaska originally adopted the guidelines in Chapter III of the Togiak National Wildlife Refuge Public Use Management Plan as a State Land Use Plan in May of 1991. At the same time, the state-owned shorelands in the Togiak National Wildlife Refuge and lower Goodnews River were administratively designated as Special Use Lands, and later adopted as regulations in 2002. The Special Use Land Designation (SULD) was revised in 2008 in conjunction with the Comprehensive Conservation Plan and Public Use Management Plan revision process for the Togiak National Wildlife Refuge. These revisions to the 1991 SULD were intended to clarify guidelines and language presented in the original version.

These shorelands are designated Special Use Lands based on their special resource values. This designation authorizes restrictions on some uses and requires a permit for certain activities that would otherwise be considered "Generally Allowed" under 11 AAC 96.020. In this case, the Special Use Lands designation allows managers to implement the management guidelines as outlined within this Appendix.

The State of Alaska has special duties and management constraints with respect to waters, tidelands and shorelands (the lands underlying inland navigable waters) which arise from the Alaska Constitution and its principles commonly known as the public trust doctrine. The public trust doctrine requires the State to exercise authority to ensure public use of navigable waters for navigation, commerce, recreation, and other related purposes.

The Alaska Constitution (Article VIII, Sections 1, 2, 3, 6, 13 and 14) and Alaska Statutes (AS 38.05.126-.128) provide the legal basis for applying the public trust doctrine in Alaska. The Constitution states "free access to the navigable or public waters of the State, as defined by the legislature, shall not be denied any citizen of the United States or resident of the State, except that the legislature may by general law regulate and limit such access for other beneficial uses or public purposes."

The Alaska Department of Natural Resources is the agency entrusted with responsibility for managing state lands and waters. To meet the intent of the public trust doctrine, the Alaska Department of Natural Resources will manage state shorelands in the Togiak National Wildlife Refuge and on the lower Goodnews River under the guidelines outlined below.

SPECIAL USE LAND

As provided in regulation (11 AAC 96.014), the Department of Natural Resources has determined that these lands have special recreational and other special resource values warranting additional protections or other special requirements. State of Alaska shorelands within the Togiak National Wildlife Refuge and lower Goodnews River are therefore designated as Special Use Lands.

GUIDELINES FOR MANAGEMENT OF STATE OWNED SHORELANDS

Management of state shorelands in the Togiak National Wildlife Refuge and on the lower Goodnews River will be consistent with the Alaska Constitution, laws, regulations, and management guidelines included in this document. The following guidelines apply:

Generally Allowed Uses on State Shorelands

11 AAC 96.020 provides a list of uses that are "Generally Allowed" on state lands (including shorelands) without a permit. Modifications to these generally allowed uses for Special Use Lands in the Togiak National Wildlife Refuge and on the lower Goodnews River are established per regulation 11 AAC 96.014 (b)(8) and are detailed in this Appendix.

Short-term Camping on State Shorelands

Consistent with 11 AAC 96.020(a)(4)(A), camping is generally allowed on state-owned lands for personal, noncommercial purposes for no more than fourteen days at one site, using a temporary facility that can be readily dismantled and removed. For these Special Use Lands, camping is limited to three consecutive days at any one site per 11 AAC 96.014 (b)(8). Moving the entire camp at least two miles starts a new three-day period. Camping on state shorelands within ¼ mile (1,320 feet) of the outlet of Kagati Lake is restricted to one night per party every seven days.

Long-term Camping on State Shorelands

Permits may be issued for long-term camping necessary for fish and wildlife management, resource management and scientific research. Other long-term camping on state shorelands will not be permitted within the Togiak National Wildlife Refuge and on the lower Goodnews River unless specifically authorized by the State of Alaska Department of Natural Resources, Division of Mining, Land and Water, Southcentral Regional Office.

Human Waste

Human waste shall not be disposed of on state-owned shorelands, in accordance with AS 46.03.800 - 810. Human waste may be disposed of in a cathole at least 100 feet away from the Ordinary High Water Mark of streams, rivers, or lakes in accordance with the Alaska Department of Environmental Conservation (ADEC) regulation 18 AAC 72.020 (see also "Activities on Adjacent Private Uplands"). On privately-owned uplands, human waste may only be disposed of with the concurrence of the owner.

Identification of State Shorelands

Defining the location of the Ordinary High Water Mark, which delineates the boundary of state-owned shorelands, is often difficult and may require technical expertise. The Ordinary High Water Mark can usually be identified by the vegetation line along the bank or shore, or by other distinctive signs. It is defined as the mark along the bank or shore where the presence and action of the water are so common as to leave a natural line on the bank or shore. That line may be indicated by erosion, shelving, changes in soil characteristics, destruction of terrestrial vegetation, or other distinctive physical characteristics.

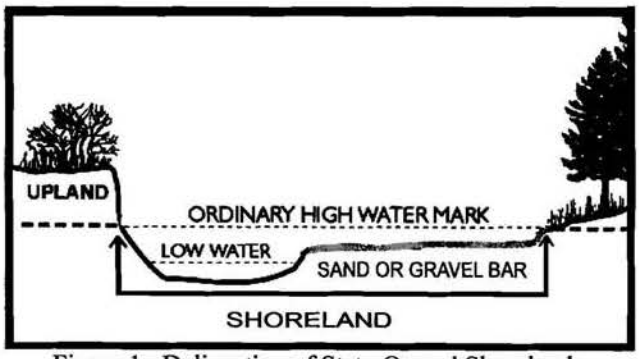


Figure 1: Delineation of State-Owned Shorelands

2

ACTIVITIES ON ADJACENT PRIVATE UPLANDS

Nothing in this document authorizes trespass on, or use of, adjacent privately-owned uplands. It is the responsibility of the river user to acquire all applicable permits prior to use of adjacent privately-owned uplands. Authorization to use privately-owned uplands may or may not include disposal of human waste. If a permit for disposal of human waste on adjacent private uplands is not secured, it is the responsibility of the river user to transport human waste to an ADEC-approved facility for disposal.

MODIFICATION AND AMENDMENT OF GUIDELINES

The Special Use Land Designation does not preclude any future land management action deemed by the State to be in the public interest. The development of any future regulations for the Special Use Land will require additional public involvement. The regulations will be reviewed and updated periodically as new data and technologies become available, and as changing social or economic conditions place different demands on state land.

SAFETY AND EDUCATION

The Department of Natural Resources discussed issues related to boating safety on the Goodnews River with local residents, river users and resource managers. As a result of these discussions and review of pertinent information, several methods of addressing boating safety have been considered, including: motorized restrictions, courtesy signage on the adjacent uplands, brush removal, and increased boater education and safety training. In addition to the management guidelines listed above, the Department of Natural Resources will continue to promote safe use of state waters by local residents, commercial operators and guided and unguided users. This can be accomplished through various means, including: boater safety and education programs offered by the State, brochures, and increased enforcement of existing state laws.

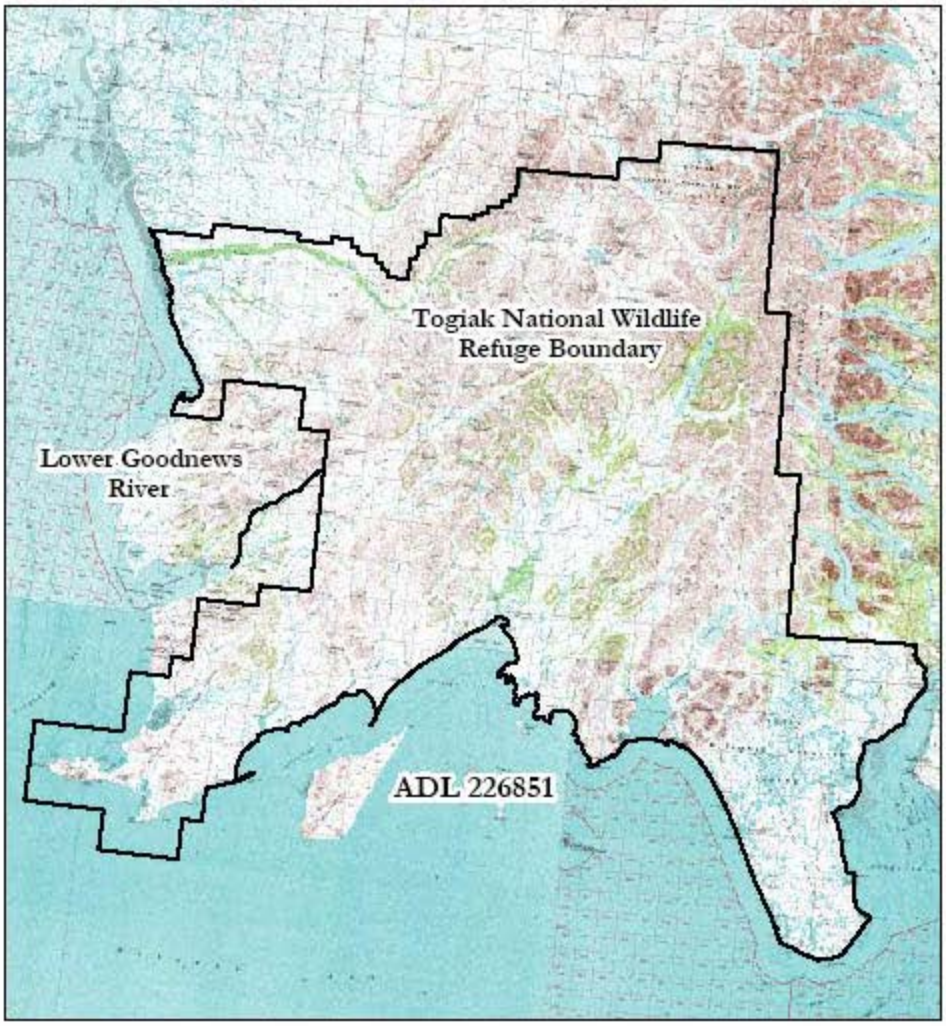
DEFINITIONS

Outlet of Kagati Lake. The confluence of Kagati Lake, and adjoining Pegati Lake, with the Kanektok River. Seward Meridian T. 003S R. 062W Section 33.

Temporary Facility. For the purposes of this Special Use Land Designation, temporary facilities are manmade structures that can be disassembled within 48 hours and must be removed and the site restored to its natural state at the end of the term of use. Examples of temporary facilities are frame, dome, or pup tents.

Togiak National Wildlife Refuge and Lower Goodnews River Special Use Area

Authorized: May 10, 1991



Legend

Special use lands include all shorelands within Togiak National Wildlife Refuge and along the Lower Goodnews River

Map Created On October 16, 2002

Alaska Department of Natural Resources
Division of Mining, Land & Water

Appendix D

Compatibility Determinations

Table of Contents

COMPATIBILITY DETERMINATION

Use: Subsistence Activities

Supporting Uses: Tree harvest (firewood), boating (human-powered), boating (motorized), trapping, natural resource collecting, camping, cross-country skiing, dog sledding and ski jouring, hiking and backpacking, photography, video, filming, audio recording (nonwildlife-dependent, recreational—other), snowshoeing, outdoor recreation (other), photography (wildlife), wildlife observation, fixed-wing aircraft.

Refuge Name: Togiak National Wildlife Refuge including the Hagemeister Island portion of Alaska Maritime Refuge (Refuge).

Establishing and Acquisition Authority(ies)

Togiak National Wildlife Refuge encompassing approximately 4,899,000 acres, was established on December 2, 1980 when Congress passed the Alaska National Interest Lands Conservation Act (ANILCA). Former Cape Newenham Refuge, established January, 1969 was incorporated into the present Togiak National Wildlife Refuge in 1980.

Section 702(10) of ANILCA designated approximately 2,373,000 of Togiak Refuge as the Togiak Wilderness under the Wilderness Act, as amended (16 U.S.C. 1131-1136). The purposes for these lands as wilderness are supplemental to the other purposes of Togiak Refuge.

As part of the Togiak Refuge Comprehensive Conservation Plan revision, the administration of Hagemeister Island was transferred from Alaska Maritime Refuge to Togiak Refuge. Approximately 74,000 acres in size, Hagemeister Island became part of Alaska Maritime Refuge with the passage of ANILCA on December 2, 1980.

Refuge Purpose(s)

Cape Newenham Refuge (now part of Togiak Refuge) was established in 1969 by Public Land Order 4583 "…for the protection of wildlife and their habitat…".

Sections 303(1)(B) and 303(6)(B) of ANILCA set forth the purposes for which Togiak and Alaska Maritime Refuges (including Cape Newenham Refuge) were established and shall be managed, including:

> **(i)** to conserve fish and wildlife populations and habitats in their natural diversity including, but not limited to,
>
> [Togiak Refuge] salmonids, marine birds and mammals, migratory birds and large mammals (including their restoration to historic levels);
>
> [Alaska Maritime Refuge] marine mammals, marine birds and other migratory birds, the marine resources upon which they rely, bears, caribou and other mammals;
>
> **(ii)** to fulfill the international treaty obligations of the United States with respect to fish and wildlife and their habitats;
>
> **(iii)** to provide, in a manner consistent with purposes set forth in subparagraphs (i) and (ii), the opportunity for continued subsistence uses by local residents;

(iv) [Alaska Maritime Refuge] to provide, in a manner consistent with subparagraphs (i) and (ii), a program of national and international scientific research on marine resources; and

(v) to ensure, to the maximum extent practicable and in a manner consistent with the purposes set forth in paragraph (i), water quality and necessary water quantity within the refuge.

The purpose for the Togiak Wilderness Area defined by the Wilderness Act is:

The Wilderness Act of 1964 (Public Law 88-577) creates additional Refuge purposes for the Togiak Wilderness Area. Designated wilderness areas are to be managed "for the use and enjoyment of the American people in such manner as will leave them unimpaired for future use and enjoyment as wilderness, and so as to provide for the protection of these areas, the preservation of their wilderness character, and for the gathering and dissemination of information regarding their use and enjoyment as wilderness."

National Wildlife Refuge System Mission:

The mission of the National Wildlife Refuge System is to administer a national network of lands and waters for the conservation, management, and, where appropriate, restoration of the fish, wildlife, and plant resources and their habitats within the United States for the benefit of present and future generations of Americans (National Wildlife Refuge System Administration Act, as amended).

Description of Use(s)

Subsistence activities are an existing use provided for in the Refuge purposes. They occur

year-round throughout the Refuge. Subsistence uses are defined by ANILCA to mean:

"the customary and traditional uses by rural Alaska residents of wild, renewable resources for direct personal or family consumption as food, shelter, fuel, clothing, tools, or transportation; for the making and selling of handicraft articles out of non-edible byproducts of fish and wildlife resources taken for personal or family consumption; for barter, or sharing for personal or family consumption; and for customary trade."

Residents of villages located within and adjacent to the Refuge have lifestyles and economies that depend on subsistence resources. Subsistence activities are not just a way of obtaining food, but are an important mechanism for maintaining cultural values such as kinship, community, respect for elders, hospitality, sharing resources, and the passing of values to younger generations.

Specific examples of activities within the Refuge addressed in this document include hunting, fishing, trapping, firewood gathering, berry picking, gathering of other plant materials, and gathering of bird eggs.

Activities associated with subsistence uses involve camping, the use of chainsaws for wood cutting, and the construction of temporary facilities. Cabins associated with subsistence uses are allowed by special use permit only. Summer activities are concentrated along river corridors and coastlines accessed by motorboats and ATV's. Winter activities are much more dispersed and cover large portions of the Refuge. Snowmobiles are the primary mode of transportation during periods of adequate snow cover and are often used to pull sleds. The

use of airplanes for subsistence purposes does occur, but is uncommon. Other traditional methods of transportation include hiking, backpacking, snowshoeing, cross-country skiing, raft, kayak, canoe, and sled-dog teams.

Much of the subject use occurs within the approximately 2.4-million-acre Togiak Wilderness Area, which is administered according to the provisions of the Wilderness Act and ANILCA. Although the Wilderness Act prohibits the public use of motor vehicles, motorboats, aircraft, and other forms of mechanical transport, and motorized equipment, ANILCA contains special provisions for Alaska wilderness areas allowing the use of snowmachines, motorboats, airplanes, and non-motorized surface transportation methods for traditional activities. The public use of helicopters, off-highway vehicles, and motorized equipment is not allowed.

Section 811 of ANILCA requires that we ensure rural residents have reasonable access to subsistence resources on the Refuge, and that we allow them use of snowmachines, motorboats and other traditionally used means of surface transportation, subject to reasonable regulations.

The mainstay subsistence food for communities within and adjacent to the Refuge is salmon. Salmon are obtained primarily by gill net or hook-and-line fishing. All Pacific salmon species are used, although chinook, sockeye, and coho are preferred. Primary freshwater species include Dolly Varden, rainbow trout, and northern pike, but are used to a lesser extent than salmon. The most widely hunted animals for subsistence uses include caribou, moose, ptarmigan, ground squirrel, beaver, otter, fox, wolf, and marine mammals.

Until recently, most caribou harvested by local villages occurred outside the boundaries of Togiak Refuge. With the successful reintroduction of caribou to the Nushagak Peninsula in 1988 (Hinkes and Van Daele 1996) and the range and population expansion of the Mulchatna Caribou Herd (Hinkes et al. 2005), caribou became available locally and harvest opportunities were greatly liberalized. Since 1995, annual reported harvests of Nushagak Peninsula caribou have ranged from 3 to 127 with Dillingham and Manokotak hunters accounting for greater than 95% of the total harvest (Aderman and Woolington 2004). Coiley-Kenner et al. (2003) estimated harvest of Nushagak Peninsula caribou during the 1999-2000 season by Manokotak to be 126, significantly higher than the 16 reported via federal harvest permit during the same period. In the 2006 spring survey, fewer than 600 caribou were counted in the Nushagak Peninsula herd, the level at which the management plan directs that no hunting take place. No permits were issued for the fall 2006 hunting season. A very limited harvest can be expected in the next several years from this herd. Beginning in 1994, Mulchatna caribou began using Togiak Refuge in varying, but often appreciable, numbers. Subsistence harvests of Mulchatna caribou by local villages depends on availability and access. Coiley-Kenner et al. (2003) estimated harvest of Mulchatna caribou during the 1999-2000 season by Togiak and Twin Hills to be 192.

Similar to the situation with caribou, moose have only recently established themselves on Togiak Refuge lands, most notably in the Togiak and Kulukak drainages (Aderman and Woolington 2003). Moose hunting was reestablished in 1997 and since then hunters, primarily from Togiak and Twin Hills, have reported harvesting 7 to 15 moose annually during the fall. Coiley-Kenner et al. (2003) estimated harvest of moose in the Togiak drainage during the 1999-2000 season by Togiak and Twin Hills to be 56. Currently, an unlimited number of state registration permits are available to local residents during the fall and winter moose hunts in the eastern one-half of Togiak Refuge.

Availability of Resources

Adequate refuge personnel and base operational funds are available to manage subsistence activities at existing and projected levels. Activity related tasks are primarily conducted in cooperation with the Alaska Department of Fish and Game by the refuge manager, deputy refuge manager, subsistence coordinator, pilot/refuge officer and park ranger. Management primarily includes conducting wildlife and public-use studies and surveys specifically for the management of subsistence species, conducting harvest surveys in the local communities, and participating in the regulatory development process with the Federal Subsistence Board and Alaska Boards of Fisheries and Game.

Anticipated Impacts of the Use(s)

Fish and wildlife harvested by subsistence users at current and projected levels—in accordance with established state and Federal regulations pertaining to season, bag limits and methods of harvest—are not expected to have significant long-term impacts on the overall populations of refuge fish and wildlife resources. State and Federal biologists monitor fish and game populations and state and Federal regulatory bodies continually respond to management needs by adopting regulations to ensure the continued health of fish and wildlife populations.

Activities associated with subsistence uses at the Refuge occur year round in a variety of locations and habitats. There is no evidence to suggest long-term impacts to wildlife due to human disturbance occurs at the Refuge. Short-term impacts such as displacement and avoidance due to subsistence activities are isolated and have little impact on wildlife populations. At current levels of use it is not believed that subsistence activities are adversely affecting the character of the wilderness area.

Maintaining natural diversity and historic age and size composition of rainbow trout populations are goals outlined in the 1990 Togiak Refuge fisheries management plan and 1990 ADF&G Southwest Alaska rainbow trout management plan. The Alaska Board of Fisheries and ADF&G have further restricted sport fishing harvest methods and limits, but it is too early to detect any affect these changes may have. Biologists will continue to evaluate the affect of subsistence and sport fishing upon rainbow trout and other fish populations and make management recommendations to the Federal Subsistence Board and State Board of Fisheries.

Public Review and Comment

Draft compatibility determinations were published as a portion of the Draft Revised Comprehensive Conservation Plan, and public review was invited with comments on the plan. The State of Alaska provided several comments on this compatibility determination. They requested we clarify the access provisions on Sections 1110(a) and 811(b) of the Alaska National Interest Lands Conservation Act. The requested changes were made. The State requested that we modify our statement concerning possible changes in the size and age structure of rainbow trout to show that it was not a conclusive finding. We deleted the sentence referenced. The State requested we clarify in the justification section of this compatibility determination that refuge purposes address the "opportunity for continued subsistence uses" not simply subsistence uses. The requested change was made.

Determination

_____Use is Not Compatible

___X___Use is Compatible

Stipulations Necessary to Ensure Compatibility

Although specific stipulations for subsistence activities are not necessary, management direction is provided in the revised Comprehensive Conservation Plan for the Refuge. The Nushagak Peninsula Caribou Herd Management Plan, the Togiak Refuge Fisheries Management Plan, the Refuge Public Use Management Plan, and the Refuge wildlife inventory plan give direction for harvest limits and current and future monitoring efforts. Findings from these wildlife, public use, and habitat monitoring efforts will be used to determine what additional management actions, if any, are needed to ensure all subsistence activities remain compatible with refuge purposes.

Justification

One of the purposes of the Refuge, as established by ANILCA, is to provide the opportunity for continued subsistence uses by local residents, consistent with the other refuge purposes of conserving fish and wildlife populations and habitats and fulfilling international treaty obligations with respect to fish and wildlife. ANILCA recognized that the continued opportunity for subsistence uses of public lands is critical to physical, economic, traditional, social, and cultural existence of rural Native and non-Native residents of Alaska. ANILCA established a preference for subsistence users, stating that the taking of fish and wildlife on public lands for non-wasteful subsistence use is given priority over other consumptive uses; in times of scarcity, recreational use is limited first. Section 811 of ANILCA ensures that subsistence users can access public lands by snowmobile, motorboat, and other traditionally used means of surface transportation, subject to reasonable regulation. In conclusion, current subsistence activities occurring on the Refuge contribute to one of the purposes of the Refuge while not materially interfering with or detracting from the other purposes of the Refuge or the mission of the National Wildlife Refuge System.

Supporting Documents

U.S. Fish and Wildlife Service. 1986. Togiak National Wildlife Refuge Final Comprehensive Conservation Plan, Wilderness Review, and Environmental Impact Statement. U.S. Fish and Wildlife Service. Anchorage, Alaska. 514 pp.

U.S. Fish and Wildlife Service. 1988. Alaska Maritime National Wildlife Refuge Final Comprehensive Conservation Plan, Wilderness Review, and Environmental Impact Statement. U.S. Fish and Wildlife Service. Anchorage, Alaska.

U.S. Fish and Wildlife Service. 1991. Togiak National Wildlife Refuge, Final Public Use Management Plan and Environmental Assessment. U.S. Fish and Wildlife Service. Anchorage, Alaska. 244 pp.

USFWS. 1990 “Final Fishery Management Plan, Togiak National Wildlife Refuge.” U.S. Fish and Wildlife Service, Region 7, Alaska.

USFWS. 1992. Environmental Assessment for the Policy on Commercial Big-Game Guide-Outfitters and Transporters on National Wildlife Refuge in Alaska. U.S. Fish and Wildlife Service. May 22, 1992.

USFWS. 1992. Finding of No Significant Impact, Environmental Assessment for the Policy on Commercial Big-Game Guide-Outfitters and Transporters on National Wildlife Refuge in Alaska. U.S. Fish and Wildlife Service. June 9, 1992.

USFWS. 1992. Subsistence Management for Federal Public Lands in Alaska, Final Environmental Impact Statement, Record of Decision signed April 2, 1992. U.S. Fish and Wildlife Service.

U.S. Fish and Wildlife Service. 2007. Togiak National Wildlife Refuge Draft Revised Comprehensive Conservation Plan and Revised Public Use Management Plan and Environmental Assessment. U.S. Fish and Wildlife Service. Anchorage, Alaska.

Aderman, A. and J. Woolington. 2003. Population identity and movements of moose in the Togiak, Kulukak, and Goodnews River Drainages, Southwest Alaska, March 1998 - April 2002. Unpubl. Prog. Rep. Togiak National Wildlife Refuge & Alaska Dept. of Fish and Game. Dillingham, AK. 30 pp.

Aderman, A, and J. Woolington. 2004. Nushagak Peninsula caribou herd summary data, 1988 - 2004. Unpubl. Prog. Rep. Togiak National Wildlife Refuge & Alaska Dept. of Fish and Game. Dillingham, AK. 10 pp.

Coiley-Kenner, P., T. M. Kreig, M. B. Chythlook, and G. Jennings. 2003. Wild resource harvests and uses by residents of Manokotak, Togiak, and Twin Hills, 1999/2000. Division of Subsistence, Alaska Dept. of Fish and Game, Technical Paper No. 275. Juneau.

Hinkes, M. T. and L. J. VanDaele. 1996. Population growth and status of the Nushagak Peninsula Caribou Herd in southwest Alaska following reintroduction, 1988 - 1993. Rangifer Special Issue 9:301-309.

Hinkes, M. T., G. H. Collins, L. J. Van Daele, S. D. Kovach, A. R. Aderman, J. D. Woolington, and R. J. Seavoy. 2005. Influence of population growth on caribou herd identity, calving ground fidelity, and behavior. Journal of Wildl. Manage. 69: 1147-1162.

Refuge Determination

Refuge Manager / Project Leader Approval:	/s/ Paul Liedberg	7/14/09
	(Signature)	(Date)

Concurrence

Regional Chief, National Wildlife Refuge System:	/s/ Tracey S. McDonnell, Acting	8/3/09
	(Signature)	(Date)

Mandatory 10-Year Re-Evaluation Date: 2019

NEPA Compliance for Refuge Use Decision

_____Categorical Exclusion without Environmental Action Memorandum

_____Categorical Exclusions and Environmental Action Memorandum

___X__Environmental Assessment and Finding of No Significant Impact

_____Environmental Impact Statement and Record of Decision

COMPATIBILITY DETERMINATION

Use: Commercially Guided Recreational Fishing Services

Supporting Uses: Boating (human-powered), boating (motorized), interpretation (not conducted by Refuge staff or authorized agents), hunting (upland-game), hunting (waterfowl), hunting (other), plant gathering, natural resource collecting, camping, hiking and backpacking, pets, photography, video, filming, or audio recording (nonwildlife-dependent, recreational—other), outdoor recreation (other), photography (wildlife), wildlife observation (guiding or outfitting), fixed-wing aircraft, tree harvest (firewood)

Refuge Name: Togiak National Wildlife Refuge including the Hagemeister Island portion of Alaska Maritime Refuge (Refuge).

Establishing and Acquisition Authority(ies)

Togiak National Wildlife Refuge encompassing approximately 4,899,000 acres, was established on December 2, 1980 when Congress passed the Alaska National Interest Lands Conservation Act (ANILCA). Former Cape Newenham Refuge, established January, 1969 was incorporated into the present Togiak National Wildlife Refuge in 1980.

Section 702(10) of ANILCA designated approximately 2,373,000 of Togiak Refuge as the Togiak Wilderness under the Wilderness Act, as amended (16 U.S.C. 1131-1136). The purposes for these lands as wilderness are supplemental to the other purposes of Togiak Refuge.

As part of the Togiak Refuge Comprehensive Conservation Plan revision, the administration of Hagemeister Island was transferred from Alaska Maritime Refuge to Togiak Refuge. Approximately 74,000 acres in size, Hagemeister Island became part of Alaska Maritime Refuge with the passage of ANILCA on December 2, 1980.

Refuge Purpose(s)

Cape Newenham Refuge (now part of Togiak Refuge) was established in 1969 by Public Land Order 4583 "…for the protection of wildlife and their habitat…".

Sections 303(1)(B) and 303(6)(B) of ANILCA set forth the purposes for which Togiak and Alaska Maritime Refuges (including Cape Newenham Refuge) were established and shall be managed, including:

> **(i)** to conserve fish and wildlife populations and habitats in their natural diversity including, but not limited to,
>
> [Togiak Refuge] salmonids, marine birds and mammals, migratory birds and large mammals (including their restoration to historic levels);
>
> [Alaska Maritime Refuge] marine mammals, marine birds and other migratory birds, the marine resources upon which they rely, bears, caribou and other mammals;
>
> **(ii)** to fulfill the international treaty obligations of the United States with respect to fish and wildlife and their habitats;
>
> **(iii)** to provide, in a manner consistent with purposes set forth in subparagraphs (i) and (ii), the opportunity for continued subsistence uses by local residents;

(iv) [Alaska Maritime Refuge] to provide, in a manner consistent with subparagraphs (i) and (ii), a program of national and international scientific research on marine resources; and

(v) to ensure, to the maximum extent practicable and in a manner consistent with the purposes set forth in paragraph (i), water quality and necessary water quantity within the refuge.

The Wilderness Act of 1964 (Public Law 88-577) creates additional Refuge purposes for the Togiak Wilderness Area. Designated wilderness areas are to be managed "for the use and enjoyment of the American people in such manner as will leave them unimpaired for future use and enjoyment as wilderness, and so as to provide for the protection of these areas, the preservation of their wilderness character, and for the gathering and dissemination of information regarding their use and enjoyment as wilderness."

National Wildlife Refuge System Mission:

The mission of the National Wildlife Refuge System is to administer a national network of lands and waters for the conservation, management, and, where appropriate, restoration of the fish, wildlife, and plant resources and their habitats within the United States for the benefit of present and future generations of Americans (National Wildlife Refuge System Administration Act, as amended).

Description of Use(s)

Commercially guided recreational fishing services provided within the Refuge are allowed by Refuge special use permit only. Both multi-day and day use opportunities are provided throughout the summer months. From June through September, guides primarily target chinook and coho salmon as well as rainbow and Dolly Varden trout throughout Togiak Refuge. Other species include chum, pink and sockeye salmon, grayling, northern pike, and lake trout. All methods and means of recreational fishing are regulated by the Alaska Board of Fisheries and the Alaska Department of Fish and Game (ADF&G).

Much of the subject use occurs within the boundaries of the approximately 2.4-million-acre Togiak Wilderness Area, which is administered according to the provisions of the Wilderness Act and ANILCA. Although the Wilderness Act prohibits the public use of motor vehicles, motorboats, aircraft, and other forms of mechanical transport, and motorized equipment, ANILCA contains special provisions for Alaska wilderness areas allowing the use of snowmachines, motorboats, airplanes, and non-motorized surface transportation methods for traditional activities, including guided recreational fishing. The public use of helicopters, off-highway vehicles, and motorized equipment is not allowed.

Twenty-six special use permits to conduct guided recreational fishing services on Togiak Refuge have been awarded on a competitive basis consistent with a Public Use Management Plan finalized in 1991. These permits incorporate a variety of services and locations. Four permits have been awarded for float and motorboat use of the Goodnews River, six permits to conduct day-use fly-in fishing on wilderness lakes, two fly-in/motorboat permits for the Kulukak River, six permits for a combination of floating, motorboat, and fly-in/motorboat use on the Togiak River, and one motorboat and six float permits for the Kanektok River.

The one exception to the competitively awarded permits is on the Goodnews River. The two motorboat and two float permits which are currently awarded on an annual basis on this

river will be incorporated into the competitive process with the completion of the Public Use Management Plan revision.

Eighteen different companies share the 26 competitively awarded permits in place. Each permit is initially awarded for five years with a five year renewal option. Based on the Public Use Management Plan, each permit contains stipulations that guide the permittees operation. Examples of these stipulations include the start dates for float trips, maximum numbers of clients, maximum number of boats, and weekly limitations on the use of wilderness lakes for day use fly-in trips. Because of the nature of the competitively awarded permits for commercial sport fishing on Togiak Refuge, use has remained relatively stable and is not expected to increase in the future.

Commercial operators use a variety of transportation including aircraft, motorboats, and rafts to conduct their activities. Facilities include a variety of seasonal temporary camps and short term tent camps in the refuge, and permanent camps located outside the Refuge. Equipment caches, fuel storage, tent platforms, and long-term summer camps are allowed by special use permit only.

Other activities associated with commercially guided recreational fishing include camping, hiking, photography, backpacking, cutting of dead and downed wood for campfires.

Access to waters within Togiak Refuge is either by boat or airplane. Commercial transporters contracted by commercial guides are not considered as part of this compatibility determination. The use of helicopters or jet powered personal water craft is specifically excluded from this determination.

A detailed description of sport fishing activities throughout the Refuge is provided in Chapter 3 of the Togiak Refuge Draft Comprehensive Conservation Plan.

Availability of Resources

Adequate refuge personnel and base operational funds are available to manage guided recreational fishing activities at current and projected levels. Administrative time primarily involves issuing permits, ensuring that licenses and certifications are current, collecting client use-day fees, and entering activity information into a database for analysis. Field work associated with administering the program primarily involves monitoring the permittees' compliance with the terms of the permits through the Refuge River Ranger program and law enforcement patrols. Approximately $6000-$8000 in commercial sport fishing guide use fees are collected annually, which are returned to the refuge for use in managing these activities over and above base operational funds.

Anticipated Impacts of the Use(s)

Sport fishing and associated activities at the Refuge are concentrated along river corridors during the summer months. There is no evidence to suggest long-term impacts to wildlife due to human disturbance occurs at the Refuge. Short-term impacts such as displacement and avoidance due to sport fishing activities are isolated and have little impact on fish or wildlife populations. Camping occurs primarily on durable gravel bars, where impacts to vegetation are negligible.

Maintaining natural diversity and historic age and size composition of rainbow trout populations are goals outlined in the 1990 Togiak Refuge fisheries management plan and

1990 ADF&G Southwest Alaska rainbow trout management plan. The Alaska Board of Fisheries implemented harvest methods and limit restrictions in 1985, 1990, and 1998, but it is too early to detect any affect these changes may have. Biologists will continue to evaluate the affect of subsistence and sport fishing upon rainbow trout and other fish populations and make management recommendations to the Federal Subsistence Board and State Board of Fisheries.

The number of commercially guided recreational fishing clients is managed through Refuge special use permits. These use levels were developed through the National Environmental Policy Act planning process to insure subsistence opportunities, wilderness character, and visitor satisfaction are maintained for all Refuge users. Togiak Refuge will continue to actively manage commercial use through special use permits, the River Ranger program, and law enforcement activities.

Public Review and Comment

Draft compatibility determinations were published as a portion of the Draft Revised Comprehensive Conservation Plan, and public review was invited with comments on the plan. The State of Alaska provided several comments on this compatibility determination. The State requested that we modify our statement concerning possible changes in the size and age structure of rainbow trout to show that it was not a conclusive finding. The sentence was deleted. The State requested that we clarify that off-road vehicles may be allowed by Service regulations on designated routes and areas or by special use permit and that helicopter landings may be authorized on a case-by-case basis under 43 CFR 36.11(f)(4). We did not make the requested changes as this compatibility determination is for commercially guided recreational fishing services and by terms of their special use permits we do not allow helicopters and off-road vehicles. The State requested we revise the paragraph preceding the list of conditions included in refuge permits. We made the requested change. The State also provided a number of comments on the permit special conditions. The Service's regional permit special conditions are being reviewed in a separate process and comments on them have been forwarded to those working on this task. Comments on regional permit special conditions are not addressed in this compatibility determination and no changes were made to the regional permit special conditions. The State requested the refuge modify the special condition that prohibited fuel caches to allow consideration on a case-by-case basis. The requested change was made.

Determination

_____Use is Not Compatible

___X__Use is Compatible

Stipulations Necessary to Ensure Compatibility

Management direction provided in the revised comprehensive conservation plan for the Refuge includes implementation of applicable sections of the Refuge fishery management plan. Adequate monitoring of commercial recreational fishing guide activities and other associated public-use activities will be conducted to provide information for determining what additional management actions, if any, are needed to ensure all commercial recreational fishing guide activities remain compatible with refuge purposes.

The conditions listed below are included on Refuge permits issued for commercially guided recreational fishing services, most of which are intended to minimize impacts and ensure

compatibility. Refuge permits may also include other special conditions as necessary or appropriate for the specific operations or activities that are proposed.

- Failure to abide by any part of this special-use permit; violation of any refuge-related provision in Titles 43 (Part 36) or Title 50 (subchapters B and C) of the Code of Federal Regulations; or violation of any pertinent state regulation (e.g., fish or game violation) will, with due process, be considered grounds for immediate revocation of this permit and could result in denial of future permit requests for lands administered by the U.S. Fish and Wildlife Service. This provision applies to all persons working under the authority of this permit (e.g., assistants). Appeals of decisions relative to permits are handled in accordance with Title 50 Code of Federal Regulations, Part 36.41.
- A copy of this permit must be in the permittee's possession at all times while exercising the privileges of this permit.
- The permittee is responsible for ensuring that all employees, party members, aircraft pilots, and any other persons working for the permittee and conducting activities allowed by this permit are familiar with and adhere to the conditions of this permit.
- Any problem with wildlife and/or animals taken in defense of life or property must be reported immediately to the refuge manager and to the Alaska Department of Fish and Game; any animal taken in defense of life or property must be salvaged in accordance with state regulations.
- The use of Native or state lands that have been conveyed (patented) is not authorized by this permit.
- This permit may be canceled or revised at any time by the refuge manager in case of emergency (e.g., high fire danger, flooding, unusual resource problems).
- Prior to beginning any activities allowed by this permit, the permittee shall provide the refuge manager with the following: (1) name and method of contact for the field party chief or supervisor and (2) any changes in information provided in the original permit application.
- Prior to beginning any activities allowed by this permit, the permittee shall provide the refuge manager with the following: (1) proof of appropriate aviation passenger liability ($150,000 per seat plus $100,000 property damage), marine liability, and/or comprehensive general liability insurance covering all aspects of operations throughout the annual use period; (2) aircraft and other vehicle types to be used, with identification information, if different from those described in the permit application; (3) changes in names of pilots; and (4) any other changes in information provided in the operations plan.
- In accordance with the Archaeological Resources Protection Act (16 USC 470aa), the excavation, disturbance, collection, or purchase of historical, recent, ethnological, or archaeological specimens or artifacts is prohibited.
- All noncombustible waste materials must be removed from the refuge (not buried) upon the permittee's and/or clients' departure. The permittee is responsible for removal of clients' garbage.
- The construction or clearing of landing strips or pads is prohibited. Incidental hand removal of rocks and other minor obstructions may be permitted.

- The operation of aircraft at altitudes and in flight paths resulting in the herding, harassment, hazing, or driving of wildlife is prohibited. It is recommended that all aircraft, except for take off and landing, maintain a minimum altitude of 2,000 feet above ground level.
- The use of helicopters is prohibited.
- All aircraft being used in a commercial operation must have 12-inch identification numbers in contrasting colors that are readily visible.
- Failure to report the actual number of client-use days per type of authorized activity by December 31 of the permit calendar year and to pay the Service's established fees (client-use day) within 30 days after receiving a bill for collection will be grounds for denial of future permits.
- Motorboat operators must possess a U.S. Coast Guard (USCG) license for all passenger-carrying operations, if required by USCG regulations.
- Any action by a permittee or the permittee's employees that unduly interferes with or harasses other refuge visitors or impedes access to any site is strictly prohibited. Examples of prohibited acts include flights over camps or persons at less than 500 feet altitude (unless landing) and parking aircraft or placing other objects (rocks, tents, etc.) on any landable area to restrict use by other aircraft or persons.
- This permit authorizes use of the Native-selected lands identified in the description block of this permit. If any of these Native-selected lands are conveyed during the term of this permit, the permittee will no longer be authorized to use those lands until and unless permission is obtained from the Native entity to which land ownership has been conveyed.
- Commercial operators who transport persons by air for compensation or hire must comply with all Federal Aviation Administration regulatory requirements for air carriers and commercial operators.
- The permittee and permittee's clients do not have the exclusive use of the site(s) or lands covered by this permit.

Justification

Commercially guided recreational fishing is a form of traditional activity that Congress intended to preserve with the enactment of ANILCA, which established the refuge. Commercial visitor services are also allowed in Wilderness areas under Section 4(d)(6) of the Wilderness Act. This service supports not only fishing, but also other activities, including wildlife observation and photography, which the National Wildlife Refuge System Administration Act (as amended) identifies as priority public uses. Recreational fishing guide operations on the Refuge provide the public with safe recreational fishing opportunities of a nature found few other places in the world. These visitor services are a valuable benefit to a segment of the public that is either not physically able to, not comfortable with, or for other reasons chooses not to participate in unguided fishing trips in the extremely remote and harsh wilderness environment of the Refuge. This use supports the System Mission by enabling recreational anglers to use refuge resources. It provides a safer experience for anglers than they would have accessing the refuge on their own. It does not have serious impacts on other users or on refuge resources.

After fully considering the impacts of this activity as described in the "Anticipated Impacts" section of this compatibility determination, it is my determination that commercially guided fishing activities on the Refuge contribute to the achievement of the purposes of the Refuge and the mission of the National Wildlife Refuge System.

Supporting Documents

U.S. Fish and Wildlife Service. 1986. Togiak National Wildlife Refuge Final Comprehensive Conservation Plan, Wilderness Review, and Environmental Impact Statement. U.S. Fish and Wildlife Service. Anchorage, Alaska. 514 pp.

U.S. Fish and Wildlife Service. 1988. Alaska Maritime National Wildlife Refuge Final Comprehensive Conservation Plan, Wilderness Review, and Environmental Impact Statement. U.S. Fish and Wildlife Service. Anchorage, Alaska.

U.S. Fish and Wildlife Service. 1991. Togiak National Wildlife Refuge, Final Public Use Management Plan and Environmental Assessment. U.S. Fish and Wildlife Service. Anchorage, Alaska. 244 pp.

USFWS. 1990 "Final Fishery Management Plan, Togiak National Wildlife Refuge." U.S. Fish and Wildlife Service, Region 7, Alaska.

USFWS. 1992. Subsistence Management for Federal Public Lands in Alaska, Final Environmental Impact Statement, Record of Decision signed April 2, 1992. U.S. Fish and Wildlife Service.

U.S. Fish and Wildlife Service. 2007. Togiak National Wildlife Refuge Draft Revised Comprehensive Conservation Plan and Revised Public Use Management Plan and Environmental Assessment. U.S. Fish and Wildlife Service. Anchorage, Alaska.

Refuge Determination

Refuge Manager / Project Leader Approval:	/s/ Paul Liedberg	7/14/09
	(Signature)	(Date)

Concurrence

Regional Chief, National Wildlife Refuge System:	/s/ Tracey S. McDonnell, Acting	8/3/09
	(Signature)	(Date)

Mandatory 10-Year Re-Evaluation Date: 2019

NEPA Compliance for Refuge Use Decision

_____Categorical Exclusion without Environmental Action Memorandum

_____Categorical Exclusions and Environmental Action Memorandum

___X__Environmental Assessment and Finding of No Significant Impact

_____Environmental Impact Statement and Record of Decision

COMPATIBILITY DETERMINATION

Use: Commercially Guided Recreational Hunting Services

Supporting Uses: Boating (human-powered), boating (motorized), interpretation (not conducted by Refuge staff or authorized agents), fishing (guiding and outfitting), hunting (upland-game—guiding or outfitting), hunting (waterfowl—guiding or outfitting), hunting (other—guiding or outfitting), plant gathering, natural resource collecting, camping, hiking and backpacking, pets, photography, outdoor recreation (other), photography (wildlife), wildlife observation (guiding or outfitting), fixed-wing aircraft, tree harvest (firewood).

Refuge Name: Togiak National Wildlife Refuge including the Hagemeister Island portion of Alaska Maritime Refuge (Refuge).

Establishing and Acquisition Authority(ies)

Togiak National Wildlife Refuge encompassing approximately 4,899,000 acres, was established on December 2, 1980 when Congress passed the Alaska National Interest Lands Conservation Act (ANILCA). Former Cape Newenham Refuge, established January, 1969 was incorporated into the present Togiak National Wildlife Refuge in 1980.

Section 702(10) of ANILCA designated approximately 2,373,000 of Togiak Refuge as the Togiak Wilderness under the Wilderness Act, as amended (16 U.S.C. 1131-1136). The purposes for these lands as wilderness are supplemental to the other purposes of Togiak Refuge.

As part of the Togiak Refuge Comprehensive Conservation Plan revision, the administration of Hagemeister Island was transferred from Alaska Maritime Refuge to Togiak Refuge. Approximately 74,000 acres in size, Hagemeister Island became part of Alaska Maritime Refuge with the passage of ANILCA on December 2, 1980.

Refuge Purpose(s)

Cape Newenham Refuge (now part of Togiak Refuge) was established in 1969 by Public Land Order 4583 "…for the protection of wildlife and their habitat…".

Sections 303(1)(B) and 303(6)(B) of ANILCA set forth the purposes for which Togiak and Alaska Maritime Refuges (including Cape Newenham Refuge) were established and shall be managed, including:

> **(i)** to conserve fish and wildlife populations and habitats in their natural diversity including, but not limited to,
>
> [Togiak Refuge] salmonids, marine birds and mammals, migratory birds and large mammals (including their restoration to historic levels);
>
> [Alaska Maritime Refuge] marine mammals, marine birds and other migratory birds, the marine resources upon which they rely, bears, caribou and other mammals;
>
> **(ii)** to fulfill the international treaty obligations of the United States with respect to fish and wildlife and their habitats;
>
> **(iii)** to provide, in a manner consistent with purposes set forth in subparagraphs (i) and (ii), the opportunity for continued subsistence uses by local residents;

(iv) [Alaska Maritime Refuge] to provide, in a manner consistent with subparagraphs (i) and (ii), a program of national and international scientific research on marine resources; and

(v) to ensure, to the maximum extent practicable and in a manner consistent with the purposes set forth in paragraph (i), water quality and necessary water quantity within the refuge.

The Wilderness Act of 1964 (Public Law 88-577) creates additional Refuge purposes for the Togiak Wilderness Area. Designated wilderness areas are to be managed "for the use and enjoyment of the American people in such manner as will leave them unimpaired for future use and enjoyment as wilderness, and so as to provide for the protection of these areas, the preservation of their wilderness character, and for the gathering and dissemination of information regarding their use and enjoyment as wilderness."

National Wildlife Refuge System Mission:

The mission of the National Wildlife Refuge System is to administer a national network of lands and waters for the conservation, management, and, where appropriate, restoration of the fish, wildlife, and plant resources and their habitats within the United States for the benefit of present and future generations of Americans (National Wildlife Refuge System Administration Act, as amended).

Description of Use(s)

Commercial guiding services for hunting caribou, moose, and brown bear have operated on the Togiak Refuge since establishment in 1980. Authorized services include hunting opportunities for caribou, brown bear, and wolf. The majority of guided big-game hunting opportunities within the Refuge involves the use of aircraft to access short-term tent camps for periods of a few days to a week from late August to early October.

The annual harvest by guided clients from 1992 through 2005 ranged from two to six for brown bear and zero to two for caribou. Several other commercial uses conducted concurrently with and incidentally to big-game guiding activities are routinely authorized. These include wildlife photography, guided small game and waterfowl hunting, hiking, river floating, and other ecotourism-type activities. Big-game guides are competitively selected to operate on refuge lands through a formal process, established by regional policy in 1992, to limit or manage commercial guiding activities at a level compatible with refuge purposes and to ensure that quality guiding services are available to the public. There are three established big-game guide-use areas on the Refuge. No guided hunting takes place on Hagemeister Island. These use areas are designated as sole-use areas and are limited to one authorized guide. Individual guides are limited to having special-use permits for three use areas on refuge lands in Alaska at any one time. As of January 2007, there are three guides operating on the Refuge. Guides are required to follow written operations plans, which are evaluated by Service personnel during the competitive selection process. These operations plans include the following: 1) dates of field operations; 2) species to be hunted; 3) maximum and expected number of clients for each species hunted; 4) number and type of existing or new camps (i.e., tent, tent platform or frame, cabin, boat) including other needed facilities such as caches and weatherports; 5) access points and mode(s) of transportation (e.g., airplanes, boats, snowmachines, pack animals, and other nonmotorized means); 6) fuel

storage needs; and 7) services provided by others (e.g., contracts for transportation, food services). Guides must comply with all state requirements applicable to this activity.

This compatibility determination addresses the full spectrum of uses associated with the overall activity of commercially guided hunting of big game, including all means of access, lodging and facilities, and other elements identified in the guides' operations plans.

Authorized modes of access for all areas on the Refuge include fixed-wing aircraft, motor boats, snowmachines, nonpowered boats, dogsled, foot, snowshoe, and cross country ski. Lodging and facilities include tents, tent frames, tent platforms, and weatherports. The use of off-road vehicles by big-game hunting guides and their clients is prohibited on the refuge. There are currently no cabins on the Refuge that are authorized for use in conjunction with big-game guiding operations.

Much of the subject use occurs within the approximately 2.4-million-acre Togiak Wilderness Area, which is administered according to the provisions of the Wilderness Act and ANILCA. Although the Wilderness Act prohibits the public use of motor vehicles, motorboats, aircraft, and other forms of mechanical transport, and motorized equipment, ANILCA contains special provisions for Alaska wilderness areas allowing the use of snowmachines, motorboats, airplanes, and non-motorized surface transportation methods for traditional activities, including guided recreational hunting. The public use of helicopters, off-highway vehicles, and motorized equipment is not allowed.

Commercial big-game hunting guides often contract with other commercial transporters to provide access to the Refuge. These transporters are not included as part of this compatibility determination. The use of helicopters or jet powered personal water craft is specifically excluded from this determination.

This is an existing activity that supports wildlife-dependent priority public uses. Activities would occur throughout the refuge during state regulated hunting seasons.

Availability of Resources

Adequate refuge personnel and base operational funds are available to manage guided big-game hunting activities at existing and projected levels. Administrative time (25-30 staff days) primarily involves issuing permits, ensuring that licenses and certifications are current, collecting client use-day fees, and entering activity information into a database for analysis. Field work associated with administering the program primarily involves monitoring the permittees' compliance with the terms of the permits. Fees collected annually for commercial big-game guide use from 1992 to 2004 ranged from $178 to $957. These use fees are returned to the refuge for use in managing these activities over and above base operational funds.

