Land Protection Plan

Wyoming Toad Conservation Area

Wyoming

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Prepared by

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In accordance with the National Environmental Policy Act and U.S. Fish and Wildlife Service policy, an environmental assessment and land protection plan have been prepared to analyze the effects of establishing the Wyoming Toad Conservation Area in southern Wyoming.

The environmental assessment (appendix A) analyzes the environmental effects of establishing the Wyoming Toad Conservation Area.

The Wyoming Toad Conservation Area land protection plan describes the priorities for acquiring up to 43,200 acres mostly through voluntary conservation easements, including up to a maximum of 10,000 acres in fee title.

Note: Information contained in the maps is approximate and does not represent a legal survey. Ownership information may be incomplete.

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Abbreviations

AWVED	Assessment of Wildlife Vulnerability to Energy Development
EA	Environmental assessment
FWS	U.S. Fish and Wildlife Service
LCC	Landscape conservation cooperative
LPP	Land protection plan
NAIP	National Agricultural Imaging Program
NRCS	Natural Resources Conservation Service
PLSS	Public Land Survey
Refuge System	National Wildlife Refuge System
Service	U.S. Fish and Wildlife Service
USDA	U.S. Department of Agriculture
USFWS	U.S. Fish and Wildlife Service
WGFD	Wyoming Game and Fish Department
WTCA	Wyoming Toad Conservation Area
WYNDD	Wyoming Natural Diversity Database

A glossary of these and other terms follows chapter 4 of the LPP.

Summary

Sarah Armstrong/FWS

The action would protect habitat that is important for the future of the Wyoming toad.

The U.S. Fish and Wildlife Service is establishing a conservation area in the Laramie basin of southern Wyoming to protect the Wyoming toad. The Wyoming Toad Conservation Area project is located in south-central Albany County, Wyoming, and would encompass three existing National Wildlife Refuges: Bamforth, Hutton Lake, and Mortenson Lake. The Service will work with private landowners to protect up to 43,299 acres, mainly through conservation easements, and up to 10,000 acres in fee-title land purchased from willing sellers only. Successful implementation of the Wyoming Toad Conservation Area will depend on numerous partnerships, including partnerships with The Nature Conservancy, Audubon Society chapters, State agencies, Laramie Rivers Conservation District, tribes, and other Federal agencies. We will also work with the Great Northern Landscape Conservation Cooperative as part of our landscape-scale conservation efforts.

In accordance with the National Environmental Policy Act and U.S. Fish and Wildlife Service policy, both an environmental assessment and a land protection plan have been prepared to analyze the potential effects of establishing the Wyoming Toad Conservation Area in southeastern Wyoming. Both documents are contained within this volume.

The land protection plan describes the important resources and gives direction for evaluating potential habitat conservation areas. The Service has set priorities for land protection based on the needs of the endangered Wyoming toad. The Wyoming Toad Conservation Area would focus on the protection of wetland, floodplain, riparian, and upland areas that provide the year-around habitat required by the toad. The Service has defined highest conservation value areas based on scientific modeling results for the Wyoming toad to establish priorities for where to pursue easements and fee-title acquisition from willing sellers.

Laramie Plains is a cold desert basin located at an elevation of approximately 8,000 feet between two mountain ranges, the Snowy Range and the Laramie Range. Habitats include wetlands, riparian corridors, shrublands, and shortgrass and mixed-grass prairie. In addition to providing essential habitat for the Wyoming toad, the Laramie basin also is important for other federal trust species, including populations of migratory shorebirds, waterfowl, and neotropical songbirds. The region provides resident, nesting, and migration habitat for over 146 species of birds and over 320 species of plants. Bamforth, Hutton Lake, and Mortenson Lake National Wildlife Refuges are important stopovers for migrating birds and breeding sites for species such as the American white pelican, American bittern, white-faced ibis, and black-crowned night-heron. The National Audubon Society has designated the Laramie Plains Lakes Complex as an Important Bird Area because of the diversity of birds found within the basin.