Anticipated Impacts of the Use(s)

Because of the Refuge administrative oversight of the activity, comprehensive state and federal regulations that continually evolve to respond to fisheries and wildlife management needs, and combined law-enforcement efforts of state and refuge personnel, existing and projected levels of commercially guided big-game guiding services should have minimal impacts on fish and wildlife resources, other refuge resources, other refuge users, and wilderness values, as discussed subsequently.

A competitive scoring process is used to select big-game guide permittees. Scores reflect the ability of the applicant to minimize impacts on refuge resources including; water quality, soil, vegetation, other refuge users, wilderness values, and non-target species. The permitting process insures qualified applicants with the ability to minimize impacts are selected.

Commercial big-game guiding operations may, in some cases, result in some competition for limited numbers of game animals or for preferred campsites or in interference with subsistence users and/or other unguided recreational hunters. However, both the Federal Subsistence Board and Alaska Board of Game regularly adopt regulations in response to big-game population levels and management needs to reduce impacts to big-game populations and to the opportunity for continued subsistence uses of these species by local residents. At current levels of use it is not believed that commercially guided recreational hunting is adversely affecting the character of the wilderness area.

Because the majority of the guides access the Refuge by landing on lakes and rivers with float-equipped aircraft, impacts on refuge habitat are minimized. Some landings are made on vegetated lowland tundra or ridge tops, usually with Piper Super Cubs or other small, light aircraft equipped with tundra tires. Disturbance to vegetation is minimal and short-term unless numerous landings are made repeatedly in exactly the same location (this practice has not been observed to date). Temporary displacement and/or disturbance to wildlife can occur during take-offs and approaches to landings. There are no known long-term impacts to refuge wildlife populations from this disturbance.

All three commercial guide use areas include portions of the Togiak Wilderness Area. All restrictions and provisions of the Wilderness Act (with ANILCA exceptions) for the general public also apply to commercial guiding operations. Due to the limited number of authorized clients and the low-impact nature of guide operations plans with respect to their temporary facilities and access methods, the wilderness character of the area is not significantly compromised.

Public Review and Comment

Draft compatibility determinations were published as a portion of the Draft Revised Comprehensive Conservation Plan, and public review was invited with comments on the plan. The State of Alaska provided several comments on this compatibility determination. The State requested that we clarify that off-road vehicles may be allowed by Service regulations on designated routes and areas or by special use permit and that helicopter landings may be authorized on a case-by-case basis under 43 CFR 36.11(f)(4). We did not make the requested changes as this compatibility determination is for commercially guided recreational fishing services and by terms of their special use permits we do not allow helicopters and off-road vehicles. The State requested we revise the paragraph preceding the list of conditions included in refuge permits. We made the requested change. The State also provided a number of comments on the permit special conditions. The Service's regional permit special conditions are being reviewed in a separate process and comments on them have been forwarded to those working on this task. Comments on regional permit special conditions are not addressed in this compatibility determination and no changes were made to the regional permit special conditions. The State requested the refuge modify the special condition that prohibited fuel caches to allow consideration on a case-by-case basis. The requested change was made.

Determination

_____Use is Not Compatible

___X__Use is Compatible

Stipulations Necessary to Ensure Compatibility

As directed in the Refuge's revised Comprehensive Conservation Plan and wildlife inventory plan, adequate monitoring of commercial big-game guided hunting activities (and other public-use activities) will be conducted. Findings from these monitoring efforts will be used to determine what additional management actions, if any, are needed to ensure all commercial big-game guided hunting activities remain compatible with Refuge purposes.

To minimize impacts on refuge lands and resources, law-enforcement and administrative monitoring of permittees will be continued to ensure compliance with stipulations included in all commercial big-game guiding special-permits.

The conditions listed below are included on Refuge permits issued for commercially guided recreational hunting services, most of which are intended to minimize impacts and ensure compatibility. Refuge permits may also include other special conditions necessary or appropriate for the specific operations or activities that are proposed.

- Failure to abide by any part of this special-use permit; violation of any refuge-related provision in Titles 43 (Part 36) or Title 50 (subchapters B and C) of the Code of Federal Regulations; or violation of any pertinent state regulation (e.g., fish or game violation) will, with due process, be considered grounds for immediate revocation of this permit and could result in denial of future permit requests for lands administered by the U.S. Fish and Wildlife Service. This provision applies to all persons working under the authority of this permit (e.g., assistants). Appeals of decisions relative to permits are handled in accordance with Title 50 Code of Federal Regulations, Part 36.41.
- A copy of this permit must be in the permittee's possession at all times while exercising the privileges of this permit.
- The permittee is responsible for ensuring that all employees, party members, aircraft pilots, and any other persons working for the permittee and conducting activities allowed by this permit are familiar with and adhere to the conditions of this permit.
- Any problem with wildlife and/or animals taken in defense of life or property must be reported immediately to the refuge manager and to the Alaska Department of Fish and Game; any animal taken in defense of life or property must be salvaged in accordance with state regulations.
- The use of Native or state lands that have been conveyed (patented) is not authorized by this permit.
- This permit may be canceled or revised at any time by the refuge manager in case of emergency (e.g., high fire danger, flooding, unusual resource problems).
- Prior to beginning any activities allowed by this permit, the permittee shall provide the refuge manager with the following: (1) name and method of contact for the field party chief or supervisor and (2) any changes in information provided in the original permit application.

- Prior to beginning any activities allowed by this permit, the permittee shall provide the refuge manager with the following: (1) proof of appropriate aviation passenger liability ($150,000 per seat plus $100,000 property damage), marine liability, and/or comprehensive general liability insurance covering all aspects of operations throughout the annual use period; (2) aircraft and other vehicle types to be used, with identification information, if different from those described in the permit application; (3) changes in names of pilots; and (4) any other changes in information provided in the operations plan.
- In accordance with the Archaeological Resources Protection Act (16 USC 470aa), the excavation, disturbance, collection, or purchase of historical, recent, ethnological, or archaeological specimens or artifacts is prohibited.
- All noncombustible waste materials must be removed from the refuge (not buried) upon the permittee's and/or clients' departure. The permittee is responsible for removal of clients' garbage.
- The construction or clearing of landing strips or pads is prohibited. Incidental hand removal of rocks and other minor obstructions may be permitted.
- The operation of aircraft at altitudes and in flight paths resulting in the herding, harassment, hazing, or driving of wildlife is prohibited. It is recommended that all aircraft, except for take off and landing, maintain a minimum altitude of 2,000 feet above ground level.
- The use of helicopters is prohibited.
- All aircraft being used in a commercial operation must have 12-inch identification numbers in contrasting colors that are readily visible.
- Failure to report the actual number of client-use days per type of authorized activity by December 31 of the permit calendar year and to pay the Service's established fees (client-use day) within 30 days after receiving a bill for collection will be grounds for denial of future permits.
- Motorboat operators must possess a U.S. Coast Guard (USCG) license for all passenger-carrying operations, if required by USCG regulations.
- Any action by a permittee or the permittee's employees that unduly interferes with or harasses other refuge visitors or impedes access to any site is strictly prohibited. Examples of prohibited acts include flights over camps or persons at less than 500 feet altitude (unless landing) and parking aircraft or placing other objects (rocks, tents, etc.) on any landable area to restrict use by other aircraft or persons.
- This permit authorizes use of the Native-selected lands identified in the description block of this permit. If any of these Native-selected lands are conveyed during the term of this permit, the permittee will no longer be authorized to use those lands until and unless permission is obtained from the Native entity to which land ownership has been conveyed.
- Commercial operators who transport persons by air for compensation or hire must comply with all Federal Aviation Administration regulatory requirements for air carriers and commercial operators.
- The permittee and permittee's clients do not have the exclusive use of the site(s) or lands covered by this permit.

Justification

Commercial big-game guiding services are a form of traditional activity that Congress intended to preserve with the enactment of ANILCA. Guided big-game hunting services provide the public with high-quality, safe, and exceptional recreational hunting opportunities found few places elsewhere in the world. These guiding services provide valuable benefits to those people who are required by State regulation or who simply choose to employ a commercial big-game hunting guide. People choose to hire a guide for many reasons: they may not be physically able to enter into, or are not comfortable with, unguided hunting in the extremely remote and harsh wilderness environment of the Refuge. This use supports the System Mission by enabling recreational hunters to utilize refuge resources. Commercial operators provide a safer experience for hunters then they would have accessing the refuge on their own. This use does not have serious impacts on other users or on refuge resources.

After fully considering the impacts of this activity, as described previously in the "Anticipated Impacts" section of this compatibility determination, it is my determination that commercial big-game guiding activities on the Refuge support our mission by providing support for priority public uses and that they contribute to the achievement of the purposes of the refuge and the mission of the National Wildlife Refuge System, and are necessary for realizing the recreational purposes of the Togiak Wilderness Area.

Supporting Documents

U.S. Fish and Wildlife Service. 1986. Togiak National Wildlife Refuge Final Comprehensive Conservation Plan, Wilderness Review, and Environmental Impact Statement. U.S. Fish and Wildlife Service. Anchorage, Alaska. 514 pp.

U.S. Fish and Wildlife Service. 1988. Alaska Maritime National Wildlife Refuge Final Comprehensive Conservation Plan, Wilderness Review, and Environmental Impact Statement. U.S. Fish and Wildlife Service. Anchorage, Alaska.

U.S. Fish and Wildlife Service. 1991. Togiak National Wildlife Refuge, Final Public Use Management Plan and Environmental Assessment. U.S. Fish and Wildlife Service. Anchorage, Alaska. 244 pp.

USFWS. 1992. Environmental Assessment for the Policy on Commercial Big-Game Guide-Outfitters and Transporters on National Wildlife Refuge in Alaska. U.S. Fish and Wildlife Service. May 22, 1992.

USFWS. 1992. Finding of No Significant Impact, Environmental Assessment for the Policy on Commercial Big-Game Guide-Outfitters and Transporters on National Wildlife Refuge in Alaska. U.S. Fish and Wildlife Service. June 9, 1992.

USFWS. 1992. Subsistence Management for Federal Public Lands in Alaska, Final Environmental Impact Statement, Record of Decision signed April 2, 1992. U.S. Fish and Wildlife Service.

U.S. Fish and Wildlife Service. 2007. Togiak National Wildlife Refuge Draft Revised Comprehensive Conservation Plan and Revised Public Use Management Plan and Environmental Assessment. U.S. Fish and Wildlife Service. Anchorage, Alaska.

Refuge Determination

Refuge Manager / Project Leader Approval:	/s/ Paul Liedberg	7/14/09
	(Signature)	(Date)

Concurrence

Regional Chief, National Wildlife Refuge System:	/s/ Tracey S. McDonnell, Acting	8/3/09
	(Signature)	(Date)

Mandatory 10-Year Re-Evaluation Date: 2019

NEPA Compliance for Refuge Use Decision

_____Categorical Exclusion without Environmental Action Memorandum

_____Categorical Exclusions and Environmental Action Memorandum

___X__Environmental Assessment and Finding of No Significant Impact

_____Environmental Impact Statement and Record of Decision

COMPATIBILITY DETERMINATION

Use: Trail Marking and Marker Maintenance

Supporting Uses: Camping, dog sledding, photography, video, snowshoeing, gathering (subsistence), wildlife observation, fixed-wing aircraft, tree harvest (firewood), snow machining.

Refuge Name: Togiak National Wildlife Refuge including the Hagemeister Island portion of Alaska Maritime Refuge (Refuge).

Establishing and Acquisition Authority(ies)

Togiak National Wildlife Refuge encompassing approximately 4,899,000 acres, was established on December 2, 1980 when Congress passed the Alaska National Interest Lands Conservation Act (ANILCA). Former Cape Newenham Refuge, established January, 1969 was incorporated into the present Togiak National Wildlife Refuge in 1980.

Section 702(10) of ANILCA designated approximately 2,373,000 of Togiak Refuge as the Togiak Wilderness under the Wilderness Act, as amended (16 U.S.C. 1131-1136). The purposes for these lands as wilderness are supplemental to the other purposes of Togiak Refuge.

As part of the Togiak Refuge Comprehensive Conservation Plan revision, the administration of Hagemeister Island was transferred from Alaska Maritime Refuge to Togiak Refuge. Approximately 74,000 acres in size, Hagemeister Island became part of Alaska Maritime Refuge with the passage of ANILCA on December 2, 1980.

Refuge Purpose(s)

Cape Newenham Refuge (now part of Togiak Refuge) was established in 1969 by Public

Land Order 4583 "…for the protection of wildlife and their habitat…".

Sections 303(1)(B) and 303(6)(B) of ANILCA set forth the purposes for which Togiak and Alaska Maritime Refuge (including Cape Newenham Refuge) were established and shall be managed, including:

> **(i)** to conserve fish and wildlife populations and habitats in their natural diversity including, but not limited to,
>
> [Togiak Refuge] salmonids, marine birds and mammals, migratory birds and large mammals (including their restoration to historic levels);
>
> [Alaska Maritime Refuge] marine mammals, marine birds and other migratory birds, the marine resources upon which they rely, bears, caribou and other mammals;
>
> **(ii)** to fulfill the international treaty obligations of the United States with respect to fish and wildlife and their habitats;
>
> **(iii)** to provide, in a manner consistent with purposes set forth in subparagraphs (i) and (ii), the opportunity for continued subsistence uses by local residents;

(iv) [Alaska Maritime Refuge] to provide, in a manner consistent with subparagraphs (i) and (ii), a program of national and international scientific research on marine resources; and

(v) to ensure, to the maximum extent practicable and in a manner consistent with the purposes set forth in paragraph (i), water quality and necessary water quantity within the refuge.

The Wilderness Act of 1964 (Public Law 88-577) creates additional Refuge purposes for the Togiak Wilderness Area. Designated wilderness areas are to be managed "for the use and enjoyment of the American people in such manner as will leave them unimpaired for future use and enjoyment as wilderness, and so as to provide for the protection of these areas, the preservation of their wilderness character, and for the gathering and dissemination of information regarding their use and enjoyment as wilderness."

National Wildlife Refuge System Mission:

The mission of the National Wildlife Refuge System is to administer a national network of lands and waters for the conservation, management, and, where appropriate, restoration of the fish, wildlife, and plant resources and their habitats within the United States for the benefit of present and future generations of Americans (National Wildlife Refuge System Administration Act, as amended).

Description of Use(s)

Numerous winter snowmobile trails are used for travel between villages in and around Togiak Refuge. Groups including the State of Alaska Department of Transportation, tribal governments, search and rescue organizations, and others periodically mark these trails to make travel safer in poor weather conditions. These markers are typically wooden poles or tripods with attached reflective material, or reflectors attached directly to trees. Markers are generally located no more than 500 feet apart. Marking of trails is conducted by snowmobile pulling a sled when adequate snow cover provides suitable conditions for the work. Permits are requested when initial trail marking is proposed by ADOT and village organizations, and is not on an annual basis. Approximately 120 miles of trail are currently marked on the Refuge between the villages of Dillingham and Platinum.

Availability of Resources

Adequate refuge personnel and base operational funds are available to manage research activities at existing levels. Management involves administrative staff time to conduct phone conversations, written correspondence, review of proposed activities, and personnel interaction with the participants. Field work associated with administering the program primarily involves monitoring compliance with the terms of the permit.

Anticipated Impacts of the Use(s)

There are minimal to no impacts on refuge habitat -- air quality, water quality, vegetation, etc. There are no impacts to recreational or subsistence uses anticipated due to trail markers or their associated activities. Because of the nature of the trails and location of villages, it is not expected that trails would be marked within the wilderness area. Necessary actions to minimize impacts of trail marking and markers in specific areas will be addressed on a case-by-case basis through special use permits.

Public Review and Comment

Draft compatibility determinations were published as a portion of the Draft Revised Comprehensive Conservation Plan, and public review was invited with comments on the plan. The State of Alaska provided several comments on this compatibility determination.

The State requested that we clarify that off-road vehicles may be allowed by Service regulations on designated routes and areas or by special use permit and that helicopter landings may be authorized on a case-by-case basis under 43 CFR 36.11(f)(4). We did not make the requested changes as this compatibility determination is for trail marking and by terms of their special use permits we do not allow helicopters and off-road vehicles (other than snowmobiles) for this use.

Determination

_____Use is Not Compatible

___X__Use is Compatible

Stipulations Necessary to Ensure Compatibility

The Togiak Refuge Comprehensive Conservation Plan provides direction for current and future fishery, wildlife and public use monitoring efforts. Findings from these monitoring efforts will be used to determine what additional management actions, if any, are needed to ensure trail marking activities remain compatible with refuge purposes.

Activities considered in this compatibility determination will only be allowed under the conditions of a valid special use permit, including the following stipulations.

- All items, with the exception of trail markers, used to conduct or aid in trail marking will be removed from the refuge on or before the expiration date of the special use permit.
- Trail marking will only be allowed during periods of adequate snow cover as determined by the refuge manager.
- In accordance with Region 7 Service policy, duration of activities, and types of equipment used within the Togiak Wilderness Area will be limited to the minimum length and type necessary to complete marking of specified trails consistent with an approved Wilderness Minimum Tool Analysis.
- Marking of trails on Federal refuge lands does not convey any interest in the land to another party.

Justification

Ensuring the continuation of subsistence and wilderness recreational uses are purposes of Togiak Refuge established by ANILCA, the Refuge Improvement Act, and the Wilderness Act. Winter trail marking will improve the safety of winter travel between communities throughout the refuge and the region. These activities are supported by local residents and will not significantly restrict subsistence uses. After fully considering the impacts of these activities as described previously in the “Anticipated Impacts” section of this document, it is my determination that trail marking activities on the refuge do not materially interfere with or detract from the purposes of the refuge or the mission of the National Wildlife Refuge System.

Supporting Documents

U.S. Fish and Wildlife Service. 1986. Togiak National Wildlife Refuge Final Comprehensive Conservation Plan, Wilderness Review, and Environmental Impact Statement. U.S. Fish and Wildlife Service. Anchorage, Alaska. 514 pp.

U.S. Fish and Wildlife Service. 1988. Alaska Maritime National Wildlife Refuge Final Comprehensive Conservation Plan, Wilderness Review, and Environmental Impact Statement. U.S. Fish and Wildlife Service. Anchorage, Alaska.

U.S. Fish and Wildlife Service. 2007. Togiak National Wildlife Refuge Draft Revised Comprehensive Conservation Plan and Revised Public Use Management Plan and Environmental Assessment. U.S. Fish and Wildlife Service. Anchorage, Alaska.

Refuge Determination

Refuge Manager / Project Leader Approval:	/s/ Paul Liedberg	7/14/09
	(Signature)	(Date)

Concurrence

Regional Chief, National Wildlife Refuge System:	/s/ Tracey S. McDonnell, Acting	8/3/09
	(Signature)	(Date)

Mandatory 10-Year Re-Evaluation Date: 2019

NEPA Compliance for Refuge Use Decision

_____Categorical Exclusion without Environmental Action Memorandum

_____Categorical Exclusions and Environmental Action Memorandum

___X__Environmental Assessment and Finding of No Significant Impact

_____Environmental Impact Statement and Record of Decision

COMPATIBILITY DETERMINATION

Use: Commercial Transporter Services

Supporting Uses: Boating (human-powered), boating (motorized), environmental education (not conducted by NWRS staff or authorized agents), environmental education (other), interpretation (not conducted by NWRS staff or authorized agents), fishing (general), fishing (guiding and outfitting), fishing (other), hunting (big game), hunting (big-game guiding and outfitting), hunting (other migratory birds), hunting (upland game), hunting (upland game—guiding and outfitting), hunting (waterfowl), hunting (waterfowl—guiding and outfitting), hunting (other), hunting (other—guiding and outfitting), plant gathering, trapping, natural resource collecting, camping, cross-country skiing, dog sledding and ski jouring, hiking and backpacking, pets, photography, video, filming, or audio recording (nonwildlife-dependent, recreational—other), snowshoeing, outdoor recreation (other), research, scientific collecting, surveys, fishing (subsistence), gathering (subsistence), trapping (subsistence), subsistence (other), photography (wildlife), wildlife observation, wildlife observation (guiding or outfitting), fixed-wing aircraft, photography, video or filming or audio recording (commercial), photography, video or filming or audio recording (news and education), residential, uses (other).

Refuge Name: Togiak National Wildlife Refuge including the Hagemeister Island portion of Alaska Maritime Refuge (Refuge).

Establishing and Acquisition Authority(ies)

Togiak National Wildlife Refuge encompassing approximately 4,788,000 acres, was established on December 2, 1980 when Congress passed the Alaska National Interest Lands Conservation Act (ANILCA). Former Cape Newenham Refuge, established January, 1969 was incorporated into the present Togiak National Wildlife Refuge in 1980.

Section 702(10) of ANILCA designated approximately 2,270,000 of Togiak Refuge as the Togiak Wilderness under the Wilderness Act, as amended (16 U.S.C. 1131-1136). The purposes for these lands as wilderness are supplemental to the other purposes of Togiak Refuge.

As part of the Togiak Refuge Comprehensive Conservation Plan revision, the administration of Hagemeister Island was transferred from Alaska Maritime Refuge to Togiak Refuge. Approximately 60,000 acres in size, Hagemeister Island became part of Alaska Maritime Refuge with the passage of ANILCA on December 2, 1980.

Refuge Purpose(s)

Cape Newenham Refuge (now part of Togiak Refuge) was established in 1969 by Public Land Order 4583 "…for the protection of wildlife and their habitat…".

Sections 303(1)(B) and 303(6)(B) of ANILCA set forth the purposes for which Togiak and Alaska Maritime Refuge (including Cape Newenham Refuge) were established and shall be managed, including:

> **(i)** to conserve fish and wildlife populations and habitats in their natural diversity including, but not limited to,
>
> [Togiak Refuge] salmonids, marine birds and mammals, migratory birds and large

mammals (including their restoration to historic levels); [Alaska Maritime Refuge] marine mammals, marine birds and other migratory birds, the marine resources upon which they rely, bears, caribou and other mammals;

(ii) to fulfill the international treaty obligations of the United States with respect to fish and wildlife and their habitats;

(iii) to provide, in a manner consistent with purposes set forth in subparagraphs (i) and (ii), the opportunity for continued subsistence uses by local residents;

(iv) [Alaska Maritime Refuge] to provide, in a manner consistent with subparagraphs (i) and (ii), a program of national and international scientific research on marine resources; and

(v) to ensure, to the maximum extent practicable and in a manner consistent with the purposes set forth in paragraph (i), water quality and necessary water quantity within the refuge.

The Wilderness Act of 1964 (Public Law 88-577) creates additional Refuge purposes for the Togiak Wilderness Area. Designated wilderness areas are to be managed "for the use and enjoyment of the American people in such manner as will leave them unimpaired for future use and enjoyment as wilderness, and so as to provide for the protection of these areas, the preservation of their wilderness character, and for the gathering and dissemination of information regarding their use and enjoyment as wilderness."

National Wildlife Refuge System Mission:

The mission of the National Wildlife Refuge System is to administer a national network of lands and waters for the conservation, management, and, where appropriate, restoration of the fish, wildlife, and plant resources and their habitats within the United States for the benefit of present and future generations of Americans (National Wildlife Refuge System Administration Act, as amended).

Description of Use(s)

Visitors to the Refuge typically travel by aircraft, snowmachine or boat. Commercial transporters provide services to the public participating in wildlife-dependant recreation and subsistence activities. Although almost all commercial transporting activities on the Refuge are conducted by air-taxi operators (predominantly with amphibious or float-equipped aircraft), permits could be issued for the use of motorboats, snowmobiles, dog-sleds, or other non-motorized surface transportation methods employed for traditional activities.

The use of helicopters or jet powered personal water craft is specifically excluded from this determination.

Commercial transporters currently provide air-taxi service throughout the Refuge. A Refuge special use permit is required for all commercial transporters. The number of air-taxi operators authorized to operate on the Refuge between 2000 and 2008 ranged from 11 to 15. It should also be noted that not all of the permitted businesses actually operate within the Refuge each year. The number of transporters that operated on the Refuge for those years ranged from six to 10, and two permitted businesses accounted for 59% of all trips. Most use occurs from May through October, and the number of commercial transporter trips made to

the Refuge fluctuated from 162 to 217 per year between 2001 and 2004. Since the early 1990's, more anglers than hunters used commercial transporters to access the Refuge. The number of hunters using transporters steadily increased from 2001 through 2004 with some reduction since then as a result of the decreased Mulchatna Caribou herd. The number of permits issued, and the number of clients are not restricted.

Much of the subject use occurs within the approximately 2.4-million-acre Togiak Wilderness Area, which is administered according to the provisions of the Wilderness Act and ANILCA. Although the Wilderness Act prohibits the public use of motor vehicles, motorboats, aircraft, and other forms of mechanical transport, and motorized equipment, ANILCA contains special provisions for Alaska wilderness areas allowing the use of snowmachines, motorboats, airplanes, and non-motorized surface transportation methods for traditional activities, including commercial transporter services. The public use of helicopters, off-highway vehicles, and motorized equipment is not allowed.

This activity (commercial transporter services) occurs throughout the Refuge and supports wildlife-dependent recreational activities. Timing of this activity would primarily be in response to State fishing and hunting seasons.

Availability of Resources

Adequate refuge personnel and base operational funds are available to manage commercial transporter activities at current and projected levels. Administrative time (20-25 staff days) primarily involves annually issuing permits, ensuring that licenses and certifications are current, collecting client use-day fees, and entering activity data into a database. Field work associated with administering the program primarily involves monitoring the permittee's compliance with the terms of the permits. Approximately $2500-$3000 in commercial transporter use fees are collected annually, which are returned to the refuge for use in managing these activities over and above base operational funds.

Anticipated Impacts of the Use(s)

Because of the Refuge administrative oversight of the activity, comprehensive state and federal regulations (which continually evolve to respond to fisheries and wildlife management needs) and because of combined law-enforcement efforts of state and refuge personnel, direct impacts from commercial transporter services at existing and projected levels should have minimal impacts to fish and wildlife resources, other refuge resources, other refuge users, and wilderness values. Impacts associated with the activities that occur on the refuge as a result of the commercial transporters providing the public access to the refuge are addressed in the respective compatibility determination for each activity.

Because the vast majority of transporters access the refuge by landing on lakes and rivers with float-equipped aircraft, potential impacts to refuge habitats are minimized. A few landings have been made by commercial transporters on vegetated lowland tundra or ridge tops, usually with Piper Super Cubs or other small, light aircraft equipped with tundra tires. Disturbance to vegetation is minimal and short-term unless repeated landings are made in exactly the same location (this practice has not been observed to date). Temporary displacement and/or disturbance to wildlife can occur during take-offs and landings. There are no known long-term impacts to refuge wildlife populations from this disturbance.

Operators providing transportation to the Cape Peirce Wildlife Viewing Area, and Sangor Lake are required to avoid landing in certain locations and at certain time when wildlife disturbances are likely.

The numbers of commercial transporter flights and landings currently occurring within the designated Togiak Wilderness Area do not significantly impact the wilderness character of the area. Public use opportunities within the Togiak Wilderness Area largely depend upon commercial transporters.

Public Review and Comment

Draft compatibility determinations were published as a portion of the Draft Revised Comprehensive Conservation Plan, and public review was invited with comments on the plan. The State of Alaska provided several comments on this compatibility determination. The State requested we edit the first sentence of the description of the use and we revised the sentence. The State requested that we clarify that off-road vehicles may be allowed by Service regulations on designated routes and areas or by special use permit and that helicopter landings may be authorized on a case-by-case basis under 43 CFR 36.11(f)(4). We did not make the requested changes as this compatibility determination is for commercially guided transporter services and by terms of their special use permits we do not allow helicopters and off-road vehicles. The State requested we revise the paragraph preceding the list of conditions included in refuge permits. We made the requested change. The State also provided a number of comments on the permit special conditions. The Service's regional permit special conditions are being reviewed in a separate process and comments on them have been forwarded to those working on this task. Comments on regional permit special conditions are not addressed in this compatibility determination and no changes were made to the regional permit special conditions. The State requested the refuge modify the special condition that prohibited fuel caches to allow consideration on a case-by-case basis. The requested change was made.

Determination

_____Use is Not Compatible

___X__Use is Compatible

Stipulations Necessary to Ensure Compatibility

Management direction provided in the revised Comprehensive Conservation Plan for the Refuge, particularly adequate monitoring of commercial transporter activities and other associated public-use activities, will be conducted. Findings from the monitoring efforts will be used to determine what additional management actions, if any, are needed to ensure that commercial transporter activities remain compatible with refuge purposes.

Continuing law-enforcement and administrative monitoring of permittees will be carried out to ensure compliance with stipulations incorporated into all commercial transporter permits.

The conditions listed below are included on Refuge permits issued for commercial transporter services, most of which are intended to minimize impacts and ensure compatibility. Refuge permits may also include other special conditions necessary or appropriate for the specific operations or activities that are proposed.

• Failure to abide by any part of this special-use permit; violation of any refuge-related provision in Titles 43 (Part 36) or Title 50 (subchapters B and C) of the Code of Federal Regulations; or violation of any pertinent state regulation (e.g., fish or game violation) will, with due process, be considered grounds for immediate revocation of this permit and could result in denial of future permit requests for lands administered by the U.S. Fish and Wildlife Service. This provision applies to all persons working under the authority of this permit (e.g., assistants). Appeals of decisions relative to permits are handled in accordance with Title 50 Code of Federal Regulations, Part 36.41.

• A copy of this permit must be in the permittee's possession at all times while exercising the privileges of this permit.

• The permittee is responsible for ensuring that all employees, party members, aircraft pilots, and any other persons working for the permittee and conducting activities allowed by this permit are familiar with and adhere to the conditions of this permit.

• Any problem with wildlife and/or animals taken in defense of life or property must be reported immediately to the refuge manager and to the Alaska Department of Fish and Game; any animal taken in defense of life or property must be salvaged in accordance with state regulations.

• The use of Native or state lands that have been conveyed (patented) is not authorized by this permit.

• This permit may be canceled or revised at any time by the refuge manager in case of emergency (e.g., high fire danger, flooding, unusual resource problems).

• Prior to beginning any activities allowed by this permit, the permittee shall provide the refuge manager with the following: (1) name and method of contact for the field party chief or supervisor and (2) any changes in information provided in the original permit application.

• Prior to beginning any activities allowed by this permit, the permittee shall provide the refuge manager with the following: (1) proof of appropriate aviation passenger liability ($150,000 per seat plus $100,000 property damage), marine liability, and/or comprehensive general liability insurance covering all aspects of operations throughout the annual use period; (2) aircraft and other vehicle types to be used, with identification information, if different from those described in the permit application; (3) changes in names of pilots; and (4) any other changes in information provided in the operations plan.

- In accordance with the Archaeological Resources Protection Act (16 USC 470aa), the excavation, disturbance, collection, or purchase of historical, recent, ethnological, or archaeological specimens or artifacts is prohibited.
- All noncombustible waste materials must be removed from the refuge (not buried) upon the permittee's and/or clients' departure. The permittee is responsible for removal of clients' garbage.
- The construction or clearing of landing strips or pads is prohibited. Incidental hand removal of rocks and other minor obstructions may be permitted.
- The operation of aircraft at altitudes and in flight paths resulting in the herding, harassment, hazing, or driving of wildlife is prohibited. It is

recommended that all aircraft, except for take off and landing, maintain a minimum altitude of 2,000 feet above ground level.

- The use of helicopters is prohibited.
- All aircraft being used in a commercial operation must have 12-inch identification numbers in contrasting colors that are readily visible.
- Failure to report the actual number of client-use days per type of authorized activity by December 31 of the permit calendar year and to pay the Service's established fees (client-use day) within 30 days after receiving a bill for collection will be grounds for denial of future permits.
- Motorboat operators must possess a U.S. Coast Guard (USCG) license for all passenger-carrying operations, if required by USCG regulations.
- Any action by a permittee or the permittee's employees that unduly interferes with or harasses other refuge visitors or impedes access to any site is strictly prohibited. Examples of prohibited acts include flights over camps or persons at less than 500 feet altitude (unless landing) and parking aircraft or placing other objects (rocks, tents, etc.) on any landable area to restrict use by other aircraft or persons.
- This permit authorizes use of the Native-selected lands identified in the description block of this permit. If any of these Native-selected lands are conveyed during the term of this permit, the permittee will no longer be authorized to use those lands until and unless permission is obtained from the Native entity to which land ownership has been conveyed.
- Commercial operators who transport persons by air for compensation or hire must comply with all Federal Aviation Administration regulatory requirements for air carriers and commercial operators.
- The permittee and permittee's clients do not have the exclusive use of the site(s) or lands covered by this permit.

Justification

Commercial transporting is a traditional activity that Congress intended to preserve when it established the Refuge with the enactment of ANILCA. Commercial transporter services provide the public with safe access for the wildlife-dependent priority public uses of hunting, fishing, wildlife observation, wildlife photography, and environmental education. These are activities that the National Wildlife Refuge System Improvement Act of 1997 (§ 5) identifies as priority public uses. Commercial transporter services are necessary to a segment of the public that does not have other means of access to the extremely remote environment of these Refuge. After fully considering the impacts of this activity, as described previously in the Anticipated Impacts section of this compatibility determination, it is my determination that commercial transporter services contribute to the achievement of the purposes of the Refuge and the mission of the National Wildlife Refuge System, and are necessary for realizing the recreational purposes of the Togiak Wilderness Area.

Supporting Documents

U.S. Fish and Wildlife Service. 1986. Togiak National Wildlife Refuge Final Comprehensive Conservation Plan, Wilderness Review, and Environmental Impact Statement. U.S. Fish and Wildlife Service. Anchorage, Alaska. 514 pp.

U.S. Fish and Wildlife Service. 1988. Alaska Maritime National Wildlife Refuge Final Comprehensive Conservation Plan, Wilderness Review, and Environmental Impact Statement. U.S. Fish and Wildlife Service. Anchorage, Alaska.

U.S. Fish and Wildlife Service. 1991. Togiak National Wildlife Refuge, Final Public Use Management Plan and Environmental Assessment. U.S. Fish and Wildlife Service. Anchorage, Alaska. 244 pp.

USFWS. 1990 "Final Fishery Management Plan, Togiak National Wildlife Refuge." U.S. Fish and Wildlife Service, Region 7, Alaska.

USFWS. 1992. Environmental Assessment for the Policy on Commercial Big-Game Guide-Outfitters and Transporters on National Wildlife Refuge in Alaska. U.S. Fish and Wildlife Service. May 22, 1992.

USFWS. 1992. Finding of No Significant Impact, Environmental Assessment for the Policy on Commercial Big-Game Guide-Outfitters and Transporters on National Wildlife Refuge in Alaska. U.S. Fish and Wildlife Service. June 9, 1992.

USFWS. 1992. Subsistence Management for Federal Public Lands in Alaska, Final Environmental Impact Statement, Record of Decision signed April 2, 1992. U.S. Fish and Wildlife Service.

U.S. Fish and Wildlife Service. 2007. Togiak National Wildlife Refuge Draft Revised Comprehensive Conservation Plan and Revised Public Use Management Plan and Environmental Assessment. U.S. Fish and Wildlife Service. Anchorage, Alaska.

Refuge Determination

Refuge Manager / Project Leader Approval:	/s/ Paul Liedberg	7/14/09
	(Signature)	(Date)

Concurrence

Regional Chief, National Wildlife Refuge System:	/s/ Tracey S. McDonnell, Acting	8/3/09
	(Signature)	(Date)

Mandatory 10-Year Re-Evaluation Date: 2019

NEPA Compliance for Refuge Use Decision

_____Categorical Exclusion without Environmental Action Memorandum

_____Categorical Exclusions and Environmental Action Memorandum

___X__Environmental Assessment and Finding of No Significant Impact

_____Environmental Impact Statement and Record of Decision

COMPATIBILITY DETERMINATION

Use: Native Allotment Surveys

Supporting Uses: Boating (motorized), hiking and backpacking, photography, video, filming, scientific collecting, photography (wildlife), wildlife observation, fixed-wing aircraft, helicopter.

Refuge Name: Togiak National Wildlife Refuge including the Hagemeister Island portion of Alaska Maritime Refuge (Refuge).

Establishing and Acquisition Authority(ies)

Togiak National Wildlife Refuge encompassing approximately 4,899,000 acres, was established on December 2, 1980 when Congress passed the Alaska National Interest Lands Conservation Act (ANILCA). Former Cape Newenham Refuge, established January, 1969 was incorporated into the present Togiak National Wildlife Refuge in 1980.

Section 702(10) of ANILCA designated approximately 2,373,000 of Togiak Refuge as the Togiak Wilderness under the Wilderness Act, as amended (16 U.S.C. 1131-1136). The purposes for these lands as wilderness are supplemental to the other purposes of Togiak Refuge.

As part of the Togiak Refuge Comprehensive Conservation Plan revision, the administration of Hagemeister Island was transferred from Alaska Maritime Refuge to Togiak Refuge. Approximately 74,000 acres in size, Hagemeister Island became part of Alaska Maritime Refuge with the passage of ANILCA on December 2, 1980.

Refuge Purpose(s)

Cape Newenham Refuge (now part of Togiak Refuge) was established in 1969 by Public Land Order 4583 "…for the protection of wildlife and their habitat…".

Sections 303(1)(B) and 303(6)(B) of ANILCA set forth the purposes for which Togiak and Alaska Maritime Refuge (including Cape Newenham Refuge) were established and shall be managed, including:

> **(i)** to conserve fish and wildlife populations and habitats in their natural diversity including, but not limited to,
>
> [Togiak Refuge] salmonids, marine birds and mammals, migratory birds and large mammals (including their restoration to historic levels);
>
> [Alaska Maritime Refuge] marine mammals, marine birds and other migratory birds, the marine resources upon which they rely, bears, caribou and other mammals;
>
> **(ii)** to fulfill the international treaty obligations of the United States with respect to fish and wildlife and their habitats;
>
> **(iii)** to provide, in a manner consistent with purposes set forth in subparagraphs (i) and (ii), the opportunity for continued subsistence uses by local residents;

(iv) [Alaska Maritime Refuge] to provide, in a manner consistent with subparagraphs (i) and (ii), a program of national and international scientific research on marine resources; and

(v) to ensure, to the maximum extent practicable and in a manner consistent with the purposes set forth in paragraph (i), water quality and necessary water quantity within the refuge.

The Wilderness Act of 1964 (Public Law 88-577) creates additional Refuge purposes for the Togiak Wilderness Area. Designated wilderness areas are to be managed "for the use and enjoyment of the American people in such manner as will leave them unimpaired for future use and enjoyment as wilderness, and so as to provide for the protection of these areas, the preservation of their wilderness character, and for the gathering and dissemination of information regarding their use and enjoyment as wilderness."

National Wildlife Refuge System Mission:

The mission of the National Wildlife Refuge System is to administer a national network of lands and waters for the conservation, management, and, where appropriate, restoration of the fish, wildlife, and plant resources and their habitats within the United States for the benefit of present and future generations of Americans (National Wildlife Refuge System Administration Act, as amended).

Description of Use(s)

This compatibility determination addresses the range of activities associated with the survey of Native allotments granted under the Alaska Native Allotment Act of 1906 and the 1998 amendments to ANCSA that authorized certain Alaska Native Vietnam veterans to secure allotments. There are approximately 320 Native allotments within the Refuge. Of these, approximately 26 allotments still require final conveyance. BLM representatives or their contractors conduct the survey of allotments. Transportation to the sites is generally provided by floatplane or boat. In a few cases remote allotments are not accessible via those means and would require days to access by foot, or winter access via snowmachine. In those cases, access via helicopter is considered although authorizations for the use of helicopters in the Togiak Wilderness Area are subject to a minimum requirements analysis. Surveys require from one to several hours to complete depending on the site and individual characteristics of the survey. It is anticipated that BLM will require from two to five days per year to conduct allotment surveys until the project is complete.

Availability of Resources

Adequate refuge personnel and base operational funds are available to manage research activities at existing (generally no more than one requests per year) and projected levels. Administrative staff time (not more than two days) primarily involves phone conversations, written correspondence, and permit issuance. Field work associated with administering the program primarily involves monitoring compliance with the terms of the permit.

Anticipated Impacts of the Use(s)

Factors such as transportation modes, number and type of aircraft and anticipated amount of aircraft use, fuel storage, and location of access points will determine the extent of impacts on the Refuge. However, allotment surveys and associated activities should not have significant impacts on the wildlife resources, other refuge resources (e.g., water quality, soil,

and vegetation), and other refuge users, especially subsistence users, because of the limited scope, special use permit stipulations, and the complete administrative oversight.

Public Review and Comment

Draft compatibility determinations were published as a portion of the Draft Revised Comprehensive Conservation Plan, and public review was invited with comments on the plan. The State of Alaska provided several comments on this compatibility determination. The State requested that we clarify that off-road vehicles may be allowed by Service regulations on designated routes and areas or by special use permit. We did not make the requested changes as this compatibility determination is for native allotment surveys and by terms of their special use permits we do not allow off-road vehicles for this use. The State requested we revise the paragraph preceding the list of conditions included in refuge permits. We made the requested change. The State also provided a number of comments on the permit special conditions. The Service's regional permit special conditions are being reviewed in a separate process and comments on them have been forwarded to those working on this task. Comments on regional permit special conditions are not addressed in this compatibility determination and no changes were made to the regional permit special conditions. State requested the refuge modify the special condition that prohibited fuel caches to allow consideration on a case-by-case basis. The requested change was made.

Determination

_____Use is Not Compatible

__X__Use is Compatible

Stipulations Necessary to Ensure Compatibility

Refuge staff will monitor all allotment surveys being conducted on the Refuge. Findings from these monitoring efforts will be used to determine what additional management actions, if any, are needed to ensure that activities remain compatible with refuge purposes. Permits will incorporate stipulations to minimize impacts on refuge lands and resources.

The conditions listed below are included on Refuge permits issued for Native Allotment surveys, most of which are intended to minimize impacts and ensure compatibility. Refuge permits may also include other special conditions necessary or appropriate for the specific operations or activities that are proposed.

- Failure to abide by any part of this special-use permit; violation of any refuge-related provision in Titles 43 (Part 36) or 50(sub-chapters B and C), Code of Federal Regulations; or violation of any pertinent state regulation (e.g., fish or game violation) will, with due process, be considered grounds for revocation of this permit and could result in denial of future permit requests for lands administered by the U.S. Fish and Wildlife Service. This provision applies to all persons working under the authority of this permit. Appeals of decisions relative to permits are handled in accordance with Title 50 Code of Federal Regulations Part 36.41.
- The permittee is responsible for ensuring that all employees, party members, aircraft pilots, and any other persons working for the permittee and conducting activities allowed by this permit are familiar with and adhere to the conditions of this permit.

- A copy of this permit must be in the permittee's or field party chief's possession at all times while exercising the privileges of this permit.
- Any problems with wildlife and/or animals taken in defense of life or property must be reported immediately to the refuge manager and to the Alaska Department of Fish and Game; animals taken in defense of life or property must be salvaged in accordance with state regulations.
- The permittee does not have the exclusive use of the site(s) or lands covered by this permit.
- The use of Native or state lands that have been conveyed (patented) is not authorized by this permit.
- Use of Native or state lands that have been selected but not yet conveyed is prohibited unless a letter of concurrence from the interested party is submitted to the refuge manager prior to beginning any activities allowed by this permit.
- This permit may be canceled or revised at any time by the refuge manager in case of emergency (e.g., high fire danger, flooding, unusual resource problems etc.).
- The permittee or party chief shall notify the refuge manager during refuge working hours in person or by telephone before beginning and upon completion of activities allowed by this permit.
- Prior to beginning any activities allowed by this permit, the permittee shall provide the refuge manager with the following: (1) name and method of contact for the field party chief or supervisor; aircraft and other vehicle types to be used, identification information for these vehicles; and names of assistants (2) any changes in information provided in the original permit application.
- The refuge manager, upon request, shall be afforded the opportunity and logistical support to accompany the permittee from the nearest commercial transportation site for the purpose of inspection and monitoring permittee activities. A final inspection trip provided by the permittee of the areas of use may be required by the refuge manager to determine compliance with the terms of this permit.
- The permittee shall provide the refuge manager with a report of activities under this permit within 30 days of permit expiration.
- In accordance with the Archaeological Resources Protection Act (16 USC 470aa), the excavation, disturbance, collection, or purchase of historical, recent, ethnological, or archaeological specimens or artifacts is prohibited.
- Permittees shall maintain their use areas in a neat and sanitary condition. Latrines must be located at least 150 feet from springs, lakes, and streams to avoid contamination of water resources. All property (except cabins and/or tent frames) of the permittee must be removed from refuge lands upon completion of permitted activities.
- All noncombustible waste materials must be removed from the refuge (not buried) upon the permittee's departure.
- The construction of landing strips or pads is prohibited. Incidental hand removal of rocks and other minor obstructions may be permitted.

- The use of off-road vehicles (except snow machines) is prohibited except in designated areas.
- The operation of aircraft at altitudes and in flight paths resulting in the herding, harassment, hazing, or driving of wildlife is prohibited. It is recommended that all aircraft, except for take-off and landing, maintain a minimum altitude of 2,000 feet above ground level.
- Construction of cabins or other permanent structures is prohibited.
- Activity will be curtailed if the Service does not have adequate staff, equipment, or supplies to ensure proper monitoring.

Justification

Authorizing access to Refuge lands to conduct surveys necessary to facilitate the transfer of Native allotments is necessary. Operational plans will be reviewed and adjusted to ensure that the activities do not materially interfere with, or detract from the purposes of the Refuge or the mission of the National Wildlife Refuge System. Activities related to the surveys will be authorized by a special use permit that will incorporate stipulations to minimize impacts on refuge lands and resources.

Supporting Documents

U.S. Fish and Wildlife Service. 1986. Togiak National Wildlife Refuge Final Comprehensive Conservation Plan, Wilderness Review, and Environmental Impact Statement. U.S. Fish and Wildlife Service. Anchorage, Alaska. 514 pp.

U.S. Fish and Wildlife Service. 1988. Alaska Maritime National Wildlife Refuge Final Comprehensive Conservation Plan, Wilderness Review, and Environmental Impact Statement. U.S. Fish and Wildlife Service.

Anchorage, Alaska. U.S. Fish and Wildlife Service. 2007. Togiak National Wildlife Refuge Draft Revised Comprehensive Conservation Plan and Revised Public Use Management Plan and Environmental Assessment. U.S. Fish and Wildlife Service. Anchorage, Alaska.

Refuge Determination

Refuge Manager / Project Leader Approval:	/s/ Paul Liedberg	7/14/09
	(Signature)	(Date)

Concurrence

Regional Chief, National Wildlife Refuge System:	/s/ Tracey S. McDonnell, Acting	8/3/09
	(Signature)	(Date)

Mandatory 10-Year Re-Evaluation Date: 2019.

NEPA Compliance for Refuge Use Decision

_____Categorical Exclusion without Environmental Action Memorandum

_____Categorical Exclusions and Environmental Action Memorandum

___X__Environmental Assessment and Finding of No Significant Impact

_____Environmental Impact Statement and Record of Decision

COMPATIBILITY DETERMINATION

Use: Reburial of Archaeological Human Remains per State and Federal Guidelines

Supporting Uses: Boating (motorized), camping, hiking and backpacking, photography, video, filming, audio recording (nonwildlife-dependent, recreational—other), fixed-wing aircraft, cemetery

Refuge Name: Togiak National Wildlife Refuge including the Hagemeister Island portion of Alaska Maritime Refuge (Refuge).

Establishing and Acquisition Authority(ies)

Togiak National Wildlife Refuge encompassing approximately 4,899,000 acres, was established on December 2, 1980 when Congress passed the Alaska National Interest Lands Conservation Act (ANILCA). Former Cape Newenham Refuge, established January, 1969 was incorporated into the present Togiak National Wildlife Refuge in 1980.

Section 702(10) of ANILCA designated approximately 2,373,000 of Togiak Refuge as the Togiak Wilderness under the Wilderness Act, as amended (16 U.S.C. 1131-1136). The purposes for these lands as wilderness are supplemental to the other purposes of Togiak Refuge.

As part of the Togiak Refuge Comprehensive Conservation Plan revision, the administration of Hagemeister Island was transferred from Alaska Maritime Refuge to Togiak Refuge. Approximately 74,000 acres in size, Hagemeister Island became part of Alaska Maritime Refuge with the passage of ANILCA on December 2, 1980.

Refuge Purpose(s)

Cape Newenham Refuge (now part of Togiak Refuge) was established in 1969 by Public Land Order 4583 "…for the protection of wildlife and their habitat…".

Sections 303(1)(B) and 303(6)(B) of ANILCA set forth the purposes for which Togiak and Alaska Maritime Refuges (including Cape Newenham Refuge) were established and shall be managed, including:

> **(i)** to conserve fish and wildlife populations and habitats in their natural diversity including, but not limited to,
>
> [Togiak Refuge] salmonids, marine birds and mammals, migratory birds and large mammals (including their restoration to historic levels);
>
> [Alaska Maritime Refuge] marine mammals, marine birds and other migratory birds, the marine resources upon which they rely, bears, caribou and other mammals;
>
> **(ii)** to fulfill the international treaty obligations of the United States with respect to fish and wildlife and their habitats;
>
> **(iii)** to provide, in a manner consistent with purposes set forth in subparagraphs (i) and (ii), the opportunity for continued subsistence uses by local residents;

(iv) [Alaska Maritime Refuge] to provide, in a manner consistent with subparagraphs (i) and (ii), a program of national and international scientific research on marine resources; and

(v) to ensure, to the maximum extent practicable and in a manner consistent with the purposes set forth in paragraph (i), water quality and necessary water quantity within the refuge.

The Wilderness Act of 1964 (Public Law 88-577) creates additional Refuge purposes for the Togiak Wilderness Area. Designated wilderness areas are to be managed "for the use and enjoyment of the American people in such manner as will leave them unimpaired for future use and enjoyment as wilderness, and so as to provide for the protection of these areas, the preservation of their wilderness character, and for the gathering and dissemination of information regarding their use and enjoyment as wilderness."

National Wildlife Refuge System Mission:

The mission of the National Wildlife Refuge System is to administer a national network of lands and waters for the conservation, management, and, where appropriate, restoration of the fish, wildlife, and plant resources and their habitats within the United States for the benefit of present and future generations of Americans (National Wildlife Refuge System Administration Act, as amended).

Description of Use(s)

The Refuge anticipate requests to rebury human remains eroding from recorded and unrecorded prehistoric sites and remains that have been removed from prehistoric sites. The Inadvertent Discovery section (§ [3][d]) of the Native American Graves Protection and Repatriation Act of 1990 (Public Law 101-601) requires that the land management agency identify and notify the closest Native group and then, if requested, provide for the repatriation of the remains.

With this in mind, we have prepared this compatibility determination to cover an expected one to three reburial requests annually for the next 10 years. Each proposed burial and its proposed reburial location would need to be approved by the Regional Historic Preservation Officer, who will ensure compliance with the National Historic Preservation Act (§106) prior to issuance of a permit.