Conservation through Easements and Fee-Title Lands

To protect habitat, the Service recognizes that it is essential to work with private landowners on conservation matters of mutual interest. The project will use voluntary conservation easements and, on a limited basis, fee-title land throughout the Wyoming Toad Conservation Area to protect wetland, upland, and agricultural land from conversion to other uses. As a voluntary legal agreement between a landowner and the Service, an easement is a perpetual conservation agreement that the Service will purchase from willing landowners.

- A conservation easement typically contains habitat protection measures that prohibit subdivision but allow for the continuation of traditional activities such as livestock grazing and haying.

- Alteration of the natural topography and conversion of uplands or wetlands to cropland will be prohibited on a conservation easement.

- Conservation easement land will remain in private ownership, and property tax and land management, including invasive weed control, will remain the responsibility of the landowner.

- Public access to a conservation easement will remain under the control of the landowner.

The Service will purchase conservation easements and fee-title lands mainly with money generated by the Land and Water Conservation Fund Act of 1965. These funds are derived from oil and gas leases on the Outer Continental Shelf, motorboat fuel tax revenues, and sale of surplus federal property. The U.S. Congress appropriates money for a specific project, such as the Wyoming Toad Conservation Area. Easement and fee-title land prices offered to willing sellers will be determined by an appraisal completed by an appraiser familiar with the local market. Service staff from the Arapaho National Wildlife Refuge Complex will administer and monitor the conservation easement and fee-title program.

The Service would seek to strategically buy conservation easements or fee-title lands from willing sellers that provide potentially valuable habitat for the Wyoming toad. These areas would also provide perpetual protection of valuable wildlife habitat for threatened and endangered species and migratory birds by restricting some types of development.

Chapter 1—Introduction and Project Description

FWS

A prairie dog colony in the uplands at Hutton Lake National Wildlife Refuge.

The Environmental Assessment (EA) (see appendix A) that was completed by the U.S. Fish and Wildlife Service (the Service or USFWS) during the planning process considered several alternatives, and two of them were selected for further analysis. Alternative A, the no-action alternative, considers the consequences of not doing anything beyond current actions at Bamforth, Mortenson Lake, and Hutton Lake National Wildlife Refuges. Alternative B considers the potential positive and negative consequences of purchasing limited fee-title land and conservation easements and establishing the Wyoming Toad Conservation Area (WTCA) (see figure LPP–1 for a map of the project area). The regional director found that establishing the Wyoming Toad Conservation Area (alternative B of the EA) would have no significant impact (refer to "Appendix C, Environmental Compliance").

The Laramie Plains is an isolated mountain basin once covered by wetlands, riparian corridors, meadows, shrublands, and native prairie. In the spring, snow melt would fill streams and waterways as well as many shallow depressions scattered throughout the valley. These wetlands provided an oasis of food and rest for thousands of waterfowl and shorebirds making their northward migration to their breeding grounds. Linear riparian corridors bordered the Big and Little Laramie Rivers and their tributaries, supporting scattered woodlands of cottonwoods and willows. The relatively fine soils and low annual precipitation kept the uplands in short mixed-grass prairie with scattered patches of shrubland. The Wyoming toad, a species endemic to the Laramie Plains, was once a common sight. Waterfowl, shorebirds, and grassland birds would dominate the skies, with raptors following the migration. Many mammals that depended heavily on white-tailed prairie dogs for prey and burrow habitats also lived in the area, including the swift fox and the black-footed ferret. Big game herds, including the American bison, once occupied almost all parts of the basin. (See appendix E for a list of species found in the area).

Today, the landscape has changed. Some wetlands have been filled or drained, others have been altered, and new wetlands in the form of flood-irrigated fields have been created. Only 4 percent of existing wetlands within the Laramie Plains are protected (Copeland et al. 2010a). Much of the water in the area is managed to support various human needs such as