It is anticipated that the majority of reburial sites would be accessible by boat, which would be the mode of access for this activity. Other forms of requested access that do not use traditional means of access would be reviewed on a case by case basis using existing policy and other guidance as appropriate.

Availability of Resources

Except for issuance of the permit, no refuge resources are needed to administer use. All activities associated with use will be accomplished by the permittee.

Anticipated Impacts of the Use(s)

This project will result in minimal and short-term impacts to refuge resources, involving a few small-scale excavations with hand tools and then reburial. Reburial of repatriated human

remains would take place near the place of discovery of such remains and/or near their original burial place. Each burial would involve a small excavation with hand tools.

Impacts to refuge resources would be negligible and short-term, with no foreseeable long-term effects, and would not affect subsistence use of the refuge. A copy of the Global Positioning System (GPS) coordinates and contents of the burial site will be filed at the Refuge headquarters and with the Regional Historic Preservation Officer. The remains should be buried with a modern object (e.g., coin, button—with date) to indicate it is a historical reburial.

Public Review and Comment

Draft compatibility determinations were published as a portion of the Draft Revised Comprehensive Conservation Plan, and public review was invited with comments on the plan. The State of Alaska provided several comments on this compatibility determination. The State requested that we clarify that off-road vehicles may be allowed by Service regulations on designated routes and areas or by special use permit. We did not make the requested changes as this compatibility determination is for native allotment surveys and by terms of their special use permits we do not allow off-road vehicles for this use. The State requested we revise the paragraph preceding the list of conditions included in refuge permits. We made the requested change. The State also provided a number of comments on the permit special conditions. The Service's regional permit special conditions are being reviewed in a separate process and comments on them have been forwarded to those working on this task. Comments on regional permit special conditions are not addressed in this compatibility determination and no changes were made to the regional permit special conditions.

Determination

_____Use is Not Compatible

__X__Use is Compatible

Stipulations Necessary to Ensure Compatibility

The following stipulations will be made part of a special-use permit for Reburial of Archaeological Human Remains per State and Federal Guidelines.

The conditions listed below are included on Refuge permits issued for reburial of archaeological human remains per State and Federal guidelines, most of which are intended to minimize impacts and ensure compatibility. Refuge permits may also include other special conditions as necessary or appropriate for the specific operations or activities that are proposed.

- Failure to abide by any part of the special-use permit for this activity; violation of any refuge-related provision in Titles 43 (Part 36) or 50 (subchapters B and C) Code of Federal Regulations; or violation of any pertinent state regulation (e.g., fish or game violation) will, with due process, be considered grounds for immediate revocation of the permit and could result in denial of future permit requests for lands administered by the
- U.S. Fish and Wildlife Service. This provision applies to all persons working under the authority of this permit (e.g., assistants). Appeals of decisions relative to permits are handled in accordance with Title 50 Code of Federal Regulations Part 36.41.

- The permittee is responsible for ensuring that all employees, party members, aircraft pilots, and any other persons working for the permittee and conducting activities allowed by this permit are familiar with and adhere to the conditions of the permit.
- Reburial of repatriated human remains will take place near the place of discovery of such remains and/or near their original burial place.
- The permittee or permittees representatives will make the smallest possible excavation, using only hand tools
- The Global Positioning System (GPS) coordinates and contents of the burial site will be filed at the Refuge headquarters and with the Regional Historic Preservation Officer.
- Remains shall be buried with a modern object (e.g., coin, button, etc.—with date) to indicate that it is a historical reburial.
- Any problem with wildlife and/or animals taken in defense of life or property must be reported immediately to the refuge manager and the Alaska Department of Fish and Game; animals taken in defense of life or property must be salvaged in accordance with state regulations.
- The use of Native or state lands that have been selected but not yet conveyed is prohibited unless a letter of concurrence from the interested party is submitted to the refuge manager prior to beginning any activities allowed by the permit.
- The permittee shall notify the refuge manager during refuge working hours in person or by telephone before beginning and upon completion of activities allowed by the permit.
- Prior to beginning any activities allowed by this permit, the permittee shall provide the refuge manager with the following: (1) name and method of contact for the field party chief or supervisor; (2) aircraft and other vehicle types to be used, with identification information.
- The refuge manager, upon request, shall be afforded the opportunity and logistical support, from the nearest commercial transportation site, to accompany the permittee for the purpose of inspection and monitoring permittee activities. A final inspection trip, provided by the permittee, of the areas of use may be required by the refuge manager to determine compliance with the terms of this permit.
- The operation of aircraft at altitudes and in flight paths resulting in the herding, harassment, hazing, or driving of wildlife is prohibited. It is recommended that all aircraft, except for take off and landing, maintain a minimum altitude of 2,000 feet above ground level.
- A copy of this permit must be in the permittee's possession at all times while exercising the privileges of this permit.
- The permittee shall provide the refuge manager with a report of activities under this permit within 30 days of permit expiration.

Justification

The proposed use is limited and short-term and thus will result in minimal impact to refuge resources. This use is necessary for the Refuge to comply with the Native American Graves Protection and Repatriation Act of 1990 (Public Law 101-601). It will not interfere with or detract from the National Wildlife Refuge System mission or the purposes of the Refuge.

Supporting Documents

U.S. Fish and Wildlife Service. 1986. Togiak National Wildlife Refuge Final Comprehensive Conservation Plan, Wilderness Review, and Environmental Impact Statement. U.S. Fish and Wildlife Service. Anchorage, Alaska. 514 pp.

U.S. Fish and Wildlife Service. 1988. Alaska Maritime National Wildlife Refuge Final Comprehensive Conservation Plan, Wilderness Review, and Environmental Impact Statement. U.S. Fish and Wildlife Service. Anchorage, Alaska.

U.S. Fish and Wildlife Service. 2007. Togiak National Wildlife Refuge Draft Revised Comprehensive Conservation Plan and Revised Public Use Management Plan and Environmental Assessment. U.S. Fish and Wildlife Service. Anchorage, Alaska.

Refuge Determination

Refuge Manager / Project Leader Approval:	/s/ Paul Liedberg	7/14/09
	(Signature)	(Date)

Concurrence

Regional Chief, National Wildlife Refuge System:	/s/ Tracey S. McDonnell, Acting	8/3/09
	(Signature)	(Date)

Mandatory 10-Year Re-Evaluation Date: 2019

NEPA Compliance for Refuge Use Decision

_____Categorical Exclusion without Environmental Action Memorandum

_____Categorical Exclusions and Environmental Action Memorandum

___X__Environmental Assessment and Finding of No Significant Impact

_____Environmental Impact Statement and Record of Decision

COMPATIBILITY DETERMINATION

Use: Recreational Fishing (wildlife-dependent recreation)

Supporting Uses: Boating (human-powered), boating (motorized), hunting (big game), hunting (other migratory birds), hunting (upland game), hunting (waterfowl), hunting (other), plant gathering, trapping, natural resource collecting, camping, hiking and backpacking, pets, photography, video, filming, audio recording (nonwildlife-dependent, recreational—other), outdoor recreation (other), photography (wildlife), wildlife observation, fixed-wing aircraft

Refuge Name: Togiak National Wildlife Refuge including the Hagemeister Island portion of Alaska Maritime Refuge (Refuge).

Establishing and Acquisition Authority(ies)

Togiak National Wildlife Refuge encompassing approximately 4,899,000 acres, was established on December 2, 1980 when Congress passed the Alaska National Interest Lands Conservation Act (ANILCA). Former Cape Newenham Refuge, established January, 1969 was incorporated into the present Togiak National Wildlife Refuge in 1980.

Section 702(10) of ANILCA designated approximately 2,373,000 of Togiak Refuge as the Togiak Wilderness under the Wilderness Act, as amended (16 U.S.C. 1131-1136). The purposes for these lands as wilderness are supplemental to the other purposes of Togiak Refuge.

As part of the Togiak Refuge Comprehensive Conservation Plan revision, the administration of Hagemeister Island was transferred from Alaska Maritime Refuge to Togiak Refuge. Approximately 74,000 acres in size, Hagemeister Island became part of Alaska Maritime Refuge with the passage of ANILCA on December 2, 1980.

Refuge Purpose(s)

Cape Newenham Refuge (now part of Togiak Refuge) was established in 1969 by Public Land Order 4583 "…for the protection of wildlife and their habitat…".

Sections 303(1)(B) and 303(6)(B) of ANILCA set forth the purposes for which Togiak and Alaska Maritime Refuge (including Cape Newenham Refuge) were established and shall be managed, including:

> **(i)** to conserve fish and wildlife populations and habitats in their natural diversity including, but not limited to,
>
> [Togiak Refuge] salmonids, marine birds and mammals, migratory birds and large mammals (including their restoration to historic levels);
>
> [Alaska Maritime Refuge] marine mammals, marine birds and other migratory birds, the marine resources upon which they rely, bears, caribou and other mammals;
>
> **(ii)** to fulfill the international treaty obligations of the United States with respect to fish and wildlife and their habitats;
>
> **(iii)** to provide, in a manner consistent with purposes set forth in subparagraphs (i) and (ii), the opportunity for continued subsistence uses by local residents;

(iv) [Alaska Maritime Refuge] to provide, in a manner consistent with subparagraphs (i) and (ii), a program of national and international scientific research on marine resources; and

(v) to ensure, to the maximum extent practicable and in a manner consistent with the purposes set forth in paragraph (i), water quality and necessary water quantity within the refuge.

The Wilderness Act of 1964 (Public Law 88-577) creates additional Refuge purposes for the Togiak Wilderness Area. Designated wilderness areas are to be managed "for the use and enjoyment of the American people in such manner as will leave them unimpaired for future use and enjoyment as wilderness, and so as to provide for the protection of these areas, the preservation of their wilderness character, and for the gathering and dissemination of information regarding their use and enjoyment as wilderness."

National Wildlife Refuge System Mission:

The mission of the National Wildlife Refuge System is to administer a national network of lands and waters for the conservation, management, and, where appropriate, restoration of the fish, wildlife, and plant resources and their habitats within the United States for the benefit of present and future generations of Americans (National Wildlife Refuge System Administration Act, as amended).

Description of Use(s)

Recreational fishing is an existing wildlife-dependent priority public use identified through the National Wildlife Refuge System Administration Act of 1997, as amended (§5C). This use is generally encouraged and receives emphasis in management of public use of the Refuge.

Recreational fishing occurs throughout the summer months. From June through September, anglers primarily target Chinook and coho salmon as well as rainbow and Dolly Varden trout throughout Togiak Refuge. Other species include chum, pink and sockeye salmon, grayling, northern pike, and lake trout. Very little, if any, recreational fishing occurs at other times of the year. All methods and means of recreational fishing are regulated by the Alaska Board of Fisheries and the Alaska Department of Fish and Game (ADF&G).

The most popular destinations for unguided anglers are the Kanektok, Goodnews, Togiak, Kulukak and Arolik Rivers. Anglers use a variety of watercraft including motorboats, rafts, kayaks, and canoes. Access for fishing by unguided anglers generally involves flying into a headwater lake and floating down or by using motor boats to go up rivers from local villages. Other activities associated with sport fishing include camping, hiking and backpacking, cutting of dead and downed wood for campfires, and the use of latrines or cat-holes for human waste disposal.

Much of the subject use occurs within the boundaries of the approximately 2.4-million-acre Togiak Wilderness Area, which is administered according to the provisions of the Wilderness Act and ANILCA. Although the Wilderness Act prohibits the public use of motor vehicles, motorboats, aircraft, and other forms of mechanical transport, and motorized equipment, ANILCA contains special provisions for Alaska wilderness areas allowing the use of snowmachines, motorboats, airplanes, and non-motorized surface transportation methods for traditional activities, including recreational fishing. The public use of helicopters, off-highway vehicles, and motorized equipment is not allowed.

Access to waters within the Refuge is most commonly either by boat or airplane. The majority of motorized recreational access is through commercial guides and transporters which are not considered as part of this compatibility determination. The use of helicopters, off-highway vehicles, or jet powered personal water craft is specifically excluded from this determination.

Total recreational fishing effort (guided and unguided) averaged an estimated 16,644 angler days for the period 1999-2003 (ADFG estimate). Angler use days and harvest are calculated for all waters within the region, and not just waters within the refuge. The average annual sport harvest during that time was 6,078 salmon and 2,182 of all other species. The primary species being harvested are coho and Chinook salmon, and Dolly Varden

A detailed description of sport fishing activities is provided in the Togiak Refuge Draft Comprehensive Conservation Plan.

Availability of Resources

Adequate refuge personnel and base operational funds are available to manage recreational use of Refuge lands and the Togiak Wilderness Area at existing levels (300-400 staff days). Togiak Refuge anticipates that personnel and base operational funds will be available to meet the demands of maintaining compatibility as visitation increases over the next 10-15 years. Management primarily includes: conducting fish and wildlife studies and surveys specifically for the management of healthy fish and wildlife populations; conducting public use surveys specifically for the management of high quality recreational experiences including outstanding opportunities for wilderness solitude; administering the refuge special use permit program; continuing the refuge River Ranger program to monitor resource conditions, educate the public, and increase compliance with State and Federal regulations; providing information as part of the regulatory development process with the State Boards of Fish and Game; and assisting with the enforcement of Alaska sport fishing regulations and other Federal regulations.

Anticipated Impacts of the Use(s)

Recreational fishing and associated activities are concentrated at headwater lakes and along river corridors during the summer months. There is no evidence to suggest long-term impacts to wildlife due to human disturbance occur within the Refuge. Short-term impacts such as displacement and avoidance due to sport fishing activities are isolated and have little impact on fish or wildlife populations. Camping occurs primarily on durable gravel bars, where impacts to vegetation are negligible.

Maintaining natural diversity and historic age and size composition of rainbow trout populations are goals outlined in the 1990 Togiak Refuge fisheries management plan and 1990 ADF&G Southwest Alaska rainbow trout management plan. The Alaska Board of Fisheries implemented fishing harvest methods and limit restrictions in 1985, 1990, and 1998, but it is too early to detect any effect these changes may have. Biologists will continue to evaluate the effect of subsistence and sport fishing upon rainbow trout and other fish populations and make management recommendations to the Federal Subsistence Board and State Board of Fisheries.

Increased sport fishing within the Refuge has the potential to negatively impact subsistence opportunities, wilderness character, and the quality of recreational experiences. Impacts concerning the Refuge purpose—“to provide, in a manner consistent with the other refuge

purposes, the opportunity for continued subsistence uses by local residents"—has been and must continue to be carefully addressed. An issue continually expressed by local subsistence users is conflict with recreational anglers. Sometimes this issue is more closely related to the opportunity to gather, hunt, and fish in preferred ways and at preferred places and times than with the availability of populations of fish, animals, and plants.

Monitoring of visitor use through the River Ranger program, of visitor satisfaction through angler surveys, and local resident satisfaction through interviews indicate current conditions are acceptable and are not adversely affecting the wilderness character of the area. This information also suggests if visitation increases noticeably, unacceptable crowding and conflicts between user groups are likely. Togiak Refuge will continue to actively manage angler visitation through the River Ranger program, refuge outreach and education, and special use permits to insure continued compatibility with refuge purposes.

The outhouses at Kagati Lake and Goodnews Lake, and the monitoring of public uses will mitigate various impacts near these lakes. Increased public education and monitoring will mitigate potentially negative bear-human interactions. Stipulations listed below will further mitigate impacts to subsistence opportunity and wilderness solitude.

Public Review and Comment

Draft compatibility determinations were published as a portion of the Draft Revised Comprehensive Conservation Plan, and public review was invited with comments on the plan. The State of Alaska provided several comments on this compatibility determination. The State requested that we modify our statement concerning possible changes in the size and age structure of rainbow trout to show that it was not a conclusive finding. The sentence was deleted. The State requested that we clarify that off-road vehicles may be allowed by Service regulations on designated routes and areas or by special use permit. We did not make the requested changes as this compatibility determination is for recreational fishing. The plan does not allow recreational use of helicopters. There are no designated routes for ORVs and the use of ORVs by special use permit is not covered under this compatibility determination. The State requested we revise wording about access to the refuge in the description of use section. The requested changes were made. The State of Alaska asked us to clarify that ADF&G angler use days and harvest are calculated for all waters within the region, not just waters within the refuge. We added the clarification requested.

Determination

_____Use is Not Compatible

___X__Use is Compatible

Stipulations Necessary to Ensure Compatibility

The Togiak Refuge Comprehensive Conservation Plan provides direction for current and future fishery, wildlife and public use monitoring efforts. Findings from these monitoring efforts will be used to determine what additional management actions, if any, are needed to ensure sport fishing activities remain compatible with refuge purposes. To minimize impacts on refuge lands and resources, law enforcement patrols will routinely be conducted in an effort to maximize compliance with Refuge policies, rules, and/or regulations.

Justification

All refuge lands in the Togiak Refuge and the Hagemeister Island portion of Alaska Maritime Refuge are open to general public access unless specifically closed. The National Wildlife Refuge System Administration Act of 1997, as amended (§5C), identifies the priority public uses of the System as wildlife-dependent recreation, defined as uses of a refuge involving hunting, fishing, wildlife observation and photography, and environmental education and interpretation. These uses are generally encouraged and receive emphasis in management of public use of the Refuge. Togiak Refuge has consistently taken actions to insure subsistence opportunity and to preserve the wilderness character of the Togiak Wilderness Area. Stipulations in this compatibility determination will assist in meeting the Refuge goals and to fulfill the purposes of the Togiak Refuge and the mission of the National Wildlife Refuge System.

Over the past 35-plus years, means of access—including airplanes, motorboats, and snowmachines—for traditional activities, as provided by ANILCA and as currently regulated by the Service, have not materially interfered with or detracted from refuge purposes. Should motorized transportation grow to levels where it interferes with refuge purposes, steps would be taken to maintain compatibility.

Recreational fishing is a form of traditional activity that Congress intended to preserve when the Refuge were established by ANILCA. As previously stated, recreational fishing on the Refuge provides the public with high-quality, safe, and unique recreational fishing opportunities found in few places in the world. To reduce impacts to fishery resources and to provide the continued opportunity for subsistence uses of these species by local residents, both the Federal Subsistence Board and Alaska Board of Fisheries regularly adopt regulations in response to fish population levels and management needs. These regulations currently provide adequate protection for the Refuge fishery resources, continued subsistence opportunities, and other refuge purposes. After fully considering the impacts of this activity, as described previously in the "Anticipated Impacts" section of this Compatibility Determination, it is my determination that recreational fishing activities on the Refuge do not materially interfere with or detract from the purposes of the refuge or the mission of the National Wildlife Refuge System. These activities will remain compatible with the implementation of the compatibility stipulations.

Supporting Documents

U.S. Fish and Wildlife Service. 1986. Togiak National Wildlife Refuge Final Comprehensive Conservation Plan, Wilderness Review, and Environmental Impact Statement. U.S. Fish and Wildlife Service. Anchorage, Alaska. 514 pp.

U.S. Fish and Wildlife Service. 1988. Alaska Maritime National Wildlife Refuge Final Comprehensive Conservation Plan, Wilderness Review, and Environmental Impact Statement. U.S. Fish and Wildlife Service. Anchorage, Alaska.

U.S. Fish and Wildlife Service. 1991. Togiak National Wildlife Refuge, Final Public Use Management Plan and Environmental Assessment. U.S. Fish and Wildlife Service. Anchorage, Alaska. 244 pp.

USFWS. 1990 "Final Fishery Management Plan, Togiak National Wildlife Refuge." U.S. Fish and Wildlife Service, Region 7, Alaska.

USFWS. 1992. Subsistence Management for Federal Public Lands in Alaska, Final Environmental Impact Statement, Record of Decision signed April 2, 1992. U.S. Fish and Wildlife Service.

U.S. Fish and Wildlife Service. 2007. Togiak National Wildlife Refuge Draft Revised Comprehensive Conservation Plan and Revised Public Use Management Plan and Environmental Assessment. U.S. Fish and Wildlife Service. Anchorage, Alaska.

Refuge Determination

Refuge Manager / Project Leader Approval:	/s/ Paul Liedberg	7/14/09
	(Signature)	(Date)

Concurrence

Regional Chief, National Wildlife Refuge System:	/s/ Tracey S. McDonnell, Acting	8/3/09
	(Signature)	(Date)

Mandatory 10-Year Re-Evaluation Date: 2024

NEPA Compliance for Refuge Use Decision

_____Categorical Exclusion without Environmental Action Memorandum

_____Categorical Exclusions and Environmental Action Memorandum

___X__Environmental Assessment and Finding of No Significant Impact

_____Environmental Impact Statement and Record of Decision

COMPATIBILITY DETERMINATION

Use: Recreational Hunting (wildlife-dependent recreation)

Supporting Uses: Boating (electric and wind-driven), boating (human-powered), boating (motorized), fishing (general), fishing (other), plant gathering, rock collecting, trapping, natural resource collecting, camping, dog training (including field trials), hiking and backpacking, pets, photography, video, filming, audio recording (nonwildlife-dependent, recreational—other), swimming and beach use, outdoor recreation (other), photography (wildlife), wildlife observation, fixed-wing aircraft

Refuge Name: Togiak National Wildlife Refuge including the Hagemeister Island portion of Alaska Maritime Refuge (Refuge).

Establishing and Acquisition Authority(ies)

Togiak National Wildlife Refuge encompassing approximately 4,899,000 acres, was established on December 2, 1980 when Congress passed the Alaska National Interest Lands Conservation Act (ANILCA). Former Cape Newenham Refuge, established January, 1969 was incorporated into the present Togiak National Wildlife Refuge in 1980.

Section 702(10) of ANILCA designated approximately 2,373,000 of Togiak Refuge as the Togiak Wilderness under the Wilderness Act, as amended (16 U.S.C. 1131-1136). The purposes for these lands as wilderness are supplemental to the other purposes of Togiak Refuge.

As part of the Togiak Refuge Comprehensive Conservation Plan revision, the administration of Hagemeister Island was transferred from Alaska Maritime Refuge to Togiak Refuge. Approximately 74,000 acres in size, Hagemeister Island became part of Alaska Maritime Refuge with the passage of ANILCA on December 2, 1980.

Refuge Purpose(s)

Cape Newenham Refuge (now part of Togiak Refuge) was established in 1969 by Public Land Order 4583 "…for the protection of wildlife and their habitat…".

Sections 303(1)(B) and 303(6)(B) of ANILCA set forth the purposes for which Togiak and Alaska Maritime Refuges (including Cape Newenham Refuge) were established and shall be managed, including:

> **(i)** to conserve fish and wildlife populations and habitats in their natural diversity including, but not limited to,
>
> [Togiak Refuge] salmonids, marine birds and mammals, migratory birds and large mammals (including their restoration to historic levels);
>
> [Alaska Maritime Refuge] marine mammals, marine birds and other migratory birds, the marine resources upon which they rely, bears, caribou and other mammals;
>
> **(ii)** to fulfill the international treaty obligations of the United States with respect to fish and wildlife and their habitats;
>
> **(iii)** to provide, in a manner consistent with purposes set forth in subparagraphs (i) and (ii), the opportunity for continued subsistence uses by local residents;

(iv) [Alaska Maritime Refuge] to provide, in a manner consistent with subparagraphs (i) and (ii), a program of national and international scientific research on marine resources; and

(v) to ensure, to the maximum extent practicable and in a manner consistent with the purposes set forth in paragraph (i), water quality and necessary water quantity within the refuge.

The Wilderness Act of 1964 (Public Law 88-577) creates additional Refuge purposes for the Togiak Wilderness Area. Designated wilderness areas are to be managed "for the use and enjoyment of the American people in such manner as will leave them unimpaired for future use and enjoyment as wilderness, and so as to provide for the protection of these areas, the preservation of their wilderness character, and for the gathering and dissemination of information regarding their use and enjoyment as wilderness."

National Wildlife Refuge System Mission:

The mission of the National Wildlife Refuge System is to administer a national network of lands and waters for the conservation, management, and, where appropriate, restoration of the fish, wildlife, and plant resources and their habitats within the United States for the benefit of present and future generations of Americans (National Wildlife Refuge System Administration Act, as amended).

Description of Use(s)

During hunting seasons a variety of wildlife are pursued which primarily include waterfowl, upland game birds, brown bear, caribou, and furbearers. All methods and means of recreational hunting are regulated by the Alaska Board of Game and the Alaska Department of Fish and Game (ADF&G).

Hunters use snowmobiles, airplanes and a variety of watercraft including motorboats and rafts to access the refuge. Activities such as camping, backpacking, hiking, and other incidental uses are associated with recreational hunting and trapping activities.

Much of the subject use occurs within the approximately 2.4-million-acre Togiak Wilderness Area, which is administered according to the provisions of the Wilderness Act and ANILCA. Although the Wilderness Act prohibits the public use of motor vehicles, motorboats, aircraft, and other forms of mechanical transport, and motorized equipment, ANILCA contains special provisions for Alaska wilderness areas allowing the use of snowmachines, motorboats, airplanes, and non-motorized surface transportation methods for traditional activities, including recreational hunting. The public use of helicopters, off-highway vehicles, and motorized equipment is not allowed.

The majority of motorized recreational access to the Refuge is through commercial guides and transporters, which are not considered as part of this compatibility determination. The use of helicopters or jet powered personal water craft is specifically excluded from this determination.

A detailed description of recreational hunting activities throughout Togiak Refuge is provided in the Togiak Refuge Draft Comprehensive Conservation Plan.

Availability of Resources

Adequate refuge personnel and base operational funds are available to manage recreational use of Refuge lands and the Togiak Wilderness Area at existing and projected levels. Administrative staff time (20-30 staff days) involves phone conversations, written correspondence, personal interaction with visitors at the visitor center, and entering activity data into a database for analysis. Field work associated with administering the activity primarily involves conducting law-enforcement patrols (as many as 20 staff days) via aircraft and boat to increase recreational hunters' compliance with state and Federal regulations and to foster respect for local residents' activities and property.

Anticipated Impacts of the Use(s)

The estimated harvest of wildlife resources on the Refuge is well within the limits established in various Alaska Department of Fish and Game management plans. Past impact evaluations and studies have focused primarily on impacts to the brown bear, moose, and caribou populations.

Increased recreational hunting has the potential to negatively impact subsistence opportunity, wilderness character and the quality of recreational experiences. Participation in recreational hunting has remained very low compared with other wildlife dependant activities, and does not typically coincide with peak periods of recreational fishing. Recreational hunting for caribou, the main target species, increased significantly on the refuge from the mid 1990's through about 2004 as the Mulchatna Caribou Herd expanded its range westward. By 2005 this herd had declined significantly and successful hunting opportunities, and correspondingly the number of hunters, on the refuge were much reduced. The moose population in Game Management Unit 17A (mainly the Togiak River Valley) continues to increase and it is expected that non-subsistence hunting opportunities in this area will be made available by 2010. No formal monitoring of visitor satisfaction for recreational hunting is conducted by the refuge. Recreational hunting activities may, in some cases, result in competition for limited resources such as preferred campsites or use areas, or in interference with subsistence users and/or other refuge users. This has been most evident at several mountain lakes within the wilderness area where concentrations of caribou have led to a corresponding concentration of hunters. Both the Federal Subsistence Board and the Alaska Board of Game regularly adopt regulations in response to wildlife population levels and management needs to reduce impacts to wildlife resources and to support opportunities for continued subsistence uses by local residents. Numerous regulation changes have been made by these boards in recent years to address the Refuge wildlife resource management needs.

Impacts related the Refuge purpose, "to provide, in a manner consistent with the other refuge purposes, the opportunity for continued subsistence uses by local residents," has been and must continue to be carefully addressed.

State and Federal regulations continually evolve and respond to wildlife management needs. Regulations, combined with law-enforcement efforts of state and refuge personnel, minimize impacts of recreational hunting to wildlife resources, other refuge resources, other refuge users, and wilderness values. Togiak Refuge will continue to actively manage visitation through the River Ranger program, and refuge outreach and education. Togiak Refuge will continue to work with ADF&G in monitoring biological changes and potential impacts.

Public Review and Comment

Draft compatibility determinations were published as a portion of the Draft Revised Comprehensive Conservation Plan, and public review was invited with comments on the plan. The State of Alaska provided several comments on this compatibility determination. The State requested that we clarify that off-road vehicles may be allowed by Service regulations on designated routes and areas or by special use permit. We did not make the requested changes as this compatibility determination is for recreational hunting. The plan does not allow recreational use of helicopters. There are no designated routes for ORVs and the use of ORVs by special use permit is not covered under this compatibility determination. The State requested we change the phrase "sport hunting" to "recreational hunting" and we made the requested change.

Determination

_____Use is Not Compatible

___X__Use is Compatible

Stipulations Necessary to Ensure Compatibility

The Togiak Refuge Comprehensive Conservation Plan provides direction for current and future fishery, wildlife and public use monitoring efforts. Findings from these monitoring efforts will be used to determine what additional management actions, if any, are needed to ensure recreational hunting activities remain compatible with refuge purposes. To minimize impacts on refuge lands and resources, law enforcement patrols will routinely be conducted in an effort to maximize compliance with Refuge policies, rules, and/or regulations.

Justification

All refuge lands in the Togiak Refuge and the Hagemeister Island portion of Alaska Maritime Refuge are open to general public access unless specifically closed. The National Wildlife Refuge System Administration Act of 1997, as amended (§5C), identifies the priority public uses of the System as wildlife-dependent recreation, defined as uses of a refuge involving hunting, fishing, wildlife observation and photography, and environmental education and interpretation. These uses are generally encouraged and receive emphasis in management of public use of the Refuge. Togiak Refuge has consistently taken actions to insure subsistence opportunity and maintain outstanding opportunities for wilderness naturalness and solitude.

Over the past 25-plus years, means of access—including airplanes, motorboats, and snowmachines—for traditional activities, as provided by ANILCA and as currently regulated by the Service, have not materially interfered with or detracted from refuge purposes. Should motorized transportation grow to levels where it interferes with refuge purposes, steps would be taken to maintain compatibility.

Recreational hunting is a form of traditional activity that Congress intended to preserve with the enactment of ANILCA, which established the refuge. As stated previously, recreational hunting on the Refuge provides the public with quality, safe, and exceptional hunting opportunities found few places elsewhere in the world. In response to wildlife population levels and management needs, both the Federal Subsistence Board and the Alaska Board of Game regularly modify regulations to reduce impacts to wildlife resources and to provide the continued opportunity to pursue a subsistence lifestyle. After fully considering the impacts of

this activity as described previously in the "Anticipated Impacts" section of this compatibility determination, it is my determination that recreational hunting activities on the Refuge do not materially interfere with or detract from the purposes of the Refuge or the mission of the National Wildlife Refuge System. Recreational hunting is a wildlife-dependent priority public use. The use supports refuge goals and objectives.

Supporting Documents

U.S. Fish and Wildlife Service. 1986. Togiak National Wildlife Refuge Final Comprehensive Conservation Plan, Wilderness Review, and Environmental Impact Statement. U.S. Fish and Wildlife Service. Anchorage, Alaska. 514 pp.

U.S. Fish and Wildlife Service. 1988. Alaska Maritime National Wildlife Refuge Final Comprehensive Conservation Plan, Wilderness Review, and Environmental Impact Statement. U.S. Fish and Wildlife Service. Anchorage, Alaska.

U.S. Fish and Wildlife Service. 1991. Togiak National Wildlife Refuge, Final Public Use Management Plan and Environmental Assessment. U.S. Fish and Wildlife Service. Anchorage, Alaska. 244 pp.

USFWS. 1992. Environmental Assessment for the Policy on Commercial Big-Game Guide-Outfitters and Transporters on National Wildlife Refuge in Alaska. U.S. Fish and Wildlife Service. May 22, 1992.

USFWS. 1992. Finding of No Significant Impact, Environmental Assessment for the Policy on Commercial Big-Game Guide-Outfitters and Transporters on National Wildlife Refuge in Alaska. U.S. Fish and Wildlife Service. June 9, 1992.

USFWS. 1992. Subsistence Management for Federal Public Lands in Alaska, Final Environmental Impact Statement, Record of Decision signed April 2, 1992. U.S. Fish and Wildlife Service.

U.S. Fish and Wildlife Service. 2007. Togiak National Wildlife Refuge Draft Revised Comprehensive Conservation Plan and Revised Public Use Management Plan and Environmental Assessment. U.S. Fish and Wildlife Service. Anchorage, Alaska.

Refuge Determination

Refuge Manager / Project Leader Approval:	/s/ Paul Liedberg	7/14/09
	(Signature)	(Date)

Concurrence

Regional Chief, National Wildlife Refuge System:	/s/ Tracey S. McDonnell, Acting	8/3/09
	(Signature)	(Date)

Mandatory 10-Year Re-Evaluation Date: 2024

NEPA Compliance for Refuge Use Decision

_____Categorical Exclusion without Environmental Action Memorandum
_____Categorical Exclusions and Environmental Action Memorandum
___X__Environmental Assessment and Finding of No Significant Impact
_____Environmental Impact Statement and Record of Decision

COMPATIBILITY DETERMINATION

Use: Scientific Research

Supporting Uses: Boating (human-powered), boating (motorized), environmental education (not conducted by NWRS staff or authorized agents), environmental education (other), interpretation (not conducted by NWRS staff or authorized agents), fishing (general), fishing (other), plant gathering, rock collecting, trapping, natural resource collecting, camping, cross-country skiing, hiking and backpacking, photography, video, filming, audio recording (nonwildlife-dependent, recreational—other), snorkeling or scuba diving, snowshoeing, outdoor recreation (other), scientific collecting, photography (wildlife), wildlife observation, fixed-wing aircraft, helicopter.

Refuge Name: Togiak National Wildlife Refuge including the Hagemeister Island portion of Alaska Maritime Refuge (Refuge).

Establishing and Acquisition Authority(ies)

Togiak National Wildlife Refuge encompassing approximately 4,899,000 acres, was established on December 2, 1980 when Congress passed the Alaska National Interest Lands Conservation Act (ANILCA). Former Cape Newenham Refuge, established January, 1969 was incorporated into the present Togiak National Wildlife Refuge in 1980.

Section 702(10) of ANILCA designated approximately 2,373,000 of Togiak Refuge as the Togiak Wilderness under the Wilderness Act, as amended (16 U.S.C. 1131-1136). The purposes for these lands as wilderness are supplemental to the other purposes of Togiak Refuge.

As part of the Togiak Refuge Comprehensive Conservation Plan revision, the administration of Hagemeister Island was transferred from Alaska Maritime Refuge to Togiak Refuge. Approximately 74,000 acres in size, Hagemeister Island became part of Alaska Maritime Refuge with the passage of ANILCA on December 2, 1980.

Refuge Purpose(s)

Cape Newenham Refuge (now part of Togiak Refuge) was established in 1969 by Public Land Order 4583 "…for the protection of wildlife and their habitat…".

Sections 303(1)(B) and 303(6)(B) of ANILCA set forth the purposes for which Togiak and Alaska Maritime Refuge (including Cape Newenham Refuge) were established and shall be managed, including:

> **(i)** to conserve fish and wildlife populations and habitats in their natural diversity including, but not limited to,
>
> [Togiak Refuge] salmonids, marine birds and mammals, migratory birds and large mammals (including their restoration to historic levels);
>
> [Alaska Maritime Refuge] marine mammals, marine birds and other migratory birds, the marine resources upon which they rely, bears, caribou and other mammals;
>
> **(ii)** to fulfill the international treaty obligations of the United States with respect to fish and wildlife and their habitats;

(iii) to provide, in a manner consistent with purposes set forth in subparagraphs (i) and (ii), the opportunity for continued subsistence uses by local residents;

(iv) [Alaska Maritime Refuge] to provide, in a manner consistent with subparagraphs (i) and (ii), a program of national and international scientific research on marine resources; and

(v) to ensure, to the maximum extent practicable and in a manner consistent with the purposes set forth in paragraph (i), water quality and necessary water quantity within the refuge.

The Wilderness Act of 1964 (Public Law 88-577) creates additional Refuge purposes for the Togiak Wilderness Area. Designated wilderness areas are to be managed "for the use and enjoyment of the American people in such manner as will leave them unimpaired for future use and enjoyment as wilderness, and so as to provide for the protection of these areas, the preservation of their wilderness character, and for the gathering and dissemination of information regarding their use and enjoyment as wilderness."

National Wildlife Refuge System Mission:

The mission of the National Wildlife Refuge System is to administer a national network of lands and waters for the conservation, management, and, where appropriate, restoration of the fish, wildlife, and plant resources and their habitats within the United States for the benefit of present and future generations of Americans (National Wildlife Refuge System Administration Act, as amended).

Description of Use(s)

This compatibility determination addresses the full spectrum of uses associated with the scientific research of fish, wildlife, habitat, and other refuge resources. It includes all means of access, lodging, facilities, and other elements that would be included in a typical research proposal. The scope of this determination includes research conducted by all agencies or entities other than the Service and the Alaska Department of Fish and Game. Specific authorized means of access for all areas on the Refuge will be noted in each special-use permit. Potential means of access include fixed-wing aircraft, helicopter, motorboat, snowmobile, nonpowered boat, dogsled, foot, snowshoes, and cross-country skis. Authorizations for all activities and forms of access included in this CD within the Togiak Wilderness Area are subject to a minimum requirements analysis. Potential lodging and facilities includes tents, tent frames, weatherports, existing cabins, and caches.

A wide range of various research activities (e.g., biological, paleontological, geological, meteorological) have been conducted on the Refuge since their creation. Future activities would likely be dispersed and be of low magnitude.

Availability of Resources

Adequate refuge personnel and base operational funds are available to manage research activities at existing (generally no more than two requests per year) and projected levels. Administrative staff time (not more than five days) primarily involves phone conversations, written correspondence, proposal review, and personal interaction with researchers. Field work associated with administering the program primarily involves monitoring researchers' compliance with the terms of the permit.

Anticipated Impacts of the Use(s)

Factors such as target species, number of researchers, transportation modes, number of aircraft and anticipated amount of aircraft use, fuel storage, garbage and human waste management, type and location of lodging, and location of access points will determine the extent of impacts on the Refuge. However, scientific research and associated activities should not have significant impacts on the wildlife resources, other refuge resources (e.g., water quality, soil, and vegetation), and other refuge users, especially subsistence users, because of the limited scope, special use permit stipulations, and the complete administrative oversight of research.

Prior to initiating field work, the permittee must provide documentation that recognized Institutional Animal Care and Use Committee (IACUC) personnel have reviewed and approved (as required by the Animal Welfare Act) activities and proposed procedures involving invasive procedures or procedures that could harm or materially alter the behavior of an animal under study.

For all projects proposed in the designated Togiak Wilderness Area, a minimum requirements analysis (MRA) will be included as part of the decision process. A MRA is a two-step process to decide if a proposed activity is necessary in wilderness, and if so, determine the minimum tool to accomplish the project. Although required for all administrative activities, including issuing special use permits, a MRA can not be used to authorize prohibited activities in designated wilderness by the public.

Research concerning fish, wildlife, and other refuge resources is expected to contribute to Refuge purposes of conserving fish and wildlife populations and protecting resources of the refuge.

Public Review and Comment

Draft compatibility determinations were published as a portion of the Draft Revised Comprehensive Conservation Plan, and public review was invited with comments on the plan. The State of Alaska provided comments on this compatibility determination. The State also provided a number of comments on the permit special conditions. The Service's regional permit special conditions are being reviewed in a separate process and comments on them have been forwarded to those working on this task. Comments on regional permit special conditions are not addressed in this compatibility determination and no changes were made to the regional permit special conditions. The State requested the refuge modify the special condition that prohibited fuel caches to allow consideration on a case-by-case basis. The requested change was made. The state requested that we include mention of ANILCA Section 101 language about opportunities for scientific research in the justification section. We made the requested change.

Determination

_____Use is Not Compatible

___X__Use is Compatible

Stipulations Necessary to Ensure Compatibility

Refuge staff will monitor all research being conducted on the Refuge. Findings from these monitoring efforts will be used to determine what additional management actions, if any, are needed to ensure that research activities remain compatible with refuge purposes.

Monitoring of all authorized research activities will be continued to ensure compliance with specific terms and conditions tailored for each research project=s permit as well stipulations incorporated into all research permits to minimize impacts on refuge lands and resources.

The conditions listed below are included on Refuge permits issued for scientific research, most of which are intended to minimize impacts and ensure compatibility. Refuge permits may also include other special conditions as necessary or appropriate for the specific operations or activities that are proposed.

- Failure to abide by any part of this special-use permit; violation of any refuge-related provision in Titles 43 (Part 36) or 50(sub-chapters B and C), Code of Federal Regulations; or violation of any pertinent state regulation (e.g., fish or game violation) will, with due process, be considered grounds for revocation of this permit and could result in denial of future permit requests for lands administered by the U.S. Fish and Wildlife Service. This provision applies to all persons working under the authority of this permit. Appeals of decisions relative to permits are handled in accordance with Title 50 Code of Federal Regulations Part 36.41.
- The permittee is responsible for obtaining appropriate collection permits from the State of Alaska, Department of Fish and Game, for research involving fish and wildlife.
- The permittee is responsible for ensuring that all employees, party members, aircraft pilots, and any other persons working for the permittee and conducting activities allowed by this permit are familiar with and adhere to the conditions of this permit.
- A copy of this permit must be in the permittee's or field party chief's possession at all times while exercising the privileges of this permit.
- Any problems with wildlife and/or animals taken in defense of life or property must be reported immediately to the refuge manager and to the Alaska Department of Fish and Game; animals taken in defense of life or property must be salvaged in accordance with state regulations.
- The permittee does not have the exclusive use of the site(s) or lands covered by this permit.
- The use of Native or state lands that have been conveyed is not authorized by this permit.
- This permit may be canceled or revised at any time by the refuge manager in case of emergency (e.g., high fire danger, flooding, unusual resource problems etc.).
- The permittee or party chief shall notify the refuge manager during refuge working hours in person or by telephone before beginning and upon completion of activities allowed by this permit.
- Prior to beginning any activities allowed by this permit, the permittee shall provide the refuge manager with the following: (1) name and method of contact for the field party chief or supervisor; aircraft and other vehicle types to be used, identification information for these vehicles; and names of assistants (2) any changes in information provided in the original permit application.

- The refuge manager, upon request, shall be afforded the opportunity and logistical support to accompany the permittee from the nearest commercial transportation site for the purpose of inspection and monitoring permittee activities. A final inspection trip provided by the permittee of the areas of use may be required by the refuge manager to determine compliance with the terms of this permit.
- The permittee shall provide the refuge manager with a report of activities under this permit within 30 days of permit expiration.
- In accordance with the Archaeological Resources Protection Act (16 USC 470aa), the excavation, disturbance, collection, or purchase of historical, recent, ethnological, or archaeological specimens or artifacts is prohibited.
- Permittees shall maintain their use areas in a neat and sanitary condition. Latrines must be located at least 150 feet from springs, lakes, and streams to avoid contamination of water resources. All property (except cabins and/or tent frames) of the permittee must be removed from refuge lands upon completion of permitted activities.
- All noncombustible waste materials must be removed from the refuge (not buried) upon the permittee's departure.
- The construction of landing strips or pads is prohibited. Incidental hand removal of rocks and other minor obstructions may be permitted.
- The use of off-road vehicles (except snow machines) is prohibited except in designated areas.
- The operation of aircraft at altitudes and in flight paths resulting in the herding, harassment, hazing, or driving of wildlife is prohibited. It is recommended that all aircraft, except for take-off and landing, maintain a minimum altitude of 2,000 feet above ground level.
- Construction of cabins or other permanent structures is prohibited.
- Activity will be curtailed if the Service does not have adequate staff, equipment, or supplies to ensure proper monitoring.

Justification

Natural and social science information is necessary for the proper management of units within the National Wildlife Refuge System. It is the policy of the Service (4 RM 6.1) to encourage and support research and management studies in order to provide scientific data upon which to base decisions regarding management of units of the refuge system.

The Service will also permit the use of a refuge for other investigatory scientific purposes when such use is compatible with the objectives for which the refuge is managed. Priority will be given to studies that contribute to the enhancement, protection, use, preservation, and management of native wildlife populations and their habitats in their natural diversity. Under ANILCA Section 101, purposes for all refuges in Alaska include maintaining opportunities for scientific research. Under ANILCA Section 303, scientific research of marine resources is a purpose of the Hagemeister Island portion of Alaska Maritime Refuge. Under the Wilderness Act, scientific use is a purpose of the Togiak Wilderness Area. For all scientific activities proposed in the Togiak Wilderness Area, a minimum requirements analysis will be prepared prior to authorizing the activity.

All proposed research conducted by other agencies or entities will be thoroughly evaluated prior to authorization and then monitored closely to ensure that the activities do not materially interfere with or detract from the purposes of the Refuge or the mission of the National Wildlife Refuge System.

Scientific investigations of wildlife, resources, and social interactions will support the Refuge's ability to provide for wildlife-dependent priority public uses and to meet other refuge purposes.

Supporting Documents

U.S. Fish and Wildlife Service. 1986. Togiak National Wildlife Refuge Final Comprehensive Conservation Plan, Wilderness Review, and Environmental Impact Statement. U.S. Fish and Wildlife Service. Anchorage, Alaska. 514 pp.

U.S. Fish and Wildlife Service. 1988. Alaska Maritime National Wildlife Refuge Final Comprehensive Conservation Plan, Wilderness Review, and Environmental Impact Statement. U.S. Fish and Wildlife Service. Anchorage, Alaska.

U.S. Fish and Wildlife Service. 2007. Togiak National Wildlife Refuge Draft Revised Comprehensive Conservation Plan and Revised Public Use Management Plan and Environmental Assessment. U.S. Fish and Wildlife Service. Anchorage, Alaska.

Refuge Determination

Refuge Manager / Project Leader Approval:	/s/ Paul Liedberg	7/14/09
	(Signature)	(Date)

Concurrence

Regional Chief, National Wildlife Refuge System:	/s/ Tracey S. McDonnell, Acting	8/3/09
	(Signature)	(Date)

Mandatory 10-Year Re-Evaluation Date: 2019

NEPA Compliance for Refuge Use Decision

_____Categorical Exclusion without Environmental Action Memorandum

_____Categorical Exclusions and Environmental Action Memorandum

___X__Environmental Assessment and Finding of No Significant Impact

_____Environmental Impact Statement and Record of Decision

COMPATIBILITY DETERMINATION

Use: State of Alaska Management Activities

Supporting Uses: Boating (human-powered), boating (motorized), environmental education (not conducted by NWRS staff or authorized agents), interpretation (not conducted by NWRS staff or authorized agents), fishing (general), fishing (other), plant gathering, rock collecting, trapping, natural resource collecting, camping, cross-country skiing, hiking and backpacking, photography, video, filming, audio recording (nonwildlife-dependent, recreational—other), snorkeling or scuba diving, snowshoeing, swimming and beach use, outdoor recreation (other), research, scientific collecting, surveys, photography (wildlife), wildlife observation, fixed-wing aircraft and helicopter access, tree harvest (firewood).

Refuge Name: Togiak National Wildlife Refuge including the Hagemeister Island portion of Alaska Maritime Refuge (Refuge).

Establishing and Acquisition Authority(ies)

Togiak National Wildlife Refuge encompassing approximately 4,899,000 acres, was established on December 2, 1980 when Congress passed the Alaska National Interest Lands Conservation Act (ANILCA). Former Cape Newenham Refuge, established January, 1969 was incorporated into the present Togiak National Wildlife Refuge in 1980.

Section 702(10) of ANILCA designated approximately 2,373,000 of Togiak Refuge as the Togiak Wilderness under the Wilderness Act, as amended (16 U.S.C. 1131-1136). The purposes for these lands as wilderness are supplemental to the other purposes of Togiak Refuge.

As part of the Togiak Refuge Comprehensive Conservation Plan revision, the administration of Hagemeister Island was transferred from Alaska Maritime Refuge to Togiak Refuge. Approximately 74,000 acres in size, Hagemeister Island became part of Alaska Maritime Refuge with the passage of ANILCA on December 2, 1980.

Refuge Purpose(s)

Cape Newenham Refuge (now part of Togiak Refuge) was established in 1969 by Public Land Order 4583 "…for the protection of wildlife and their habitat…".

Sections 303(1)(B) and 303(6)(B) of ANILCA set forth the purposes for which Togiak and Alaska Maritime Refuge (including Cape Newenham Refuge) were established and shall be managed, including:

> **(i)** to conserve fish and wildlife populations and habitats in their natural diversity including, but not limited to,
>
> [Togiak Refuge] salmonids, marine birds and mammals, migratory birds and large mammals (including their restoration to historic levels);
>
> [Alaska Maritime Refuge] marine mammals, marine birds and other migratory birds, the marine resources upon which they rely, bears, caribou and other mammals;
>
> **(ii)** to fulfill the international treaty obligations of the United States with respect to fish and wildlife and their habitats; (iii) to provide, in a manner consistent with

purposes set forth in subparagraphs (i) and (ii), the opportunity for continued subsistence uses by local residents;

(iv) [Alaska Maritime Refuge] to provide, in a manner consistent with subparagraphs (i) and (ii), a program of national and international scientific research on marine resources; and

(v) to ensure, to the maximum extent practicable and in a manner consistent with the purposes set forth in paragraph (i), water quality and necessary water quantity within the refuge.

The Wilderness Act of 1964 (Public Law 88-577) creates additional Refuge purposes for the Togiak Wilderness Area. Designated wilderness areas are to be managed "for the use and enjoyment of the American people in such manner as will leave them unimpaired for future use and enjoyment as wilderness, and so as to provide for the protection of these areas, the preservation of their wilderness character, and for the gathering and dissemination of information regarding their use and enjoyment as wilderness."

National Wildlife Refuge System Mission:

The mission of the National Wildlife Refuge System is to administer a national network of lands and waters for the conservation, management, and, where appropriate, restoration of the fish, wildlife, and plant resources and their habitats within the United States for the benefit of present and future generations of Americans (National Wildlife Refuge System Administration Act, as amended).

Description of Use(s)

This compatibility determination addresses routine management activities conducted by the Alaska Department of Fish and Game that may not be encompassed by the Master Memorandum of Understanding between the Alaska Department of Fish and Game, Juneau, Alaska, and the U.S. Fish and Wildlife Service, Department of the Interior, Anchorage, Alaska, signed March 13, 1982, and law enforcement activities conducted by Alaska Department of Public Safety Fish and Wildlife Protection Officers. This includes the following activities: fish and wildlife surveys conducted by boat, foot, or other means not restricted by regulation or policy; aircraft landings in support of aerial fish and wildlife surveys; vegetation and habitat classification and surveys; and law-enforcement activities. This compatibility determination does not address predator management, fish and wildlife control (with the exception of emergency removal of individual rogue animals), reintroduction of species, nonindigenous species management, pest management, disease prevention and control, fishery restoration, fishery enhancement, indigenous fish introductions, nonindigenous species introductions, invasive types of data collection (e.g., immobilization and collaring of animals), construction of facilities, or any other nonpermitted activity that could alter Refuge ecosystems. Separate compatibility determinations addressing specific proposals will be required for those activities. All management and research activities conducted by the Alaska Department of Fish and Game under a specific cooperative agreement with the Fish and Wildlife Service to fulfill one or more purposes of the refuge or the National Wildlife Refuge System mission are not subject to a compatibility determination.

Potential means of access include fixed-wing aircraft, helicopter, motorboats, snowmobiles, nonpowered boats, dogsled, foot, snowshoes, and cross-country skis. Potential lodging and

facilities include tents, tent frames, tent platforms, weatherports, existing permitted cabins, and caches. Authorizations for all activities and forms of access included in this compatibility determination within the Togiak Wilderness Area are subject to a minimum requirements analysis.

Availability of Resources

Adequate refuge personnel and base operational funds are available to manage activities at existing and projected levels. Administrative staff time (as many as 10 staff days annually) primarily involves phone conversations, written correspondence, and personal interaction with state personnel regarding ongoing activities. Field work associated with administering the program primarily involves monitoring (when applicable) the state's activities to ensure all activities are compatible with the Master Memorandum of Understanding.

Anticipated Impacts of the Use(s)

Because ADF&G and Public Safety personnel are trained professionals, we anticipate that routine law-enforcement and fish and wildlife monitoring and management activities will have positive overall impacts on the wildlife resources, other refuge resources (such as water quality, soil, and vegetation), and refuge users. These positive impacts will support refuge purposes and goals and the Service mission.

For all projects proposed in the designated Togiak Wilderness Area, analysis of projects will be conducted to ensure compliance with the "minimum-requirement" philosophy to ensure that the project is essential to protect physical, biological, or experiential resources of the wilderness. In addition, "minimum-tool" analysis will be conducted to ensure that the methods and equipment have the least impact and are the least manipulative or restrictive means of achieving the project.

Public Review and Comment

Draft compatibility determinations were published as a portion of the Draft Revised Comprehensive Conservation Plan, and public review was invited with comments on the plan. The State of Alaska provided comments on this compatibility determination. The State also provided a number of comments on the permit special conditions. The state requested that we include mention of ANILCA Section 101 language about opportunities for scientific research in the justification section. We made the requested change.

Determination

_____Use is Not Compatible

___X__Use is Compatible

Stipulations Necessary to Ensure Compatibility

A compatibility determination is not required for state activities on refuge lands where an established agreement is in place. Refuge staff will monitor state activities on the Refuge. Findings from these monitoring efforts will be used to determine what additional management actions, if any, are needed to ensure state activities remain compatible with refuge purposes and in compliance with established agreements.

Justification

Natural and social science information is necessary for the proper management of the National Wildlife Refuge System. It is the policy of the Service to encourage and support research and management studies in order to provide scientific data upon which decisions regarding management of units of the refuge system may be based.

Under ANILCA Section 303, scientific research of marine resources is a purpose of the Hagemeister Island portion of Alaska Maritime Refuge. Under ANILCA Section 101, purposes for all refuges in Alaska include maintaining opportunities for scientific research. Under the Wilderness Act, scientific use is a purpose of the Togiak Wilderness Area.

This activity supports the refuge purposes and goals and the System mission. It will have favorable impacts on refuge resources and wildlife-dependent priority public uses.

Supporting Documents

U.S. Fish and Wildlife Service. 1986. Togiak National Wildlife Refuge Final Comprehensive Conservation Plan, Wilderness Review, and Environmental Impact Statement. U.S. Fish and Wildlife Service. Anchorage, Alaska. 514 pp.

U.S. Fish and Wildlife Service. 1988. Alaska Maritime National Wildlife Refuge Final Comprehensive Conservation Plan, Wilderness Review, and Environmental Impact Statement. U.S. Fish and Wildlife Service. Anchorage, Alaska.

U.S. Fish and Wildlife Service. 2007. Togiak National Wildlife Refuge Draft Revised Comprehensive Conservation Plan and Revised Public Use Management Plan and Environmental Assessment. U.S. Fish and Wildlife Service. Anchorage, Alaska.

Refuge Determination

Refuge Manager / Project Leader Approval:	/s/ Paul Liedberg	7/14/09
	(Signature)	(Date)

Concurrence

Regional Chief, National Wildlife Refuge System:	/s/ Tracey S. McDonnell, Acting	8/3/09
	(Signature)	(Date)

Mandatory 10-Year Re-Evaluation Date: 2019

NEPA Compliance for Refuge Use Decision

_____Categorical Exclusion without Environmental Action Memorandum

_____Categorical Exclusions and Environmental Action Memorandum

___X__Environmental Assessment and Finding of No Significant Impact

_____Environmental Impact Statement and Record of Decision

COMPATIBILITY DETERMINATION

Use: Wildlife Observation, Photography, Environmental Education, and Environmental Interpretation (wildlife-dependent recreation)

Supporting Uses: Boating (human-powered), boating (motorized), fishing (general), fishing (other), hunting (big game), hunting (other migratory birds), hunting (upland game), hunting (waterfowl), hunting (other), plant gathering, trapping, natural resource collecting, camping, cross-country skiing, dog sledding and ski jouring, hiking and backpacking, pets, photography, video, filming, audio recording (nonwildlife-dependent, recreational—other), snowshoeing, outdoor recreation (other), fishing (subsistence), gathering (subsistence), hunting (subsistence), photography (wildlife), wildlife observation, fixed-wing aircraft, tree harvest (firewood).

Refuge Name: Togiak National Wildlife Refuge including the Hagemeister Island portion of Alaska Maritime Refuge (Refuge).

Establishing and Acquisition Authority(ies)

Togiak National Wildlife Refuge encompassing approximately 4,899,000 acres, was established on December 2, 1980 when Congress passed the Alaska National Interest Lands Conservation Act (ANILCA). Former Cape Newenham Refuge, established January, 1969 was incorporated into the present Togiak National Wildlife Refuge in 1980.

Section 702(10) of ANILCA designated approximately 2,373,000 of Togiak Refuge as the Togiak Wilderness under the Wilderness Act, as amended (16 U.S.C. 1131-1136). The purposes for these lands as wilderness are supplemental to the other purposes of Togiak Refuge.

As part of the Togiak Refuge Comprehensive Conservation Plan revision, the administration of Hagemeister Island was transferred from Alaska Maritime Refuge to Togiak Refuge. Approximately 74,000 acres in size, Hagemeister Island became part of Alaska Maritime Refuge with the passage of ANILCA on December 2, 1980.

Refuge Purpose(s)

Cape Newenham Refuge (now part of Togiak Refuge) was established in 1969 by Public Land Order 4583 "…for the protection of wildlife and their habitat…".

Sections 303(1)(B) and 303(6)(B) of ANILCA set forth the purposes for which Togiak and Alaska Maritime Refuge (including Cape Newenham Refuge) were established and shall be managed, including:

> **(i)** to conserve fish and wildlife populations and habitats in their natural diversity including, but not limited to,
>
> [Togiak Refuge] salmonids, marine birds and mammals, migratory birds and large mammals (including their restoration to historic levels);
>
> [Alaska Maritime Refuge] marine mammals, marine birds and other migratory birds, the marine resources upon which they rely, bears, caribou and other mammals;
>
> **(ii)** to fulfill the international treaty obligations of the United States with respect to fish and wildlife and their habitats; (iii) to provide, in a manner consistent with

purposes set forth in subparagraphs (i) and (ii), the opportunity for continued subsistence uses by local residents;

(iv) [Alaska Maritime Refuge] to provide, in a manner consistent with subparagraphs (i) and (ii), a program of national and international scientific research on marine resources; and

(v) to ensure, to the maximum extent practicable and in a manner consistent with the purposes set forth in paragraph (i), water quality and necessary water quantity within the refuge.

The Wilderness Act of 1964 (Public Law 88-577) creates additional Refuge purposes for the Togiak Wilderness Area. Designated wilderness areas are to be managed "for the use and enjoyment of the American people in such manner as will leave them unimpaired for future use and enjoyment as wilderness, and so as to provide for the protection of these areas, the preservation of their wilderness character, and for the gathering and dissemination of information regarding their use and enjoyment as wilderness."

National Wildlife Refuge System Mission:

The mission of the National Wildlife Refuge System is to administer a national network of lands and waters for the conservation, management, and, where appropriate, restoration of the fish, wildlife, and plant resources and their habitats within the United States for the benefit of present and future generations of Americans (National Wildlife Refuge System Administration Act, as amended).

Description of Use(s)

The Refuge provide excellent opportunities for "Big Six" wildlife-dependent, priority public uses, which are hunting, fishing, wildlife viewing, wildlife photography, and environmental education and interpretation. These activities predate refuge establishment. They occur throughout the Refuge and throughout the year. Hunting and fishing are discussed on other, separate compatibility determinations.

Associated activities such as camping, backpacking, hiking, and other incidental uses are considered part of these wildlife-dependent activities.

Recreational settings on the Refuge are remote and not accessible by road. Typical forms of access for all areas on the Refuge include fixed-wing aircraft, motorboat, snowmachine, nonpowered boats, dogsled, foot, snowshoes, cross-country skis, and other nonmotorized means. However, the vast majority of visitors participating in these activities access the Refuge by commercial air taxi. The most common means of access by the relatively few recreational users not using commercial transporters (air taxis) are private aircraft and boats. Use of helicopters, jet-powered watercraft, and airboats is specifically excluded from this evaluation.

Much of the subject use occurs within the approximately 2.4-million-acre Togiak Wilderness Area, which is administered according to the provisions of the Wilderness Act and ANILCA. Although the Wilderness Act prohibits the public use of motor vehicles, motorboats, aircraft, and other forms of mechanical transport, and motorized equipment, ANILCA contains special provisions for Alaska wilderness areas allowing the use of snowmachines, motorboats, airplanes, and non-motorized surface transportation methods for traditional activities,

including recreational fishing. The public use of helicopters, off-highway vehicles, and motorized equipment is not allowed.

Wildlife viewing and photography primarily occur incidental to hunting and fishing activities. Increased use of the Refuge for ecotourism activities (which would include wildlife viewing) has occurred since 2000 but can be largely attributed to one commercial operator. This activity is somewhat variable depending on wildlife concentrations and use is not expected to increase significantly in the near future.

The Cape Peirce wildlife viewing area is a key location that attracts visitors to the Togiak Refuge for photography and wildlife observation during summer months. The area provides one of the few reliable walrus haulout sites in Bristol Bay that is reasonably accessible for visitors. Seabird concentrations and outstanding vistas are also attractants to the area. Wildlife observation and photography are also incidental to other activities including sport fishing, recreational hunting, and various subsistence uses.

Because of the lack of developed visitor facilities on the Refuge, interpretive and education efforts occur primarily off-refuge at the headquarters in Dillingham or surrounding villages.

The Refuge has an active education and outreach program. Environmental education programs focus on the National Wildlife Refuge System, the purposes for which the Refuge were established, and significant resource-management issues. A week long Marine Science and Yup'ik Culture Camp is held annually at Cape Peirce, a Riparian Ecology Camp is done annually by floating a refuge river, and staff participate in teaching segments of the Bristol Bay Salmon Camp held each year at Lake Aleknagik.

A detailed discussion of non-consumptive recreational activities can be found in the Togiak Refuge Draft Comprehensive Conservation Plan.

Availability of Resources

Adequate refuge personnel and base operational funds are available to manage on-refuge wildlife-dependent recreational activities at existing and projected levels. Administrative staff time primarily involves phone conversations, written correspondence, and interaction with visitors at the visitor center. There is additional work entering activity data into a database. Field work associated with administering the program related to wildlife observation and photography primarily involves monitoring recreational users' compliance with state and federal regulations. The only environmental education and interpretation occurring on the Refuge and under the scope of this compatibility determination are in conjunction with the annually conducted Yup'ik culture camp.

Anticipated Impacts of the Use(s)

Wildlife viewing associated activities at the Refuge are concentrated within the Cape Peirce wildlife viewing area and to some extent along river corridors during the summer months. There is no evidence to suggest long-term impacts to wildlife due to human disturbance occur at the Refuge. Short-term impacts such as displacement and avoidance due to wildlife-viewing and photography activities are isolated and have little impact on wildlife populations. Camping occurs primarily on sand dunes, and durable gravel bars, where impacts to vegetation are negligible.

Increased visitation within the Refuge has the potential to negatively impact wilderness character and the quality of recreational experiences. Monitoring of visitor use through the River Ranger program, and of visitor satisfaction through visitor surveys indicate current conditions are acceptable and provide outstanding opportunities for wilderness solitude. This information also suggests if visitation increases noticeably, unacceptable crowding and conflicts between user groups are likely. Togiak Refuge will continue to actively manage recreational visitation through the River Ranger program, refuge outreach and education, cooperation with the State and other adjoining landowners, and special use permits to insure continued compatibility with refuge purposes.

A detailed analysis of anticipated impacts due to wildlife viewing, photography, environmental education and interpretation is included in the Togiak Refuge Draft Comprehensive Conservation Plan.

Public Review and Comment

Draft compatibility determinations were published as a portion of the Draft Revised Comprehensive Conservation Plan, and public review was invited with comments on the plan. The State of Alaska provided comments on this compatibility determination. The State requested that we clarify that off-road vehicles may be allowed by Service regulations on designated routes and areas or by special use permit. We did not make the requested changes as this compatibility determination is for recreational fishing. The plan does not allow recreational use of helicopters. There are no designated routes for ORVs and the use of ORVs by special use permit is not covered under this compatibility determination. The State requested we change "sport hunting" to "recreational hunting." The change was made. The State asked that we include coordination with the State and other land owners as part of our active management in the "Anticipated Impacts of the Use(s)" section. We added the requested language.

Determination

_____Use is Not Compatible

___X__Use is Compatible

Stipulations Necessary to Ensure Compatibility

The Togiak Refuge Comprehensive Conservation Plan provides direction for current and future fishery, wildlife and public use monitoring efforts. Findings from these monitoring efforts will be used to determine what additional management actions, if any, are needed to ensure wildlife-dependent recreational activities remain compatible with refuge purposes. To minimize impacts on refuge lands and resources, law enforcement patrols will routinely be conducted in an effort to maximize compliance with Refuge policies, rules, and/or regulations.

The following actions will be implemented to maintain compatibility between wildlife observation, wildlife photography, environmental education, environmental interpretation, and the purposes for the Refuge.

- Monitor site impacts on Refuge lands surrounding Kagati, Goodnews, Kukatlim, within the Cape Peirce Wildlife Viewing Area, and other areas with concentrated public use and potential resource impacts.

- Monitor all activities to ensure that wildlife-dependent recreation and its impacts remain compatible with refuge purposes.

Justification

All refuge lands in the Togiak Refuge and the Hagemeister Island portion of Alaska Maritime Refuge are open to general public access unless specifically closed. The National Wildlife Refuge System Administration Act of 1997, as amended (§5C), identifies the priority public uses of the System as wildlife-dependent recreation, defined as uses of a refuge involving hunting, fishing, wildlife observation and photography, and environmental education and interpretation. These uses are generally encouraged and receive emphasis in management of public use of the Refuge. Togiak Refuge has consistently taken actions to insure subsistence opportunity and maintain outstanding opportunities for wilderness naturalness and solitude. In an effort to facilitate additional wildlife observation and photography, and environmental education and interpretation it has been determined the stipulations in this compatibility determination are necessary to meet this and other Refuge goals and to fulfill the purposes of the Togiak Refuge and the Togiak Wilderness Area.

Over the past 25-plus years, means of access—including airplanes, motorboats, and snowmachines—for traditional activities, as provided by ANILCA and as currently regulated by the Service, have not materially interfered with or detracted from refuge purposes. Should motorized transportation grow to levels where it interferes with refuge purposes, steps would be taken to maintain compatibility.

To protect and manage land and wildlife resources for the benefit of the American people is part of the Refuge System's mission. It is important to provide the opportunity, when possible, for the public to visit the Refuge, allowing them to observe wildlife and its habitats in the simplest and most basic form. The Refuge provide an incredible opportunity to function as an outdoor classroom, promoting an awareness of ecological functions and the interrelationship between human activities and the natural system, and to educate and motivate future generations of people so that they effectively support wildlife conservation. The current and projected levels of wildlife-dependent recreational activities (wildlife observation, wildlife photography, environmental education, and interpretation) occurring on the Refuge will remain relatively low. After fully considering the impacts of this activity, as described previously in the "Anticipated Impacts" section of this compatibility determination, it is my determination that wildlife observation and photography, environmental education, and environmental interpretation activities on the Refuge do not materially interfere with or detract from the purposes of the Refuge or the mission of the National Wildlife Refuge System. These activities will remain compatible with the implementation of the compatibility stipulations.

Supporting Documents

U.S. Fish and Wildlife Service. 1986. Togiak National Wildlife Refuge Final Comprehensive Conservation Plan, Wilderness Review, and Environmental Impact Statement. U.S. Fish and Wildlife Service. Anchorage, Alaska. 514 pp.

U.S. Fish and Wildlife Service. 1988. Alaska Maritime National Wildlife Refuge Final Comprehensive Conservation Plan, Wilderness Review, and Environmental Impact Statement. U.S. Fish and Wildlife Service. Anchorage, Alaska.

U.S. Fish and Wildlife Service. 1991. Togiak National Wildlife Refuge, Final Public Use Management Plan and Environmental Assessment. U.S. Fish and Wildlife Service. Anchorage, Alaska. 244 pp.

USFWS. 1992. Subsistence Management for Federal Public Lands in Alaska, Final Environmental Impact Statement, Record of Decision signed April 2, 1992. U.S. Fish and Wildlife Service.

U.S. Fish and Wildlife Service. 2007. Togiak National Wildlife Refuge Draft Revised Comprehensive Conservation Plan and Revised Public Use Management Plan and Environmental Assessment. U.S. Fish and Wildlife Service. Anchorage, Alaska.

Refuge Determination

Refuge Manager / Project Leader Approval:	/s/ Paul Liedberg	7/14/09
	(Signature)	(Date)

Concurrence

Regional Chief, National Wildlife Refuge System:	/s/ Tracey S. McDonnell, Acting	8/3/09
	(Signature)	(Date)

Mandatory 10-Year Re-Evaluation Date: 2024

NEPA Compliance for Refuge Use Decision

_____Categorical Exclusion without Environmental Action Memorandum

_____Categorical Exclusions and Environmental Action Memorandum

___X__Environmental Assessment and Finding of No Significant Impact

_____Environmental Impact Statement and Record of Decision

COMPATIBILITY DETERMINATION

Use: Trapping

Primary Use: Trapping

Supporting Uses: Boating (motorized), hunting (subsistence), plant gathering, camping, dog sledding, photography, video, snowshoeing, fishing (subsistence), gathering (subsistence), wildlife observation, fixed-wing aircraft, tree harvest (firewood).

Refuge Name: Togiak National Wildlife Refuge including the Hagemeister Island portion of Alaska Maritime Refuge (Refuge).

Establishing and Acquisition Authorities

Togiak National Wildlife Refuge encompassing approximately 4,899,000 acres, was established on December 2, 1980 when Congress passed the Alaska National Interest Lands Conservation Act (ANILCA). Former Cape Newenham Refuge, established January, 1969 was incorporated into the present Togiak National Wildlife Refuge in 1980.

Section 702(10) of ANILCA designated approximately 2,373,000 of Togiak Refuge as the Togiak Wilderness under the Wilderness Act, as amended (16 U.S.C. 1131-1136). The purposes for these lands as wilderness are supplemental to the other purposes of Togiak Refuge.

As part of the Togiak Refuge Comprehensive Conservation Plan revision, the administration of Hagemeister Island was transferred from Alaska Maritime Refuge to Togiak Refuge. Approximately 74,000 acres in size, Hagemeister Island became part of Alaska Maritime Refuge with the passage of ANILCA on December 2, 1980.

Refuge Purposes

Cape Newenham Refuge (now part of Togiak Refuge) was established in 1969 by Public Land Order 4583 "…for the protection of wildlife and their habitat…".

Sections 303(1)(B) and 303(6)(B) of ANILCA set forth the purposes for which Togiak and Alaska Maritime Refuge (including Cape Newenham Refuge) were established and shall be managed, including:

> **(i)** to conserve fish and wildlife populations and habitats in their natural diversity including, but not limited to,
>
> [Togiak Refuge] salmonids, marine birds and mammals, migratory birds and large mammals (including their restoration to historic levels);
>
> [Alaska Maritime Refuge] marine mammals, marine birds and other migratory birds, the marine resources upon which they rely, bears, caribou and other mammals;
>
> **(ii)** to fulfill the international treaty obligations of the United States with respect to fish and wildlife and their habitats;
>
> **(iii)** to provide, in a manner consistent with purposes set forth in subparagraphs (i) and (ii), the opportunity for continued subsistence uses by local residents;

(iv) [Alaska Maritime Refuge] to provide, in a manner consistent with subparagraphs (i) and (ii), a program of national and international scientific research on marine resources; and

(v) to ensure, to the maximum extent practicable and in a manner consistent with the purposes set forth in paragraph (i), water quality and necessary water quantity within the refuge.

The Wilderness Act of 1964 (Public Law 88-577) creates additional Refuge purposes for the Togiak Wilderness Area. Designated wilderness areas are to be managed "for the use and enjoyment of the American people in such manner as will leave them unimpaired for future use and enjoyment as wilderness, and so as to provide for the protection of these areas, the preservation of their wilderness character, and for the gathering and dissemination of information regarding their use and enjoyment as wilderness."

National Wildlife Refuge System Mission

The mission of the National Wildlife Refuge System is to administer a national network of lands and waters for the conservation, management, and, where appropriate, restoration of the fish, wildlife, and plant resources and their habitats within the United States for the benefit of present and future generations of Americans (National Wildlife Refuge System Administration Act of 1966, as amended [16 U.S.C.668dd-668ee]).

Description of Use

This determination re-evaluates trapping furbearing animals on Togiak refuge under federal subsistence and State of Alaska trapping regulations. Beaver, red fox, river otter, wolf, coyote, wolverine, mink, muskrat, marten, and short-tailed weasel are trapped. Most trapping takes place from October through March and access is generally via snowmachine. Open water or lack of adequate snow may prohibit access and thus, reduce trapping effort.

Some of the subject use occurs within the approximately 2.4-million-acre Togiak Wilderness Area, which is administered according to the provisions of the Wilderness Act and ANILCA. Although the Wilderness Act prohibits the public use of motor vehicles, motorboats, aircraft, and other forms of mechanical transport, and motorized equipment, ANILCA contains special provisions for Alaska wilderness areas allowing the use of snowmachines, motorboats, airplanes, and non-motorized surface transportation methods for traditional activities, including trapping. The public use of helicopters, off-highway vehicles, and motorized equipment is not allowed.

Availability of Resources

Adequate Refuge personnel and base operational funds are available to manage trapping on Togiak Refuge.

Anticipated Impacts of the Use

State and federal trapping regulations are established to ensure healthy sustainable wildlife populations. Trappers themselves have little impact on the Refuge. Occasionally a nontargeted animal could be harvested. No long-term adverse impacts on wildlife populations or other Refuge resources are likely to occur because of continuation of trapping on the Refuge.

Public Review and Comment

Draft compatibility determinations were published as a portion of the Draft Revised Comprehensive Conservation Plan, and public review was invited with comments on the plan. The State of Alaska provided comments on this compatibility determination. The State requested that we clarify that off-road vehicles may be allowed by Service regulations on designated routes and areas or by special use permit and that helicopter landings may be authorized on a case-by-case basis under 43 CFR 36.11(f)(4). We did not make the requested changes as this compatibility determination is for trapping. We do not allow helicopters for trapping. There are no designated routes for ORVs and the use of ORVs by special use permit is not covered under this compatibility determination. The State commented, "trapping is a public use that is not classified under federal or state law as commercial, subsistence, or recreation." We removed a sentence that characterized trapping as either a subsistence or recreational activity.

Determination

_____Use is Not Compatible

___X__Use is Compatible With the Following Stipulations

Stipulations Necessary to Ensure Compatibility

The management direction provided in the revised Comprehensive Conservation Plan for the refuge will be implemented. Monitoring would be used to determine what additional management actions, if any, were needed to ensure compatibility. Continuing law enforcement will be carried out to ensure compliance with applicable regulations.

Justification

Trapping is a long-established use on the Refuge. All species targeted are native to the Refuge. Both the State of Alaska and Federal Subsistence Board manage harvest of wildlife to ensure long-term sustainability of harvest. Most trapping occurs when there are few other visitors on the Refuge. Although pelts of animals trapped may be sold, trapping on Togiak Refuge is not a major commercial venture. The current level of trapping, or even a substantial increase in trapping activities, would have only negligible adverse effects on the resources of Togiak refuge because of State and Federal harvest management oversight.

Supporting Documents

U.S. Fish and Wildlife Service. 1986. Togiak National Wildlife Refuge Final Comprehensive Conservation Plan, Wilderness Review, and Environmental Impact Statement. U.S. Fish and Wildlife Service. Anchorage, Alaska. 514 pp.

U.S. Fish and Wildlife Service. 1988. Alaska Maritime National Wildlife Refuge Final Comprehensive Conservation Plan, Wilderness Review, and Environmental Impact Statement. U.S. Fish and Wildlife Service. Anchorage, Alaska.

USFWS. 1992. Subsistence Management for Federal Public Lands in Alaska, Final Environmental Impact Statement, Record of Decision signed April 2, 1992. U.S. Fish and Wildlife Service.

U.S. Fish and Wildlife Service. 2007. Togiak National Wildlife Refuge Draft Revised Comprehensive Conservation Plan and Revised Public Use Management Plan and Environmental Assessment. U.S. Fish and Wildlife Service. Anchorage, Alaska.

Refuge Determination

Refuge Manager / Project Leader Approval:	/s/ Paul Liedberg	7/14/09
	(Signature)	(Date)

Concurrence

Regional Chief, National Wildlife Refuge System:	/s/ Tracey S. McDonnell, Acting	8/3/09
	(Signature)	(Date)

Mandatory 10-Year Re-Evaluation Date: 2019

NEPA Compliance for Refuge Use Decision

_____Categorical Exclusion without Environmental Action Memorandum

_____Categorical Exclusions and Environmental Action Memorandum

___X__Environmental Assessment and Finding of No Significant Impact

_____Environmental Impact Statement and Record of Decision

COMPATIBILITY DETERMINATION

Use: Helicopter Use to Support Authorized Activities by Other Federal, State, and Local Governments

Primary Use: Helicopters

Supporting Uses: Research, scientific collecting, surveys, Native allotment surveys, ANCSA land conveyance surveys.

Refuge Name: Togiak National Wildlife Refuge including the Hagemeister Island portion of Alaska Maritime Refuge (Refuge).

Establishing and Acquisition Authorities

Togiak National Wildlife Refuge encompassing approximately 4,788,000 acres, was established on December 2, 1980 when Congress passed the Alaska National Interest Lands Conservation Act (ANILCA). Former Cape Newenham Refuge, established January, 1969 was incorporated into the present Togiak National Wildlife Refuge in 1980.

Section 702(10) of ANILCA designated approximately 2,270,000 of Togiak Refuge as the Togiak Wilderness under the Wilderness Act, as amended (16 U.S.C. 1131-1136). The purposes for these lands as wilderness are supplemental to the other purposes of Togiak Refuge.

As part of the Togiak Refuge Comprehensive Conservation Plan revision, the administration of Hagemeister Island was transferred from Alaska Maritime Refuge to Togiak Refuge. Approximately 60,000 acres in size, Hagemeister Island became part of Alaska Maritime Refuge with the passage of ANILCA on December 2, 1980.

Refuge Purposes

Cape Newenham Refuge (now part of Togiak Refuge) was established in 1969 by Public Land Order 4583 "…for the protection of wildlife and their habitat…".

Sections 303(1)(B) and 303(6)(B) of ANILCA set forth the purposes for which Togiak and Alaska Maritime Refuge (including Cape Newenham Refuge) were established and shall be managed, including:

> **(i)** to conserve fish and wildlife populations and habitats in their natural diversity including, but not limited to,
>
> [Togiak Refuge] salmonids, marine birds and mammals, migratory birds and large mammals (including their restoration to historic levels);
>
> [Alaska Maritime Refuge] marine mammals, marine birds and other migratory birds,the marine resources upon which they rely, bears, caribou and other mammals;
>
> **(ii)** to fulfill the international treaty obligations of the United States with respect to fish and wildlife and their habitats;
>
> **(iii)** to provide, in a manner consistent with purposes set forth in subparagraphs (i) and (ii), the opportunity for continued subsistence uses by local residents;

(iv) [Alaska Maritime Refuge] to provide, in a manner consistent with subparagraphs (i) and (ii), a program of national and international scientific research on marine resources; and

(v) to ensure, to the maximum extent practicable and in a manner consistent with the purposes set forth in paragraph (i), water quality and necessary water quantity within the refuge.

The Wilderness Act of 1964 (Public Law 88-577) creates additional Refuge purposes for the Togiak Wilderness Area. Designated wilderness areas are to be managed "for the use and enjoyment of the American people in such manner as will leave them unimpaired for future use and enjoyment as wilderness, and so as to provide for the protection of these areas, the preservation of their wilderness character, and for the gathering and dissemination of information regarding their use and enjoyment as wilderness."

National Wildlife Refuge System Mission

The mission of the National Wildlife Refuge System is to administer a national network of lands and waters for the conservation, management, and, where appropriate, restoration of the fish, wildlife, and plant resources and their habitats within the United States for the benefit of present and future generations of Americans (National Wildlife Refuge System Administration Act of 1966, as amended [16 U.S.C.668dd-668ee]).

Description of Use

This determination re-evaluates helicopter use to support authorized activities of local, state, and other federal agencies. One or two applications per year are normally received to allow helicopter landings as part of some other authorized use such as geologic research, Native allotment conveyance surveys, or ANCSA land conveyance surveys. Less than one permit request per year is made for helicopter landings within the Togiak Wilderness area. Permits could be issued for any time of the year but are most likely to be for activities during spring, summer, or fall. Requests almost always specify sites to be accessed, but on occasion a permittee may stop at a site not designated in advance, mainly when conducting geological research.

Availability of Resources

Adequate refuge personnel and base operational funds are available to manage permits.

Anticipated Impacts of the Use

Adverse impacts associated with helicopter landings on the Refuge would be associated with displacement of wildlife, especially bears, caribou, moose, and raptors, and disturbance to refuge visitors. Hunters would be especially vulnerable to disturbance by helicopters if allowed to operate at times when significant hunting is taking place.

Public Review and Comment

Draft compatibility determinations were published as a portion of the Draft Revised Comprehensive Conservation Plan, and public review was invited with comments on the plan. The State of Alaska provided comments on this compatibility determination. The State also provided a number of comments on the permit special conditions. The Service's regional permit special conditions are being reviewed in a separate process and comments on them have been forwarded to those working on this task. Comments on regional permit special

conditions are not addressed in this compatibility determination and no changes were made to the regional permit special conditions. The State requested the refuge modify the special condition that prohibited fuel caches to allow consideration on a case-by-case basis. The requested change was made. The State requested we modify the stipulation about archaeological resources to state, "unless specifically authorized in this permit." We did not modify the stipulation, a stipulation prohibiting disturbance of archaeological sites would not include it in a permit for archaeological research. The State objected to a refuge special use permit condition that requires helicopters to cross certain rivers and lakes in a generally perpendicular manner. We did not change the special use condition as it is an important way to minimize conflicts between helicopters and other refuge users and in no way affects safety of flight.

Determination

_____Use is Not Compatible

___X__Use is Compatible With the Following Stipulations

Stipulations Necessary to Ensure Compatibility

Management direction provided in the revised Comprehensive Conservation Plan for the Refuge, particularly adequate monitoring of permits that authorize the use of helicopters, will be conducted. Findings from the monitoring efforts will be used to determine what additional management actions, if any, are needed to ensure that these activities remain compatible with refuge purposes.

Continuing law-enforcement and administrative monitoring of permittees will be carried out to ensure compliance with stipulations incorporated into all permits that incorporate the use of helicopters.

The conditions listed below are included on Refuge permits issued for helicopter use to support authorized activities by other federal, state, and local governments, most of which are intended to minimize impacts and ensure compatibility. Refuge permits may also include other special conditions as necessary or appropriate for the specific operations or activities that are proposed.

Regional conditions

- Failure to abide by any part of this special use permit; violation of any refuge-related provision in Titles 43 or 50, Code of Federal Regulations; or violation of any pertinent state regulation (e.g., fish or game violation) will be considered grounds for immediate revocation of this permit and could result in denial of future permit requests for lands administered by the U.S. Fish and Wildlife Service. This provision applies to all persons working under the authority of this permit (e.g., assistants or contractors). Appeals of decisions relative to permits are handled in accordance with 50 Code of Federal Regulations 36.41.
- The permittee is responsible for ensuring that all employees, party members, contractors, aircraft pilots, and any other persons working for the permittee and conducting activities allowed by this permit are familiar with and adhere to the conditions of this permit.

- Any problems with wildlife and/or animals taken in defense of life or property must be reported immediately to the refuge manager, the Alaska Department of Fish and Game, and the Alaska State Troopers. Animals taken must be salvaged in accordance with state regulations.
- The permittee and permittee's employees do not have the exclusive use of the site(s) or lands covered by the permit.
- This permit may be cancelled or revised at any time by the refuge manager for noncompliance or in case of emergency (e.g., public safety, unusual resource problems).
- Prior to beginning any activities allowed by this permit, the permittee shall provide the refuge with (1) a copy of current business license; (2) proof of comprehensive general liability insurance, listing Togiak National Wildlife Refuge as additionally insured, ($300,000 each occurrence, $500,000 aggregate) covering all aspects of operations throughout the annual use period.
- In accordance with the Archaeological Resources Protection Act (16 U.S.C. 470aa), the disturbance of archaeological or historical sites, and the removal of artifacts are prohibited. The excavation, disturbance, collection, or purchase of historical, ethnological, or archaeological specimens or artifacts is prohibited.
- The construction of landing strips or pads is prohibited.
- The operation of aircraft at altitudes and in flight paths resulting in the herding, harassment, hazing, or driving of wildlife is prohibited. It is recommended that all aircraft, except for take-off and landing, maintain a minimum altitude of 2,000 feet above ground level.

Togiak Refuge Conditions

- Use of Native or State lands that have been selected but not yet conveyed is prohibited unless a letter of concurrence is submitted to the refuge manager prior to beginning any activities allowed by this permit.
- River corridors and lakes, including but not limited to the following list, that receive anything above minimum levels of recreational and/or subsistence use will not be overflown except to cross in a generally perpendicular manner.

Kanektok River	Togiak River and Lake
Kagati Lake	Pungokepuk River and Lake
Goodnews River (all forks) and Lake	Ongivinuck River and Lake
Middle Fork Lake	Gechiak River and Lake
Kukatlim Lake	Kulukak River
Arolik River and Lake	

Justification

Under 43 CFR 36.11(4), helicopter use on national wildlife refuge requires a special use permit. The current conservation plan states "use of helicopters is not permitted for recreational activities; other uses require a special use permit." As only occasional and limited use of helicopters would be authorized, and with special conditions in place that

generally separate helicopter activity from refuge visitors, the potential for adverse effects to refuge resources and visitors would be negligible. Helicopter landings would only be authorized when other means of access are impractical or unsafe. The landing of helicopters in the Togiak Wilderness Area would require completion of a Minimum Requirements Analysis prior to permit issuance.

Supporting Documents

U.S. Fish and Wildlife Service. 1986. Togiak National Wildlife Refuge Final Comprehensive Conservation Plan, Wilderness Review, and Environmental Impact Statement. U.S. Fish and Wildlife Service. Anchorage, Alaska. 514 pp.

U.S. Fish and Wildlife Service. 1988. Alaska Maritime National Wildlife Refuge Final Comprehensive Conservation Plan, Wilderness Review, and Environmental Impact Statement. U.S. Fish and Wildlife Service. Anchorage, Alaska.

U.S. Fish and Wildlife Service. 2007. Togiak National Wildlife Refuge Draft Revised Comprehensive Conservation Plan and Revised Public Use Management Plan and Environmental Assessment. U.S. Fish and Wildlife Service. Anchorage, Alaska.

Refuge Determination

Refuge Manager / Project Leader Approval:	/s/ Paul Liedberg	7/14/09
	(Signature)	(Date)

Concurrence

Regional Chief, National Wildlife Refuge System:	/s/ Tracey S. McDonnell, Acting	8/3/09
	(Signature)	(Date)

Mandatory 10-Year Re-Evaluation Date: 2019

NEPA Compliance for Refuge Use Decision

_____Categorical Exclusion without Environmental Action Memorandum

_____Categorical Exclusions and Environmental Action Memorandum

___X__Environmental Assessment and Finding of No Significant Impact

_____Environmental Impact Statement and Record of Decision

Appendix E

Togiak Refuge Angler Survey

E. Togiak Refuge Angler Survey Results: 1995 and 2001

E.1 Introduction

Togiak Refuge managers continually strive to meet goals and objectives set forth by the Refuge Improvement Act, Alaska National Interest Lands Conservation Act (ANILCA), the Wilderness Act, and the Togiak Refuge Public Use Management Plan (PUMP). Understanding Togiak Refuge visitor characteristics, their motivations, perceptions of quality recreation, and opinions toward current and future management is fundamental in meeting these goals and objectives.

Management direction provided in various laws, regulations, and policy related to public uses of national wildlife refuges and wilderness areas is not based solely on objective information related to fish, wildlife, plants, and their habitats. Terms such as "outstanding opportunity," "high-quality fishing experiences," and "solitude" included in various laws and policies reflect the subjective nature of visitor perceptions and recreation experiences. Therefore, understanding the views, opinions, and perceptions of the public with respect to these and other related terms is very important when formulating management decisions.

In 1995, a survey designed to measure Refuge anglers' perceptions of the quality of fish and wildlife-dependent recreation, wilderness experience opportunities (e.g., solitude), and other issues was conducted on the Kanektok, Goodnews, and Togiak Rivers. In 2001, a second, very similar survey was conducted on the same three rivers to measure how visitors' perceptions and Refuge conditions had changed over time. This appendix describes results from the 2001 survey efforts, and contrasts relevant findings with those from the 1995 survey.

E.2 2001 Survey Methods

Beginning in late May 2001, Refuge visitors were contacted before their trips at the Dillingham airport and/or during their trips as part of current Togiak Refuge public-use programs. Visitors were informed about the survey and its purpose and asked if they would like to receive a questionnaire in the mail.

Following the Dillman total design method (Dillman 1978), questionnaires were mailed to anglers within two weeks of signing up for the survey, beginning in late July 2001. Final mailing of questionnaires was completed September 18, 2001. Approximately two weeks after the survey was initially mailed, participants received a postcard thanking them for completing the survey and asking for the survey to be completed if they had not done so. After an additional week to 10 days, those people who had not responded to either the initial survey mailing or the postcard were sent a second identical survey. The last of these follow-up questionnaires were mailed October 15, 2001.

E.3 Results: Visitor Experiences

E.3.1 Selected Visitor Characteristics

By the end of November 2001, 590 questionnaires had been mailed, eight returned as undeliverable, and 478 completed questionnaires received for a response rate of 81 percent. Questionnaires completed by off-duty U.S. Fish and Wildlife Service employees and guides were not included in this analysis, leaving 426 useable questionnaires: 148 from Goodnews River visitors, 233 from Kanektok visitors, and 45 from Togiak visitors. These numbers are consistent with the relative amount of use each river receives. Not every person responded to all questions, therefore some analyses in this appendix report sample sizes smaller than those listed in Table E-1.

Table E-1. Number of surveyed anglers in each major user group by river

River	Total sample size	Unguided floaters	Guided floaters	Total floaters	Guided motorboat anglers
Kanektok	233	89	62	151	82
Goodnews	148	85	14	99	49
Togiak	45	10	4	14	31

Questionnaires were received from 43 states and 12 foreign countries. When broken down by geographic region, 30 percent of survey respondents were from the west or northwest of the contiguous United States, 13 percent from the Rocky Mountain states, 10 percent from Alaska, 10 percent from the Midwest, 6 percent from Florida, 6 percent from foreign countries, and the remaining 25 percent from 25 other states.

The majority of anglers surveyed were more than 50 years of age, with guided anglers being slightly older, on average, than unguided anglers. The age distribution of anglers surveyed is listed in Table E-2.

Table E-2. Percentage of surveyed anglers by age cohort

Age Range (years)	Percentage of Respondents
16–24	4.2%
25–34	8.8%
35–44	17.4%
45–54	31.2%
55–64	21.3%
65 and older	16.5%

Anglers were asked to describe the amount of experience they had on rivers within the Togiak Refuge (including their current trip), other Alaska rivers, and other multi-day trips on other rivers around the world. Overall, guided float anglers had less experience than either guided motorized anglers or unguided float anglers.

E.3.2 2001 Selected Trip Characteristics

Most anglers who visit Togiak Refuge plan their trips several months in advance, particularly on the Kanektok, where 75 percent of respondents indicated that they planned their trips more than six months ahead of time (Table E-3).

Table E-3. Trip planning horizon by river

Trip Planning Horizon	Kanektok Anglers	Goodnews Anglers	Togiak Anglers
Less than one week	3%	5%	0%
One week to one month	2%	3%	8%
One to six months	20%	30%	30%
More than six months	75%	62%	62%

Results from the 1995 survey indicated significant differences in group size and lengths of stay between motorized and float anglers. Results for 2001 were similar to 1995 results and are listed in Table E-4.

Table E-4. Average group size and trip length by user group

User group	Average Number of Nights on the River	Average Group Size
Unguided float anglers	8	4
Guided float anglers	6	9
Guided Motorized anglers	7	10

Anglers were classified as visiting during chinook season, coho season, or "other," depending on when their trip began. These seasons were defined by looking at 2001 Alaska Department of Fish and Game (ADF&G) commercial harvest data and fish weir data from the Kanektok River and the Middle Fork Goodnews River. The percentages of anglers visiting during the chinook and coho salmon runs are included in Table E-5.

Table E-5. Season of use by river

Season	Kanektok Anglers	Goodnews Anglers	Togiak Anglers
Chinook	33% (June 21–July 14)	26% (July 1– July 14)	35% (July 4–July 21)
Coho	48% (Aug. 4– Sept. 14)	58% (Aug. 4–Sept. 14)	21% (Aug. 14– Sept. 7)
Other	19%	16%	44%

E.3.3 Visitor Motivations and Expectations

Information from the 1995 survey suggests that Togiak Refuge anglers seek a wilderness fishing experience and place significant importance on being in a natural place, viewing scenery, and viewing wildlife. Similar to the 1995 survey, 2001 visitors were asked to rate various reasons for their trips on a five-point scale ranging from "not important" to "extremely important." The percentages of respondents who felt that the given reasons were either "very important" or "extremely important" are listed in table E-6. Closer scrutiny of the 2001 data indicates that responses from float and motorized anglers were similar, but float anglers placed slightly more emphasis on setting-dependent factors such as viewing wildlife, viewing scenery, being in a wilderness, and opportunities for solitude. Differences were greatest with respect to unguided floaters, 69 percent of whom felt that opportunities for solitude were "very" or "extremely" important, compared to 45 percent of guided floaters, and 39 percent of guided motorized anglers. With respect to camping, 49 percent of unguided floaters felt opportunities for camping were "very" or "extremely" important, compared to only 30 percent for guided floaters.

Table E-6. Rating of visitor motivational factors

Motivational Factor	Percentage of respondents who rated as "very important" or "extremely important"
Fishing	92
Being in a natural place	80
Being in a wilderness	73
Scenery	57
Wildlife viewing	55
Opportunities for solitude	53
Being with fellow anglers	50
Being with family	36
Camping	32
Photography	31
Testing and using my gear	22
Learning about local cultures	21
Develop boating skills	4
Hunting	1

As might be expected, all groups rated fishing as the most important reason for their trip. Next to that primary activity, physical setting characteristics of the trip—such as being in a natural place, being in a wilderness, viewing the scenery, and viewing wildlife—rated higher than all social characteristics (e.g., opportunities for solitude or being with family or friends). These figures are only slightly different from the importance placed on these trip characteristics by visitors in 1995. Visitors surveyed in 1995 rated "being in a natural place" and "opportunities for solitude" as two of the most important aspects of their trips. In 1995, 77 percent of people surveyed indicated opportunity for solitude was "very important" or "extremely important" (compared to 53 percent in 2001).

In addition to their specific trip motivations, anglers on each river were asked about their expectations for conditions at the headwater lake, the upper river above the Wilderness Area boundary, and the lower river below the Wilderness Area boundary. They were then asked what types of settings they actually experienced and, finally, what type of setting they would prefer in these various river segments. The response choices for settings were as follows:

Primitive Recreation—Where one can expect to find solitude and very few traces of previous use. There is little or no development.

Semi-Primitive Recreation—Where one expects to meet a few other groups of users, but solitude is still possible, particularly at camps. One may see a few semi-permanent tent camps and traces of previous use at some sites.

Undeveloped Recreation—Where you expect to meet many other groups of users, and solitude is sometimes difficult to find. There are some semi-permanent tent camps and traces of previous use at many sites.

The majority of visitors to Kagati, Goodnews, and Kukaktlim lakes at the headwaters of the Kanektok and Goodnews River forks were float anglers. Guided floaters generally anticipated, experienced and preferred more primitive settings than did unguided floaters at these headwater lakes and along the upper river reaches within the Wilderness Area boundary. At Kagati Lake, 88 percent of guided visitors anticipated a primitive setting, and 75 percent of them reported experiencing that type of setting. Only 65 percent of unguided anglers anticipated a primitive setting at headwater lakes where they began their trip, and 50 percent of them reported that they actually experienced this type of setting. Unguided visitors to the Goodnews River both anticipated and experienced a more primitive setting than did Kanektok River visitors. Sixty-nine percent of motorized anglers anticipated a semi-primitive setting below the Wilderness Area boundary along the lower reaches of the three rivers, with almost the same percentage indicating that their experiences matched their expectations. On average, *all user groups preferred a more primitive setting than what they experienced or anticipated*. Based on the criteria used to define each setting, most visitors generally would have preferred more solitude and less evidence of other users than what they actually experienced.

Compared to 1995 visitors, 2001 visitors generally preferred and experienced more primitive settings while traveling along the three rivers. This suggests that many conditions may have improved during the intervening time. However, 2001 survey responses suggest that some conditions at Kagati and Goodnews Lakes may have degraded since 1995. Seventy percent of 1995 visitors reported experiencing a primitive setting at these two lakes, compared to 57 percent in 2001.

E.3.4 Experience Impacts and Visitor Tolerances

Past outdoor recreation research has identified some specific natural-resource and social-setting conditions that tend to have a negative influence on visitors' enjoyment of wilderness settings. Drawing from this research, Togiak Refuge visitors were asked to rate the significance of selected conditions that they might encounter during their trips. For each potential negative condition (impact), survey participants could choose from the following responses: "doesn't matter;" "is annoying, but only if frequent;" "is annoying even if infrequent;" or, "can ruin the trip."

Analyses show little variation in the rating of impacts across the three rivers considered in this study. However, there were important differences between different user groups (guided motorboat clients, guided float clients, and unguided floaters). These three groups generally rated impacts in the same order, but as shown in Table E-7, guided float anglers consistently felt that the listed factors could have a potentially greater impact on their recreational experience. Percentages for unguided float anglers and motorized anglers were very similar, so they are grouped together in the table. One important difference not reflected in the table is that 27 percent of guided float anglers felt seeing other float groups would be "annoying even if infrequent," compared with only nine percent of other visitors who felt this way.

For all three user groups, encounters that involved direct competition for space and extended interaction with other people were rated as more detrimental than were other types of encounters that are shorter in duration (such as merely seeing another party). Compared with the 1995 survey, the 2001 ratings of these potential impacts were very similar.

Table E-7. Significance of potential trip impacts, by user-group

Potential Impact	Percent of guided float anglers who felt the impact "can ruin the trip"	Percent of unguided float and guided motorized anglers who felt the impact "can ruin the trip"
Competition for fishing sites	51	38
Competition for campsites	42	36
Seeing unburied human waste	39	26
Seeing litter	38	25
Encounters with sport anglers in motor boats	38	(unguided floaters 26, motorized anglers 4)
Camping within sight/ sound of other groups	33	24
Seeing other groups with many boats (over 4)	26	14
Number of permanent camps/ structures	21	(unguided floaters 21, motorized anglers 12)
Seeing other large groups (over 8 people)	17	11
Encounters with local villagers in motor boats	8	(unguided floaters 7, motorized anglers 0)
Seeing helicopters	4	3
Seeing airplanes	0	0

In addition to rating the significance of potential impacts, respondents were asked to consider the following:

- The amount or percentage of each impact they experienced during their river trip;
- If what they experienced was more than they expected;
- What amount or percentage of each impact they would be willing to accept or tolerate.
- The instructions provided to visitors in the questionnaire read as follows:
- "For each of the following impacts, please estimate the amount you experienced or saw on your most recent trip, and then estimate the amount you would accept or tolerate before your trip would be compromised."

Based on visitors' responses, average amounts experienced and tolerance values were calculated for each impact. In addition, a series of statistical tests was conducted to determine if the tolerances reported by each angler group were, in fact, different enough from the conditions they experienced to be of concern. Bold type in Tables E-8, E-9, and E-10 indicates those impacts that significantly ($p \leq 0.05$)[2] exceeded visitor tolerances. In those cases where 2001 visitor tolerances were significantly greater than those reported in 1995 (meaning the average reported tolerance level had changed over time), the values are in bold type and noted with an asterisk (*). In those cases where 2001 visitor tolerances were significantly exceeded, values are also in bold type and noted with two asterisks (**).

[2] For comparing 2001with 1995 visitor tolerances, Mann-Whitney U-tests were used. For comparing 2001 experiences with visitor tolerances, paired Wilcoxon signed-rank tests were used.