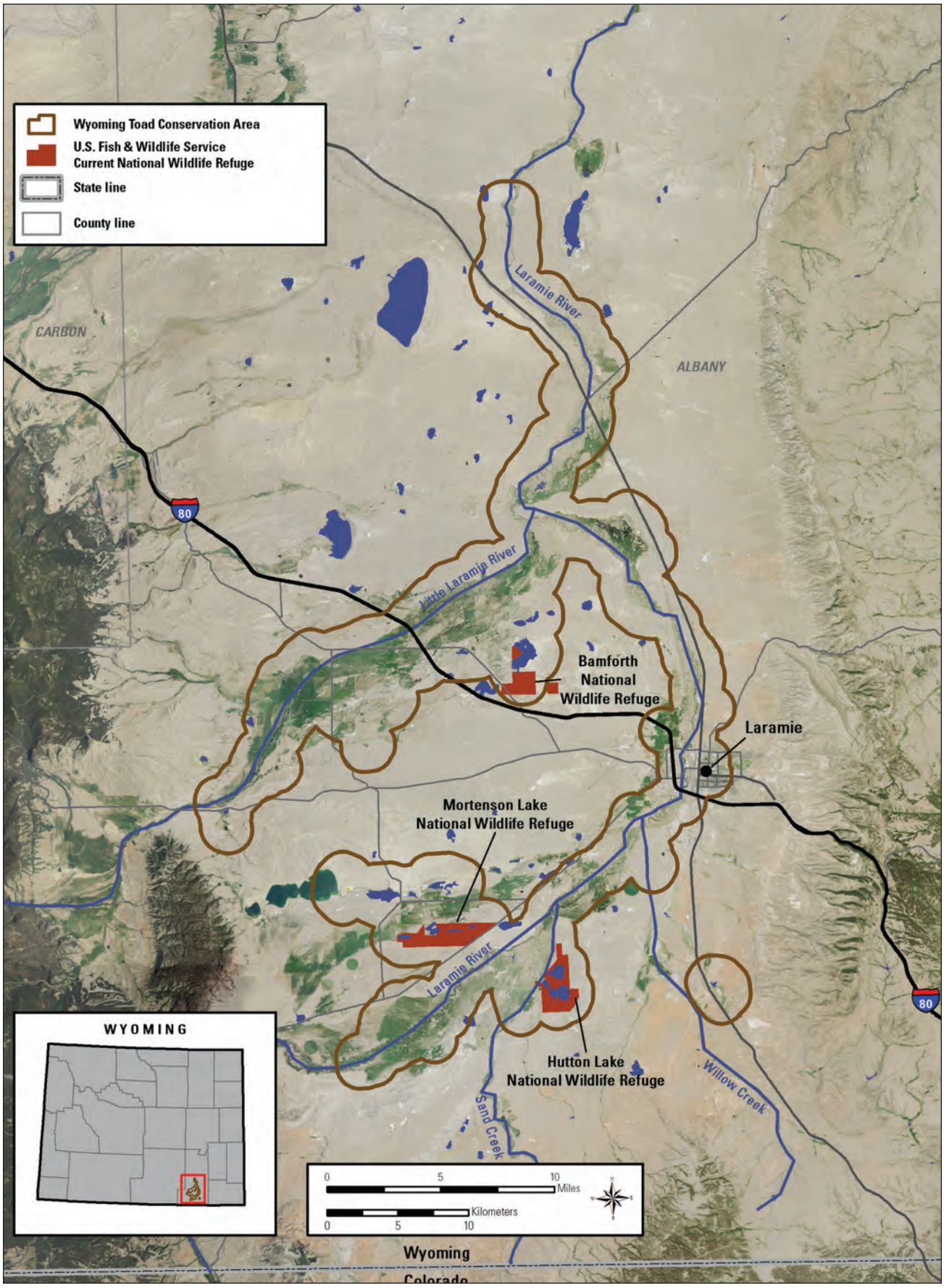

Figure LPP-1. Map of the Wyoming Toad Conservation Area in Wyoming.

residential use, hay and crop production, and recreation. The strong ranching culture in the area has kept many of the habitats of the basin from being converted to other uses and left much of the region's biodiversity intact. There are growing concerns that a significant increase in residential development threatens the remaining natural character of this landscape, in particular the habitats and species that make the Laramie Plains regionally important for biological diversity. Rural development on exurban lots has been growing at a rate of 10 to 15 percent a year (USDA 2006). Such development will likely diminish the future value of these important biological resources and working landscapes.