Table E-8. Goodnews River angler tolerances and conditions experienced (n=143)

	2001 Average visitor tolerance threshold	Conditions actually experienced	% Reporting conditions at tolerance threshold	% Reporting conditions exceeded tolerance threshold	1995 Average visitor tolerance threshold
Litter (average percent of sites/trip)	**4.3% ***	**8.0% ****	**35**	**20**	3.3%
Human waste (average percent of sites/trip)	**3.0% ***	4.3%	39	13	0.8%
Fishing sites passed up (average percent of sites/trip)	12.4%	10.6%	24	19	9.5%
Campsites passed up (average percent of sites/trip)	**11.6% ***	5.7%	18	9	9.8%
Nights near other groups (average percent of nights/trip)	**15.2% ***	9.7%	33	12	8.5%
Structures on upper river (average seen/ day)	1.4	.8	32	3	1
Motorized groups on upper river (average encounters/day)	.9	.5	28	8	0.9
Motorized groups on lower river (average encounters/day)	**4.5 ***	**5.1 ****	**27**	**32**	3.3
Time near other groups (average percent of time/trip)	13.5%	13.3%	25	18	13.2%
Float groups at lake (average encounters/day)	1.5	1.0	15	11	1.7
Float groups on upper river (average encounters/day)	2.3	1.6	19	12	2.2
Float groups on lower river (average encounters/day)	3.5	3.6	17	24	3.4

*2001 tolerance significantly greater than 1995 tolerance
** 2001 tolerance significantly exceeded

There are not any significant differences between 1995 and 2001 visitor observations or tolerances for the number of other float groups at Goodnews Lake, the upper river, or lower river. However, a greater percentage of anglers in 2001 reported seeing more float groups than expected. Survey responses also indicate a greater number of float groups encountered in 2001 at Goodnews Lake and on the upper Goodnews River within the Togiak Wilderness Area compared to 1995. This is consistent with the greater number of use-days reported by commercial sportfishing guides and air-taxi operators for the Goodnews River.

Anglers indicated they would accept or tolerate, on average, encountering up to 1.6 groups per day at Goodnews Lake, 2.3 groups per day on the upper river, and 3.5 groups per day on the lower river. Forty-one percent of those anglers reported the number of encounters with float groups on the lower Goodnews River (outside the Togiak Wilderness Area, and the Togiak Refuge) was equal to or more than what they were willing to accept or tolerate. These results show that, while visitors' average tolerance for this impact was not exceeded at a statistically significant level, a large proportion of visitors did experience conditions that were near threshold levels.

When it comes to motorized use, visitors to the Goodnews River in 1995 reported seeing an average of 3.7 motorized groups per day on the lower river outside the Togiak Refuge. In 2001 this average increased to 5.1 motorized groups on the lower Goodnews River. In 2001, visitors were willing to tolerate seeing more boats outside the Togiak Refuge on the lower river (average of 4.5 groups per day), but 59 percent of those surveyed indicated this was as much as or more than they were willing to tolerate. Along the Wilderness Area portion of the Goodnews River, respondents were willing to tolerate very few motorized groups (one group per day), and on average they encountered about half that many.

Anglers surveyed in 1995 reported camping within sight or sound of other groups an average of 6.5 percent of nights on the river, compared to 2001 anglers who reported an average of 9.7 percent of nights camped within sight or sound of other groups. Statistical analysis indicates this increase was significant. However, 2001 visitors were also more tolerant of this impact, and consequently, visitors, on average, did not feel conditions exceeded their tolerances.

For 11 of the 13 impacts, 2001 tolerances were greater than those expressed by visitors surveyed in 1995. People were willing to tolerate a greater percentage of sites with litter, more time camped within sight or sound of others, more sites with visible signs of human waste, passing up campsites more often because they were occupied, and seeing more motorized groups on the lower river outside the Togiak Refuge. These tolerances were all significantly greater than those indicated in the 1995 survey.

In 2001, the percentage of sites people saw with litter (eight percent) was significantly greater than they were willing to tolerate (4.3 percent). This was due mostly to the very low tolerance expressed for this impact. Sixty-eight percent of visitors on the Goodnews River indicated they were not willing to tolerate any sites with visible litter. Tolerances for the percentage of sites with human waste were not exceeded at a significant level according to the criteria used (4.3 percent of sites observed; 3 percent of sites acceptable).

Kanektok River:

Table E-9. Kanektok River angler tolerances and conditions experienced (n=225)

	2001 Average Visitor Tolerance threshold	Conditions Actually Experienced	% Reporting conditions at tolerance threshold	% Reporting conditions exceeded tolerance threshold	1995 Average Visitor tolerance threshold
Litter (average percentage of sites/trip)	2.3%	**5.0% ****	**40**	**18**	2.2%
Human waste (average percentage of sites/trip)	**2.1% ***	2.1%	45	9	0.6%
Fishing sites passed up (average percentage of sites/trip)	**13% ***	12.9%	26	21	10.2%
Campsites passed up (average percentage of sites/trip)	7.9%	4.1%	27	7	7.9%
Nights near other groups (average percentage of nights/trip)	**11.9% ***	7.2%	35	8	7.9%
Structures on upper river (average seen/day)	**2.3 ***	1.4	29	3	1.5
Motorized groups on upper river (average encounters/day)	1.9	1.4	22	13	1.3
Motorized groups on lower river (average encounters/ day)	**7.7 ***	**11.1 ****	**15**	**41**	5.2
Time near other groups (average percentage of time/trip)	16.9%*	17.0%	29	22	11.9%

	2001 Average Visitor Tolerance threshold	Conditions Actually Experienced	% Reporting conditions at tolerance threshold	% Reporting conditions exceeded tolerance threshold	1995 Average Visitor tolerance threshold
Float groups at lake (average encounters/day)	1.5	1	20	5	1.4
Float groups on upper river (average encounters/day)	2.6	2.1	21	13	2.3
Float groups on lower river (average encounters/ day)	4.7	**5.5** **	**20**	**28**	5.0

*2001 tolerance significantly greater than 1995 tolerance

** 2001 tolerance significantly exceeded

There do not appear to be any significant differences between 1995 and 2001 visitor observations or tolerances for the number of other float groups at Kagati Lake, the upper river, or lower river. The percentage of Kanektok anglers who reported seeing more float groups than expected increased slightly at Kagati Lake, but decreased slightly for the upper and lower river reaches.

Statistical tests confirm that for 11 of the 13 impacts asked about in the questionnaire, visitors in 2001 were more tolerant than those in 1995. Tolerances reported for the percentage of sites with human waste impacts, fishing sites passed up because they were occupied, nights camped within sight or sound of other groups, the number of motorboats encountered on the lower Kanektok, and the number of temporary camps on the upper river were significantly greater than those reported in 1995. In addition, anglers in 2001 reported fewer observations for eight of the 13 impacts. According to the 2001 questionnaire, anglers passed up campsites 4.1 percent of the time because they were occupied, which was significantly less than the 6.5 percent of times 1995 visitors indicated they passed up campsites.

Visitors in 2001 seemed to be willing to tolerate slightly more competition for fishing sites. On average, they reported passing up fishing sites 13 percent of the time because they were already occupied. Forty-seven percent of respondents indicated this was equal to or more than what they felt was acceptable.

Togiak River visitors who responded to the 2001 survey seem to think that the number of boats, people, and structures along the upper river are within acceptable limits. However, 2001 visitors encountered more sites with litter and human waste, and more groups on the lower river, than did 1995 visitors. Despite average tolerances that were greater than those reported by 1995 visitors, over one quarter of 2001 Togiak River visitors reported that the number of motorized groups they encountered on the lower river and the amount of time they spent near other groups exceeded their tolerance thresholds. In addition, 18 percent of 2001 visitors reported that the percentage of sites they encountered with litter exceeded their tolerance thresholds. These findings represent a

shift from 1995, when Togiak River visitors did not report that their tolerances were exceeded for any of these impacts.

Togiak River:

Table E-10. Togiak River angler tolerances and conditions experienced (n=42)

	2001 Visitor Tolerance threshold	Conditions Actually Experienced	% Reporting conditions at tolerance threshold	% Reporting tolerance exceeded	1995 Visitor Tolerance threshold
Litter (average percentage of sites/trip)	**5.4% ***	**11.2% ****	**28**	**18**	0.0%
Human waste (average percentage of sites/trip)	4.38%	6.8%	40	6	0.0%
Fishing sites passed up (average percentage of sites/trip)	12.5%	11.5%	18	22	11.7%
Campsites passed up (average percentage of sites/trip)	8.1%	.3%	24	0	6.0%
Nights near other groups (average percentage of nights/trip)	15.7%	6.9%	28	0	6.0%
Structures on upper river (average seen/day)	1.9	2.3	24	6	3.0
Motorized groups on upper river (average encounters/day)	3.6	2.5	8	16	3.6
Motorized groups on lower river (average encounters/day)	**8.4 ***	**9.8 ****	**12**	**28**	4.0
Time near other groups (average percentage of time/trip)	17.9%	**22.4% ****	**26**	**26**	12.4
Float groups at lake (average encounters/day)	1.7	.5	2	2	3.9
Float groups on upper river (average encounters/day)	2.8	1.6	2	10	2.4
Float groups on lower river (average encounters/day)	4.7	5	6	14	

*2001 tolerance significantly greater than 1995 tolerance
** 2001 tolerance significantly exceeded

E.3.5 Perceived Crowding in the Togiak Wilderness

One criterion frequently used for evaluating wilderness settings is the opportunity for solitude, measured in terms of the absence or presence of crowding. When asked to agree or disagree with the statement [referring to conditions both in and outside of the Wilderness], "Fishing conditions were uncrowded," 385 respondents to the 2001 questionnaire agreed that conditions were

uncrowded, and 39 respondents disagreed. In 2001, visitors were also asked to rate the crowding they experienced "upstream from the wilderness boundary" [i.e., within the Wilderness] on a nine point scale from "not at all crowded" to "extremely crowded." Only one visitor rated conditions as "extremely crowded." Visitor ratings of crowding in the Togiak Wilderness Area are displayed in Table E-11.

Table E-11. Relative crowding by river

River	Visitor Rating of Crowding in the Togiak Wilderness Area (upper river)		
	"not at all crowded"	"lightly crowded"	"moderately crowded"
Kanektok	66%	30%	4%
Goodnews	70%	24%	6%
Togiak	85%	8%	7%

E.3.6 Visitor Interaction with Local Residents and USFWS Personnel

In past years, interaction between local residents and recreational anglers has in some cases been a source of tension and conflict along rivers within the Togiak Refuge. Visitors in 2001 were asked to indicate where they had contact with local residents and how those contacts affected their trip.

Table E-12. Effect of visitor contact with local residents by river

	Contact with local residents	Added to Trip	Detracted from Trip	No Effect on Trip
Kanektok River	80%	60%	6%	34%
Goodnews River	77%	71%	3%	26%
Togiak River	56%	39%	0%	61%

The most common comments from the 336 survey respondents who had contact with local residents indicate they gained an appreciation for local residents and enjoyed learning about new and different cultures and lifestyles. Many visitors commented they found local residents helpful, courteous, friendly, positive, or interesting.

The Togiak Refuge River Ranger program has been in place since the early 1990s. Participants in the 2001 survey were asked to indicate if they had contact with Togiak Refuge River Rangers, to indicate if the contact was positive, and to indicate which of the information they received was most helpful, and/or what information they would have liked to receive.

Sixty-seven percent of respondents indicated Togiak Refuge River Rangers contacted them on the river, and 31 percent of visitors were contacted before their trip by Togiak Refuge staff in Dillingham. Of those who were contacted, all but one person reported their contact as positive.

Generally, visitors found information about bear safety, fishing practices or regulations, and river conditions the most helpful. While more than 50 percent of anglers indicated they did not need additional information, some other visitors indicated they would like more information about fishing and fishing regulations, local history and culture, fish life history, and refuge projects.

Survey respondents were also given space in the 2001 questionnaire to provide any additional comments about the River Ranger program. The vast majority of comments were positive and supportive of the program. In general, response to the River Ranger program was more positive

in 2001 than in 1995. In 1995, 10 percent of people surveyed indicated contact with River Rangers detracted from their trip.

E.3.7 Plans to Return

Fifty-nine percent of survey respondents indicated that they plan to return to the river they visited in 2001. When asked to give a brief explanation of why they might return; 131 visitors cited the great fishing; 48 commented about the scenery; 36 noted the river itself; 33 noted wilderness, solitude, and remoteness; and 33 visitors cited the overall experience.

Among respondents who indicated that they did not plan to return, 73 (19 percent) indicated they wanted to experience a new river, and 41 visitors cited logistics, planning problems, age, and other external factors. Thirty-eight visitors indicated the cost of the trip itself was a reason for not returning, and only 15 (four percent) responded that crowding was one reason they might not return to the river. These results represent a shift from 1995 responses, when more than 80 percent of visitors indicated they planned on taking a future trip on the river in question.

E.4 Results: Visitor Opinions About management Strategies

One purpose of the 2001 visitor survey was to determine what support or opposition exists among anglers for current and potential future management actions. This section summarizes visitors' opinions regarding potential management actions. Graphs in this section may display values that do not add up to 100 percent because respondents who indicated "neutral/ not sure" were not included in the totals.

E.4.1 Permits for Unguided Float Use

Visitors were asked about their opinions regarding possible management actions ranging from providing additional education to implementing a permit system for unguided visitors. There were no significant differences in visitors' opinions between the three rivers covered by this study. However, there were substantial differences between different user groups (i.e., guided and unguided visitors).

With respect to permits, visitors were asked to consider three different potential systems: one that would require a permit and possibly implement use-limits year round; one that would only require a permit during the chinook and coho fishing seasons; and one that would require a permit but would not limit the number of people. Responses for all respondents as a group are shown in Figure E-1.

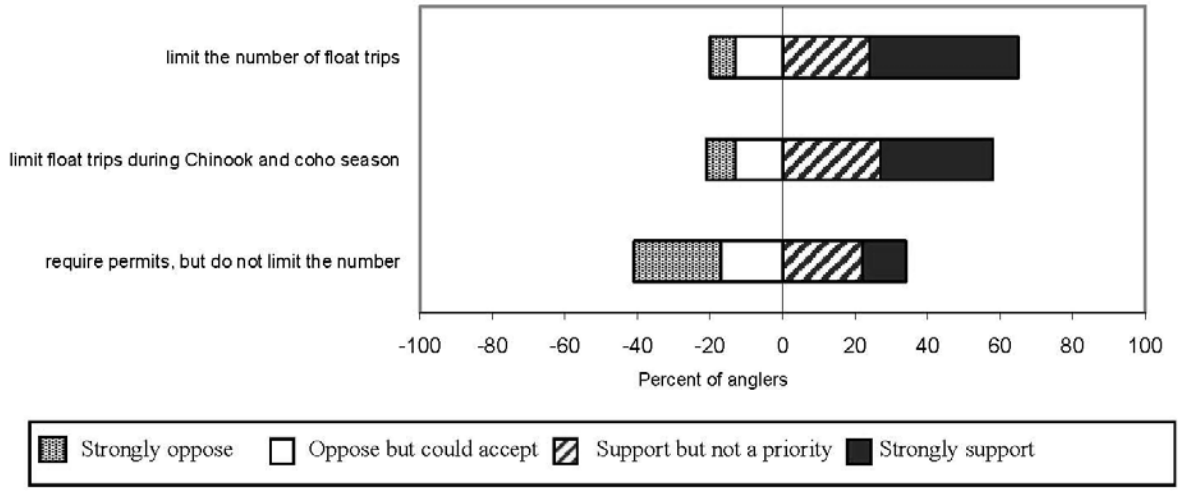


Figure E-1. Opinion toward permit options-all anglers

As shown in Figure E-2, 44 percent of unguided floaters indicated they would support, or strongly support, limiting the number of unguided float trips allowed. Another 17 percent were neutral or not sure, and the remaining 39 percent would oppose (but could accept) or would strongly oppose such a limited-permit system. When asked about permits during chinook and coho season only, the proportion of unguided floaters who would support or strongly support dropped to 38 percent, with more people being neutral or not sure. Finally, only 28 percent supported or strongly supported a permit system with no limits, and 44 percent opposed (but could accept), or strongly opposed this third type of permit system. The proportion of unguided visitors supporting these potential actions is notable considering they represent the opinion of those visitors who would presumably be most impacted by a permit system. When responses from all user groups are considered, 64 percent support or strongly support limiting unguided float trips. These values are similar to those from the 1995 survey.

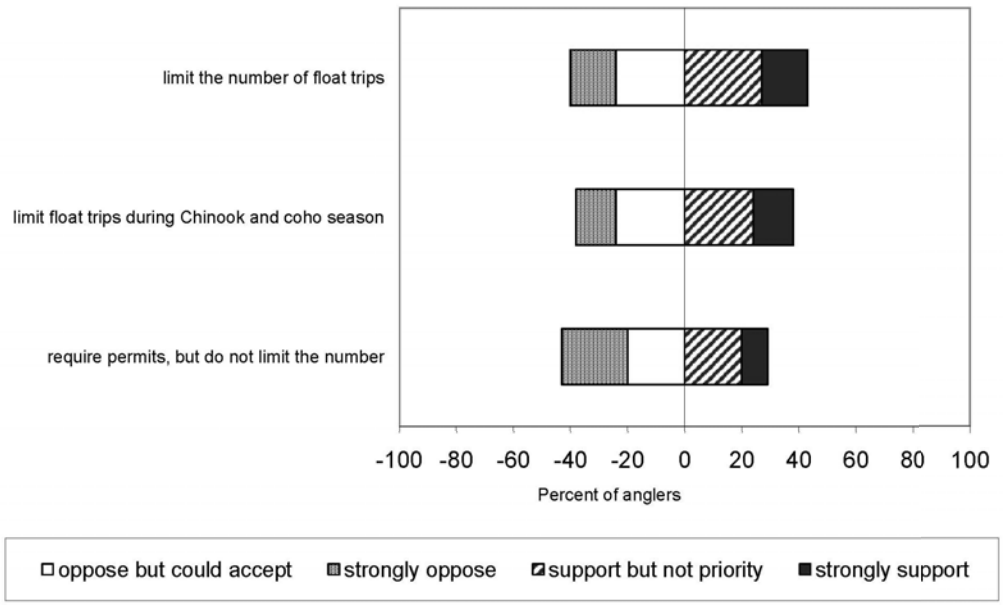


Figure E-2. Non-guided float angler opinion toward permit options

Visitor opinion regarding limited permits for unguided float use is clearly divided according to user group. While 44 percent of unguided floaters indicated support for such permits, a strong majority (79 percent) of guided visitors indicated that they would support limits on unguided float use. This division may be, in part, a perceived equity issue. This interpretation is supported by the data in figure E.3, which show that unguided floaters are willing to give up access for a better trip, but they do not feel there is a need for such restrictions simply because guided visitors are limited. Most guided anglers (82 percent), on the other hand, indicated that they did support matching limits for unguided users. Note that fewer unguided anglers agreed that access limits would lead to an improved experience. When the opinions of all survey respondents are considered together, it appears that a majority of river users would support limits on unguided floaters.

Figure E-3.

E.4.2 Waste Management

Visitors in 2001 were asked about their opinions with respect to building toilets in some high-use areas and establishing a requirement that human waste be packed out. As shown in Figure E-4, 17 percent of unguided floaters supported or strongly supported packing out waste. Thirty-five percent of unguided floaters indicated that they would support constructing toilets in some high use areas along the rivers, and 46 percent indicated that they would be opposed or strongly opposed to such an action.

Guided floaters were much more supportive of requiring float groups to pack out waste compared to unguided visitors. Sixty percent of guided float anglers indicated they would support or strongly support such a requirement. At present, float guides operating within the Togiak Refuge are required to ensure that their clients properly dispose of waste, and some guides make it a practice to pack out all waste.

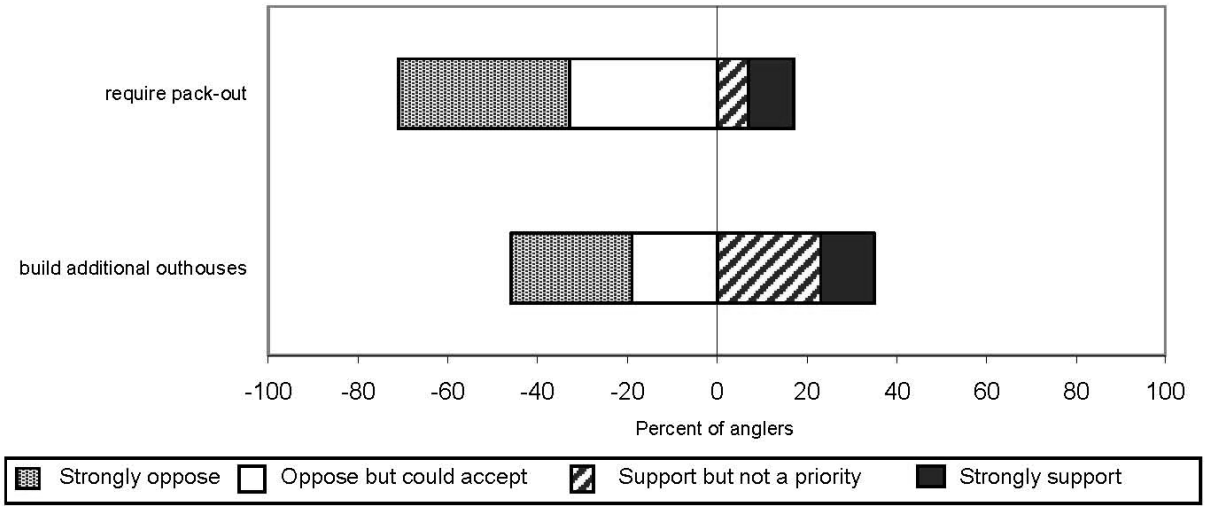


Figure E-4. Opinion toward required pack out or additional outhouses

E.4.3 Boating Safety

In the recent past, some Refuge visitors have registered complaints about unsafe boating practices, possible boating safety violations, and even near-fatal accidents. One section of the 2001 questionnaire was designed to measure the prevalence of safety concerns across the visitor population. Survey participants were asked how safe they felt on the river, if the actions of others negatively affected their trip, and how they would feel if managers were to implement additional regulations such as horsepower or boatsize restrictions.

The vast majority of respondents (98 percent) indicated that they felt safe while fishing. However, almost 100 respondents (22 percent of the sample) indicated that the actions of another person or group negatively affected their trips. Only eight of these negative encounters were described as specifically relating to boating safety, yet survey responses may still indicate that boating safety may be an issue of broader concern. Sixty-two percent of motorized visitors indicated that they would support or strongly support limits on motorboat size, with only 16 percent opposed or strongly opposed to such limits. Similarly, 58 percent supported or strongly supported horsepower restrictions, with only 19 percent opposed or strongly opposed (Figure E-5). In comparison, only about 40 percent of motorized visitors in 1995 supported size or horsepower restrictions.

Among non-motorized (float) groups, 83 percent of respondents indicated that they would support or strongly support restrictions on motorboat size, and a similar proportion indicated support for horsepower restrictions. Because of this strong support by floaters, restrictions on motorboat size and horsepower were among the most widely supported potential management actions that were addressed in the 2001 visitor survey. Across the entire visitor sample (motorized and non-motorized users combined), just over 76 percent of visitors supported such motorboat restrictions.

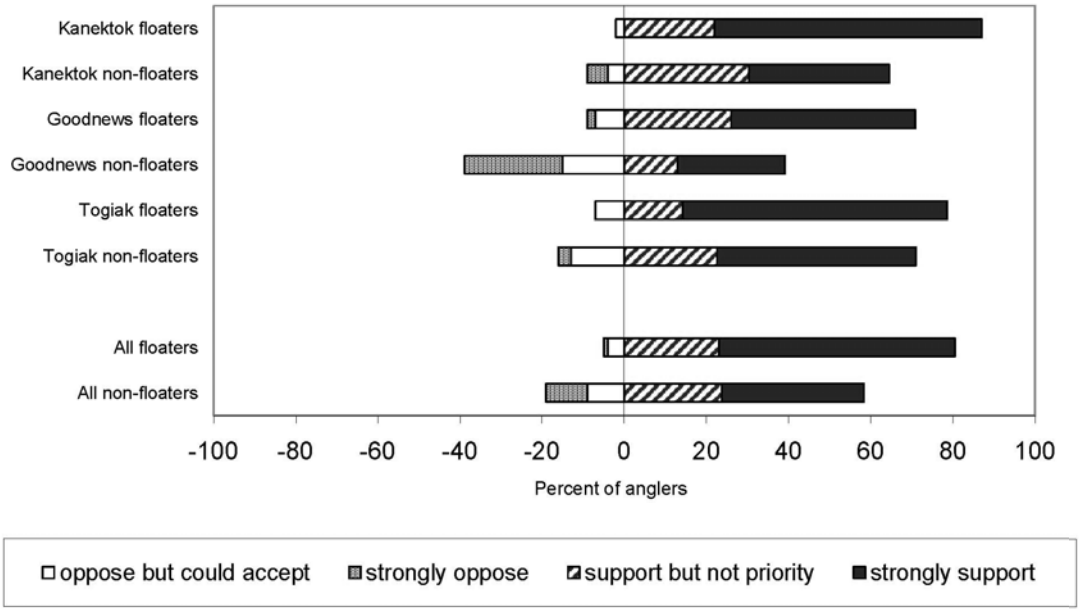


Figure E-5. Opinion toward limiting horsepower

E.5 Summary and Conclusions

The 1995 and 2001 surveys provide a clear picture of typical Togiak Refuge river visitors. These visitors are older, well-educated male anglers from throughout the United States who seek a high-quality wilderness fishing experience that places importance on naturalness and solitude.

Overall, most visitors feel they are able to find the types of experiences they seek, but there is room for improvement and cause for concern about maintaining the opportunities for these experiences in the future. In particular, litter and evidence of improperly disposed human waste continue to be problems. This is, in part, due to the very low tolerance most recreational users have for these impacts, which not only represent evidence of other people but also evidence of behavior considered inappropriate and illegal.

Competition for fishing areas and campsites were the two most important potential impacts for 2001 visitors. While competition for camping areas and fishing sites was not found to be a statistically significant impact when analyzing responses, more than 40 percent of visitors felt the percent of fishing sites or campsites passed up because they were occupied was unacceptable. Based on the importance of these impacts to anglers, they deserve careful consideration.

According to Togiak Refuge commercial guide and air-taxi client use reports, float angler use in 2001 was about eight percent greater than in 1995, but this difference is small in terms of actual anglers. Analyses of survey responses did not detect a statistically significant influence of this increased use on the number of people observed or on the percent of time near other groups reported for the Togiak Wilderness Area. However, visitors responses do indicate a greater number of float groups encountered in 2001 at Goodnews Lake and on the upper Goodnews and Kanektok rivers within the Togiak Wilderness Area

At first glance, a comparison of 1995 and 2001 angler survey results seems to indicate conditions on the Kanektok and Goodnews rivers have improved. On closer inspection, it is evident visitors in 2001 were more tolerant of impacts and that actual conditions within the Togiak Refuge changed

relatively little. Visitors in 2001 were more tolerant of crowding, evidence of human waste, and competition for space than were visitors in 1995. In 1995, 80 percent of visitors indicated they planned on returning for a future visit; in 2001, however, this proportion dropped to 59 percent. These values suggest that there is a considerable amount of visitor turnover and possibly visitor displacement. It is possible that visitor tolerances appear to have changed because the visitors themselves have changed, but determining the underlying causes of shifts in tolerances is outside the scope of the 2001 survey.

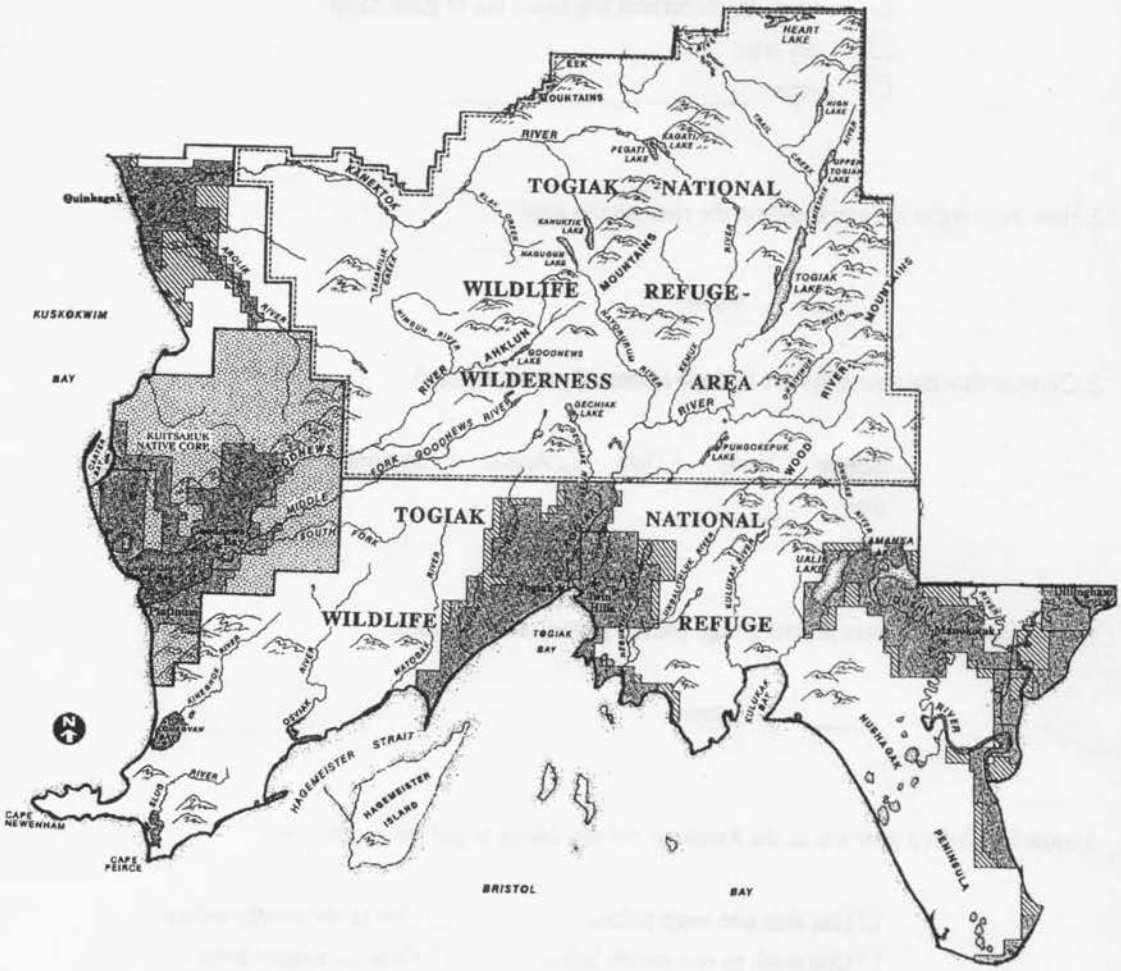
E.6 References

Dillman, D.A. 1978. *Mail and Telephone Surveys: The Total Design Method*. New York, New York: Wiley-Interscience. 375 pages.

USFWS. [unpublished]. Special-use permit reports. Dillingham, Alaska: U.S. Fish and Wildlife Service, Togiak National Wildlife Refuge.

Whittaker, D. 1996. Kanektok, Goodnews, and Togiak Rivers user survey findings and implications. Togiak National Wildlife Refuge.

Kanektok River Recreation Use Survey Summer 2001



U.S. Fish and Wildlife Service
Togiak National Wildlife Refuge

OMB #0569-0108 expires 01/31/2003

Section A. Your Most Recent Trip to the Kanektok

1. What type of trip did you take on your most recent visit to the Kanektok River? (only check one response)

- ☐ guided float trip → # of boats used by your group: _____
- ☐ private float trip → # of boats used by your group: _____
- ☐ multi-day motorboat trip based out of guide camp
- ☐ day trip
- ☐ other: _____

2. How many nights did you spend on the river on this trip?

_____ nights

3. On what date did your trip start ? (please estimate if you are not sure)

month: ☐ June ☐ July ☐ August ☐ September
day: _____

4. How many people were in your group? (include yourself and any guides)

_____ people

5. How long before your trip to the Kanektok did you decide to go? (please check one)

☐ Less than one week before ☐ One to six months before
☐ One week to one month before ☐ Over six months before

6. Counting this trip, about how many trips have you taken on each of the following rivers?

	Number of guided trips:	Number of non-guided (private) trips:
The Kanektok	_____	_____
The Goodnews	_____	_____
The Togiak	_____	_____
Other rivers in Alaska	_____	_____

7. When did you make your first trip to a river on the Togiak refuge?
_____ year of first trip

8. About how many multi-day trips have you taken on rivers anywhere in the country or world?

_____ trips

9. Do you plan to come to the Kanektok again?

☐ Yes ☐ No ☐ Not sure

9a. Could you please explain why you might or might not return?_____

Section B. Reasons for Visiting

1. There are a variety of reasons why people take trips to the Kanektok River. Some possible reasons are listed below. Please indicate how important each reason was for you. (Circle one number per item)

	Not important	Somewhat Important	Important	Very Important	Extremely Important
For the fishing	1	2	3	4	5
Hunting opportunities	1	2	3	4	5
Camping opportunities	1	2	3	4	5
Viewing the scenery	1	2	3	4	5
Viewing wildlife	1	2	3	4	5
Being in a natural place	1	2	3	4	5
Developing boating skills	1	2	3	4	5
Opportunities for solitude	1	2	3	4	5
Being with fellow anglers	1	2	3	4	5
Being with my family	1	2	3	4	5
Photography	1	2	3	4	5
Being in a wilderness	1	2	3	4	5
Learning about local cultures	1	2	3	4	5
Testing and using my gear	1	2	3	4	5
Other: _____	1	2	3	4	5

2. Which of the following fish were you fishing for (targeting) on this trip? For each type of fish you targeted, please check the box that shows your evaluation of the fishing for that type of fish.

	Targeted?		Excellent	Good	Fair	Poor
King salmon	☐ no ☐ yes →	Fishing was:	☐	☐	☐	☐
Silver salmon	☐ no ☐ yes →	Fishing was:	☐	☐	☐	☐
Sockeye salmon	☐ no ☐ yes →	Fishing was:	☐	☐	☐	☐
Lake trout	☐ no ☐ yes →	Fishing was:	☐	☐	☐	☐
Rainbow trout	☐ no ☐ yes →	Fishing was:	☐	☐	☐	☐
Char	☐ no ☐ yes →	Fishing was:	☐	☐	☐	☐
Grayling	☐ no ☐ yes →	Fishing was:	☐	☐	☐	☐
Other: _____	☐ no ☐ yes →	Fishing was:	☐	☐	☐	☐

3. Is there anything you'd like fisheries managers to know about based on your fishing experience this trip? _____

4. About what proportion of the time you were actually fishing did you spend each of the following ways?

Fishing from boat _____ percent of the time
Fishing from shore _____ percent of the time
Wading _____ percent of the time

5. For each item, please check the box that shows how strongly you agree or disagree with the following statements about the fishing you experienced on the Kanektok.

	Strongly Agree	Agree	Not Sure	Disagree	Strongly Disagree
a. I felt safe while fishing	☐	☐	☐	☐	☐
b. Fishing conditions were uncrowded	☐	☐	☐	☐	☐
c. The fishing was challenging	☐	☐	☐	☐	☐
d. There was a reasonable opportunity to catch fish	☐	☐	☐	☐	☐
e. There was minimal conflict with other anglers or uses of the Refuge	☐	☐	☐	☐	☐
f. I practiced the highest standard of ethical behavior when catching and releasing fish	☐	☐	☐	☐	☐
g. My understanding and appreciation for the fisheries resource increased	☐	☐	☐	☐	☐
h. My understanding and appreciation for the Togiak Refuge increased	☐	☐	☐	☐	☐

6. Did you have contact with the US Fish and Wildlife Service river rangers on the river?

☐ Yes ☐ No—*please go to #7*

6a. If yes, was your contact with the rangers positive or negative, and do you have any comments about the ranger program?

_____

7. Were you contacted by US Fish and Wildlife Service staff at Dillingham airport?

☐ No
☐ Yes
☐ I did not travel through Dillingham airport
☐ Don't know

8. Did you receive information about the river or river practices?

☐ Yes ☐ No—*please go to #9*

8a. What information did you find most helpful? _____

9. Are there any topics that you wanted to know more about? _____

10. Did you have any contact with local residents? (Check all that apply)

☐ No—*please go to #11*
☐ Yes, at the airport/waiting to fly out
☐ Yes, on the upper river
☐ Yes, on the lower river

10a. If yes, did this contact add to, detract from, or not make a difference in your trip?

☐ Seeing local residents added to my trip
☐ Seeing local residents detracted from my trip
☐ Seeing local residents didn't affect my trip one way or the other

10b. Could you please explain your answer? _____

_____

11. In general, how crowded was the upper river (upstream from the Wilderness boundary) on your trip? (Circle one number; please leave blank if you did not visit this stretch of river)

1	2	3	4	5	6	7	8	9
not at all crowded		lightly crowded			moderately crowded		extremely crowded	

12. In general, how crowded was the lower river (downstream from the Wilderness boundary) on your trip? (Circle one number; please leave blank if you did not visit this stretch of river)

1	2	3	4	5	6	7	8	9
not at all crowded		slightly crowded			moderately crowded		extremely crowded	

Section C. Type of Experience Questions

1. Please read these and choose the letter of the category that best describes the setting that you expected to find, the setting you actually experienced, and the setting you would have preferred on each river segment. The upper river is upstream from the Wilderness boundary (the upper 73 miles). The lower river is downstream from the Wilderness boundary (the lower 17 miles). Only answer for the sections you visited.

A. Primitive Recreation: Where one can expect to find solitude and very few traces of previous use. There is little or no development.

B. Semi-Primitive Recreation: Where one expects to meet a few other groups of users, but solitude is still possible, particularly at camps. You may see a few semi-permanent tent camps and traces of previous use at some sites.

C. Undeveloped Recreation: Where you expect to meet many other groups of users, and solitude is sometimes difficult to find. There are some semi permanent tent camps and traces of previous use at many sites.

	What I expected: (circle one letter)	What I actually experienced: (circle one letter)	What I would prefer: (circle one letter)
Kagati Lake	A B C	A B C	A B C
Upper river	A B C	A B C	A B C
Lower river	A B C	A B C	A B C

Section D. Impact Importance

1. Different impacts have different effects on peoples' trips. Please tell us the potential of the following to affect your enjoyment of the Kanektok, even if you didn't happen to see or experience it on this trip (please check on box for each item)

	Doesn't matter	Annoying, but only if frequent	Annoying, even if infrequent	Can ruin the trip
Seeing litter	☐	☐	☐	☐
Seeing unburied human waste	☐	☐	☐	☐
Camping within sight/sound of other groups	☐	☐	☐	☐
Seeing other groups	☐	☐	☐	☐
Competition for campsites	☐	☐	☐	☐
Competition for fishing areas	☐	☐	☐	☐
Number of permanent camps/structures	☐	☐	☐	☐
Encounters with float groups	☐	☐	☐	☐
Encounters with sport anglers in motor boats	☐	☐	☐	☐
Encounters with local villagers in motor boats	☐	☐	☐	☐
Seeing airplanes	☐	☐	☐	☐
Seeing helicopters	☐	☐	☐	☐
See other large groups (over 8 people)	☐	☐	☐	☐
Seeing other groups with many boats (over 4)	☐	☐	☐	☐
Other: _____	☐	☐	☐	☐

2. Did the actions of another group or person not in your own group negatively affect your trip?

☐ No
☐ Yes

Please explain: _____

Section E. Questions About Impacts

1. For each of the following impacts, please estimate the amount you experienced or saw on your most recent trip, and then estimate the amount you would accept or tolerate before your trip would be compromised.

Example: If you encountered about three other parties a day on the upper river (upstream from the Wilderness boundary), you would write "3" under the "amount you experienced or saw." If you felt this was too many and you could only see about two other groups per day before your trip was compromised, you would check the box and then write "2" under "amount you would accept or tolerate."

	Amount you experienced or saw	Check if you saw more than you expected	Amount you would accept or tolerate
Average number of encounters with floating groups per day:			
at Kagati Lake	_____	☐	_____
on the upper river (upper 73 miles)	_____	☐	_____
on the lower river (lower 17 miles)	_____	☐	_____
Average number of encounters with motorboats per day:			
on the upper river	_____	☐_____	_____
on the lower river	_____	☐_____	_____
Number of structures (wall tents, weatherports, cabins, fish drying racks, etc.) you saw per day:			
on the upper river	_____	☐_____	_____
on the lower river	_____	☐_____	_____

Section F. Questions About Impacts (continued)

1. For each of the following impacts, please estimate the amount you experienced or saw on your trip and then estimate the amount you would accept or tolerate before your trip would be compromised. These questions ask about percentages. Please round your estimates to the nearest tenth (for example: 0, 10, 20.... 80, 90, 100).

Example: If you took a 10-day trip and camped within sight or sound of other groups on 3 nights, you would write "30" for the "percent you experienced." If you felt that you could have spent a couple of more nights camped near another group, you could write "50" for the percent you would accept or tolerate."

	Percent you experienced or saw	Check if you saw more than you expected	Percent you would accept or tolerate
Percent of nights you camped within sight or sound of other groups	_____	☐	_____
Percent of sites with litter	_____	☐	_____
Percent of sites with human waste impacts	_____	☐	_____
Percent of times you passed up fishing areas that you would have liked to use except they were occupied	_____	☐	_____
Percent of times you passed up campsites that you would have liked to use except they were occupied	_____	☐	_____
Percent of time you were in sight or sound of other groups of people on the river	_____	☐	_____

Section G. Opinion Toward Management Strategies

1. The following questions ask for your opinion toward management strategies that might be used to help reduce impacts. These strategies have been mentioned by the public or have been utilized on other rivers in Alaska or the Lower 48. No decisions have been made to implement any strategy. We are interested in what you think of them. (Please check one box for each item.)

	Strongly support	Support but not a priority	Neutral/ not sure	Oppose but could be acceptable	Strongly oppose
Limit the number of private float trips allowed (guided users are already limited)	☐	☐	☐	☐	☐
Limit the number of private float trips allowed during king and silver seasons only	☐	☐	☐	☐	☐

Require private floaters to have permits but do not limit the number	☐	☐	☐	☐	☐
Build toilets in some high use areas	☐	☐	☐	☐	☐
Require float parties to carry out all human waste	☐	☐	☐	☐	☐
Enforcement of existing regulations	☐	☐	☐	☐	☐
Limit the size of motorboats	☐	☐	☐	☐	☐
Limit horsepower of motorboats	☐	☐	☐	☐	☐
Provide safety information to both motor boaters and floaters	☐	☐	☐	☐	☐
Increase information about minimum impact practices	☐	☐	☐	☐	☐
Expand river clean-up efforts	☐	☐	☐	☐	☐
Change fishing regulations to: _____	☐	☐	☐	☐	☐
Other: _____	☐	☐	☐	☐	☐

Section H. Opinion Toward Limiting Float Use

Since 1991, the Togiak Refuge has limited the number of guides and their clients who can visit the upper Kanektok. We would like to know more about your attitudes toward the possible limits on non-guided floaters.

1. Do you feel that limits are needed on the number of non-guided float trips on the Kanektok? (please check one)

☐ Yes, limits are needed to lower the current level of use

☐ Yes, limits are needed to keep use at about the current level

☐ No limits are needed now, but should be imposed in the future if and when overuse occurs

☐ No limits on non-guided use should ever be implemented

☐ Not sure; would need more information

2. If a permit system were implemented to limit non-guided float use,, how should permits be made available? (please check one)

☐ First-come, first-served reservation system

☐ Lottery system (everyone has an equal chance of being selected) with waiting list

☐ Other: _____

☐ Not sure; would need more information

3. Please check the box that shows your opinion about limits on non-guided float use on the Kanektok.

	Strongly Agree	Agree	Not Sure	Disagree	Strongly Disagree
Limiting non-guided float use would make for a better experience	☐	☐	☐	☐	☐
I would be willing to give up some of my chance to access the Kanektok in return for a better trip when I do go	☐	☐	☐	☐	☐
I would be able to find a way to float the Kanektok even if permits were limited	☐	☐	☐	☐	☐
If guided visitors are limited then non-guided visitors should be limited	☐	☐	☐	☐	☐
I would support a limited permit system if I was convinced it would improve locals' subsistence use	☐	☐	☐	☐	☐

Finally, we have a few questions for statistical purposes:

1. What is your sex? ☐ Male ☐ Female

2. How old are you? _____ years old

3. What is the highest level of education you have completed? (Please check one)

☐ Some high school ☐ Finished high school
☐ Some college ☐ Finished college
☐ Some post-graduate ☐ Graduate degree

4. What is your zip code? _____

Is there anything else you'd like to tell us about your trip or how you feel the Kanektok should be managed in the future?

Thanks for your help!

Public reporting burden for this collection of information is estimated to average 20 minutes per response, including time needed for reviewing instructions, searching existing data sources, gathering and maintaining data needed, and completing and reviewing the collection of information. Send comments regarding this burden estimate or any other aspect of this collection of information, including suggestions for reducing this burden, to Department of Agriculture, Clearance Officer, OIRM, Room 404-W, Washington D.C. 20250 and to the Office of Management and Budget, Paperwork Reduction Project (OMB#0596-0108), Washington DC 20503.