Once the western fringe of the range for many short mixed-grass prairie species, the Laramie Plains has increased in relative habitat value because of habitat loss, fragmentation, and conversion of native prairie to cropland elsewhere in the Great Plains. Because of the relatively large, intact ecosystem still available, the basin has become crucial habitat for many species. Without increased conservation measures to protect upland habitat from degradation and conversion to other uses, species that now depend on the high-elevation prairie as a last remaining refuge would be vulnerable.

The remaining wetlands play a vital role in providing resting and feeding areas for the thousands of migratory birds that continue to use the central flyway each spring and fall. However, increased sedimentation, nutrient runoff, salinization, and decreased water runoff jeopardize the functions and values of these wetlands. Similarly, riparian corridors are also affected by sedimentation, nutrient runoff, decreased water runoff, and stream channelization, which affect fish and other aquatic species, such as the endangered Wyoming toad. With decreasing water quality and natural water flow in the rivers and remaining wetlands, the recovery of the Wyoming toad could be impaired.

While increased human activity in the Laramie Plains has generally reduced wildlife populations and habitat, there have been some compensating effects. For example, irrigated hay meadows provide nesting cover for waterfowl. Some of the same flood-irrigated meadows may also hold water longer during the summer months, helping to retain higher late-summer flows in the surrounding rivers. Large ranches in the basin provide large blocks of habitat that benefit wildlife.

The entire footprint of this project would be located in south-central Albany County, Wyoming, and would encompass three existing refuges: Bamforth, Mortenson Lake, and Hutton Lake National Wildlife Refuges. The WTCA would focus on the protection of wetlands, riparian corridors, and open landscapes with the objective of conserving land through the acquisition of up to 43,200 acres of voluntary conservation easements and up to a maximum of 10,000 acres in fee-title acquisition from willing sellers only (table LPP–1).

Table LPP-1. Summary of current and proposed acreage for the Wyoming Toad Conservation Area, Wyoming.

National wildlife refuge	*Executive boundary acres*	*Acquired acres*	*In-holding acres*
Mortenson Lake	2,500	1,927	573
Hutton Lake	1,968	1,968	0
Bamforth	1,166	1,166	0
	Potential new acres	*Fee title acres*	*Conservation easement acres*
Project area	43,200	Up to 10,000	Balance of 43,200 less fee title
Project boundary total acres	186,185		

Acquisition of fee-title lands from willing sellers would be prioritized based on specific criteria that would help with meeting the criteria of the Wyoming Toad Revised Recovery Plan (USFWS 2015). These criteria are meant to contribute to the recovery and eventual delisting of the Wyoming toad. The Wyoming Toad Revised Recovery Plan (USFWS 2015) calls for the establishment of five independent, self-sustaining populations, all within the toad's historical range. Furthermore, these five populations should be distributed across at least two basic habitat types: rivers and associated floodplains (lotic habitats) and ponds and lakes (lentic habitats). To accomplish this goal, other lands need to be acquired within the Wyoming toad's historical range to reintroduce and conserve its populations in perpetuity. Management practices on fee-title lands could include prescribed fire, livestock grazing with periodic resting of pastures, exclusion of nonnative fish, invasive species control, and disease management. A compatibility determination would be completed to establish whether any land acquired in fee title could be opened for public use.

Conservation easements would be bought from willing sellers on parcels that contain habitat suitable

to support conservation efforts. Easement acquisitions would focus on the protection of wetlands and riparian corridors for Federal trust species (migratory birds and threatened and endangered species). Lands protected via easements would remain in private ownership and could continue to be grazed, hayed, farmed, or otherwise managed in accordance with current practices. However, subdivision and development would be restricted and subject to stipulations agreed on by the landowners and the Service. Furthermore, easements may include stipulations related to exercising water rights, which could be changed only if the changes would be beneficial to wildlife. Easement terms would be negotiated with landowners interested in a conservation easement. The WTCA project, in conjunction with other conservation efforts in the region, would help to keep unfragmented blocks of wetland, grassland, and shrubland habitat. The WTCA would complement the conservation efforts of land trusts and entities such as The Nature Conservancy, Wyoming Stock Growers Land Trust, Wyoming Game and Fish Department (WGFD), and Natural Resources Conservation Service (NRCS). A map showing the protected lands is in the EA (see appendix A, figure EA-2).

Purpose of the Wyoming Toad Conservation Area

The purpose of the WTCA is to protect the endangered Wyoming toad and other Federal trust species and provide strategic habitat conservation measures that are necessary to maintain, conserve, restore, protect, and enhance the native ecological communities within the Laramie Plains. Native habitats that make up the Laramie Plains, including wetlands, riparian areas, shrublands, and short mixed-grass prairie, are important for a variety of wildlife species. The wetlands and riparian habitats function as important breeding, foraging, and nesting areas for large populations of migratory shorebirds, waterfowl, and neotropical passerines, and are also the historical range of the endemic endangered Wyoming toad. The uplands, which are covered with shrubs and short mixed-grass prairie, are home to white-tailed prairie dogs, pronghorn, and many grassland birds, such as mountain plover and McCown's longspur. Land acquisition (fee-title and easement) and management of the WTCA will focus on protecting those habitats that complement and connect to existing protected areas, along with protecting lands in perpetuity for the recovery of the Wyoming toad.

Vision for the WTCA

Nestled between the Snowy and Laramie mountain ranges, the Laramie Plains is a semiarid, high-elevation basin that was once the western fringe of many species' ranges; due to habitat loss on the Great Plains and the largely intact ecosystem still available within the basin, the Laramie Plains has become crucial habitat for many species.

Among them, the endemic Wyoming toad, found only in the Laramie Plains, now stands at the precipice of extinction. With additional research and habitat protection, the toad has the ability to once again become a common sight. The mosaic landscape of wetlands, grasslands, and shrublands will continue to support a multitude of diverse wildlife species as well as provide abundant outdoor recreation opportunities to visitors. The WTCA fosters a collaborative effort between numerous partners to conserve the valuable natural resources of the Laramie Plains into the future and will be a model of cooperative conservation between private, State, and Federal partners shaping a common vision for the area related to conservation, agriculture, and open space.

Purpose of the Existing National Wildlife Refuges

Bamforth National Wildlife Refuge was established in 1932 by Executive Order 5783 to provide breeding grounds for birds and other wildlife.

Hutton Lake National Wildlife Refuge was established by Executive Order 5782 in 1932. The purpose of the refuge is to provide "a refuge and breeding ground for birds and wild animals."

Mortenson Lake National Wildlife Refuge was established in 1993 to protect the Wyoming toad's last known population. The Wyoming toad was listed as an endangered species in 1984. The population at Mortenson Lake was found in 1987. The purpose of the refuge is "to conserve fish or wildlife which are listed as endangered species or threatened species."

Issues Identified and Selected for Analysis

Please see discussion of Issues Identified and Selected for Analysis in section 1 of the EA in this volume (appendix A).

Public Review of and Comments on the Draft Environmental Assessment and Land Protection Plan

The Service released the draft WTCA EA and LPP on November 20, 2014, for a 47-day public review period. The draft documents became the basis for the final WTCA EA/LPP. They were made available to the general public as well as to Federal officials and agencies, State officials and agencies, four Native American tribes with aboriginal interests, and members of the public who had asked to be added to the project mailing list as well as via the project Web site. A public meeting was held December 4, 2014, in Laramie, Wyoming, to discuss and get public comments on the draft EA/LPP. Approximately 80 members of the public attended the meeting. In addition to comments provided at the public meeting, the Service received 16 written comments from government agencies, non-governmental organizations, corporations, and individuals. Comments were reviewed and incorporated into the administrative record. Comments and responses to substantive comments are included in appendix F.