Appendix F

Togiak National Wildlife Refuge Species Lists

Togiak National Wildlife Refuge Animal Species

Bird species recorded on the Togiak National Wildlife Refuge and in the Dillingham area

* = Nests Locally / Known Breeder
Spring = April– May
Summer = June–July
Fall = August– October
Winter = November–March

C = Common (should see)
U = Uncommon (might see)
CL = Common Locally
UL = Uncommon Locally
R = Rare (seldom seen)

Common Name	Spring	Summer	Fall	Winter
RED-THROATED LOON	C	C	C	
ARCTIC LOON	U	U	U	
PACIFIC LOON	CL	U	U	
COMMON LOON	C	C	C	
YELLOW-BILLED LOON	R	R	R	
HORNED GREBE	R	R	R	
RED-NECKED GREBE	U	U	U	
NORTHERN FULMAR		R		
SHORT-TAILED SHEARWATER		R	R	
LEACH'S STORM-PETREL	R			
DOUBLE-CRESTED CORMORANT	CL	CL	CL	
RED-FACED CORMORANT	UL	UL	UL	
PELAGIC CORMORANT	CL	CL	CL	
MAGNIFICENT FRIGATEBIRD	R			
GREATER WHITE-FRONTED GOOSE	CL	CL	CL	
EMPEROR GOOSE	CL	U	CL	
SNOW GOOSE	R	R	R	

CANADA GOOSE	CL	U	CL	
BRANT	CL	U	CL	
TRUMPETER SWAN		U	U	
TUNDRA SWAN	C	C	C	
Wood Duck	R			
GADWALL	R	R	R	
EURASIAN WIGEON	R			
AMERICAN WIGEON	U	U	U	
MALLARD	C	C	C	R
NORTHERN SHOVELER	CL	CL	CL	
NORTHERN PINTAIL	C	C	C	
BAIKAL TEAL	R			
GREEN-WINGED TEAL	C	C	C	
CANVASBACK	R	R	R	
REDHEAD		R		
GREATER SCAUP	C	C	C	
LESSER SCAUP	R	R	R	
STELLER'S EIDER	CL	CL	CL	
SPECTACLED EIDER	R	R	R	
KING EIDER	CL	UL	CL	
COMMON EIDER	CL	CL	CL	
HARLEQUIN DUCK	C	C	C	
SURF SCOTER	U	U	U	
WHITE-WINGED SCOTER	CL	CL	CL	
BLACK SCOTER	CL	CL	CL	
LONG-TAILED DUCK	U	U	U	R
BUFFLEHEAD	U	U	U	

COMMON GOLDENEYE	U	U	U	UL
BARROW'S GOLDENEYE	U	U	U	
COMMON MERGANSER	U	U	U	CL
RED-BREASTED MERGANSER	C	C	C	
OSPREY	R	R	R	
BALD EAGLE	C	C	C	CL
NORTHERN HARRIER	C	C	C	
SHARP-SHINNED HAWK	U	U	U	
NORTHERN GOSHAWK	R	R	R	R
SWAINSON'S HAWK	R			
RED-TAILED HAWK	R	R	R	
ROUGH-LEGGED HAWK	C	C	C	
GOLDEN EAGLE	U	U	U	
AMERICAN KESTREL		R	R	
MERLIN	U	U	U	R
GYRFALCON	R	R	R	R
PEREGRINE FALCON	U	U	U	
SPRUCE GROUSE	CL	CL	CL	CL
WILLOW PTARMIGAN	C	C	C	C
ROCK PTARMIGAN	U	U	U	U
WHITE-TAILED PTARMIGAN	R	R	R	R
SANDHILL CRANE	C	C	C	
BLACK-BELLIED PLOVER	U	U	CL	
AMERICAN GOLDEN-PLOVER	U	U	U	
PACIFIC GOLDEN-PLOVER	U	U	CL	
MONGOLIAN PLOVER	R	R		

SEMIPALMATED PLOVER	C	C	C
BLACK OYSTERCATCHER		R	
GREATER YELLOWLEGS	C	C	C
LESSER YELLOWLEGS	U	U	U
SOLITARY SANDPIPER	U	U	U
WANDERING TATTLER	U	U	U
GRAY-TAILED TATTLER		R	
SPOTTED SANDPIPER	U	U	U
TEREK SANDPIPER	R	R	
WHIMBREL	U	CL	CL
BRISTLE-THIGHED CURLEW	U	R	U
HUDSONIAN GODWIT		U	U
BAR-TAILED GODWIT	U	U	U
MARBLED GODWIT	U		U
RUDDY TURNSTONE	U	U	U
BLACK TURNSTONE	U	U	U
SURFBIRD	U	U	U
RED KNOT		R	U
SANDERLING	U	U	CL
SEMIPALMATED SANDPIPER	U	U	U
WESTERN SANDPIPER	C	C	C
RED-NECKED STINT		R	R
LONG-TOED STINT		R	
LEAST SANDPIPER	C	C	C
BAIRD'S SANDPIPER	R	R	R
PECTORAL SANDPIPER	U	U	U
SHARP-TAILED SANDPIPER		R	R

ROCK SANDPIPER	CL	CL	CL	
DUNLIN	CL	CL	CL	
RUFF			R	
SHORT-BILLED DOWITCHER	U	U	U	
LONG-BILLED DOWITCHER	U	U	U	
COMMON SNIPE	C	C	C	
RED-NECKED PHALAROPE	CL	CL	CL	
RED PHALAROPE	U	U	U	
SOUTH POLAR SKUA		R		
POMARINE JAEGER	U	U	U	
PARASITIC JAEGER	U	U	U	
LONG-TAILED JAEGER	U	U	U	
BONAPARTE'S GULL	UL	CL	U	
MEW GULL	C	C	C	
HERRING GULL	U	U	U	
THAYER'S GULL			R	
SLATY-BACKED GULL		R	R	
GLAUCOUS-WINGED GULL	C	C	C	R
GLAUCOUS GULL	U	U	U	
SABINE'S GULL	U	U	U	
BLACK-LEGGED KITTIWAKE	CL	CL	CL	
RED-LEGGED KITTIWAKE	R		R	
CASPIAN TERN			R	
ARCTIC TERN	C	C	C	
ALEUTIAN TERN	CL	CL	CL	
COMMON MURRE	CL	CL	CL	R
THICK-BILLED MURRE		R		

BLACK GUILLEMOT	R			
PIGEON GUILLEMOT	CL	CL	CL	
MARBLED MURRELET		U	U	
KITTLITZ'S MURRELET		R		
PARAKEET AUKLET	CL	CL	CL	
RHINOCEROS AUKLET		R		
HORNED PUFFIN	CL	CL	CL	
TUFTED PUFFIN	CL	CL	CL	
GREAT HORNED OWL	U	U	U	U
SNOWY OWL	U	U	U	U
NORTHERN HAWK OWL	U	U	U	U
GREAT GRAY OWL	U	U	U	U
SHORT-EARED OWL	C	C	C	
BOREAL OWL	C	R	R	C
NORTHERN SAW-WHET OWL		R		
RUFOUS HUMMINGBIRD		R	R	
BELTED KINGFISHER	U	U	U	R
HAIRY WOODPECKER	U	U	U	U
ALDER FLYCATCHER		C		
SAY'S PHOEBE		R	R	
NORTHERN SHRIKE	U	U	U	U
GRAY JAY	U	U	U	U
BLACK-BILLED MAGPIE	C	C	C	C
COMMON RAVEN	C	C	C	C
HORNED LARK		CL	CL	
TREE SWALLOW	C	C	C	

VIOLET-GREEN SWALLOW	R	R		
BANK SWALLOW	CL	CL	CL	
CLIFF SWALLOW	CL	CL		
BARN SWALLOW	R	R	R	
BLACK-CAPPED CHICKADEE	C	C	C	C
BOREAL CHICKADEE	CL	CL	CL	CL
GRAY-HEADED CHICKADEE		R	R	
RED-BREASTED NUTHATCH	CL	CL	CL	CL
WINTER WREN		R		
AMERICAN DIPPER	CL	CL	CL	CL
GOLDEN-CROWNED KINGLET			U	
RUBY-CROWNED KINGLET	CL	CL	CL	
ARCTIC WARBLER	CL	C	C	
NORTHERN WHEATEAR	U	U	U	
MOUNTAIN BLUEBIRD	R			
GRAY-CHEEKED THRUSH	C	C	C	
SWAINSON'S THRUSH	CL	CL	CL	
HERMIT THRUSH	C	C	C	
AMERICAN ROBIN	C	C	C	
VARIED THRUSH	CL	CL	CL	R
GRAY CATBIRD			R	
YELLOW WAGTAIL	C	C	C	
WHITE WAGTAIL		R		
RED-THROATED PIPIT		R		
AMERICAN PIPIT	CL	CL	CL	
BOHEMIAN WAXWING	U	U	U	U

ORANGE-CROWNED WARBLER	C	C	C	
YELLOW WARBLER	C	C	C	
MYRTLE WARBLER	CL	CL	CL	
PALM WARBLER			R	
BLACKPOLL WARBLER	C	C	C	
NORTHERN WATERTHRUSH		C	C	
WILSON'S WARBLER	C	C	C	
AMERICAN TREE SPARROW	CL	CL	CL	R
CHIPPING SPARROW		R		
SAVANNAH SPARROW	C	C	C	
FOX SPARROW	C	C	C	
SONG SPARROW	U	U	U	
LINCOLN'S SPARROW			R	
HARRIS'S SPARROW		R		
WHITE-CROWNED SPARROW	CL	CL	CL	R
GOLDEN-CROWNED SPARROW	C	C	C	
DARK-EYED JUNCO	U	U	U	U
LAPLAND LONGSPUR	C	C	C	
SNOW BUNTING	CL	CL	CL	CL
MCKAY'S BUNTING	U	U	U	U
RED-WINGED BLACKBIRD			R	
RUSTY BLACKBIRD	U	U	U	
GRAY-CROWNED ROSY-FINCH	CL	CL	CL	
COMMON REDPOLL	C	C	C	C
HOARY REDPOLL	U	U	U	U

Mammals Known to Occur Within the Togiak National Wildlife Refuge

Scientific Name	**Common Name**
INSECTIVORA	
Soricida	
Sorex cinereus (Kerr, 1792)	common shrew
Sorex hoyi (Baird, 1857)	pygmy shrew
Sorex yukonicus	Alaska tiny shrew
Sorex tundrensis (Merriam, 1900)	tundra shrew
CHIROPTERA	
Vespertilionidae	
Myotis lucifiga (Le Conte, 1831)	little brown bat
CARNIVORA	
Canidae	
Alopex lagopus (Linnaeus, 1758)	Arctic fox
Canis latrans (Say, 1823)	coyote
Canis lupus (Linnaeus, 1758)	gray wolf
Vulpes vulpes (Linnaeus, 1758)	red fox
Felidae	
Lynx canadensis (Kerr, 1792)	lynx
Mustelidae	
Lontra canadensis (Schreber, 1777)	river otter
Gulo gulo (Linnaeus, 1758)	wolverine
Martes americana (Turton, 1806)	marten
Mustela erminea (Linnaeus, 1758)	ermine
Mustela nivalis (Linnaeus, 1766)	least weasel
Mustela vison (Schreber, 1777)	mink
Odobenidae	
Odobenus rosmarus (Linnaeus, 1758)	Pacific walrus
Otariidae	
Eumetopias jubatus (Scheber, 1776)	Steller sea lion
Callorhinus ursinus (Linnaeus, 1758)	northern fur seal
Phocidae	
Erignathus barbatus (Erxleben, 1777)	bearded seal
Phoca largha (Pallas, 1811)	spotted seal
Phoca vitulina (Linnaeus, 1758)	harbor seal
Phoca fasciata (Zimmerman, 1783)	ribbon seal
Phoca hispida (Schreber, 1775)	ringed seal
Ursidae	
Ursus americanus (Pallas, 1780)	black bear
Ursus arctos (Linnaeus, 1758)	brown bear
CETACEA	
Balaenopteridae	
Balaenoptera borealis (Lesson, 1828)	sei whale

Balaenoptera acutorostrata (Lacepede, 1804)	minke whale
Eschrichtiidae	
Eschrichtius robustus (Lillieborg, 1861)	gray whale
Delphinidae	
Lagenorhynchus obliquidens (Gill, 1865)	Pacific white-sided dolphin
Orcinus orca (Linnaeus, 1758)	orca/killer whale
Monodontidae	
Delphinapterus leucas (Pallas, 1776)	beluga/white whale
Phocoenidae	
Phoeoenoides dalli (True, 1885)	Dall's porpoise
Phocoena phoeoena (Linnaeus, 1758)	harbor porpoise
Ziphiidae	
Ziphius cavirostris (Cuvier, 1823)	goose-beaked whale
ARTIODACTYLA	
Cervidae	
Alces alces (Linnaeus, 1758)	moose
Rangifer tarandus (Linnaeus, 1758)	barren-ground caribou
RODENTIA	
Sciuridae	
Marmota caligata (Eschscholtz, 1829)	hoary marmot
Spermophilus parryii (Richardson, 1825)	Arctic ground squirrel
Tamiasciurus hudsonicus (Erxleben, 1777)	red squirrel
Castoridae	
Castor canadensis (Kuhl, 1820)	beaver
Dipodidae	
Zapus hudsonius (Zimmermann, 1780)	meadow jumping mouse
Muridae	
Clethrionomys rutilus (Pallas, 1779)	northern red-backed vole
Lemmus trimucronatus (Richardson, 1825)	rown lemming
Microtus oeconomus (Pallas, 1776)	tundra vole
Microtus pennsylvanicus (Ord, 1815)	meadow vole
Ondatra zibethicus (Linnaeus, 1766)	muskrat
Erethizontidae	
Erethizon dorsatum (Linnaeus, 1758)	porcupine
LAGOMORPHA	
Leporidae	
Lepus americanus (Erxleben, 1777)	snowshoe hare
Lepus othus (Merriam, 1900)	tundra hare

Fish Species of the Togiak National Wildlife Refuge

Scientific Name	**Common Name**
Oncorhynchus gorbuscha	Pink salmon
Oncorhynchus nerka	Sockeye salmon
Oncorhynchus tshawytscha	chinook salmon
Oncorhynchus kisutch	Coho salmon
Oncorhynchus keta	Chum salmon
Salvelinus namaycush	Lake trout
Salvelinus alpinus	Arctic char
Salvelinus malma	Dolly Varden
Thymallus arcticus	Arctic grayling
Onchorhynchus mykiss	Rainbow trout
Esox lucius	Northern pike
Dallis pectoralis	Alaska blackfish
Lota lota	Burbot
Coregonus laurettae	Bering cisco
Coregonus sardinella	Least cisco
Coregonus nelsoni	Alaska whitefish
Prosopium coulteri	Pigmy whitefish
Cottus aleuticus	Coastrange sculpin
Cottus cognatus	Slimy sculpin
Gasterosteus aculatus	Threespine stickleback
Pungitius pungitius	Ninespine stickleback
Entosphenus tridentatus	Pacific lamprey
Lampetra japonica	Arctic lamprey
Clupea harengus pallasi	Pacific herring
Thaleichthys pacificus	Eulachon
Hypomesus olidus	Pond smelt
Osmerus mordax	Rainbow smelt
Liopsetta glacialis	Arctic flounder
Platichthys stellatus	Starry flounder
Catostomus catostomus	Longnose sucker

Togiak Refuge Plant Species List

Nomenclature follows "A Synonymized Checklist of the Vascular Flora of the United States, Canada, and Greenland," by John T. Kartesz

LYCOPODIACEAE (Club Moss Family)

Huperzia selago Fir Club Moss
H. selago var. selago
H. selago var. densa Trevisan Fir Club Moss
Huperzia chinensis Mountain Club Moss
Lycopodium annotinum Stiff Club Moss
L. annotinum var. annotinum
L. annotinum var. pungens
L. annotinum ssp. annotinum var. alpestre
Lycopodium clavatum var. monostachyon Common Club Moss
Lycopodium alpinum Alpine Club Moss

ISOETACEAE (Quillwort Family)

Isoeetes echinospora Quillwort

EQUISETACEAE (Horsetail Family)

Equisetum variegatum Horsetail
E. variegatum var. variegatum Variegated Horsetail
E. variegatum var. alaskanum Variegated Horsetail
Equisetum scirpoides Dwarf Scouring Rush
Equisetum fluviatile Water Horsetail
Equisetum silvaticum Wood Horsetail
Equisetum pratense Meadow Horsetail

OPHIOGLOSSACEAE (Adder's Tongue Family)

Botrychium lunaria Moonwort
Botrychium pinnatum Northern Moonwort
Botrychium lanceolatum Lance-leaved Grapefern

ADIANTACEAE (Mountain Parsley Family)

Cryptogramma acrostichoides Parsley Fern
Cryptogramma sitchensis Rock-brake

THELPYPTERIDACEAE (Marsh Fern Family)

Phegopteris connectilis Beech Fern

DRYOPTERIDACEAE (Shield Fern or Lady Fern Family)

Athyrium filix-femina ssp. cyclosorum Lady Fern
Cystopteris fragilis Fragile Fern
C. fragilis ssp. fragilis
C. fragilis ssp. Dickieana
Woodsia ilvensis Rusty Woodsia
Woodsia alpina Northern Woodsia
Woodsia glabella Smooth Woodsia
Matteuccia struthiopteris Ostrich Fern
Polystichum lonchitis Holly Fern
Dryopteris campyloptera Spinulose Wood Fern
Gymnocarpium dryopteris Oak Fern

PINACEAE (Pine Family)

Picea glauca White Spruce

SPARGANIACEAE (Bur Reed Family)

Sparganium angustifolium Narrow-leaved Burreed
Sparganium nutans Small Burreed
Sparganium hyperboreum Northern Burreed

ZOSTERACEAE (Eelgrass Family)

Zostera marina Eelgrass

POTAMOGETONACEAE (Pondweed Family)

Potamogeton alpinus Alpine Pondweed
Potamogeton praelongus White-stemmed Pondweed
Potamogeton richardsonii Clasping-leaf Pondweed
Potamogeton pusillus var. tenuissimus Berchtold's Pondweed
Potamogeton filiformis Filiform Pondweed
Potamogeton vaginatus Sheathed Pondweed

ZANNICHELLIACEAE (Grass Wrack Family)

Zannichellia palustris Horned Pondweed

JUNCAGINACEAE (Arrow Grass Family)

Triglochin palustre Marsh Arrow Grass

POACEAE (Grass Family)

Hierochloe alpina Alpine Holy Grass
Hierochloe odorata Vanilla Grass
Hierochloe pauciflora Arctic Holy Grass
Phleum alpinum Mountain Timothy
Phleum pratense Timothy
Alopecurus borealis Gray Foxtail
Alopecurus aequalis Short-awn Fox Tail
Phippsia algida Snow Grass
Arctagrostis latifolia Polar Grass
    A. latifolia ssp. latifolia
    A. latifolia ssp. arundinacea
Agrostis mertensii Red Bent Grass
Agrostis vinealis ssp. trinii
Agrostis alascana Alaska Bentgrass
Agrostis gigantea
Agrostis scabra Ticklegrass
Calamagrostis canadensis Blue-joint
    C. canadensis var. canadensis
    C. canadensis var. langsdorfii
Calamagrostis inexpansa Northern Reedgrass
Calamagrostis lapponica Lapland Reedgrass
Calamagrostis deschampsioides Reed Bent-grass
Deschampsia caespitosa Tufted Hairgrass
    D. caespitosa ssp. caespitosa
    D. caespitosa ssp. glauca
    D. caespitosa ssp. orientalis
    D. caespitosa ssp. beringensis Bering Hairgrass
Vahlodea atropurpurea Mountain Hairgrass
Trisetum spicatum Downy Oatgrass
Beckmannia syzigachne Slough Grass
Poa arctica Arctic Bluegrass
    P. arctica ssp. arctica
    P. arctica ssp. longiculmis
    P. arctica ssp. williamsii
Poa eminens Large-flower Speargrass
Poa macrocalyx Hispid Bluegrass
Poa pratensis Kentucky Bluegrass
Poa glauca Glaucous Bluegrass
Poa malacantha Tufted Wooly Bluegrass
Poa leptocoma ssp. paucispicula Bog Bluegrass
Poa pseudoabbreviata Ridgetop Bluegrass
Arctophila fulva Pendant Grass
Dupontia fisheri Tundra Grass
Puccinellia phryganodes Creeping Alkaligrass
Puccinellia arctica
Festuca altaica Rough Fescue
Festuca brachyphylla Sheep Fescue
Festuca brevissima
Festuca vivipara
Festuca rubra Red Fescue
    F. rubra ssp. arctica
Bromus inermis var. pumpellianus Arctic Brome
Hordeum brachyantherum Meadow Barley
Leymus mollis Lyme Grass
    L. mollis ssp. mollis
    L. mollis ssp. villosissimus

CYPERACEAE (Sedge Family)

Eriophorum angustifolium Tall Cotton Grass
    E. angustifolium ssp. subarcticum
    E. angustifolium ssp. subarcticum var. coloratum
    E. angustifolium ssp. scabriusculum
    E. angustifolium ssp. triste
Eriophorum scheuchzeri Alaska Cotton Grass
Eriophorum russeolum Russet Cotton Grass
    E. russeolum var. majus

E. russeolum var. albidum
Eriophorum chamissonis. Cotton Grass
Eriophorum vaginatum var. vaginatum Hare's Tail Grass
E. vaginatum var. spissum
Scirpus cespitosus Tufted Club Rush
Eleocharis acicularis Needle Spikerush
Kobresia myosuroides Kobresia
Carex gynocrates Northern Bog Sedge
Carex scirpoidea Two Plant Sedge
Carex rupestris Tiny Mountain Sedge
Carex anthoxanthea Slender Sedge
Carex circinnata Coiled Sedge
Carex pyrenaica ssp. micropoda Snow-bed Sedge
Carex chordorrhiza Creeping Sedge
Carex macrocephala Large-head Sedge
Carex pachystachya Thick-Headed Sedge
Carex bipartita Hare's Foot Sedge
Carex glareosa ssp. glareosa Clustered Sedge
Carex mackenziei
Carex canescens Silvery Sedge
Carex brunnescens Brownish Sedge
C. brunnescens ssp. alaskana
C. brunnescens ssp. pacifica
Carex disperma Soft-leaved Sedge
Carex loliacea Slender Yellow-green Bog Sedge
Carex bigelowii Bigelow Sedge
Carex eleusinoides Gravel Bar Sedge
Carex lenticularis var. lipocarpa
Kellogg's Sedge
Carex aquatilis var. aquatilis Water Sedge
C.aquatilis var. dives Sitka Sedge
Carex ramenskii Coastal Marsh Sedge
Carex lyngbyaei Lyngbye Sedge
Carex norvegica ssp. inferalpina Scandanavian Sedge
Carex stylosa Variegated Sedge
Carex gmelini Gmelin Sedge
Carex macrochaeta Long-awned Sedge
Carex podocarpa Short-stalked Sedge
Carex spectabilis Showy Sedge
Carex microchaeta Short-stalk Sedge
C. microchaeta ssp. nesophila Bering Sea Sedge
Carex rariflora Loose Flowered Sedge
Carex pluriflora Many-flower Sedge
Carex limosa Shore Sedge
Carex magellanica ssp. irrigua Bog Sedge
Carex livida Livid Sedge
Carex misandra Short-leaf Sedge
Carex capillaris
Carex rostrata Beaked Sedge
Carex utriculata Beaked Sedge
Carex saxatilis var. saxatilis Common Sedge
Carex rotundata Gray-green Water Sedge
Carex membranacea Fragile Sedge

JUNCACEAE (Rush Family)

Juncus filiformis Thread Rush
Juncus haenkei Arctic Rush
Juncus drummondii Drummond Rush
Juncus mertensianus Mertens Rush
Juncus castaneus ssp. castaneus Chestnut Rush
Juncus alpinoarticulatus ssp. Nodulosus Alpine Rush
Juncus albescens Three-flowered Rush
Juncus biglumis Two-flowered Rush
Juncus bufonius Toad Rush
Luzula rufescens Hairy Woodrush
Luzula wahlenbergii Wahlenberg Woodrush
Luzula piperi
Luzula parviflora Small-flowered Woodrush
L. parviflora ssp. parviflora Small-flowered Woodrush
L. parviflora ssp. divaricata Small-flowered Woodrush
Luzula arcuata ssp. arcuata Alpine Woodrush
L. arcuata ssp. unalaschcensis Alpine Woodrush
L. arctica ssp. latifolia Tundra Woodrush
Luzula confusa Northern Woodrush
Luzula multiflora Multiflora Complex
L. multiflora ssp. frigida Many Flowered Wood Rush
L. multiflora ssp. multiflora var. kjellmanioides
Luzula spicata Nodding Wood Rush, Spiked Wood Rush

LILIACEAE (Lily Family)

Tofieldia coccinea Northern False Asphodel
Tofieldia pusilla Scotch Asphodel
Veratrum viride False Hellebore
Fritillaria camschatcensis Kamchatka Fritillary
Lloydia serotina Alp Lily
Streptopus amplexifolius Twisted Stalk
Streptopus streptopoides

IRIDACEAE (Iris Family)

Iris setosa var. setosa Wild Flag

ORCHIDACEAE (Orchis Family)

Cypripedium guttatum
Coeloglossum viride var. viriscens Long-bracted Bog-orchid
Platanthera obtusata Small Bog-orchid
Spiranthes romanzoffiana Hooded Ladies' Tresses
Listera cordata Heart-leaf Twayblade
Corallorrhiza trifida Coral Root

SALICACEAE (Willow Family)

Populus balsamifera ssp. balsamifera Balsam Poplar
Salix polaris Polar Willow
Salix phlebophylla Skeleton Leaf Willow
Salix rotundifolia Least Willow
Salix arctica Arctic Willow
Salix fuscescens Brownish Willow
Salix ovalifolia Ovalleaf Willow
Salix stolonifera Stoloniferous Willow
Salix glauca Grayleaf Willow
S. glauca var. acutifolia
Salix brachycarpa ssp. niphoclada Barren Ground Willow
Salix hastata Halberd Willow
Salix reticulata ssp. reticulata Netted Willow
Salix myrtillifolia Low Blueberry Willow
Salix hastata Halberd Willow
Salix Barclayi Barclay Willow
Salix commutata Undergreen Willow
Salix lanata ssp. Richardsonii Wooly Willow
Salix alaxensis Alaska Willow
S. alaxensis var. alaxensis
S. alaxensis var. longistylis
Salix bebbiana Bebb Willow
Salix planifolia ssp. pulchra Diamond Leaf Willow
Salix arbusculoides Littletree Willow

MYRICACEAE (Wax Myrtle Family)

Myrica gale var. tomentosa Sweet Gale

BETULACEAE (Birch Family)

Betula nana Dwarf Birch
Betula occidentalis Water Birch
Betula papyrifera var. kenaica Kenai Birch
Betula neoalaskana Paper Birch
Betula neoalaskana X Betula glandulosa
Alnus viridis . ssp. crispa Mountain Alder
Alnus viridis ssp. sinuata Sitka Alder

URTICACEAE (Nettle Family)

Urtica dioica ssp. gracilis Stinging Nettle

POLYGONACEAE (Buckwheat Family)

Koenigia islandica Koenigia
Rumex acetosa ssp. alpestris Garden Sorrel
Rumex arcticus Arctic Dock
R. arcticus var. perlatus
Rumex sibiricus Beach Dock
Oxyria digyna Mountain Sorrel
Polygonum viviparum Alpine Bistort
Polygonum bistorta ssp. plumosum Bistort
Polygonum amphibium var. stipulaceum Water Smartweed
Polygonum lapathifolium var. lapathifolium Willow Weed
Polygonum aviculare Knotweed

PORTULACACEAE (Purslane Family)

Claytonia eschscholtzii Bering Sea Spring Beauty
Claytonia tuberosa Tuberous Spring Beauty

Claytonia scammaniana Scamman's Spring Beauty
Claytonia sarmentosa Alaska Spring Beauty
Montia chamissoi Toad Lily
Montia fontana ssp. fontana Water Blinks

CARYOPHYLLACEAE (Pink Family)

Stellaria media Common Chickweed
Stellaria crispa
Stellaria humifusa Low Chickweed
Stellaria crassifolia Fleshy Starwort
Stellaria calycantha Northern Starwort
Stellaria borealis ssp. borealis Northern Starwort
Stellaria longifolia Long-leaved Starwort
Stellaria longipes ssp. longipes Long Stalked Starwort
Stellaria dicranoides
Cerastium maximum Great Chickweed
Cerastium beeringianum ssp. beeringianum Mouse-ear Chickweed
C. beeringianum ssp. beeringianum var. beeringianum
C. beeringianum ssp. beeringianum var. grandiflorum
Cerastium aleuticum
Cerastium Regelii
Sagina nivalis Snow Pearlwort
Sagina saginoides Arctic Pearlwort
Minuartia macrocarpa Long-podded Sandwort
Minuartia arctica Arctic Sandwort
Minuartia obtusiloba Alpine Sandwort
Minuartia stricta Rock Sandwort, Fragile Sandwort
Minuartia rubella Reddish Sandwort
Minuartia elegans
Minuartia rossii Ross Sandwort
Honckenya peploides Seabeach Sandwort, Beach Sandwort
H. peploides ssp. peploides
H. peploides ssp. major
Moehringia lateriflora Grove Sandwort
Wilhelmsia physodes McNeill Merckia
Silene acaulis Moss Campion
S. acaulis var. acaulis
S. acaulis var. subacaulescens
Silene uralensis ssp. uralensis Nodding Melandrium
Silene macrosperma Erect Melandrium
Silene tayloriae Taylor's Melandrium

NYMPHAEACEAE (Water Lily Family)

Nuphar lutea ssp. polysepala Yellow Pond Lily

RANUNCULACEAE (Crowfoot Family)

Caltha palustris Marsh Marigold
C. palustris var. radicans
C. palustris var. palustris
Actaea rubra Red Baneberry
A. rubra ssp. rubra
A. rubra ssp. arguta
Aconitum delphinifolium ssp. delphinifolium Monkshood
Aconitum delphinifolium ssp. paradoxum Monkshood
Anemone richardsonii Richardson's Anemone
Anemone parviflora Northern Anemone
Anemone narcissiflora Wild Narcissus
A. narcissiflora ssp. sibirica
A. narcissiflora ssp. interior
A. narcissiflora ssp. villosissima
A. narcissiflora ssp. alaskana
Anemone drummondii Alpine Anemone
Ranunculus trichophyllus var. trichophyllus White Water
Ranunculus trichophyllus
var. eradicatus Fragile White Water Crowfoot
Ranunculus gmelinii var. gmelinii Yellow Water Crowfoot
Ranunculus hyperboreus var. hyperboreus Arctic Buttercup
Ranunculus pallasii Pallas Buttercup
Ranunculus lapponicus Lapland Buttercup
Ranunculus flammula var. filiformis Creeping Spearwort
Ranunculus eschscholtzii Mountain Buttercup
Ranunculus nivalis Snow Buttercup
Ranunculus sulphureus Sulphur Buttercup

Ranunculus karelinii Arctic Buttercup
Ranunculus pygmaeus var. pygmaeus Dwarf Buttercup
Ranunculus repens Creeping Buttercup
Thalictrum alpinum Arctic Meadowrue
Thalictrum sparsiflorum Meadow Rue
Thalictrum hultenii Boivin

PAPAVERACEAE (Poppy Family)

Papaver walpolei Walpole's Poppy
Papaver macounii
Papaver radicatum
Papaver pulvinatum
Papaver alaskanum Alaska Poppy
Papaver lapponicum ssp. occidentale Arctic Poppy

FUMARIACEAE (Earth Smoke Family)

Corydalis pauciflora Few Flowered Corydalis

BRASSICACEAE (Mustard Family)

Subularia aquatica Awlwort
Thlaspi arcticum
Cochlearia groenlandica Scurvy Grass
Aphragmus eschscholtzianus Aphragmus
Eutrema edwardsii Eutrema
Barbarea orthoceras Winter Cress
Rorippa palustris Yellow Cress
    R. palustris ssp. Occidentalis
    R. palustris ssp. fernialdiana
    R. palustris . ssp. hispida
Cardamine bellidifolia Alpine Bitter Cress
Cardamine pratensis var. angustifolia Cuckoo Flower
Cardamine oligosperma var. kamtschatica Bitter Cress
Cardamine purpurea Purple Cress
Draba nivalis Snow Draba
Draba lonchocarpa
    D. lonchocarpa var. lonchocarpa
    D. lonchocarpa var. vestita
Draba lactea Adams Rock Cress
Draba fladnizensis Rock Cress
Draba alpina Alpine Draba
Draba corymbosa Rock Cress
Draba stenopetala Pincushion Rock Cress
Draba stenoloba Rock Cress
Draba glabella Rock Cress
Draba longipes Rock Cress
Draba borealis
Smelowskia pyriformis
Arabis lyrata var kamchatica Rock Cress
Arabis lyrata var. kamchatica Kamchatka Rockcress
Erysimum Pallasii Pallas Wallflower
Parrya nudicaulis Parry's Wall Flower

DROSERACEAE (Sundew Family)

Drosera anglica Long-leaved Sundew
Drosera rotundifolia Round-leaved Sundew

CRASSULACEAE (Stonecrop Family)

Sedum integrifolium ssp. integrifolium Roseroot

SAXIFRAGACEAE (Saxifrage Family)

Leptarrhena pyrolifolia Leather Leaved Saxifrage
Saxifraga oppositifolia
    ssp. oppositifolia Purple Mountain Saxifrage
Saxifraga eschscholtzii Cushion Saxifrage, Ciliate Saxifrage, Barnacle Saxifrage
Saxifraga serpyllifolia Thyme Leaved Saxifrage
Saxifraga hirculus Bog Saxifrage
Saxifraga flagellaris ssp. setigera Spiderplant
Saxifraga bronchialis ssp. funstonii Spotted Saxifrage
Saxifraga nelsoniana Cordate Leaved Saxifrage
    S. nelsoniana ssp. nelsoniana
    S. nelsoniana ssp. insularis
    S. nelsoniana ssp. pacifica
    S. nelsoniana ssp. porsildiana
    S. nelsoniana ssp. carlottae
Saxifraga spicata Spiked Saxifrage
Saxifraga cernua Bulblet Saxifrage

Saxifraga sibirica
Saxifraga rivularis Brook Saxifrage
Saxifraga Lyallii ssp. Hultenii Red-Stemmed Saxifrage
Saxifraga calycina ssp. calycina Purple Headed Saxifrage
Saxifraga calycina ssp. unalaschcensis Purple Headed Saxifrage
Saxifraga nivalis Snow Saxifrage
Saxifraga tenuis
Saxifraga reflexa Yukon Saxifrage
Saxifraga hieracifolia Stiff-stemmed Saxifrage
Saxifraga foliolosa Grained Saxifrage
Saxifraga cespitosa Tufted Saxifrage
Heuchera glabra Alpine Heuchera
Chrysosplenium tetrandrum Northern Water Carpet
Chrysosplenium wrightii Golden Saxifrage
Parnassia multiseta Northern Grass of Parnassus
Parnassia kotzebuei Kotzebue Grass of Parnassus

GROSSULARIACEAE (Currant Family)

Ribes hudsonianum Northern Black Currant
Ribes glandulosum Skunk Currant
Ribes laxiflorum Trailing Black Currant

ROSACEAE (Rose Family)

Spiraea stevenii Alaska Spiraea
Luetkea pectinata Partridge Foot
Sorbus scopulina Western Mountain Ash
Rubus chamaemorus Cloudberry
Rubus arcticus Nagoonberry
    R. arcticus ssp. arcticus
    R. arcticus ssp. acaulis
    R. arcticus ssp. stellatus
Comarum palustre Marsh Fivefinger, Swamp Cinquefoil
Pentaphylloides floribunda Shrubby Cinquefoil
Potentilla biflora Cleft Leaved Cinquefoil
Potentilla villosa Hairy Cinquefoil
Potentilla uniflora Villous Cinquefoil
Potentilla nana Arctic Cinquefoil
Potentilla norvegica ssp. monspeliensis
Potentilla hookeriana ssp. hookeriana
Argentina egedii Silverweed
    A. egedii ssp. groenlandica
    A. egedii ssp. egedii
Sibbaldia procumbens Sibbaldia
Geum macrophyllum var. macrophyllum
Geum macrophyllum
    var. perincisum Large-leaved Avens
Geum rossii Ross's Avens
Geum glaciale Glacier Geum
Dryas octopetala Mountain Avens
    D. octopetala ssp. octopetala var. octopetala
    D. octopetala ssp. octopetala var. kamtschatica
    D. octopetala ssp. alaskensis
Dryas integrifolia ssp. integrifolia Entire-leaf Avens
Sanguisorba officinalis Common Burnet
Sanguisorba canadensis Sitka Burnet
Rosa acicularis Prickly Rose
Rosa nutkana Nootka Rose

FABACEAE (Pea Family)

Lupinus nootkatensis Nootka Lupine
Trifolium hybidum Alsike Clover
Astragalus umbellatus Hairy Milk Vetch
Astragalus alpinus var. alpinus Alpine Milk Vetch
Astragalus polaris Polar Milk Vetch
Oxytropis mertensiana Merten's Oxytrope
Oxytropis maydelliana Maydell's Oxytrope
Oxytropis nigrescens var. nigrescens Blackish Oxytrope
Lathyrus japonicus Beach Pea
    L. japonicus var. maritimus
    L. japonicus var. pubescens
Lathyrus palustris Vetchling, Wild Pea

GERANIACEAE (Geranium Family)

Geranium erianthum Wild Geranium

CALLITRICHACEAE (Water Starwort Family)

Callitriche palustris Water Starwort
Callitriche heterophylla ssp. heterophylla Water Starwort

VIOLACEAE (Violet Family)

Viola biflora Two-flowered Violet
Viola langsdorffii Alaska Violet
Viola epipsila ssp. repens Marsh Violet
Viola renifolia White Violet

ONAGRACEAE (Evening Primrose Family)

Epilobium angustifolium Fireweed
E. angustifolium ssp. angustifolium
E. angustifolium ssp. circumvagum
Epilobium latifolium River Beauty
Epilobium luteum Yellow-flowered Willow Herb
Epilobium palustre Swamp Willow Herb
Epilobium anagallidifolium Alpine Willow Herb
Epilobium ciliatum ssp. Glandulosum Glandular Willow Herb
Epilobium ciliatum ssp. ciliatum Northern Willow Herb
Epilobium hornemannii Alpine Willow Herb
E. hornemannii ssp. behringianum
E. hornemannii ssp. hornemannii
Circaea alpina Enchanter's Nightshade

HALORAGACEAE (Water Milfoil Family)

Myriophyllum sibiricum Water Milfoil
Hippuris vulgaris Mare's Tail
Hippuris tetraphylla Four-leaf Marestail

APIACEAE (Parsley Family)

Bupleurum americanum Thoroughwax
Cicuta virosa Mackenzie's Water Hemlock
Ligusticum scothicum ssp. hultenii Beach Lovage
Podistera macounii Alpine Lovage
Conioselinum gmelini Hemlock Parsley

Angelica lucida Angelica
Angelica genuflexa Drooping Wild Celery
Heracleum maximum Cow Parsnip

CORNACEAE (Dogwood Family)

Cornus suecica Swedish Dwarf Cornel

PYROLACEAE (Wintergreen Family)

Pyrola asarifolia ssp.asarifolia Pink-Flowered Wintergreen
Pyrola grandiflora Large-flowered Wintergreen
Pyrola minor Lesser Wintergreen
Orthilia secunda One-sided Pyrola

EMPETRACEAE (Crowberry Family)

Empetrum nigrum Crowberry

ERICACEAE (Heath Family)

Ledum palustre ssp. decumbens Narrow Leaved Labrador Tea
Ledum groenlandicum Labrador Tea
Rhododendron camtschaticum ssp. camtschaticum Kamchatka Rhododendron
Loiseleuria procumbens Alpine Azalea
Phyllodoce coerulea Blue Mountain Heather
Phyllodoce aleutica Aleutian Mountain Heather
Harrimanella stellariana Alaska Moss Heather
Cassiope lycopodioides Clubmoss Mountain Heather
Andromeda polifolia Bog Rosemary
Chamaedaphne calyculata Leatherleaf
Arctostaphylos alpina Alpine Bearberry
Vaccinium vitis-idaea ssp. minus Lingonberry
Vaccinium ovalifolium Early Blueberry
Vaccinium uliginosum Alpine Blueberry
Vaccinium oxycoccos Bog Cranberry

DIAPENSIACEAE (Diapensia Family)

Diapensia lapponica var. obovata Diapensia

PRIMULACEAE (Primrose Family)

Primula tschuktschorum Chukchi Primrose
Primula eximia Eximia
Primula cuneifolia var. saxifragifolia Pixie Eyes
Primula mistassinica Mistassini Primrose
Androsace chamaejasme ssp. Lehmanniana Rock Jasmine
Androsace septentrionalis Northern Jasmine
Douglasia alaskana Alpine Rock Jasmine
Dodecatheon frigidum Northern Shooting Star
Lysimachia thyrsiflora Tufted Loostrife
Trientalis europaea ssp. arctica Starflower

PLUMBAGINACEAE (Leadwort Family)

Armeria maritima ssp. purpurea Sea-pink

GENTIANACEAE (Gentian Family)

Gentiana algida White Gentian
Gentiana glauca Glaucous Gentian
Gentianella amarella ssp. acuta Northern Gentian
Gentianella propinqua ssp. aleutica
Gentianella propinqua ssp. propinqua Four-parted Gentian
Lomatogonium rotatum Star Gentian

MENYANTHACEAE (Buckbean Family)

Menyanthes trifoliata Buckbean

POLEMONIACEAE (Polemonium Family)

Polemonium acutiflorum Tall Jacob's Ladder
Polemonium boreale ssp. boreale Northern Jacob's Ladder
    P. boreale ssp. macranthum

BORAGINACEAE (Borage Family)

Myosotis asiatica Forget-Me-Not
Mertensia maritima var. maritima Oysterleaf
Mertensia paniculata Chiming Bells
    M. paniculata var. paniculata
    M. paniculata var. eastwoodae

SOLANACEAE (Nightshade Family)

Solanum nigrum Nightshade

SCROPHULARIACEAE (Figwort Family)

Mimulus guttatus Yellow Monkey Flower
Limosella aquatica Mudwort
Veronica americana Brooklime
Veronica serpyllifolia ssp. humifusa Thyme-leaf Speedwell
Veronica wormskjoldii Alpine Speedwell
Lagotis glauca Weasel Snout
Lagotis minor Lagotis
Castilleja elegans Elegant Paintbrush
Euphrasia mollis Eyebright
Rhinanthus minor ssp. groenlandicus Yellow Rattle
Pedicularis verticillata Whorled Lousewort
Pedicularis labradorica Labrador Lousewort
Pedicularis parviflora ssp. Pennellii Purple Bog Lousewort
Pedicularis langsdorfii ssp. arctica Arctic Lousewort
Pedicularis sudetica Sudeten Lousewort
    P. sudetica ssp. interior
    P. sudetica ssp. pacifica
Pedicularis capitata Capitate Lousewort
Pedicularis oederi Oeder's Lousewort
Pedicularis lanata ssp. lanata Wooly Lousewort

OROBANCHACEAE (Broomrape Family)

Boschniakia rossica Broomrape

LENTIBULARIACEAE (Bladderwort Family)

Pinguicula villosa Hairy Butterwort
Utricularia macrorhiza Common Bladderwort
Utricularia intermedia Flat-leaf Bladderwort
Utricularia minor Lesser Bladderwort

PLANTAGINACEAE (Plantain Family)

Plantago major var. major Common Plantain

RUBIACEAE (Madder Family)

Galium boreale Bedstraw
Galium trifidum ssp. trifidum Small Bedstraw
Galium Brandegei Least Bedstraw

CAPRIFOLIACEAE (Honeysuckle Family)

Sambucus racemosa ssp. pubens
var. arborescens Red Elderberry
Vibernum edule High Bush Cranberry
Linnaea borealis Twinflower
L. borealis ssp. borealis
L. borealis ssp. longiflora

ADOXACEAE (Moschatel Family)

Adoxa moschatellina Moschatel

VALERIANACEAE (Valerian Family)

Valeriana capitata Capitate Valerian

CAMPANULACEAE (Bluebell Family)

Campanula lasiocarpa Bellflower
Campanula uniflora Arctic Harebell

ASTERACEAE (Composite Family)

Solidago multiradiata Northern Goldenrod
S. multiradiata var. multiradiata
S. multiradiata var. arctica
Aster alpinus var. vierhapperi Alpine Aster
Aster sibiricus Siberian Aster
Erigeron humilis Fleabane
Erigeron peregrinus ssp. peregrinus Coastal Fleabane
Antennaria friesiana ssp. alaskana Pussytoes
Antennaria friesiana ssp. friesiana Alpine Pussytoes
Antennaria monocephala
ssp. monocephala Single Headed Pussytoe
Antennaria monocephala ssp. angustata Cat's Paw
Antennaria rosea Pink Flowered Pussytoe
A. rosea ssp. Pulvinata Pink Flowered Pussytoe
Gnaphalium uliginosum Cudweed
Achillea millefolium Common Yarrow
A. millefolium var. borealis Boreal Yarrow
Matricaria discoidea Pineapple Weed
Tanacetum bipinnatum ssp. bipinnatum Chrysanthemum
Dendranthema arcticum ssp. polare Arctic Daisy
Leucanthemum vulgare White Daisy
Artemisia globularia Purple Wormwood
A. glomerata var. subglabrata
Artemisia tilesii Mountain Wormwood
A. tilesii ssp. tilesii
A. tilesii ssp. elatior
A. tilesii ssp. Gormani
A. tilesii ssp. unalaschcensis
Artemisia arctica ssp. arctica Arctic Wormwood
Petasites frigidus Arctic Sweet Coltsfoot
Petasites frigidus var. nivalis Arctic Sweet Coltsfoot
Arnica lessingii Lessing's Arnica
Arnica frigida ssp. frigida Lake Louise Arnica
Arnica chamissonis ssp. chamissonis Arnica
Senecio congestus Marsh Fleabane
Senecio atropurpureus Groundsel
Senecio cymbalaria Dwarf Arctic Butterweed
Senecio conterminus Yellow Rock Senecio
Senecio pseudoarnica Seabeach Senecio
Senecio lugens Black-tipped Groundsel
Saussurea angustifolia Narrow-leaf Saussurea
Saussurea viscida Mountain Saussurea
Taraxacum officinale Common Dandelion

T. officinale ssp. ceratophorum Horned Dandelion
Taraxacum phymatocarpum Arctic Dandelion
Taraxacum lyratum Kamchatka Dandelion
Crepis nana ssp. nana Cushion Hawk's Beard
Hieracium triste Wooly Hawkweed

Appendix G

Easements, Withdrawals, and Rights-of-Way within the Togiak National Wildlife Refuge

G. Easements, Withdrawals, and Rights of Way within the Togiak National Wildlife Refuge

Easements reserved by the Service over private lands under Sec. 17(b) of ANCSA. This section authorizes the Secretary of the Interior to reserve public easements on lands conveyed to Native corporations to guarantee access to public lands. These easements include linear easements across Native lands and waters and site easements.

Listed by Easement Identification Number (EIN)

Choggiung Limited (Dillingham)

Roads

EIN 100 C4 I 60' access road in Kanakanak connecting the Public Health Service facility with the FAA service/quarters in T13S R56W, Sec. 36 and the FAA VORTAC site in T14S R56W, Sec. 1.

Existing Trails (25 feet in width)

EIN 19 C5 Dillingham-Manokotak access trail in T13S R55W, Sec. 30 southwesterly to refuge lands in T14S R57W, Sec. 2.

Restricted to U.S. Government Use

EIN 101 C4 I 20' wide easement for a control cable connecting the Kanakanak FAA service/quarters in T13S R56W, Sec. 36 southerly to the FAA VORTAC site in T14S R56W, Sec. 1.

EIN 102 C4 I 20' wide easement for a powerline connecting the Nushagak Electric Cooperative in T13S R56W, Sec. 36 southerly to the FAA VORTAC site in T14S R56W, Sec. 1.

EIN 102a C4 I 20' wide easement for a powerline connecting the Nushagak Electric Cooperative and the Kanakanak FAA service/quarters in T13S R56W, Sec. 36.

EIN 103 C4 I 2,000' radius surrounding the VORTAC in T14S R56W, Sec. 1.

Manokotak Natives Limited (Manokotak)

Sites

EIN 9 C5 North arm of Amanka Lake in T12S R59W, Sec. 10 at mouth of Longarm Creek.

EIN 10 C5 North shore of Ualik Lake in T12S R60W, Secs. 15 and 16.

EIN 12 D9 South shore of Ualik Lake in T13S R61W, Sec. 16.

EIN 13 C4 East shore of Ualik Lake in T12S R60W, Sec. 33.

EIN 13a C4 East shore of Amanka Lake in T12S R59W, Sec. 36 SE1/4.

EIN 13b C4 North shore of Amanka Lake in T12S R59W, Sec. 30 at mouth of Ongoke River.

Existing Trails (25 feet in width)

EIN 3 C5 Dillingham west to Manokotak and Twin Hills.

Proposed Trails (25 feet in width)

EIN 6c E Igushik River in T13S R60W, Sec. 23 at Site EIN 106 C5 southwesterly to refuge land.

EIN 9a C5 North arm of Amanka Lake in T12S R59W, Secs. 15 at Site EIN 9 C5 northerly to refuge land.

EIN 10a C5 North shore of Ualik Lake in T12S R60W, Secs. 15 & 16 at Site EIN 10 C5 northerly to refuge land.

EIN 12a D9 South shore of Ualik Lake in T13S R61W, Sec. 16 at Site EIN 12 D9 southerly to refuge land.

EIN 13c E East shore of Ualik Lake in T12S R60W, Sec. 33 at Site EIN 13 C4 southeasterly to refuge land.

EIN 13d E East shore of Amanka Lake in T12S R59W, Sec. 36 at Site EIN 13a C4 southeasterly to refuge land.

Olsonville Incorporated (Olsonville)

Sites (one acre)

EIN 1a C4 C5 Bristol Bay shoreline east of Cape Constantine in T20S R58W, Sec. 35.

Proposed Trails (25 feet in width)

EIN 1 C4 C5 Bristol Bay shoreline east of Cape Constantine in T20S R58W, Sec. 35 at Site EIN 1a C4 C5 northwesterly to refuge land.

City of Quinhagak

Sites (one acre)

EIN 7 D9 North bank of the Kanektok River in T4S R73W, Sec. 34 SE1/4.

Trails (25 feet in width)

EIN 1 D1 D9 C3 Village of Quinhagak in T5S R74W, Sec. 17 northwesterly to refuge land.

EIN 3 D1 C3 Village of Quinhagak in T5S R74W, Sec. 17 easterly parallel to the south bank of the Kanektok River to refuge land.

EIN 3 D1 D9 From Platinum northeasterly to a point on the north section line of T13S R73W, Sec. 6 . This is a winter use only trail.

EIN 4 D1 D9 C3 Village of Quinhagak in T5S R74W, Sec. 17 southeasterly parallel to Kuskokwim Bay to refuge land.

Proposed Trails (25 feet in width)

EIN 2 C5 Trail EIN 1 D1 D9 C3 in T5S R74W, Sec. 6 northeasterly to refuge land.

EIN 3 D1 D9 From Platinum northeasterly to a point on the north section line of T13S R73W, Sec. 6 . This is a winter use only trail.

EIN 3 D1 C3 Extends existing easement EIN 3 D1 C3 easterly to the eastern boundary of T5S R73W, Sec. 4

EIN 7a C4 North bank of the Kanektok River in T4S R73W, Sec. 34 at Site EIN 7 D9 northerly to refuge land.

EIN 18 E Arolik River in T6S R73W, Sec.12 southwesterly to Trail EIN 4 D1 D9 C3 in T6S R74W, Sec. 36.

EIN 22 C5 Quinhagak Airport in T5S R74W, Sec. 9 extending 1,000' southwesterly from the west end of the runway, 150' wide at the west end of the runway, and 1,150' wide at the east end of the runway for a designated airport clear area.

Togiak Natives Limited (Togiak)

Sites (one acre)

EIN 1a D1 C4 Togiak Bay shoreline in T14S R68W, Sec. 16 SW1/4.

EIN 13 D9 East bank of the Togiak River in T11S R65W, Sec. 22 NW1/4.

Existing Trails (25 feet in width)

EIN 15 D1 C5 Village of Togiak in T13S R67W, Sec. 12 westerly to refuge land and Goodnews Bay.

Proposed Trails (25 feet in width)

EIN 19 C4 East bank of the Togiak River in T11S R65W, Sec. 22 at Site EIN 13 D9 westerly to refuge land.

EIN 21 C4 East bank of the Togiak River in T11S R65W, Sec. 22 at Site EIN 13 D9 easterly to refuge land.

Twin Hills Native Corporation (Twin Hills)

Sites (one acre)

EIN 3 C5 D9 L East bank of Negukthlik River in T13S R65W, Sec. 28 SW1/4 at Trail EIN 5 C5.

EIN 6 C4 D9 West bank of the Twin Hills River in T13S R66W, Sec. 4 NE1/4 at Trail EIN 5 C5.

EIN 8 D9 South bank of the Togiak River in T13S R66W, Sec. 6 NE1/4 at Trail EIN 5 C5.

EIN 11 D9 Southwest shore of an unnamed lake in T13S R65W, Secs. 6 and 7.

EIN 25 C6 Right bank of the Ungalikthluk River in T14S R65W, Secs. 29.

EIN 26 C6 Eastern shore of an unnamed lake in T14S R65W, Secs. 29.

EIN 27 D9 Southern shore of an unnamed lake and the outlet of Negukthlik River in T12S R64W, Secs. 20.

Existing Trails (25 feet in width)

EIN 5 C5 Manokotak–Togiak trail from refuge land in T13S R65W, Sec. 25 westerly to Twin Hills and Togiak villages.

Proposed Trails (25 feet in width)

EIN 25a C6 Trail connecting site EIN 25 C6 in T14S R65W, Sec. 29., westerly to site EIN 26 C6

EIN 25a C6 Trail accessing site EIN 27 D9 T12S R64W, Sec. 20., easterly to refuge land.

Calista Corporation

Existing Trails (25 feet in width)

EIN 3 C3 C4 D1 D9 Trail accessing the Togiak National Wildlife Refuge

EIN 3a C3 C4 D1 D9 Connecting with trail easement EIN 3 C3 C4 D1 D9. Limited to winter use only.

EIN 3b C3 C4 D1 D9 Connecting with trail easement EIN 3 C3 C4 D1 D9. Limited to summer use only.

RS-2477 Rights-of-Way

The State of Alaska identifies numerous claims to roads, trails, and paths across federal lands under Revised Statute 2477 (RS 2477), a section in the Mining Act of 1866 that sites, "The right-of-way for the construction of highways over public lands, not reserved for public uses, is hereby granted." RS 2477 was repealed by the Federal Land Policy and Management Act of 1976, subject to valid existing claims.

Assertion and identification of potential rights-of-way does not establish the validity of these claims nor the public's right to use them. The validity of all RS 2477 rights-of-way will be determined on a case-by-case basis, either through the courts or by other legally binding document. The State of Alaska has identified in Alaska Stature 19.30.400 six routes on the Refuge that it claims may be asserted as rights-of-way under RS 2477 (See Figure G-1).

Mileage of Identified RS-2477 Rights-Of-Way Within Togiak National Wildlife Refuge						
Number	Right-of-Way name	USFWS Admin.	Native Conveyed	Native Selected	Private Patent	Total
30	Bethel-Quinhagak	0.00	5.73	0.00	0.00	5.73
86	Goodnews Bay-Togiak	19.50	12.06	2.31	0.06	33.93
173	Quinhagak-Goodnews Bay	6.99	10.01	7.49	0.19	24.68
215	Togiak-Nushagak	26.81	30.41	10.08	0.14	67.44
326	Goodnews-Arolik River	0.00	0.14	2.27	0.00	2.41
332	Togiak-Ungalikthluk	0.00	10.61	4.31	0.00	14.92
	Total	53.30	68.96	26.46	0.39	149.11

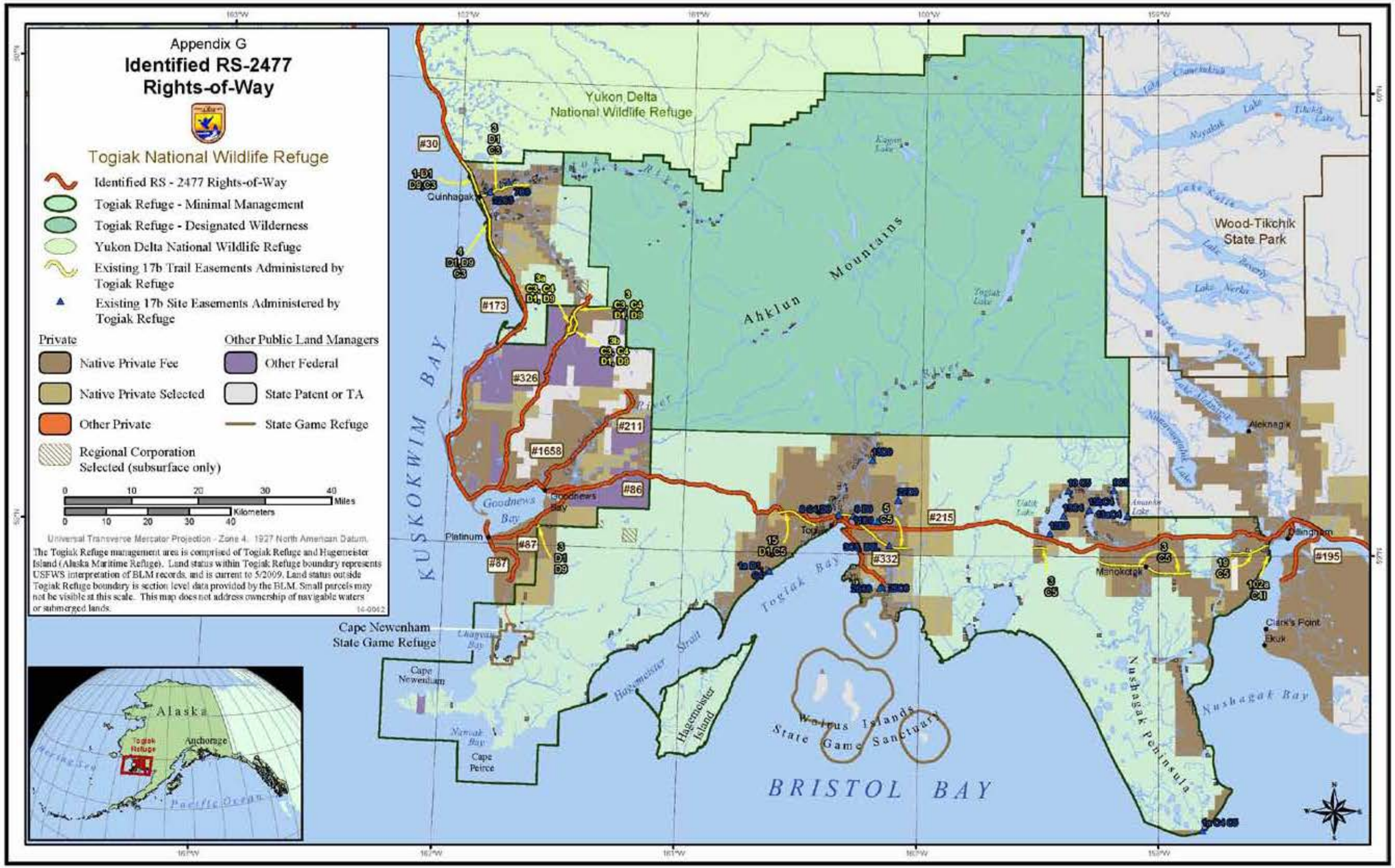


Figure G-1. Identified RS-2477 Rights-of-Way

Appendix H

Preparers

Preparers of the Togiak Refuge Draft Revised Comprehensive Conservation Plan and Public Use Management Plan

Name	Expertise/Function	Degree(s)	Experience (years)
Refuge Staff			
Aaron Archibeque	Refuge Manager	BS—Wildlife Biology	25 Refuge Management
Andy Aderman	Subsistence/Wildlife Biology	BS—Wildlife Biology	13 Fish and Wildlife Biology
Gail Collins	Wildlife Biology	BS—Wildlife Management MS—Wildlife Management	11 Wildlife Biology
Jon Dyasuk	Refuge Interpreter		18 Native Liaison and Communications
Dave Gillund	Deputy Refuge Manager	BS--Zoology	23 Refuge Operations
Paul Liedberg	Refuge Manager	BS—Natural Resource Management	16 Refuge Management
Marc Lisac	Fisheries Biology	BS—Zoology	19 Fisheries Biology
Carl Lunderstadt	Deputy Refuge Manager	BS—Wildlife Biology	11 Refuge Management
Rob McDonald	Wildlife Biology	BS—Environmental Studies	17 Fish and Wildlife Biology and Management
Allen Miller	Public Use/Permits	BS—Natural Resource Management MS—Water Resource Management	7 Fisheries Biology 9 Public Use Management
Patrick Walsh	Wildlife Biology	BS—Wildlife Biology MS—Wildlife Biology	20 Fish and Wildlife Biology and Management
Region 7 Planning Staff			
Stewart Allen	Social Science, Social Analysis, Economic Analysis (until 4/02)	BA—Psychology. BA—Journalism, MA—Social Psychology, PhD—Recreation Management	20 Social Aspects of Public Land and Natural Resources Management
Margaret Arend	Planning Team Leader	BA—Ecology MS—Planning, Natural Resource emphasis	8 Habitat/Wildlife Biology 2 Subsistence Management 1 Public Use/Interpretation 20 Natural Resources Planning
Jeffrey Brooks	Social Science	BS—Biology MS—Conservation Ecology and Sustainable Development PhD—Natural Resource Recreation	3 International Development and Health Education 5 Wildlife Biology 11 Human Dimensions, Outdoor Recreation and Visitor Experience

Helen Clough	NEPA, Policy and ANILCA compliance	BA--Anthropology	20 Natural Resource Planning 12 Resource Management
Aaron Collins	Natural Resource Management/Public Use	BS—Natural Resource Management	5 Natural Resource Planning 2 Public Use/ Recreation Management 1 Botany/ Plant Ecology
Brian Glaspell	Social Science (until 7/07)	PhD—Forestry/Wilderness and Recreation Management	8 Social Science Research
Karen L. Lew	Technical Writing and Editing	BA—Humanities	32 Writing and Editing
Robert Massengale	Planning Intern/assistant planner	BLA—Landscape Architecture	2 Landscape Architecture 1 Planning
Kenneth W. Rice	NEPA, Policy and ANILCA Compliance	MS—Wildlife Management	34 Resources Management
State of Alaska			
Brandon McCutcheon	Liaison with State of Alaska; DNR	BS—Natural Resource Management	7 Resource Management
Brad Palach	Liaison with State of Alaska; ADF&G	BA—Justice	19 Fish and Wildlife Management
Bruce Talbot	Liaison with State of Alaska; DNR	BS—Wildlife Management MS—Natural Resource Planning	21 Planning and Policy
Sara Taylor	Liaison with State of Alaska; DNR	BS—Environmental Studies	7 Wildlife Biology and Biometrics 4 Environmental Education 2 Natural Resource Planning

Appendix I

Abbreviations and Acronyms
Glossary

I. Abbreviations and Acronyms

ADF&G	Alaska Department of Fish & Game
ANCSA	Alaska Native Claims Settlement Act
ANILCA	Alaska National Interest Lands Conservation Act
ATV	all-terrain vehicle
BBNA	Bristol Bay Native Association
BCE	Before Common Era
BLM	Bureau of Land Management
BLM AFS	Bureau of Land Management Alaska Fire Service
CFR	Code of Federal Regulations
DCED	Alaska Department of Community and Economic Development
DEC	Alaska Department of Environmental Conservation
DNR	Alaska Department of Natural Resources
EA	environmental assessment
EIS	Environmental Impact Statement
EPA	Environmental Protection Agency
EO	executive order
FACA	Federal Advisory Committee Act
FONSI	Finding of No Significant Impact
GMU	game management unit
IACUC	Institutional Animal Care and Use Committee
I&M Plan	Inventorying and Monitoring Plan
ISER	Institute for Social and Economic Research (University of Alaska)
NEPA	National Environmental Policy Act
NVK	Native Village of Kwinhagak
ORV	off-road vehicle
PLO	public land order
PUMP	Public Use Management Plan
RIT	refuge information technician
RS 2477	Revised Statute 2477
Service	U.S. Fish & Wildlife Service
SULD	Special Use Land Designation (State of Alaska)
System	National Wildlife Refuge System
USGS	U.S. Geological Survey
WSR	Wild and Scenic River

Adequate snow cover	Snow cover of a sufficient depth to protect underlying vegetation and soil (50 CFR 36.2), Generally about 6 inches within the Togiak Refuge.
air taxi operator/transporter	A person who transports people, equipment, supplies, harvested fish and wildlife products, or other personal property by means of aircraft for compensation or with the intent or agreement to receive compensation; a transporter who provides commercial transportation services by means of aircraft. Must have a special use permit to operate on a national wildlife refuge.
allowed	Activity, use, or facility is allowed under existing National Environmental Policy Act (NEPA) analysis, a specific compatibility determination, and compliance with all applicable laws and regulations of the Service, other Federal agencies and the State of Alaska.
not allowed	Activity, use, or facility is not allowed.
alternatives	Different ways to resolve issues, achieve refuge purposes, meet refuge goals, and contribute to the National Wildlife Refuge System mission. Alternatives provide different options to respond to major issues identified during the planning process.
No-Action Alternative	In the context of a comprehensive conservation plan, the current management direction. With this alternative, no change from the current comprehensive conservation plan would be implemented.
Preferred Alternative	A proposed action in the NEPA document for the comprehensive conservation plan identifying the alternative that the Service believes best achieves planning unit purposes, vision, and goals; helps fulfill the Refuge System mission; maintains and, where appropriate, restores the ecological integrity of each refuge and the Refuge System; addresses the significant issues and mandates; and is consistent with principles of sound fish and wildlife management.
archaeological resource	Any material remains of past human life or activities that are of interest to the scientific study of historic or prehistoric peoples and their cultures. Materials capable of providing an understanding of past human behavior,

	cultural adaptation, and related topics through the application of scholarly or scientific techniques.
authorized	Activity, use, or facility allowed upon issuance of a special-use permit or other authorization.
base camp	Serves as a center of operations and overnight accommodations for people working in a remote part of the Refuge (e.g. refuge staff, guides, and clients). A temporary base camp usually remains in place for the full season of use but may be removed within 48 hours. It generally consists of larger tents than do primitive camps and often has tent platforms or other rigid floors. The primary distinction between temporary base camps and primitive camps is the period of occupancy. The specific details of a temporary base camp located on refuge lands would be spelled out in the refuge special-use permit.
big game guide	A person who is licensed by the State of Alaska to provide services, equipment, or facilities to a big game hunter in the field. A big game guide accompanies or is present with, personally or through an assistant, the hunter in the field. Must have a special use permit to operate on a national wildlife refuge.
big game outfitter	A person who provides for compensation or with the intent to receive compensation, services, supplies, or facilities to a big game hunter in the field. Does not accompany nor through an assistant, is not present with the hunter in the field. Must have a special use permit to operate on a national wildlife refuge.
biological diversity	The variety of life, including the variety of living organisms, the genetic differences among them, and the communities in which they occur (USFWS, 602 FW 1.6).
biological integrity	Biotic composition, structure, and functioning at the genetic, organism, and community levels consistent with natural conditions, including the natural biological processes that shape genomes, organisms, and communities (USFWS, 602 FW 1.6).
campsite hardening	Actions undertaken to increase the durability of a campsite through manipulation, such as placing gravel on a place to pitch a tent or trails within the campsite. Does not include

	facilities normally associated with campgrounds, including outhouses, picnic tables, etc.
categorical exclusion	A category of actions that do not individually or cumulatively have a significant effect on the human environment and have been found to have no such effect in procedures adopted by a Federal agency pursuant to the National Environmental Policy Act (40 CFR 1508.4).
commercial recreational uses	Recreational uses of lands, waters, and resources for business or financial gain; includes guided recreational fishing, guided recreational hunting, other guided recreation, and air-taxi services.
commercial visitor service	Any service or activity made available for a fee, commission, brokerage, or other compensation to persons who visit a refuge, including such services as providing food, accommodations, transportation, tours, and guides.
compatible use	A proposed or existing wildlife-dependent recreational use or any other use of a refuge that, based on sound professional judgment, will not materially interfere with or detract from the fulfillment of the mission of the System or the purposes of the refuge (USFWS, 603 FW 2 2.6).
compatibility determination	A written determination signed and dated by the refuge manager and the Service regional chief signifying that a proposed or existing use of a national wildlife refuge is a compatible use or is not a compatible use. The director of the Service makes this delegation through the regional director (USFWS, 603 FW 2 2.6).
consumptive use	Use of a refuge resource that removes the resource from the refuge (e.g., killing an animal to eat, catching and keeping fish, harvesting berries or plants, or removal of mineral or other specimens).
cultural resources	Fragile nonrenewable properties, including any district, site, building, structure, or object significant in American history, architecture, archaeology, engineering, or culture. These resources are significant for information they contain or the associations they have with past people, events, or life ways (USFWS 1992).

ecological integrity	The integration of biological integrity, natural biological diversity, and environmental health; the replication of natural conditions (USFWS, 602 FW 1.6).
ecosystem	A biological community functioning together with its environment as a unit.
effects (wildlife and habitat)	
long-term effects	Effects occurring after or lasting longer than 5 years after implementation of the action.
major effects	Affecting a regional or local population of a species, or its habitat, sufficiently to cause a change in abundance or a change in distribution beyond which natural recruitment is not likely to return the population to its former abundance within several generations.
minor effects	Affecting the survival, reproduction, distribution, or behavior of a specific group of individuals of a population in a localized area for one generation or less without affecting the regional population. Habitat composition and structure remain unchanged; habitat quality, however, may be affected by indirect actions. (e.g., disturbance or displacement affecting a specific group of individuals that may result in altered use of an area).
moderate effects	Affecting a local population or habitat quality and composition in a localized area, sufficiently to cause a change in abundance or distribution for more than one generation, but unlikely to affect the integrity of the regional population over the long term.
negligible effects	Temporary effects that do not result in a change in the survival, reproduction, distribution, or behavior of individuals. The ability of the habitat to support populations would remain unchanged (e.g., temporary disturbance of a specific group of individuals that does not result in a change in use of an area).
short-term effects	Effects are anticipated to occur and end within five years from implementation of the action.
environmental assessment	A concise public document that provides a sufficient analysis for determining whether to prepare an environmental

	impact statement (EIS) or a finding of no significant impact. It also aids an agency's compliance with NEPA when no EIS is necessary (40 CFR 1508.9).
environmental health	Abiotic (the nonliving factors of the environment, including light, temperature, and atmosphere) composition, structure, and functioning of the environment consistent with natural conditions, including the natural abiotic processes that shape the environment (USFWS, 602 FW 1.6).
environmental impact statement	A detailed written statement, required by section 102(2)(C) of the National Environmental Policy Act (NEPA), analyzing the environmental impacts of a proposed action, adverse effects of the project that cannot be avoided, alternative courses of action, short-term uses of the environment versus the maintenance and enhancement of long-term productivity, and any irreversible and irretrievable commitment of resources (40 CFR 1508.11).
goal	A descriptive, open-ended, and often broad statement of desired future conditions that conveys purposes but does not define measurable units (USFWS, 620 FW 1.6).
guide	Any person who has a special-use permit to provide a commercial visitor service for hire on a refuge. This term does not generally apply to air-taxi operators who only provide transportation services.
habitat	The physical and biological resources required by an organism for its survival and reproduction; these requirements are species-specific. Food and cover are major components of habitat and must extend beyond the requirements of the individual to include a sufficient area capable of supporting a viable population.
helicopter use for recreation access	Use of helicopters for other than official government management activities, search and rescue, or other authorized activities.
incidental uses	Recreational or public uses of refuge lands, waters and/or resources that are secondary to, or of less importance than, the primary recreational use a visitor is participating in. An incidental use may or may not support a primary use.

issue	Any unsettled matter that requires a management decision (e.g., a Service initiative, opportunity, resource management problem, a threat to the resources of the unit, conflict in uses, public concern, or the presence of an undesirable resource condition) (USFWS, 602 FW 1.6).
"leave no trace" principles	Principles of outdoor recreation designed to minimize effects on the natural environment and other visitors. These principles are: (1) plan ahead and prepare, (2) travel and camp on durable surfaces, (3) dispose of waste properly, (4) leave what you find, (5) minimize campfire impacts, (6) respect wildlife, and (7) be considerate of other visitors (http://www.lnt.org, accessed May 11, 2004).
national wildlife refuge	A designated area of land or water, or an interest in land or water within the National Wildlife Refuge System; does not include coordination areas. Find a complete listing of all units of the Refuge System in the current Annual Report of Lands Under Control of the U.S. Fish and Wildlife Service (USFWS 2003).
native species	A species, subspecies, or distinct population that occurs within its natural range or natural zone of potential dispersal (i.e., the geographic area the species occupies naturally or would occupy in the absence of direct or indirect human activity or an environmental catastrophe). This definition recognizes that ecosystems and natural ranges are not static; they can and do evolve over time. Thus a species may naturally extend its range onto (or within) a refuge and still be considered native.
navigable waters	Under Federal law, for the purpose of determining ownership of submerged lands beneath inland water bodies not reserved at the date of statehood, navigable waters are waters used or susceptible to being used in their ordinary condition as highways of commerce over which trade and travel are, or may be conducted, in the customary modes of trade and travel on water. In situations where navigability and the ownership of submerged lands are disputed, the final authority for determining navigability rests with the Federal courts.
National Environmental Policy Act	This act, promulgated in 1969, requires all Federal agencies to disclose the environmental effects of their actions, incorporate environmental information, and use public participation in the planning and implementation of all

	actions. Federal agencies must integrate NEPA with other planning requirements and must prepare appropriate NEPA documents to facilitate better environmental decision-making (from 40 CFR 1500). The law also established the Council on Environmental Quality to implement the law and to monitor compliance with the law.
Non-consumptive uses	Recreational activities (e.g., hiking, photography, and wildlife observation) that do not involve the taking or catching of fish, wildlife, or other natural resources.
noncommercial recreational uses	Recreational uses of lands, waters, and resources not for business or financial gain, including recreational fishing and hunting, boating and floating, camping, hiking, photography, and sightseeing.
nonnative species	A species, subspecies, or distinct population that has been introduced by humans (intentionally or unintentionally) outside its natural range or natural zone of potential dispersal.
objective	A concise statement of what we want to achieve, how much we want to achieve it, when and where we want to achieve it, and who is responsible for the work. Objectives derive from goals and provide the basis for determining strategies, monitoring refuge accomplishments, and evaluating the success of strategies. (USFWS, 602 FW 1.6).
ordinary high-water mark	The line on the shore established by the fluctuations of water and indicated by physical characteristics such as a clear, natural line impressed on the bank, shelving, changes in the character of soil, destruction of terrestrial vegetation, the presence of litter and debris, or other appropriate means that consider the characteristics of the surrounding area (33 CFR 328.3[e]).
proposed action	The alternative that best achieves refuge purposes, vision and goals; helps fulfill the mission of the Refuge System; maintains, and where appropriate, restores the ecological integrity of the refuge and the Refuge System; addresses the significant issues and mandates, and is consistent with principles of sound fish and wildlife management. The proposed action is, for all practical purposes, the Draft Comprehensive Conservation plan for the Refuge (USFWS, S 602 FW 3.4C).

prospectus	The document that the Service uses in soliciting competition to award permits for commercial visitor services on a refuge.
public	Individuals, organizations, and groups; officials of Federal, state, and local government agencies; Indian tribes; Native organizations; and foreign nations. Public may include anyone outside the core planning team. It includes those who may or may not have indicated an interest in Service issues and those who do or do not realize that Service decisions may affect them.
public involvement	A process that offers affected and interested individuals and organizations opportunities to become informed about, and to express their opinions on, Service actions and policies. In the process, these public views are studied thoroughly and are thoughtfully considered in shaping decisions for refuge management.
purposes of the refuge	The purposes specified in or derived from the law, proclamation, executive order, agreement, public land order, donation document, or administrative memorandum establishing, authorizing, or expanding a refuge, refuge unit, or refuge subunit (USFWS, 602 FW 1.6).
quality recreation program	A refuge quality recreation program promotes safety of participants, other visitors, and facilities; reliable and reasonable opportunities for the public to experience wildlife; refuge goals and objectives; resource stewardship and conservation; public understanding and increased public appreciation of America's natural resources and the Service's role in managing and protecting these resources; compliance with applicable laws and regulations and responsible behavior; accessibility and availability to a broad spectrum of the American people; facilities that blend into the natural setting; and the use of feedback from visitors to help define and evaluate programs (USFWS, 605 FW 1.6, in draft).
record of decision (ROD)	A concise public record of a decision prepared by the Federal agency, pursuant to NEPA, that contains a statement of the decision, identification of all alternatives considered, identification of the environmentally preferable alternative, a statement whether all practical means to avoid or minimize environmental harm from the alternative selected have been adopted (and if not, why they were not),

	and a summary of monitoring and enforcement where applicable for any mitigation (40 CFR 1505.2).
recreation guide	A commercial operator who accompanies clients on the refuge for photography, sightseeing, or other activities not related to hunting or fishing, for either day or overnight trips.
recreational fishing	Taking or attempting to take for personal use, not for sale or barter, any fish by hook and line held in the hand or attached to a pole or rod that is held in the hand or is closely attended.
recreational hunting	Taking or attempting to take for personal use, not for sale or barter, a game animal (as defined by the regulatory agency) by any means allowed by the regulatory agency.
recreational fishing or hunting guide	A commercial operator who accompanies recreational fishing or hunting clients on the Refuge for day or overnight trips. Must have a special use permit to operate on the refuge.
scoping	An early and open process with the public for determining the range of issues and the significant issues related to a proposed action (40 CFR 1501.7).
special use permit	A U.S. Fish and Wildlife Service authorization required for all commercial uses of refuge lands and waters.
step-down management plan	A plan that provides specific guidance on management subjects (e.g., habitat, public use, fire, safety) or groups of related subjects. It describes strategies and implementation schedules for meeting comprehensive conservation plan goals and objectives.
subsistence uses	The customary and traditional uses by rural Alaska residents of wild, renewable resources for direct personal or family consumption as food, shelter, fuel, clothing, tools, or transportation; for the making and selling of handicraft articles out of nonedible byproducts of fish and wildlife resources taken for personal or family consumption; for barter or sharing for personal or family consumption; and for customary trade (from Section 803 of the Alaska National Interest Lands Conservation Act).

unguided visitor	A visitor who arranges, organizes, and conducts his or her own trip without the assistance of a guide.
use day	A period of one calendar day (24 hours), or portion thereof, for each entity using a resource. When employed as a measure of human use, it is called a visitor, visitor use day, or client use day.
visitor contact station	A staffed or unstaffed facility where the public can learn about the Refuge and its resources.
vision statement	A concise statement of the desired future condition of the planning unit, based primarily on the System mission, specific refuge purposes, and other relevant mandates (USFWS, 602 FW 1.6).
wilderness	An area essentially undisturbed by human activity, together with its natural ecosystem.
wildlife-dependent recreation	A use of a refuge involving hunting, fishing, wildlife observation and photography, or environmental education and interpretation. These are the six priority public uses of the Refuge System, as established in the National Wildlife Refuge System Administration Act, as amended. Wildlife-dependent recreational uses, other than the six priority public uses, are those that depend on the presence of wildlife.

References Cited

Leave No Trace Center for Outdoor Ethics Web site: http://www.lnt.org. Accessed May 11, 2004.U.S. Government. "Regulations for implementing the procedural provisions of the National Environmental Policy Act (40 CFR, 1500-1508).

USFWS. "Service Manual." Accessed June 4, 2003. At http://policy.fws.gov/manual.html on the World Wide Web, produced by U.S. Fish and Wildlife Service.

USFWS. 1992. "Cultural Resources Handbook." Accessed June 4, 2003, 2003. At http://www.policy.fws.gov/614fw1.html on the World Wide Web, produced by U.S. Fish & Wildlife Service.

USFWS. 2003. "Annual Report of Lands Under Control of the U.S. Fish and Wildlife Service (as of September 30, 2002)." Accessed June 20, 2003. At http://realty.fws.gov/PDF_Files/AROL2003.pdf on the World Wide Web, produced by U.S. Fish and Wildlife Service, Division of Realty.

Appendix J

Response to Public Comments on the Draft Plan

J. Response to Public Comments on the Draft Plan

J.1 Introduction

This appendix provides a summary of and responses to public comments received during the public comment period for the Draft Togiak National Wildlife Refuge Comprehensive Conservation Plan. Comments were provided to the refuge planning team during public review of the plan and at community meetings.

All comments have been organized by relevant subject and are listed below in ascending numerical order. Comments that were unique on specific issues were addressed individually and are provided below. Comments that were of similar content from multiple respondents were consolidated and summarized. Editorial comments, grammatical changes, wordings of specific Plan sections, and other technical edits, were separated into an editorial response category.

Fifty written comments were received, 32 of which were from Alaskans. Comments were heard from nine commercial guides, The Wilderness Society, Wilderness Watch, the Sierra Club, Native Village Councils of Kwinhagak and Goodnews Bay, the State of Alaska, and 35 individuals citizens. Public meetings were held in Quinhagak, Goodnews Bay, Togiak, and Anchorage, resulting in 13 response handouts returned with public comments.

Many comments refer to specific sections or pages in the draft Comprehensive Conservation Plan. Please be aware that section numbers and pages have changed in the final plan, although section titles are the same.

1. Public Involvement

1.1 Summarized Comments:

(1) Request for a broader representation of user or groups in the planning process with broader information efforts to extend beyond local meetings. (5 comments)

Response: *The Core Planning Team was designed to represent a broad range of perspective while complying with the Federal Advisory Committee Act (FACA). User and interest groups were informed of planning process through mailings and the Internet, and invited to participate throughout the process.*

(2) A cooperative management process should be used for management of rivers with State agencies. (2 comments)

Response: *The Service is continuing to discuss the management of rivers with the State of Alaska.*

(3) Federal management should have unilateral autonomy in management actions on Federal lands in the Refuge. (2 comments)

Response: *Comment noted.*

2. Future Actions Not Considered in these Plans

2.1 Specific Comments:

(1) Concern over lack of clarity on jurisdiction boundaries between State and Federal management areas, jurisdiction needs to be made apparent and easily understandable by the public.

Response: *Jurisdictional boundaries have not been legally clarified in many cases. Under the circumstances, we have addressed jurisdictional issues as clearly as possible.*

3. Comprehensive Plan Purpose and Need

3.1 Summarized Comments:

(1) Include the history of ANILCA and its purposes. (2 comments)

Response: *No change made. The history and purposes of ANILCA are widely available. We do not believe that additional discussion in the Plan is needed.*

3.2 Specific Comments:

(1) [Section] 1.4.3 State of Alaska Coordination, first full paragraph: This paragraph, which appears as standard language in other CCPs, acknowledges that DNR manages "the state's water and land interests within and adjacent to the Refuge." In light of the applicability and clear language within the State's SULD regarding navigable waters specific to the Togiak Refuge, we request this section additionally clarify that state management direction in Appendix C applies to the beds of all navigable waters in the Togiak Refuge and to the lower Goodnews River.

Response: *Section 1.4.3 as well as section 3.2 Land Status, have been revised to direct the reader to the SULD in Appendix C.*

(2) [Section] 1.7.6: This section needs to explain to the public the alternative outcomes of the National Environmental Protection Act (NEPA) process that go into developing a final plan for the refuge. As written, it assumes a Finding of No Significant Impact will be signed regardless of the outcome of the public process. For example, an Environmental Impact Statement is also a possible result.

Response: *The text has been revised to reflect that a Finding of No Significant Impact was signed on September 10, 2008.*

3.3 Editorial Comments:

(1) [Section] 1.5.1, Refuge Purposes: Based on the second sentence in the first introductory paragraph on page 1-10, the last purpose under 1.5.1 on page 1-11 is inadvertently attributed as a direct ANILCA purpose in Section 303 (especially since the previous ANILCA purpose is not numbered). We request this purpose be correctly attributed to Section 2(a) of the Wilderness Act.

Response: *The change has been made.*

(2) [Section] 1.6.3: The second sentence says that subsistence is the most "important" human use of the Refuge, which may imply a value judgment instead of a reference to relative magnitude. We suggest revising this word to "prevalent" or something similar.

Response: *The section has been reworded.*

4. Comprehensive Conservation Plan Vision Statement and Refuge Goals

4.1 Specific Comments:

(1) The Councils [Native Village of Kwinhagak IRA Council and City of Quinhagak City Council] request that the Togiak Refuge prioritize their management of the refuge for subsistence, as required under Title 8 of ANILCA. This is to improve the quality of this subsistence and wilderness experience for all the residents that live in and adjacent to the Togiak National Wildlife Refuge.

Response: *The refuge purposes include providing the opportunity for continued subsistence uses by local residents. As a purpose, this is a priority for the Refuge.*

4.2 Editorial Comments:

(1) Refuge goals (page 1-12) [of the draft]: Suggest re-wording Goal 4 as follows: "Preserve wilderness character of the Togiak NWR" (preserve is consistent with Section 4(b) of the Wilderness Act.

Response: *Change has been made. The refuge goals are described in Chapter 2 of the final plan.*

(2) Refuge Vision. You need to have a beginning clause (not sentence) describing how you plan to maintain the refuge and a beginning clause (not sentence) describing how you will provide for future public use and understandings.

Response: *Comment noted. No change made. The Vision statement is meant to be a concise statement. Additional detail is provided through the refuge goals and objectives.*

(3) [Section 2.2.1], Vision, Goals and Objectives: We request the addition of the following introductory paragraph from the Kanuti Refuge Draft Revised CCP (page 2-27).

> *Cooperation with State and Federal agencies and other organizations is a critical component to successfully meeting most of the objectives listed below. This cooperation can take a variety of forms, ranging from reviewing and revising study plans and reports to cooperating on data collection and report completion.*

In addition, we suggest consideration of additional features of the Kanuti introductory section, including the definitions of Goals, Objectives and Strategies, why some apply specifically to one Goal but may be part of many Goals, etc. It would also be helpful to note that the Vision, Goals and Objectives are the same for both the CCP and the PUMP.

Response: *This text has been added.*

5. Objectives

5.1 Specific Comments:

(1) We [The Wilderness Society] recognize and commend the good work that has gone into identifying the purposes, values and goals of the refuges outlined by the U.S. Fish and Wildlife Service (the Service) in the Draft CCP. In general, we support the Service's listed goals, however we believe the Service has not sufficiently incorporated climate change goals into this draft CCP revision. We feel strongly that research and management goals related to climate change need to be incorporated into the Togiak revised CCP.

Response: *Comment noted. Additional information on climate change has been added throughout the document. Refuge goals, objectives and existing Service policies already affect management issues associated with climate change. See the following for more specific responses.*

(2) [Provide] training on climate change and variability for all wildlife managers;

Response: *No change. This is beyond the scope of the Plan. A variety of climate change related training is available for managers and biologists.*

(3) [Encourage] wildlife managers to consider climate change and variability whenever long-range wildlife management plans and strategies are developed;

Response: *No change. The Service does encourage the consideration of climate change and other cumulative impacts during the development of management plans and strategies.*

(4) [Implement] monitoring programs for impacts to wildlife and wildlife habitats expected to be most sensitive to climate change;

Response: *No change. We feel that this is adequately covered in objectives 1.4 and 1.6.*

(5) [Establish] and [maintain] migration corridors that allow species movement and vegetation shifts among islands of suitable habitat;

Response: *No change. See previous response. This is also covered by objective 3.5.*

(6) [Increase] buffer zones around refuges that will increase options for species under various climate change scenarios;

Response: *No change. ANILCA section 103(b) allows only limited boundary adjustments to established refuges. The Service has no authority to establish such buffer zones.*

(7) [Remove] impediments to inland migration of coastal and wetland communities;

Response: *No change. This is beyond the scope of this plan.*

(8) [Make] the reduction and elimination of human-induced synergistic effects a top priority for refuge management.

Response: *No change. This is beyond the scope of this plan.*

(9) [An] additional objective should be included where the Service incorporates studying impacts of climate change on subsistence resources and practices.

Response: *No change. The monitoring of subsistence resources is covered in objectives 1.1, 1.4, 1.5, 1.6, 1.9, 2.3, 2.4, 2.5, and 3.2.*

(10) The Service should also incorporate studying impacts of climate change on water resources. […] Management implications of these landscape-level changes identified in both of these studies should be considered in Togiak's CCP revision.

Response: *No change. This is covered in objective 1.7.*

(11) The Service also should incorporate studying the impacts of climate change on erosion of archeological values, caused by rising sea levels, more violent storms, etc..

Response: *Objective 3.3 dealing with cultural and historic resources of the Refuge has been rewritten and expanded to more clearly describe the intent of the Service in managing those resources in light of a wide variety of concerns.*

(12) All of the purposes of the refuges, including all of the species listed and involved with this CCP will be affected by climate change, and thus goals, objectives and other planning related to climate change need to be fully incorporated into the revised CCP.

Response: *No change. See previous responses.*

(13) It is very important to remember also that intact, healthy, functioning ecosystems are crucial to climate stability-and wilderness protection and restoration will be vital to the necessary human response to anthropogenic climate change.

Response: *Comment noted.*

(14) Secure preservation programs for Bristol Bay and Kuskokwin Bay with an actual rescue plan for the Pacific Walrus and all species of Pacific Salmon.

Response: *No change. Refuge staff works closely with the Alaska Department of Fish and Game to assist in the management of salmon and other fish species which use the refuge. Staff also works closely with the Service's Marine Mammals Management program to manage Pacific walrus. These are covered under existing objectives.*

(15) [Educate] the public about climate change and its effects on wildlife;

Response: *No change. See strategies listed under objective 2.8.*

5.2 Editorial Comments:

(1) [Section 2.1.3], Objective 3.2.4: We support this objective, but request the following technical revision: "Monitor and evaluate the effects of harvest of fish and wildlife within the refuge." This revision avoids the implication that the Service has primary jurisdiction over fish and wildlife resources.

Response: *Change has been made.*

(2) [Section 2.1.4], Objective 4.2: This objective, while well-meaning, implies that merely promoting these techniques will guarantee an unimpaired wilderness experience. We recommend more realistic wording, such as "… and to help future visitors enjoy an unimpaired wilderness setting."

Response: *No change. We feel that the objective is appropriately worded.*

(3) Objective 2.1: The relationship between the Public Use Monitoring Plan, the Public Use Management Plan and the Comprehensive Conservation Plan are unclear, both here and in Chapter 6. We request more information about these relationships, especially if the monitoring plan is enhanced as we recommend. We also request a reference to working with state agencies and others as appropriate. We also suggest renaming the monitoring plan to reflect that it will do more than "monitor," and to make the acronym different from PUMP.

Response: *No change. Additional details about this plan will be an outgrowth of the ongoing Public Use Management Plan (PUMP) process. We believe that the objective, as written, provides adequate guidance within the Comprehensive Conservation Plan.*

6. Management Guidelines

6.1 Summarized Comments:

(1) Two respondents wanted management alternatives to include consideration of geothermal resource development for energy use. (2 comments)

Response: *Geothermal leasing is not allowed on national wildlife refuges under Section 1014(c) of the Geothermal Steam Act (30 U.S.C. 1014).*

(2) One commenter made multiple comments regarding the need for restrictions on sport fishing equipment and baiting techniques, specifically requesting the elimination of "chumming" and bait fishing across the Refuge, or in the wilderness areas at minimum. Other comments supported catch and release policies for sport fishing. (2 comments)

Response: *Sport fishing is managed by the State of Alaska. The State has adopted special regulations governing sport fishing on many of the waters of Southwest Alaska.*

(3) Commenters wanted an increase in data collection and monitoring of fisheries escapement and other fishing related data. The need to update studies used and to standardize monitoring techniques and project assessment was also supported.

Response: *We agree such data collection and monitoring is important. The Refuge and the Alaska Department of Fish and Game monitor fisheries as funding and staffing permit, often collaboratively. Chapter 4 describes plan monitoring.*

(4) Two commenters wanted bans on hunting and fishing, while an additional comment was made regarding sports angling disturbance of spawning salmon.

Response: *One of the Refuge purposes is to provide continued opportunity for subsistence uses by local residents, including subsistence use of wildlife and fish. ANILCA Section 302(1) and (2) provide that these activities will be allowed as long as they are consistent with conserving fish and wildlife populations and habitats in their natural diversity and with meeting international treaty obligations. The National Wildlife Refuge System Administration Act identified hunting*

and fishing as two of the six priority public uses to be facilitated on refuges when they are determined to be compatible within the Refuge. Hunting and fishing have been determined compatible with refuge purposes. There is no data to suggest that current levels of fishing are disturbing spawning salmon.

(5) Two comments made a request to stop operation of a weir currently in use on the Kanektok (one requested stopping operations annually by August 31), or to relocate it outside of designated wilderness.

Response: *This weir is operated by the Alaska Department of Fish and Game and provides important information for managing the commercial, sport, and subsistence fisheries on the river and in the district. The intent is to continue its operation. Beginning in 2008, this weir is removed by August 31 each year.*

In most cases, a weir site as low as possible on the river is the most desirable. A site outside of the Togiak Wilderness area was sought when this weir was originally installed, but no sites were found to be suitable.

(6) Preservation/conservation groups voiced concern about fisheries impacts on health and habitat of natural populations, and questioned the legality of introducing fishery based elements (hatchery fish, etc.) into natural fish population areas. (An example of the point of view of the conservation comments will be provided in specific comments section)

Response: As explained in Section 2.2.4.12 of the Draft Plan, proposals for fishery enhancement projects will be subject to the provisions of the National Environmental Policy Act and would require a compatibility determination. The concerns raised above would be addressed in the site-specific analysis conducted for a specific proposal. Currently, there are no plans for fishery enhancement within the refuge.

6.2 Specific Comments:

(1) I especially support the idea of the step down plans for fisheries and public use monitoring. Clearly from the concerns I've expressed for the data presented on angling effort, a more clear cut rigorous method for assessing effort and use on the refuge is need*ed.*

Response: *Comment noted.*

(2) Make sure subsistence stays the number one priority; don't let sport fishing take over.

Response: *Subsistence and sport fishing are managed under Federal and state regulations. The Federal Subsistence Management Program recognizes the subsistence priority in times of shortage. See also response to comment 4.1(1).*

(3) Don't allow use of helicopters for public access, or for agency sponsored VIP trips. Don't allow fly in day trips to the wilderness. Discourage motorboat use and provide a preference for guides who don't use them.

Response: *Helicopters are not allowed for general public access. Administrative use of helicopters within designated Wilderness requires a minimum tool analysis. ANILCA specifically allows access by aircraft and motorboats. Current and projected uses of airplanes and motorboats within the Refuge have been compatible, and there is no need to regulate their use at this time.*

(4) I find it a bit confusing that under ACCESS P 2-22 and 2-23 in table 2-1[in the draft plan] All Weather Roads are listed as "Not Allowed"; I am assuming this means that all weather roads strictly for public, private or agency access to portions of the refuge are not allowed. If so, that is acceptable to me. However I do believe that roads to allow exit or crossing of the refuge from village to village may be needed in the future.

Response: *Refer to Section 2.4.14Public Access and Transportation Management, for a description of access opportunities and the process for authorizing transportation and utility corridors across the refuge.*

(5) Goal 3.2, strategies for fish and wildlife: We request addition of a strategy to acquire baseline population data on rainbow trout in Kuskokwim Bay drainages, focusing on these three rivers in order of importance based on estimated levels of use: Kanektok, Goodnews and Arolik rivers. We note that the Refuge does include some general strategies to study fish, but a comprehensive study concerning rainbow trout, including radio telemetry and/or mark recapture studies, in addition to genetics-based studies, would provide particularly vital information for monitoring fish populations. Rainbow trout are the most sought after recreational fish in the area, as well as an important fish for subsistence use, so the Alaska Department of Fish and Game (ADF&G) would welcome cooperation with the Refuge on such a study.

Response: *Baseline population data on rainbow trout are important for all refuge rivers, including those in the Kuskokwim Bay drainage. Specific projects such as the one suggested are identified and prioritized through a biological review and an inventory and monitoring plan. The strategies listed with objective 3.2 provide the opportunity to conduct the suggested cooperative project.*

(6) [In section 2.2.4.11, page 2-42 of the draft plan] all habitat manipulation and destruction by fire and chemical methods needs to be stopped. This purposeful destruction of the environment is anti environmental. Introducing poisonous chemicals into this environment is as stupid as it gets. I am opposed to logging in this area - short term benefit to enrich timber barons, harms the people. Completely ban all logging.

[In section 2.2.4.18, page 2-62 of the draft plan] I oppose all logging in this [Togiak] area.

Response: *Proposals for habitat manipulation will be subject to the provisions of the National Environmental Policy Act. The concerns raised above would be addressed in site-specific analysis conducted for a specific proposal. Currently there are no plans for habitat manipulation on the Refuge. Forest resources on the Refuge are very limited and not likely to be commercially viable. See sections 2.4.11 and 2.4.17 of the final plan.*

(7) Table 2-1 in the DEIS clarifies that fishery enhancement on the refuges, including in the minimal and wilderness management categories, will be allowed. This enhancement may include supplementing numbers of harvestable fish to a level beyond what could naturally be produced and introducing fish species within a drainage where they have not existed historically. Allowing such fishery enhancement activities violates Service policies and, in designated wilderness, arguably violates the Wilderness Act, which requires that wilderness areas be managed so as to maintain their natural conditions. We have strong concerns about the introduction of disease from hatchery fish which could ultimately lead to the weakening of naturally occurring fish populations and species. Introduction of hatchery fish also jeopardizes the gene pools of wild fish stocks that

are uniquely adapted to the specific conditions and habitat of their resident and spawning waters. We recommend the Service not allow these intrusive measures in designated wilderness, and caution the Service overall regarding fishery enhancement activities. There is much scientific literature available today that clarifies the risks to native species and populations from hatchery fish. We do not believe the Service should jeopardize native fish populations through the introduction of hatchery-raised fish or create unnatural conditions regarding fish populations in designated wilderness.

Response: *As explained in Section 2.4.12 of the plan (section 2.2.4.12), proposals for fishery enhancement projects will be subject to the provisions of the National Environmental Policy act and would require a compatibility determination. The concerns raised would be addressed in the site-specific analysis conducted for a specific proposal. Currently, there is no plan for fishery enhancement within the refuge.*

(8) Table 2-2, Bicycles: The inclusion of this row is not apparent. This mode of access is not specifically addressed in either Alternative.

Response: *The 1987 Plan does not mention the use of bicycles. The proposed Plan (see Table 2-1) indicates that bicycles are allowed.*

(9) Unless otherwise noted, we request all variations revert to the Regional Management Policies and Guidelines or provide justification for the refuge-specific alternate approach.

Response: *We have revised the text to be consistent with other current comprehensive conservation plans except those policies that are specific to Togiak Refuge, such as the use of helicopters for general public access, which is not allowed on Togiak Refuge.*

(10) The Introduction in the regional management guidelines is essential to understand the guidance and direction provided in the narrative, and explains how appropriate justification may lead to refuge-specific changes of regional policy. The introductions provided for the Management Categories, the Management Categories Table and the Management Policies and Guidelines are all supplemental to this main introduction. We request that the full Introduction be included as a critical component to this section.

Response: *We have added an introduction.*

(11) In the final plan, please reinstate the Intensive and Moderate management discussions, even though they are not intended to apply to the Togiak Refuge at this time. These sections are necessary for understanding the narrative and the range of possible management intent for refuges in Alaska.

Response: *These sections have been included in the final Plan.*

(12) Page 2-26, Helicopter Air Taxis: The direction to not allow helicopter air-taxi landings in Minimal management, with exceptions, is not supported in the narrative section. It is clear that 43 CFR 36.11(f)(4) would make it possible to authorize helicopter landings on a case-by-case basis, as appropriate. The relevant exceptions in the regional management guidelines for commercial use in Wilderness, per the Wilderness Act, Section 4(d)(I), have been removed from section 2.2.4.14 "Helicopters" and need to be reinserted to validate direction in the Wilderness management column.

Response: *As previously stated, use of helicopters for recreational purposes will not be allowed on Togiak Refuge. This policy was adopted in 1987 in the original Comprehensive Conservation Plan. During scoping, there were no recommendations to change the policy. The policy is fully consistent with management of the adjacent Wood-Tikchik State Park.*

(13) [Section 2.2.4.14 of the draft plan] Helicopters, second paragraph:

Comprehensive Conservation Plan (CCP): "Helicopter landings for recreational purposes are not allowed on Togiak Refuge."

Regional Management Guidelines (RMG): "Helicopter landings by commercial operators and for general public access are generally not allowed in designated Wilderness. Where such use was established prior to Wilderness designation, it may be allowed to continue."

We understand that the previous Togiak Refuge CCP did not allow helicopters for recreational purposes, but this does not supersede legislation and regulation. The information included in the regional management guidelines appropriately addresses exceptions in legislation, and the first paragraph of this section outlines the regulations that allow this use to be considered on a case-by-case basis. Under these circumstances, the CCP language either needs to be removed or refuge-specific justification provided.

See also Table comment on "Helicopter Air Taxis."

Response: *Use of helicopters for recreational purposes will not be allowed on Togiak Refuge. This policy was adopted in 1987 in the original Comprehensive Conservation Plan. During scoping, there were no recommendations to change the policy. The policy is fully consistent with management of the adjacent Wood-Tikchik State Park. Public comments consistently have favored the policy adopted in the original plan such as the comments received.*

(14) [Section 2.2.4.16 of the draft plan, 2.4.15 in the final plan], Public Use Facilities, first paragraph, third sentence:

Comprehensive Conservation Plan (CCP): "Public use facilities may include trails, boat-launch sites, airstrips…"

Regional Management Guidelines (RMG): "Public use facilities may include roads, trails, boat-launch sites, airstrips, campgrounds…"

Excluding both "roads" and "campgrounds" has substantive implications for the Table and other sections within the narrative. These two structures can readily be defined as public use facilities, and direction in the regional management guidelines was written assuming their inclusion. Reinserting these facilities as examples does not mean that the Refuge intends to provide or authorize them.

Response: *We have reinserted these references for comparative purposes among management categories even though they are not applicable to the Togiak Refuge at this time.*

6.3 Editorial Comments:

(1) [Section 2.2.2.1 of the draft plan, 2.2.3 of the final plan] Minimal Management (page 2-13) [of draft plan]: We believe that "management actions that change existing habitats should be

designed and implemented so that natural processes are maintained" rather than just "natural appearance" -- this would be more consistent with the vision statement.

Response: *The Minimal Management category description is used for all refuges, so it was not changed to use the language in the Togiak vision statement.*

(2) Wilderness (page 2-14) [of draft plan]: Suggest specifically mentioning the requirement to preserve wilderness character (Section 4(b) of the Wilderness Act). This is one of the most fundamental principles of the Wilderness Act. We also recommend that this section clearly state that commercial activity in Wilderness is prohibited (Section 4 (c) of the Wilderness Act) except for commercial services "…extent necessary for activities which are proper for realizing the recreational or other purposes…" (Section 4 (d)(5) of the Wilderness Act.

Response: *See section 2.4..19 on Management of Designated Wilderness, which states, in part, "Preserving the wilderness character of the area is the management focus for designated wilderness."*

(3) In the following examples, we use the shorthand "CCP" to refer to variations made to the Regional Management Policies and Guidelines "RMG." We request the CCP revert to the original Regional Management Policies and Guidelines unless there is a refuge-specific justification for the modified approach.

Page 2-14, 2.2.2.2 [of the draft plan] Wilderness, fourth paragraph, first sentence:

Comprehensive Conservation Plan (CCP): "Permanent structures are generally prohibited; excepted are …"

Regional Management Guidelines (RMG): "Permanent structures are generally prohibited; examples of exceptions are…"

Since not all of the available exceptions are listed in this paragraph, it is essential that this opening sentence be appropriately comprehensive.

Response: *The change has been made.*

(4) [Section 2.2.3.2 of the draft plan] [definition of] "May be allowed":

CCP: "Activity, use, or facility may be allowed subject to site-specific NEPA analysis, a specific compatibility determination, and compliance with all applicable laws …"

RMG: "Activity, use or facility may be allowed subject to site-specific NEPA analysis, an appropriate use finding (when required), a specific refuge compatibility determination (when required), and compliance with all applicable laws…"

Although the "appropriate use finding" may be inferred by including the "compatibility determination" requirement, is there any consequence to the removal of the "when required" language?

Response: *The change has been made.*

(5) [Section 2.2.2.1of the draft plan]: the exception for cabins should be defined and references to appropriate provisions of ANILCA etc should be provided so as to not create the impression that cabins will be allowed without such conditions.

Response: *This section is a summary description. Additional details on cabins are provided in sections 2.4.15 (cabin section) and 2.4.19 (wilderness section) and table 2-1 (management categories table). This section was not changed.*

(6) Management Policies and Guidelines (page 2-18[of draft plan]): Since half of the Togiak Refuge is designated Wilderness, we suggest that the Wilderness Act of 1964 be added to the list of federal laws that govern refuge management.

Response: *The Wilderness Act is prominently mentioned in several other sections of the plan. No change was made.*

(7) [Section] 2.2.4, Management Policies, third sentence:
Comprehensive Conservation Plan (CCP): "sport hunting"

Regional Management Guidelines (RMG): "hunting"

This term [sport hunting] is no longer used in ADF&G regulations and has developed a negative connotation over time, especially in rural Alaska. (The term sport fishing, however, is not problematic.)

Response: *The change has been made.*

(8) [Section] Small Hydroelectric Power Development: The narrative notes that this facility "may be authorized on a case-by-case basis" (2.2.4.18 "Other Commercial Uses"). The regional management guidelines includes the caveat that this applies to "Intensive and Moderate management areas" only. The resolution must therefore be either changing direction in the Table to "May be authorized' for Minimal management or adding the caveat from the regional guidelines to section 2.2.4.18.

Response: *The inconsistency has been corrected to indicate that these projects would not be authorized in Minimal Management.*

(9) Land Exchanges and Acquisitions (page 2-29) [of draft plan]: This section should clarify that land exchanges or acquisitions must also be "consistent with other applicable law in order to carry out the purposes of this Act" (Section 1302 (a) of ANILCA). That obviously includes ANILCA purposes defined in Section 101.

Response: *This section summarizes the requirements of ANILCA and refers the reader to the appropriate sections of the Code of Federal Regulations. No changes were made in the document, as the language is the same as in other refuge comprehensive conservation plans.*

(10) [Section] 2.2.4.9 "Other Constituencies," third sentence:

CCP: " local residents and special interest groups …"

RMG: " local residents and other stakeholders…"

This sentence was carefully worded in the regional management guidelines. Not all non local resident "stakeholders" are members of special interest groups.

Response: *The change has been made.*

(11) [Section] 2.2.4.10 "Water Resources (Hydrology) Management", second bullet:

CCP: "Estimate flow for un-gauged refuge streams"

RMG: "Estimate flow for un-gauged streams within the refuge"

This sentence was specifically worded in the regional management guidelines to avoid any implication of ownership, and a refuge-specific change is not justified.