The comments generally in favor of the WTCA mention items such as:

- Support for WTCA acquiring conservation easements and fee-title lands with a willing seller program to facilitate additional toad reintroductions
- WTCA using a partnership approach between private landowners and agencies
- Restoring the Wyoming toad to its historic range by conserving toad habitat, water quality, migratory birds, and the biodiversity that riparian and upland areas support
- Enlarging the WTCA project boundary to include additional acreage
- Protecting wildlife while ensuring compatibility with most agriculture practices
- Helping facilitate wildlife movements in our area and possibly mitigating the adverse effects of climate change on our local fauna and flora
- Delineating the project boundary using a data-driven approach

Comments not in support of the project identified the following concerns:

- Citing past experiences with other conservation agencies
- Requesting that the Service consider long-term impacts of perpetual conservation easements
- Stating that there is not enough known about what caused the decline of the Wyoming toad to ensure its successful recovery through the WTCA project
- Expressing general dissatisfaction with the Federal government regarding land access, quality of life, and increased Federal land ownership

The following substantive questions were raised that were neither in opposition to nor in support of the WTCA:

- How will the presence of a Safe Harbor Agreement or a toad reintroduction site affect an adjacent landowner who chooses not participate in one of the WTCA conservation tools?
- How will the various conservation tools (conservation easements, fee-title, or Safe Harbor Agreements) affect land management practices such as grazing, mosquito spraying, and water rights?
- Asking if the Service could consider opening refuges and fee-title lands to public access.

National Wildlife Refuge System and Authorities

Please see a discussion of the Refuge System and authorities in section 1 of the EA in this volume (appendix A).

Related Actions and Activities

Please see a discussion of Related Actions and Activities in section 1 of the EA in this volume (appendix A).

Habitat Protection and the Acquisition Process

Following the approval of a project boundary, habitat protection will occur through conservation easements and limited fee-title acquisition. It is the Service's long-established policy to acquire the minimum interest in land from willing sellers that is necessary to achieve habitat protection goals.

The acquisition authorities for fee-title and easement lands within the WTCA boundary are the U.S. Fish and Wildlife Act of 1956 (16 U.S.C. 742a–j) and the National Wildlife Refuge System Administration Act of 1966 (16 U.S.C. 668dd-ee), as amended. Land would be acquired primarily through Land and Water Conservation Fund monies generated primarily from oil and gas leases on the Outer Continental Shelf, motorboat fuel tax revenues, and the sale of surplus Federal property. The Service could also buy land with Federal Duck Stamp revenue from the Migratory Bird Hunting and Conservation Stamp Act of 1934, other funds that meet fish and wildlife conservation purposes as identified by Congress, or donations from nonprofit organizations.

The basic considerations in determining whether land should be acquired through an easement or fee-title purchase include the biological significance of the area, existing and anticipated threats to wildlife resources, and landowner interest in the project. The buying of fee-title lands or conservation easements would occur with willing sellers only and would be subject to available funding. The social and economic impacts of conservation easements and fee-title acquisition are discussed in the EA (see appendix A, table EA-2).

Conservation Easements

An easement is a conservation tool that has been extensively employed by the Service and other organizations. Easements are bought from willing sellers and they involve the acquisition of specific property rights, such as the right to subdivide or develop certain types of new infrastructure, while all other rights are kept by the property owner. Easements tend to be a cost-effective means of habitat conservation that is acceptable to landowners, particularly in areas where current agricultural land use practices are consistent with wildlife resource protection.

Fee-title Acquisition

Fee-title acquisition will be limited to lands that can be bought from willing sellers in areas that would facilitate Wyoming toad recovery and promote the reintroduction of toads onto the land. Fee-title acquisition could triple or quadruple the cost of land conservation and add significant increases to Service management costs compared to conservation easements. Up to 10,000 acres are targeted for potential fee-title acquisition because this is the estimated acreage necessary to help meet the recovery objectives for the Wyoming toad that are outlined in the recovery plan (USFWS 2015). Fee-title lands acquired under the WTCA would be managed in accordance with the Comprehensive Conservation Plan (CCP) for Mortenson Lake NWR until a compatibility determination can be completed on whether public use and access could potentially be allowed.

Chapter 2—Area Description and Resources

FWS

Western Painted Turtle.