Response: *The change has been made.*

(12) [Section] 2.2.4.12 Fish and Wildlife Population Management, first paragraph:

CCP: "The Refuge will be managed consistent with [601 FW 3]… "

RMG: "The Refuge will be managed in accordance with the purposes of the refuge and consistent with [601 FW 3;…"

A refuge-specific change is not warranted. ANILCA and Service policy may conflict at times, and it is vital for the reader to understand ANILCA, as a statute, typically prevails.

Response: *The change has been made.*

(13) Compliance with Animal Welfare Act P[age] 2-46 [of the draft plan]

Half way through the paragraph, I read: ". . . . purview of the Animal Welfare Ace . . . ." I assume this is a typo that should read Act.

Response: *The change has been made.*

(14) [Section] 2.2.4.12: The entire section on "Disease Prevention and Control" is missing. This omission also has Table implications. Please reinstate this section.

Response: *The change has been made.*

(15) [Section] 2.2.4.14 Access to In holdings (page 2-53) [of draft plan]: This section should be re-written to include the important provision of Section 1110 (b) that access rights to in holdings "…shall be subject to reasonable regulations issued by the Secretary to protect the natural and other values of such lands."

Response: This section summarizes the requirements of ANILCA and refers the reader to the appropriate sections of the Code of Federal Regulations. No changes were made in the document as the language is the same as in other refuge comprehensive conservation plans.

(16) Recreation and Other Public Use (page 2-56) [of draft plan]: Suggest changing "Refuge Administration Act" to Refuge Improvement Act.

Response: *The Refuge Improvement Act is an amendment to the Refuge Administration Act, so the correct citation is the Refuge Administration Act. No change was made to the plan.*

(17) [Section] 2.2.4.16, Public Use Facilities, first paragraph, first sentence:

CCP: "Facilities may be provided to support certain recreation uses."

RMG: "Facilities may be provided to support certain recreation and other public uses."

Recreational use is not the only form of public use in Alaska refuges, and many facilities recognized as public use facilities are used for multiple purposes. The regional management guidelines appropriately support this distinction.

Response: *The change has been made.*

(18) Outreach (page 2-59) [of draft plan]: Suggest adding "other conservation organizations" – while Friends of Alaska National Wildlife Refuges is a good organization, they are certainly not the only one in the conservation community that should be included.

Response: This section calls for taking advantage of partnership opportunities to provide outreach. The organizations specifically named, including the Friends of Alaska National Wildlife Refuges, are organizations with which we have formal agreements. The list is not meant to be all-inclusive.

(19) Commercial –Use Management (page 2-63) [of the draft plan] (Other Commercial Uses): This section is too general. It should clarify that low-head or small run-of-the-river hydropower facilities are not allowed in designated Wilderness and can not be authorized on a "case-by-case" basis. See Table 2.1 (page 2-28).

Response: Table 2-1 makes this clear.

(20) [Section] 2.2.4.20 Management of Designated Wilderness, bullet list: The following ANILCA provisions, as stated in the regional management guidelines, are missing from the CCP:

- Construction and use of cabins for traditional and customary uses (Section 1303)
- Use of facilities associated with the exercise of valid commercial fishing rights (Section 304(d))
- Construction and maintenance of navigation aids and other facilities (Section 1310)
- Continuation of existing and construction of new, public use cabins (Sections 1315(c) and (d))

Response: These statements have been added.

(21) Additionally, the regional management guidelines divide this bulleted list into Section examples which affect public uses and administrative uses. This importantly affects the final bullet on page 2-65 [of the draft plan], which is an access exception for administrative assessments.

Response: The change has been made.

(22) [Section] Table 2-2, Cleared Landing Strips and Areas: The summary is inaccurate when compared with Table 2-1. We suggest the direction for Wilderness in the middle column be changed to "New Strips Not Allowed' if this table is retained in the final plan.

Response: *We agree with the comment. This table is not in the final plan.*

7. Alternatives

7.1 Specific Comments:

(1) Alternative A. I have no objection to the refuge being managed in a no change manner.

Response: *Comment noted.*

(2) I am opposed to any use of helicopters for visitor access. I am opposed to the authorization of fly-in "day trips" to the Togiak Wilderness. They are currently allowed for some commercial fishing guides. I support a priority for guides who do not use motorboats for access.

Response: *Comment noted.*

8. Wilderness and Wild and Scenic River Review

8.1 Summarized Comments:

(1) Many comments wanted the Refuge to complete a thorough review of Togiak rivers in and out of the wilderness for consideration of Wild and Scenic River (WSR) status and include those WSR evaluations in the Plan.

(2) Comments requested the Refuge to examine existing designations and increase acreage of wilderness within the refuge jurisdiction.

(3) Several conservation groups felt that by not completing wilderness reviews and recommendations, the service is in violation of Federal law and regulations (ANILCA, NEPA, and the Wilderness Act were examples cited). The Plan needs WSR and Wilderness reviews.

Response (1), (2) and (3): *After a thorough review of ANILCA Section 304(g) planning requirements and the Refuge System planning policy, we determined that, until our Wilderness review policy is complete, we can best meet the ANILCA requirements by identifying the special values of the Refuge and providing clearer direction for how the Refuge will be administered to protect these values without conducting a Wilderness review. See section 1.8.1 of the draft plan. Wilderness values are described in Chapter 3. Note: The Service Wilderness policy released on November 17, 2008, states (610 FW 5.17), "We have completed wilderness reviews for refuges in Alaska in accordance with section 1317 of ANLICA. Additional wilderness reviews as described in the refuge planning policy (602 FW 1 and 3) are not required for refuges in Alaska. During preparation of comprehensive conservation plans for refuges in Alaska, we follow the provisions of section 304(g) of ANLICA, which requires us to identify and describe the special values of the refuge, including wilderness values. Subsequently, the comprehensive conservation plan must designate areas within the refuge according to its respective resources and values, and specify the programs for maintaining those values. However, ANILCA does not require that we incorporate formal recommendations for wilderness designation in comprehensive conservation plans and comprehensive conservation plan revisions."*

Similarly, we determined that we would best meet ANILCA requirements by identifying the special values of the Refuge without conducting a Wild and Scenic Rivers review. Section 1.8.1 of the draft plan provides the Service's rationale for not conducting Wild and Scenic River reviews. River values are described in Chapter 3.

(4) Two commenters wanted to restrict facilities/activities that they believe are contrary to the ideals/perceptions of wilderness on or in wilderness areas.

Response: *The policies and guidelines section of the plan, especially section 2.2.19 (Management of Designated Wilderness) and Table 2-1describe the facilities and activities that may be allowed within Wilderness on Togiak Refuge. Note that in many cases, authorization is not assured. Prior to authorization, a specific facility or activity must undergo additional analysis to assess and protect wilderness values.*

(5) Many comments asked the service to identify existing areas of wilderness character and determine previous levels and quality of wilderness character to 1980's levels of wilderness character. Develop a management plan that restores impaired areas and protects the character of the wilderness; implement a wilderness stewardship plan.

Response: *A wilderness stewardship plan is scheduled to be completed within three years of adoption of this Comprehensive Conservation Plan.*

8.2 Specific Comments:

(1) The second claim—that current and proposed minimal management direction can provide adequate protection for the wilderness and river-related values—is questionable. In contrast to wilderness management, minimal management allows uses such as mineral exploration, various aquaculture developments, commercial logging and firewood "harvesting" (sic), transportation and utility systems etc at the discretion of refuge managers who in turn are subject to direction from elected officials and their political appointees and allies in the Department. If allowed, these uses could disqualify eliminate a refuge area or river system from consideration for wilderness or wild/scenic river designation.

(2) Thus minimal management direction for the current 334,000 acre wilderness recommendation, as called for under the RCCP, does not provide sufficient protection for the area pending potential congressional consideration of the Service's and others' wilderness proposals. We recommend wilderness management direction for the 334,000 acres.

Response: *As explained in the Draft Plan, the Service believes that minimal management provides adequate protection for wilderness values. None of the activities listed are currently proposed within Togiak Refuge and if they were, all would be subject to additional analysis under the National Environmental Policy Act. One of the resources that would be considered in this analysis would be the wilderness character of the area.*

(3) Please manage to favor non-motorized travelers, so the silence remains. I predict in the near future, that silence will be worth more than the fish, people might catch. It is a busy, noisy world out there, and humans' need for real peace and quiet in the wilderness will only increase. No helicopters. No speed boats.

Response: *Use of helicopters for recreational access is not allowed under the Plan. Administrative use, if any, within designated Wilderness is subject to a minimum tool analysis which would include considering the affects on wilderness resources and visitors. Those forms of motorized access allowed by ANILCA have been evaluated in this Plan and found appropriate under Service policy and compatible with the purposes for which Togiak Refuge was established.*

(4) Most of the data presented comes from a comparison of angler survey responses (Appendix E: Togiak Refuge Angler Survey Results 1995 and 2001). In a large majority of the criteria evaluated, user tolerance increased from 1995 to 2001, and in many of these cases the differences were statistically significant. While the report in Appendix E offers few explanations, the wilderness recreation literature is replete with examples similar to Togiak and suggest that as wilderness character declines, some users are displaced by others who have greater tolerance for degradation. This is an important relationship which should be better explained in the PUMP as it is critical that the problem be properly diagnosed. We suggest that the plans be amended to include a discussion of appropriate wilderness recreation literature and displacement as an indicator of wilderness character decline.

Response: *Staff experts are familiar with the literature on displacement and recognize that it is very difficult to document. We do not believe that providing a summary of the literature in the plan would be useful.*

(5) Neither the CCP nor the PUMP provides data on recreational use levels from 1980 to 1995. Without such data it is difficult to adequately assess the magnitude of decline in wilderness character that has occurred due to increases in recreational use. If earlier data exists, we request that it be presented in the final documents.

Response: *Earlier data is not readily comparable to the data presented in the Draft Comprehensive Conservation Plan and Public Use Management Plan. Earlier data is available for review at the refuge office in Dillingham.*

9. Affected Environment

9.1 Summarized Comments:

(1) Several comments from individual respondents and state agencies indicated skepticism regarding fisheries studies used, their methodology, and the studies reliability. Increase of interagency review of refuge research was suggested in the individual commentary.

Response: *We stand by our fisheries studies and are confident that their findings are used appropriately.*

(2) Comments were also made regarding the difficulty of complying with Alaska Department of Environmental Conservation (DEC) regulations over human waste disposal sites in some stretches of the Refuge.

Response: *The Service is aware of the difficulties in complying with DEC regulations, particularly where uplands are privately owned. Potential responses to these challenges are addressed in the draft revised Public Use Management Plan alternatives.*

9.2 Specific Comments:

(1) Page 3-1[of draft CCP],3.2, Land Status: There is no recognition of state-owned waterways within the Refuge in the Land Status section, not even in a generic sense. Without this information, there is little, if any, indication for the public about to what lands and waters the state Special Use Land Designation applies.

Response: The status of specific submerged lands, shore lands, and tidelands have not been adjudicated, therefore it would be inappropriate for the Service to refer to them as "state-owned." The text has been revised to direct the reader to the State of Alaska Special Use Land Designation and its possible application. Please also see "Fish and Wildlife Service jurisdiction over waters within Togiak Refuge" Section 2.4.9.

(2) Page 3-17 [Section 3.3.6.1 of the draft CCP], first and third full paragraphs on page: It is our understanding from the issues identified in the revised PUMP (pages 1-9, 1-11 through 1-12 [of the draft PUMP]) that the potential for visual impacts and trespass are more fundamental planning issues than contamination of water quality. Please clarify these matters in the final plan to maintain consistency and proper identification of the prevailing refuge issues.

Response: *This section has been rewritten.*

(3) Section 3.4.2.3, Caribou: This discussion of the Mulchatna caribou herd in the second full paragraph does not reflect the herd's current status and the more restrictive regulations that have been implemented for conservation purposes. This also applies to the first paragraph on page 3-32.

Response: *This discussion of the Mulchatna caribou herd reflects the most recent population information available from the Alaska Department of Fish and Game. Limited information is provided on regulation changes implemented in response to changes in the population, and it is not considered necessary to provide that detail in this document.*

(4) [Section] 3.5.3.2, Economy: The information in this section is dated, particularly paragraph three. We recommend utilizing ADF&G's 2006 Bristol Bay Area Annual Management Report. While salmon returns to some Bristol Bay management areas in the late 1990s did display declines from the near term average, returns since that time have rebounded and display the normal variation expected in wild salmon stocks. The value of the catch has also increased since the late 1990s, with the 2006 value estimated at $93 million, though prices remain below the historic highs seen in the 1980s.

Response: *This section has been updated.*

(5) Monitor the river for contaminates.

Response: *Refuge staff will continue to monitor water bodies within the Refuge. See Ecosystem, Habitat and Fish and Wildlife Management, section 2.1.1, Objective 1.7 and Ecosystem and Landscape Management, section 2.2.10 (Hydrology Management).*

(6) Off-Road Vehicles: We appreciate the detailed discussion in section 3.5.4 (pages 3-46 through 3-50) of access methods used by refuge area communities from 1940 to 1986 and since 1986. Based on the cited published sources, the discussion concludes that while off-road vehicles (ORVs) were used extensively by local rural residents, they were only infrequently used to access refuge uplands for subsistence purposes since 1980 (i.e. ORV use on the Nushagak Peninsula for trapping during periods of low snow cover). Instead, skiffs and snowmachines were the primary mode of access to harvest fish, wildlife, marine mammals, and other resources. While ORVs are not referenced in the "*Contemporary Refuge Access*" section on page 3-49, the refuge is still considered open to ORV use for subsistence purposes per ANILCA Section 811. If the Service determines that restrictions on subsistence use of ORVs are necessary to protect refuge

resources, we request clarification in the final plan that refuge-specific regulations will be promulgated based on a larger-scope study for all pre-ANILCA activities and access.

Response: *There are no plans to restrict the use of ORVs for subsistence activities and this is not an action in the Comprehensive Plan. Therefore, a discussion of the topic is not included in the implementation chapter.*

9.3 Editorial Comments:

(1) [Figure 3-1], Generalized Land Status Map: Consistent with other refuge CCPs for refuges created by ANILCA, we request the addition of a generic footnote noting that the State owns the beds of navigable water bodies. We appreciate the inclusion of other state and federal conservation units, including Wood-Tikchik State Park and Walrus Islands State Game Sanctuary. To complete the map we request that it also include Cape Newenham State Game Refuge.

Response: *Cape Newenham State Game Refuge has been added to the maps. We have not added a footnote about the beds of navigable water bodies. We believe that such a statement would not correctly express the complex nature of the land status on the Refuge and would be confusing to the public.*

(2) [Section] 3.5.6.1, Human Waste Contamination: While the possibility of diseases being spread by contaminated water is possible, including references to cholera and typhoid fever seems to be an unnecessary or exaggerated threat in the context presented, especially in light of the page 3-7 conclusion to 3.3.6 and the last sentence on page 3-8.

Response: *This section has been revised.*

(3) [Section] 3.3.6.1, Human Waste Contamination, last sentence: Please clarify in the final plan that human waste is identified as a significant planning issue in the PUMP and not in chapters 1 and 2 of the CCP and that it addresses "aesthetics" and "trespass" issues, not contamination (see PUMP, Chapter 1, Issue 3).

Response: *This section has been revised.*

(4) [Section] 3.4.2.1, Fish, second full paragraph, first sentence: This sentence is inaccurate. Air taxi services are required to submit trip reports but individual, unguided groups are not.

Response : *This section has been revised.*

(5) Page 3-19 (now page 3-18), 3.4.2.1, Fish, first paragraph: Subsistence salmon use permits are required by ADF&G in all Bristol Bay drainages, including the Togiak drainage. No subsistence use permits are required in the Kuskokwim drainage, but individual household surveys are conducted by ADF&G in all Kuskokwim drainage villages, including those near the Kanektok and Goodnews rivers, to obtain harvest and other use information.

Response: *A subsistence permit is required for all Bristol Bay Management Area drainages, including the Togiak Bay area. Additionally, in the Kuskokwim drainage where subsistence use permits are not required, ADF&G annually conducts door to door surveys in all villages to collect subsistence salmon use information.*

(6) Page 3-19, 3.4.2.1, Fish, data collection and reliability comments. The first three full paragraphs on this page imply that this public use information collected by the Refuge is the most accurate and reliable available. Other available data sets may provide reliable information depending on the circumstances and needs of the request. In particular, the Statewide Harvest Survey provides reliable and consistent information over a long period of time. The recently introduced Freshwater Guide Logbooks have proven to be highly reliable in their reporting of public uses, including ground proofing of data for reliability. We request the final plan recognize and use, as appropriate, such supplemental data.

Response: *Comment noted. We feel that the sources used provide the most applicable data for this plan.*

(7) Page 3-20 (now pages 3-18 to 3-19), 3.4.2.1, Salmon: More recent data concerning salmon stocks in the Kuskokwim and Bristol Bay areas are available:

> Pawluk, J. A. and P. W. Jones. 2007. Kanektok River salmon monitoring and assessment, 2006. Alaska Department of Fish and Game, Regional Information Report No. 3A07-07, Anchorage.
>
> Jones, P. W. and J. C. Linderman Jr. 2006. Kanektok River salmon monitoring and assessment, 2005. Alaska Department of Fish and Game, Fishery Data Series No. 06-48, Anchorage.
>
> Pawluk, J. A. and P. W. Jones. 2007. Goodnews River salmon monitoring and assessment, 2006. Alaska Department of Fish and Game, Fishery Data Series No. 07-51, Anchorage.

Response: *Comment noted. We did not revise the text since current salmon stocks are not key to the decisions made in this plan.*

(8) [Section] 3.4.2.1, Kanektok and Arolik River Fisheries, first full paragraph: It appears this paragraph may be inappropriately mixing the terms "harvest" and "catch." "Catch" includes all fish released and retained; "harvest" refers to only the portion of the catch retained. Please clarify.

Response: *The paragraph has been changed to clarify the definition of the terms "catch" and "harvest" for the reader and to better attribute the citation.*

(9) Section 3.5.5, Subsistence. This overview of subsistence activities on the refuge summarizes some information from selected published sources that can be consulted for more detailed information. Another recent source that could be added to the bibliography is:

> Holen, Davin L., Theordore M. Krieg, Robert Walker, and Hans Nicholson 2005 Harvests and Uses of Caribou, Moose, Bears, and Dall Sheep by Communities of Game Management Units 9B and 17, Western Bristol Bay, Alaska 2001-2002. Alaska Department of Fish and Game, Division of Subsistence Technical Paper No. 283.

Response: *Comment noted.*

(10) [Section] 3.5.5, Subsistence, first full paragraph. This paragraph tends to attribute all the values of the Togiak Region to the Refuge itself, which is not consistent with either management authorities or land status. If used in the final plan, at a minimum we request the first sentence be

revised as follows: "A wide variety of subsistence activities occur year-round on or near the Refuge."

Response: *Change has been made.*

(11) [Section] 3.5.5.2, first paragraph, first sentence: While we do not object to inclusion of this information, almost all of the use described is outside of refuge boundaries. If used in the final plan, we request this fact be acknowledged. For example, the first sentence could include the added phrase at the end: "...which is outside the refuge boundaries."

Response: *This section has been revised.*

(12) Page 3-58, 3.5.6.2, Unguided Recreation, Figure 3-12: If this graph (and similar graphs of use data) is published in the final plan, we request inclusion of available 2005 and 2006 data. [The State provided supplemental Angler Use Data for the Kanektok and Goodnews rivers as developed through the ADF&G Statewide Harvest Survey, beginning in 1983.]

Response: *Comment noted. We have assessed the data and their implications in the context of the final Public Use Management Plan.*

10. Public Use

10.1 Specific Comments:

(1) [Section] 3.5.6.1, Overview, second full paragraph, third sentence: The text says:

The headwaters and upper stretches of these rivers are located within the remote Togiak Wilderness which, for many visitors, is an attraction equal to the opportunity to catch fish (Whittaker 1996).

A review of Whittaker 1996 shows that this statement is an inappropriate extrapolation of the actual survey results. While visitors value attributes associated with wilderness (natural place, scenery, solitude) they were not explicitly asked about the value or importance of the Congressionally-designated Togiak Wilderness or if they were visiting because the area was designated Wilderness. Many areas in Alaska have wilderness values, including those outside designated Wilderness. What Whittaker does state is that "These results suggest that users are interested in multiple satisfactions from their trips –not just good fishing."

Response: *Whittaker (1996) presented evidence indicating a substantial number of respondents were interested in experiencing the general wilderness values and characteristics that can be found at Togiak Refuge and in many parts of Alaska. This is the case regardless of whether those respondents knew they were in a Congressionally-designated wilderness area or not. In the case of these rivers, a substantial portion of the fishing experience does occur within a Congressionally-designated wilderness area, which must be considered when planning for and managing the experience of visitors to the Togiak Refuge. We have restated this to more accurately reflect Whittaker's interpretation.*

(2) Page 3-56 [of the Draft CCP],[Section] 3.5.6.1, Overview, second full paragraph, third sentence: The discussion that unguided recreational fishing has increased 200% since 1990 is not presented in an unbiased fashion. Figure 3-6, Lafferty 2004 and USFWS 1991-2002 (page 3-23) show that angler effort peaked in about 1988, likely in part because other nearby rivers were closed that season. Then in 1990, use was significantly lower, and it was the first year that the

Refuge apparently started collecting data. Inclusion of pre-1990 data would significantly shift downward the reported 200% increase. If the data started in 1988 or earlier, and included the most recent years, we suspect that the long term use trends might appear almost flat. See additional comment and associated graphs below for CCP page 3-58.

Response: *Visitor use data from the years 2005, 2006, and 2007 have been included in this section. These data were collected by air-taxi and guide reports. The Service determined the availability and comparability of pre-1990 data (if collected using the same methods, these data could be comparable).*

(3) Page 3-59 [of the Draft CCP], [Section} 3.5.6.3, Goodnews River: The second paragraph references the DNR's management authority on the Goodnews River below ordinary high water, but limits this recognition to the river segment outside refuge boundaries. The State's authority includes the navigable portions of the river within the refuge as well.

Response: *No change made. This paragraph describes the lower reaches of the Goodnews River outside of the refuge boundary. Discussion of jurisdiction within the refuge boundary is found in section 2.2.9, Fish and Wildlife Service Jurisdiction over Waters within Togiak Refuge.*

(4) Page 3-61 [of the Draft CCP], Figure 3-14: This chart shows unguided fishing on the Goodnews River through 2004. Use has significantly dropped since its peak in 1997. The trend does not appear to support the need to limit unguided use. We understand, however, that the Refuge is concerned about displacement to the Goodnews if the Kanektok use is limited, hence the proposal to limit both rivers together. The larger issue of displacement (including to other rivers outside the refuge) is an important one that has not been adequately addressed in the plan.

Response: *The charts have been updated, and the new data show a continued upward trend in use from 1990–2007. These available data clearly show fluctuations as the predominant trend in visitor use of these rivers. Although use numbers appear to be lowering now, it is likely that use numbers will increase in the near future. These data do support an overall continual increase in visitor use for the period.*

The Service is addressing displacement in the revision of the Togiak Refuge Public Use Management Plan.

(5) Page 3-64 [of the Draft CCP], 3.5.6.8, third paragraph, last sentence: We question the assumption that demand has increased since 2000. According to Figure 3-8, visitation has been decreasing since an initial spike in 2001. There are a greater number of flights, as well, and it is not clear in the section why that is or whether it is a product of the increased demand or some other factor (i.e., the addition of a dedicated commercial operator).

Response: *During the period from 2001 to 2004, there was a substantial increase in visitor use days relative to the prior period (1991-2000). In 2005 and the following years, visitor use has decreased, primarily because the walrus have not been using Cape Peirce in large numbers. When walrus return to the area, visitation is likely to increase as well. The numbers of flights seem to have fluctuated in the same manner as the number of use days. The text has been changed to reflect this additional information.*

(6) Page 3-65 [of the Draft CCP], 3.5.7, Social Conditions and Visitor Experiences, second paragraph: The statement that the 1995 visitor study was conducted with the input and support from ADF&G has not been verified by staff present in the area or regional offices at that time. Exhaustive review of the records and discussions with retired and current personnel has not shown any involvement with the survey design or implementation. In 2001, ADF&G requested to review the study and to participate but were not afforded the opportunity.

Response: *Whittaker (1996) discusses who was involved in the development of the survey instrument. The 2001 survey was a replication of the 1995 survey and had no additional review. The 1995 and 2001 studies are but one consideration in the greater public process used to formulate the proposed range of alternatives presented in the Revised Plan and PUMP.*

10.2 Editorial Comments:

(1) Page 3-58 [of the Draft CCP], 3.5.6.2, Kanektok River, Guided Recreation, carryover paragraph, last sentence: If used in the final plan, we request that the statement asserting use on the lower Kanektok River "has increased substantially" be attributed to a data source with a specific timetable.

Response: *This statement has been reworded*

(2) Page 3-58 [of the Draft CCP], Unguided Recreation, third sentence: It was noted that hunting trips leaving from Kagati Lake have lately tapered off. Without that very relevant context, this sentence appears to support the assertion of "increasing" public use.

Response: *This statement has been reworded.*

(3) Page 3-58 [of the Draft CCP], Unguided Recreation, last sentence: For perspective, it should be noted that these use numbers equate to an average of 1 party every 4-5 miles during peak times.

Response: *Comment noted.*

(4) Page 3-58 [of the Draft CCP], 3.5.6.2, Unguided Recreation, Figure 3-12: If [the] graph (and similar graphs of use data) is published in the final plan, we request inclusion of available 2005 and 2006 data.

Response: *These graphs and associated text have been updated. See section 10.1, comment (2).*

(5) Page 3-61 [of the Draft CCP], 3.5.6.4, second paragraph, third sentence: If this discussion is used in the final plan, we request that reference to the State's primary management authority either be removed, or clarified that it is not limited to the lower river.

Response: *The sentence has been deleted.*

(6) Page 3-66 [of the Draft CCP], 3.5.7.1, Visitor Motivations and Expectations: The last sentence accurately notes that different groups of anglers have varying views about limits on unguided users. Articulating these differences is important. Central to the issue is that unguided users, guided users, one-time users, residents and non-residents, etc. will have differing opinions relative to how they are affected. Most unguided users surveyed would not welcome such limits. Also note that the research referenced here (Romberg, 1999) applied only to non-resident anglers and that

the sample size was very small (n=41), hence the statistics reported are not very precise and conclusions should be made with care.

Response: *The 2001 survey data showed that about 40 percent of the unguided visitors favored limiting their own use of these rivers (see Appendix E, Revised Draft Plan/PUMP). The text referencing Romberg (1999) has been revised.*

(7) Page 3-69 [of the Draft CCP], Outstanding Opportunities for a Primitive and Unconfined Type of Recreation: The first sentence implies that motorized activity is, or should be, prohibited in designated wilderness. We recognize this is not the Service's intent. Since similar language appears in most CCPs, we are working with the regional planning staff to refine this section and suggest the following revision:

> Primitive and unconfined recreation ~~is non-motorized, non-mechanized activity that~~ occurs in an undeveloped setting and is relatively free from social or managerial controls.
>
> Primitive recreation is ~~also~~ characterized by experiential dimensions such as challenge, risk, and self-reliance, <u>and includes opportunities for non-motorized, non-mechanized travel</u>. Dispersed use patterns, which frequently occur where there are no facilities to concentrate use, enhance opportunities for self-reliance and also enhance opportunities for solitude.

Response: *This section has been reworded.*

11. Compatibility Determinations

11.1 General Comments - Stipulations Necessary to Ensure Compatibility

(1) When regional permit conditions are included as stipulations, we suggest including an introductory statement. This will help to clarify that the conditions listed are typical of issued permits and may vary relative to a specific proposal or user group. We suggest something similar to the following:

> *A special use permit with stipulations is required for this use(s). The following are typical stipulations, some of which are necessary for compatibility.*

Another example is provided in the general introduction to the Tetlin Refuge CCP compatibility determinations with regional and refuge-specific conditions:

> *The conditions listed below are included on Refuge permits issued for [use], most of which are intended to minimize impacts and ensure compatibility. Refuge permits may also include other special conditions as necessary or appropriate for the specific operations or activities that are proposed.*

Response: *The requested change was made.*

(2) We also request the Refuge use the phrase "*not allowed*" or "*not authorized*" instead of "*prohibited*." Stating that a prohibition exists may imply that there are regulations in place that make all forms of these activities or facilities illegal, which is not always the case.

Response: *The Service's regional special use permit conditions are being reviewed in a separate process, and comments on them have been forwarded to those working on this task. Comments on regional special use permit conditions are not being addressed here.*

(3) Subsistence Activities, Page D-6 [of the draft CCP], Description of Use(s), second paragraph on page, last two sentences: This paragraph is used, with customized variations, in many of the CDs. The purpose of the paragraph is to summarize the Section 1110(a) access provisions in designated Wilderness. In the context of this subsistence CD, the customized phrase (starting on line 6) says: "*and other non-motorized surface transportation methods for traditional activities, including subsistence*." The addition of this phrase in this particular CD appears to inadvertently mix ANILCA Sections 1110(a) and 811(b). We therefore request that line 5 refer more specifically to "*ANILCA Section 1110(a)*," and that an additional paragraph or sentence be added to address subsistence access pursuant to Section 811. For example, the Tetlin CCP contains the following language in its Subsistence CD:

> *Section 811 of ANILCA requires that we ensure rural residents have reasonable access to subsistence resources on the Refuge, and that we allow them use of snowmachines, motorboats and other traditionally used means of surface transportation, subject to reasonable regulations*. (page E-41)

Response: *The requested change has been made.*

(4) Page D-7 [of the draft CCP], Anticipated Impacts, third paragraph, second sentence: We request modifying the statement concerning possible changes in the size and age structure of rainbow trout to show that this is not a conclusive finding, as the text on page 3-21 reflects. This comment is also applicable to page D-14[of the draft CCP, second paragraph; and page D-53, [of the draft CCP first full paragraph, second sentence.

Response: *Statement deleted in each of the three referenced sections*

(5) Page D-8 [of the draft CCP], Justification, first sentence: We request that this sentence be revised to more closely reflect the language of ANILCA Section 302(8) (iii) "*to provide, in a manner consistent with the purposes set forth in subparagraphs (i) and (ii), the opportunity for continued subsistence uses by local residents;*". Suggested rewrite: " *…is to provide* ***the opportunity*** *for …*".

Response: *The requested change has been made.*

Note: The following comment applies to sections of Appendix D indicated in comment 6 through 12.

Multiple Non-Subsistence CDs: Off-road vehicles may be allowed by Service regulation on designated routes and areas or by special use permit. If none are designated, this may be clarified. Similarly, helicopter landings may be authorized on a case-by-case basis under 43 CFR 36.11(f)(4). Explaining the full context for the Refuge Manager's discretionary decision is better than just saying "*not allowed*."

(6) Page D-12 [of the draft CCP], Description of Use(s), second paragraph, last two sentences.

Response: *No change made. This compatibility determination is for commercially guided recreational fishing services, and by terms of their special use permits, we do not allow helicopters, off-highway vehicles and motorized equipment.*

(7) Page D-21 [of the draft CCP], Description of Use(s) (cont.), third full paragraph on page, last two sentences.

Response: *No change made. This compatibility determination is for commercially guided recreational hunting services, and by terms of their special use permits, we do not allow helicopters, off-highway vehicles and motorized equipment.*

(8) Page D-33 [of the draft CCP], Description of Use(s) (cont.), third paragraph on page, last two sentences

Response: *No change made. This compatibility determination is for commercial transporter services, and by terms of their special use permits, we do not allow helicopters, off-highway vehicles and motorized equipment.*

(9) Page D-52 [of the draft CCP], Description of Use(s) (cont.), first full paragraph on page, last two sentences

Response: *No change made. This compatibility determination is for recreational fishing. The plan does not allow recreational use of helicopters. There are no designated routes for ORVs, and the use of ORV by special use permit is not covered by this compatibility determination.*

(10) Page D-57 [of the draft CCP], Description of Use(s), third paragraph, last two sentences

Response: *No change made. This compatibility determination is for recreational hunting. The plan does not allow recreational use of helicopters. There are no designated routes for ORVs, and the use of ORV by special use permit is not covered by this compatibility determination.*

(11) Page D-75 [of the draft CCP], Description of Use(s) (cont.), first full paragraph on page, last two sentences, and

Response: *No change made. This compatibility determination is for wildlife observation, photography, environmental education, and environmental interpretation. The plan does not allow use of helicopters for trapping. There are no designated routes for ORVs, and the use of ORV by special use permit is not covered by this compatibility determination.*

(12) Page D-80 [of the draft CCP], Description of Use, second paragraph, last two sentences

Response: *No change made. This compatibility determination is for trapping. The plan does not allow recreational use of helicopters. There are no designated routes for ORVs, and the use of ORVs by special use permit is not covered by this compatibility determination.*

(13) *Commercially Guided Recreational Fishing Services*

Page D-12 [of the draft CCP], Description of Use(s), second paragraph, first sentence: We request that this paragraph note that most, if not all, of the commercially guided recreational fishing activities occur primarily on state lands and waters within the Refuge.

Response: *No change made. This compatibility determination only applies to activities on the Refuge.*

(14) Page D-13 [of the draft CCP], Description of Use(s), first paragraph on page, third sentence, and Page D-13[of the draft CCP, Description of Use(s), third paragraph on page, fourth sentence:

Since the Togiak Wilderness is not within those parts of the Refuge that were designated prior to Statehood, it is not appropriate to imply that the lakes themselves are designated as Wilderness since most if not all are likely navigable and thus state-owned. We suggest "*lakes within Wilderness*" as an alternative to "*wilderness lakes*."

Response: No change made. "Wilderness Lakes" was the name of the management unit established in the 1991 Public Use Management Plan and does not infer Wilderness Designation. To avoid confusion, we will maintain the unit name.

(15) Page D-1 [of the draft CCP], Stipulations Necessary to Ensure Compatibility, fifth bullet on page: Use of "prohibited" typically means a statutory or regulatory prohibition, which is not applicable here. We recommend: "The use of helicopters is not authorized by this permit."

Response: *The Service's regional special use permit conditions are being reviewed in a separate process, and comments on them have been forwarded to those working on this task. Comments on regional special use permit conditions are not being addressed here.*

(18) *Commercially Guided Recreational Hunting Services*

Page D-21 [of the draft CCP], Description of Use(s), third full sentence on the page: Commercial operators, such as air taxis, hunting and fishing guides, who utilize state lands within the Refuge, including shorelands and waters, are also required to register with the Department of Natural Resources (11AAC 96.018 and 96.250). We understand that this is not a necessary component from a refuge management perspective, but request that it be included when other state requirements for commercial operators are described.

Response: *This compatibility determination is specific to commercially guided hunting services. Sentence has been replaced with: "Guides must comply with all state requirements applicable to this activity."*

(17) Page D-21, [of the draft CCP] Description of Use(s), second full paragraph on page, third sentence: Consistent with our previous comment for page D-16, fifth bullet on page, we request the Refuge use the phrase "*not authorized*" instead of "*prohibited*."

Response: *Comment noted. Wording used is consistent with regional special use permit policy. Comment forwarded for consideration in upcoming review of special use permit policy.*

(18) Page D-21, 22 and possibly others [of the draft CCP]: When referring to designated Wilderness, the usual convention is to use a "Big W", and a "little w" to denote non-designated areas with wilderness values. There are several instances here where this convention is broached which can confuse the topic. We recommend a word search to correct this.

Response: *Concur. Word search conducted to make corrections. "Big W" has been used only when referring to a specific wilderness area (i.e. Togiak Wilderness Area) or the Wilderness Act. In all other cases the "little w" has been used.*

(19) Page D-24 [of the draft CCP], Stipulations Necessary to Ensure Compatibility (cont.), ninth full bullet: See previous comment concerning use of the word "*prohibited*" for page D-16, fifth bullet on page.

Response: *The Service's regional special use permit conditions are being reviewed in a separate process, and comments on them have been forwarded to those working on this task. Comments on regional special use permit conditions are not being addressed here.*

(20) Page D-24 [of the draft CCP], tenth stipulation: We request that this stipulation be revised to allow the consideration of fuel caches on a case-by-case basis, subject to authorization by the Refuge Manager concerning marking, recording of location and removal from the field. Such consideration is necessary due to the distances pilots may be flying and the need to store fuel for safety purposes. This comment is also applicable to Commercial Guided Recreational Hunting and Fishing Services, Commercial Transporter Services and Native Allotment Surveys. Stipulations allowing fuel caches are present in various compatibility determinations for other refuges and we request more opportunity for this practice across the Alaska Region.

Response: *Concur. Change made.*

(21) Trail Marking and Marker Maintenance: Page D-29 [of the draft CCP], Stipulations Necessary to Ensure Compatibility, second bullet: We suggest the following revision to the bullet: "*Trail markings* ***performed using a snowmachine*** *will only be allowed….*" The Description of Use states that trail marking is also performed using sleds for access, and marking activities may also need to be done during snow-free seasons. This change is suggested to ensure consistency with regulation and to help facilitate the "periodic" nature and public safety aspects of the activity.

Response: Comment noted. To date, there has never been a request to mark or maintain trail markers by any means other than snowmachine with sled. Should such a request occur, a new compatibility determination will be prepared, taking into account pertinent information in the request.

(22) *Commercial Transporter Services:* Page D-32 [of the draft CCP], Description of Use(s), first sentence: We suggest this statement be revised. As currently written it sounds like a requirement. We recommend the following revision: "*Most visitors ~~must travel by~~ access the Refuge using…*"

Response: Correction made. Sentence now reads: "Visitors to the refuge typically travel by aircraft, snowmachine or boat."

(23) Page D-36 [of the draft CCP], Stipulations Necessary to Ensure Compatibility, fourth bullet on page: See previous comment concerning use of the word "*prohibited*" for page D-16, fifth bullet on page.

Response: The Service's regional special use permit conditions are being reviewed in a separate process, and comments on them have been forwarded to those working on this task. Comments on regional special use permit conditions are not being addressed here.

(24) Native Allotment Surveys: Page D-42[of the draft CCP, Stipulations Necessary to Ensure Compatibility, last bullet on page: We request this stipulation mirror state regulations regarding minimum distances for latrines from the ordinary high water mark of any waterbody (see 18 AAC 72). 150 feet from surface water may still be within the horizontal 100 feet from the ordinary high

water mark. The following example is from the Tetlin Refuge CD for Scientific Research, Stipulation #8.

> *Permittees shall maintain their use areas in a neat and sanitary condition. Per Alaska Dept. Of Environmental Conservation Code 18 AAC 72.021(e,(h), latrines, seepage pit, etc., must be located at least 100 feet, measured horizontally to the nearest edge of the mean annual high water level of lakes, rivers, streams, springs, sloughs, or mean higher high water level of coastal waters. No privies are to be installed in areas subject (no less than 4 feet to maximum water table elevation) to flooding. All property of the permittee (except authorized cabins and/or tent frames) must be removed from refuge lands upon completion of permitted activities.*

Response: *The Service's regional special use permit conditions are being reviewed in a separate process, and comments on them have been forwarded to those working on this task. Comments on regional special use permit conditions are not being addressed here.*

(25) Page D-43 [of the draft CCP], Stipulations Necessary to Ensure Compatibility, third bullet on page: This bullet is inaccurate, as stated, and we recommend it be rephrased consistent with similar versions of this stipulation in other compatibility determinations: "*The use of off-road vehicles for non-subsistence use is not allowed unless specifically authorized in writing in this permit.*" Additionally, 50 CFR 36.2 specifically excludes snowmachines from the definition of ORVs. Including the phrase "*except snowmachines*" inaccurately implies that snowmachines are ORVs.

Response: *Change not made because by terms of the Special Use Permit required, we do not allow off-road vehicles for this use.*

(26*) Recreational Fishing (wildlife-dependent recreation):* Page D-51 [of the draft CCP], Description of Use(s), third paragraph, third sentence: Without documentation concerning numbers of visitors accessing rivers via aircraft and floating down rivers or motoring up from local villages, it is more accurate to reference access in general terms. Because of this we request the following revision:

Access for fishing by unguided anglers generally involves flying into a headwater lake and floating down or by using motor boats to go up rivers from local villages.

Response: *Change made as suggested.*

(27) Page D-52 [of the draft CCP], Description of Use(s), second full paragraph on page, first sentence: We suggest revising the sentence as follows to make the statement sufficiently comprehensive: "*Access to waters within the Refuge is* ***most commonly*** *either by boat or airplane*."

Response: *Change made as suggested*

(28) Page D-52 [of the draft CCP], Description of Use(s), third full paragraph on page, first sentence: We request this paragraph clarify that ADF&G angler use days and harvest are calculated for all waters within the region and not just waters within the Refuge. This reference for the data that is presented here is not substantiated in the supporting documents.

Response: *Change made as suggested. Reference added to Supporting Documents section.*

(29) Recreational Hunting (wildlife-dependent recreation)

Page D-58 [of the draft CCP, Description of Use(s), last paragraph, and
Page D-58 [of the draft CCP, Anticipated Impacts of the Use(s), second paragraph, first and sixth sentences:

Consistent with our comment on the Management Policies and Guidelines for page 2-18, 2.2.4, we request that "sport" not be used to describe general hunting.

Response: *Changes made as suggested.*

(30) *Scientific Research*

Page D-66 [of the draft CCP], Stipulations Necessary to Ensure Compatibility, third bullet on page: This bullet is inaccurate, as stated, and we recommend it be rephrased consistent with similar versions of this stipulation in other compatibility determinations: *"The use of off-road vehicles for non-subsistence use is not allowed unless specifically authorized in writing in this permit."* Additionally, 50 CFR 36.2 specifically excludes snowmachines from the definition of ORVs. Including the phrase *"except snowmachines"* inaccurately implies that snowmachines are ORVs.

Response: *The Service's regional special use permit conditions are being reviewed in a separate process, and comments on them have been forwarded to those working on this task. Comments on regional special use permit conditions are not being addressed here.*

(31) Page D-66 [of the draft CCP], Stipulations Necessary to Ensure Compatibility, fourth full bullet on page: See comment above about mirroring state regulations regarding minimum distances for latrines from the ordinary high water mark of any waterbody.

Response: *Correction made per suggestion.*

(32) Page D-67 [of the draft CCP], Justification, first two full sentences on page: ANILCA Section 101 also describes the purposes for all refuges in Alaska, including Togiak and Alaska Maritime, and describes, among other things, Congressional intent to "*maintain opportunities for scientific research.*"

Response: Correction made per suggestion.

(33) *State of Alaska Management Activities*

Page D-71 [of the draft CCP], Justification, second paragraph: See comment above for page D-67, seventh full bullet on page.

Response: *Correction made per suggestion.*

(34) *Wildlife Observation, Photography, Environmental Education, et. al.*

Page D-75 [of the draft CCP], Description of Use(s), third full paragraph on page, last sentence: Consistent with our comment on the Management Policies and Guidelines for page 2-18, 2.2.4, we request that *"sport"* not be used to describe general hunting.

Response: *Correction made per suggestion.*

(35) Page D-76 [of the draft CCP], Anticipated Impacts of the Uses(s), second paragraph, last sentence: Because many of the referenced uses occur on State lands and waters within the Refuge, we request that the Refuge include cooperation with the State and other land owners in its "active management."

Response: *Correction made per suggestion.*

(36) *Trapping*

Page D-81 [of the draft CCP], Justification, sixth sentence: Trapping is a public use that is not classified under federal or state law as commercial, subsistence or recreation. It is simply "trapping."

Response: *Comment noted. Sentence removed.*

(37) *Helicopter Use to Support Authorized (Government) Activities*

Page D-86 [of the draft CCP], Stipulations Necessary to Ensure Compatibility, fourth bullet: Considering that this determination encompasses research that may be performed on archaeological and cultural resources, we question the definitive nature of this stipulation. We suggest the Refuge consider adding "*…unless specifically authorized in this permit.*"

Response: *Change not made because this special use permit condition is an important way to minimize conflicts between helicopters and other refuge users and in no way affects safety of flight.*

(38) Page D-86 [of the draft CCP], Stipulations, Togiak Refuge Conditions, second bullet: The Service does not have the authority to require this stipulation, and under bad weather conditions would be inadvisable for safety purposes. Airspace is controlled by the Federal Aviation Administration. We request that this stipulation be removed, or re-characterized as advisory. Additionally, the standard discussed, "*…above minimum levels of recreation and/or subsistence use…*" is vague in its definition and very likely unenforceable. This comment also applies to the bullet about maintaining a minimum altitude of 2,000 feet.

Response : *Stipulation changed to reflect regional standard special conditions. Second bullet under refuge specific conditions changed to reflect that those rivers receiving anything above minimum levels of recreational and/or subsistence use will be determined by refuge manager.*

(41) Regional Stipulations Necessary to Ensure Compatibility

We understand the following two compatibility stipulations (bullets) are also regional permit conditions. We have brought them and others to the attention of the Region to address in a region-wide review of permit stipulations. We provide our comments concerning these stipulations here for your information within the context of this review.

> *Native Allotment Surveys (Page D-42),*
>
> *Reburial of Archeological Human Remains per State and Federal Guidelines (Page D-48), and Scientific Research (Page D-65):*

- *The permittee or party chief shall notify the refuge manager during refuge working hours in person or by telephone before beginning and upon completion of activities allowed by this permit.*

  It may be useful to incorporate a more specific timeframe in which notifications must occur.

  Native Allotment Surveys (Page D-43[of the draft CCP), and Scientific Research (D-66):

- *The use of off-road vehicles (except snow machines) is prohibited except in designated areas.*

  50 CFR 36.2 specifically excludes snowmachines from the definition of ORVs. Including the phrase "*except snowmachines*" inaccurately implies that snowmachines are ORVs.

Response: *The Service's regional special use permit conditions are being reviewed in a separate process, and comments on them have been forwarded to those working on this task. Comments on regional special use permit conditions are not being addressed here.*

(40) CCP Appendix G: Easements, Withdrawals and Rights of Way

Pages G-3 to G6: The following easements are not listed in the Appendix:

- These appear to have been reviewed for Native conveyance, but have not been conveyed.

  EIN 101 C4, C5
  EIN 102 C4, C5
  EIN 3 C3, C4, D1, D9 (also DOT 53-4)
  EIN 4 D1, C5
  EIN 3 D1, C5
  EIN 27 D9
  EIN 27a D9

- These were reserved in an interim conveyance in 1995 to the Twin Hills Corporation, but the records do not indicate that they were ever terminated.

  EIN 25 C6
  EIN 25a C6
  EIN 26 C6

The following easement is listed in the Appendix, but is not shown on the associated quad map. It is listed in Interim Conveyance 181, but was either terminated or the map is incorrect.

EIN 6cE

The following easement descriptions and their location shown on the quad map do not match. Because we do not know the location, we are unsure in which conveyance document the description may be found in.

EIN 19 C5
EIN 19a C5, M

Response: *This section has been revised.*

(41) Figure G-1: We appreciate the inclusion of detailed 17(b) easement descriptions, but would like to have them available on the map, as is done in other CCPs. Additionally, this figure actually denotes RS 2477s identified by the State. The term "*asserted*" has certain legal implications that do not apply to all of these routes. We request that the final plan avoid using the term "*asserted*" in both the Appendix and the Figure. We also recommend including a clarification about the technical term "*highway*" since it is at least as likely that any given RS 2477 route would be developed by the State as a trail instead of a road. Specifically, we request inclusion of the following sentence that BLM uses in its plans when discussing RS 2477 rights-of-way: "'*Highways' under state law include roads, trails, paths and other common routes open to the public.*" We recently recommended an approach to address RS 2477 rights-of-way for all CCPs.

Response: *This map has been revised. 17(b) easements have been added, and the map has been retitled.*

Appendix K
Findings of No Significant Impact

U. S. Department of the Interior
Fish and Wildlife Service
Region 7, Alaska

FINDING OF NO SIGNIFICANT IMPACT

Revised Comprehensive Conservation Plan
Togiak National Wildlife Refuge, Alaska

The U.S. Fish and Wildlife Service (Service) has completed the Revised Comprehensive Conservation Plan (Plan) for the Togiak National Wildlife Refuge. The draft revised plan and Environmental Assessment (EA) (herein incorporated by reference) describe the two alternatives for managing the Refuge and associated effects on the human environment. No substantive changes in the preferred alternative, Alternative 1, were made in response to public comments. Alternative 1 was selected for implementation.

Alternatives Considered

The Alaska National Interest Lands Conservation Act requires the Service to designate areas according to their respective resources and values and to specify programs and uses within the areas designated. To meet this requirement, the Alaska Region established management categories for the refuges including Wilderness; Minimal, Moderate, Intensive, and Wild River management. In the past, additional categories, including Cooperative Management were also used. Appropriate activities, public uses, commercial uses, and facilities are identified for each management category.

Two alternatives were considered in the environmental assessment. Alternative 1, the Proposed Action, includes implementation of updated management guidelines, converting lands in Cooperative Management into Minimal Management, and adds Refuge vision statement, goals and objectives. A number of potential activities are addressed which were not previously considered. Alternative 2, Current Management, maintains lands in Cooperative Management. No Refuge vision statement, goals, or objectives are included. Under either alternative, helicopter landings for recreational purposes would not be allowed.

Public Review

Public comments on the draft plan and EA were solicited from September 27, 2007, through January 18, 2008. During the public comment period meetings were held in Anchorage, Quinhagak, Goodnews Bay, Togiak and Dillingham.

Revisions from Draft Plan

Only minor revisions to Alternative 1, the preferred alternative, were made as a result of the public comments on the Draft Revised Togiak Plan.

Alternative 1, the preferred alternative, provides a realistic balance between public use of the

Refuge and the conservation needs of the Refuge. Alternative 1 best accomplishes refuge purposes, and best helps achieve the missions of the National Wildlife Refuge System and the Service. It provides long-term protection of fish and wildlife populations and their habitats while allowing for appropriate levels of fish and wildlife-dependent recreation, interpretation and environmental education, subsistence, and other public uses.

Analysis of Impacts

The EA analyzed direct, indirect, and cumulative impacts on refuge resources of fish and wildlife and on subsistence and wildlife dependent recreation, refuge facilities, cultural resources, the refuge environment, and the refuge communities. No significant effects were identified in the analysis.

Conclusions

Based on review and evaluation of the information contained in the EA and revised plan, I have determined that there will be no significant individual or cumulative impacts to the human environment, within the meaning of section 102(2)(c) of the National Environmental Policy Act of 1969, as amended. I have determined that the activities prescribed in this plan are not major Federal actions. Accordingly, the Service is not required to prepare an environmental impact statement.

for Thomas O. Melius
Regional Director

10 Sept 08
Date