This chapter describes the physical, biological, cultural, and socioeconomic resources of the WTCA that could be affected by the no-action alternative (alternative A) and the proposed action (alternative B). The WTCA consists of 43,200 acres within the Laramie Plains of southeastern Wyoming, which is part of the Wyoming Basin ecoregion (Bailey 1995) and the Great Northern LCC (USFWS 2012a).

Physical Environment

Below are descriptions of the climate and land features of the project area.

Climate

The Laramie Plains is a high, cold desert basin located at approximately 8,000 feet elevation between two mountain ranges, the Snowy Range and the Laramie Range. The average annual precipitation is 11 inches, most of which falls as snow in winter. Temperature extremes range from a record high of 97 °F in summer to a record low of –43 °F in winter (National Oceanic and Atmospheric Administration 2002). The area is known for persistent windy conditions and a short growing season that typically occurs between late May and early September.

Geology

The physiography of the Laramie Plains has been influenced by shallow, warm sea water; a crustal uplift that affected Colorado and southeastern Wyoming; the Laramie Orogeny Mountain building episode; volcanic activity in the Yellowstone area; and ice ages. Most of the stable landforms in the area were created within the last 100,000 years by glacial outwash waters. Many of the valley soils are rather deep and alluvial in nature, having been derived from the surrounding granitic mountains (USDA 1998). Soil texture near the mountains tends to be coarse, but it becomes progressively finer toward the basin center. The alluvial overburden is too thick to allow profitable petroleum development in most of the basin, although limited opportunities for such development do occur. The high, flat nature of much of eastern Wyoming is conducive to the development of strong winds, and several features on the land suggest that wind has played an important role in past geological development as well.

Minerals

Sand and gravel are the major mineral commodities in the Laramie Plains. Sand and gravel mines are scattered throughout the basin, with the biggest concentration near the southern part. Other minerals that are mined in the area include shale, gold, gypsum, and limestone. The potential for oil and gas exploration within the basin is rated as moderate, with scattered high potential areas outside the project area to the north. There are no active coal mining permits in the Laramie Plains at this time (Wyoming Department of Environmental Quality 2014).

Water and Hydrology

Over 82 miles of the Laramie River and a 41-mile-long reach of the Little Laramie River flow through the proposed WTCA. The Laramie River's headwaters are in the Rawah Mountain Range in Colorado (figure LPP-2), and the river itself ultimately empties into the North Platte River near Wheatland, Wyoming (USDA 1998). Smaller tributaries feed into the Laramie River from the Laramie Mountains to the east and the Medicine Bow Mountains to the west. The river is the primary source of water in the Laramie Plains. Because the open plains receive little precipitation, most surface and ground water is a result of snowpack runoff from the surrounding mountains. Historically, many of the natural wetlands were associated with riparian corridors and playa lakebeds. However, the number and area of natural wetlands in Wyoming have continued to decline, whereas the acreages of ponds and other human-created waterbodies have increased (Wyoming Joint Venture Steering Committee 2010). This holds true for the Laramie Plains as well. The Casper aquifer is an important water-bearing geological formation that underlies the entire Laramie Plains and supplies most of the drinking water for the city of Laramie and Albany County.

Biological Environment

This section describes the plant communities in the project area and the animals that they support. Table LPP-2 shows the habitat types in the proposed WTCA.

Table LPP-2. Habitat types within the proposed Wyoming Toad Conservation Area, Wyoming.

Habitat type	*Acres*	*Percent*
Barren Land	775	0.4
Forest, Deciduous and Evergeen	60	0.0
Developed, High Intensity	90	0.0
Developed, Low Intensity	1,990	1.1
Developed, Medium Intensity	1,370	0.7
Developed, Open Space	3,830	2.1
Emergent Herbaceous Wetlands	21,160	11.4
Hay/Pasture	29,620	15.9
Herbaceous	19,410	10.4
Open Water	2,360	1.3
Shrub/Scrub	101,610	54.6
Woody Wetlands	3,910	2.1
Total	186,185	100.0

Plant Communities

Vegetation communities within the proposed project area vary with topography and range from wetlands (which are often alkaline or saline) and riparian areas to wide expanses of shortgrass prairie and shrubland (see figure LPP-3). This section also

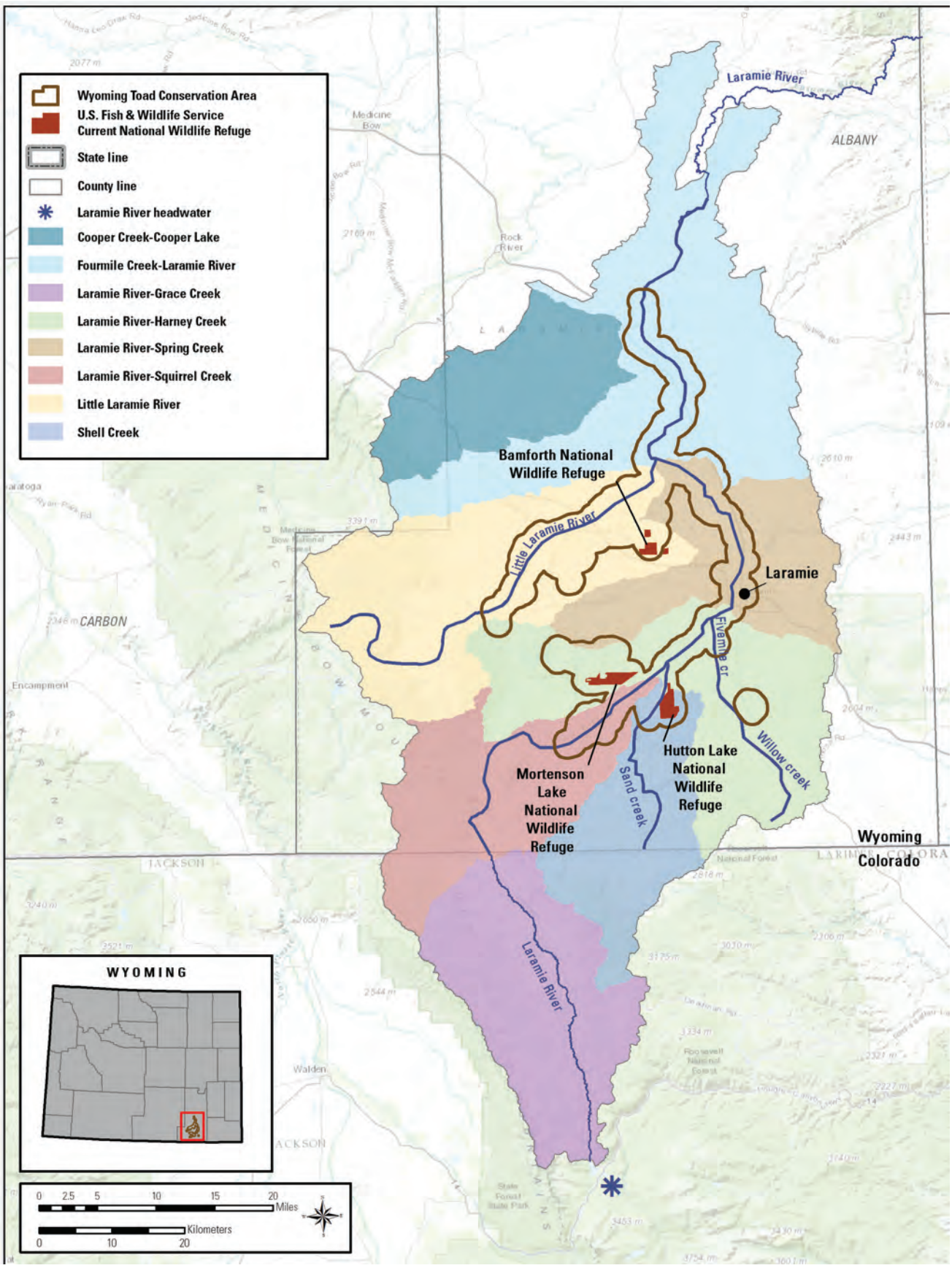

Figure LPP-2. Hydrologic units in the Laramie Plains in Wyoming and Colorado.

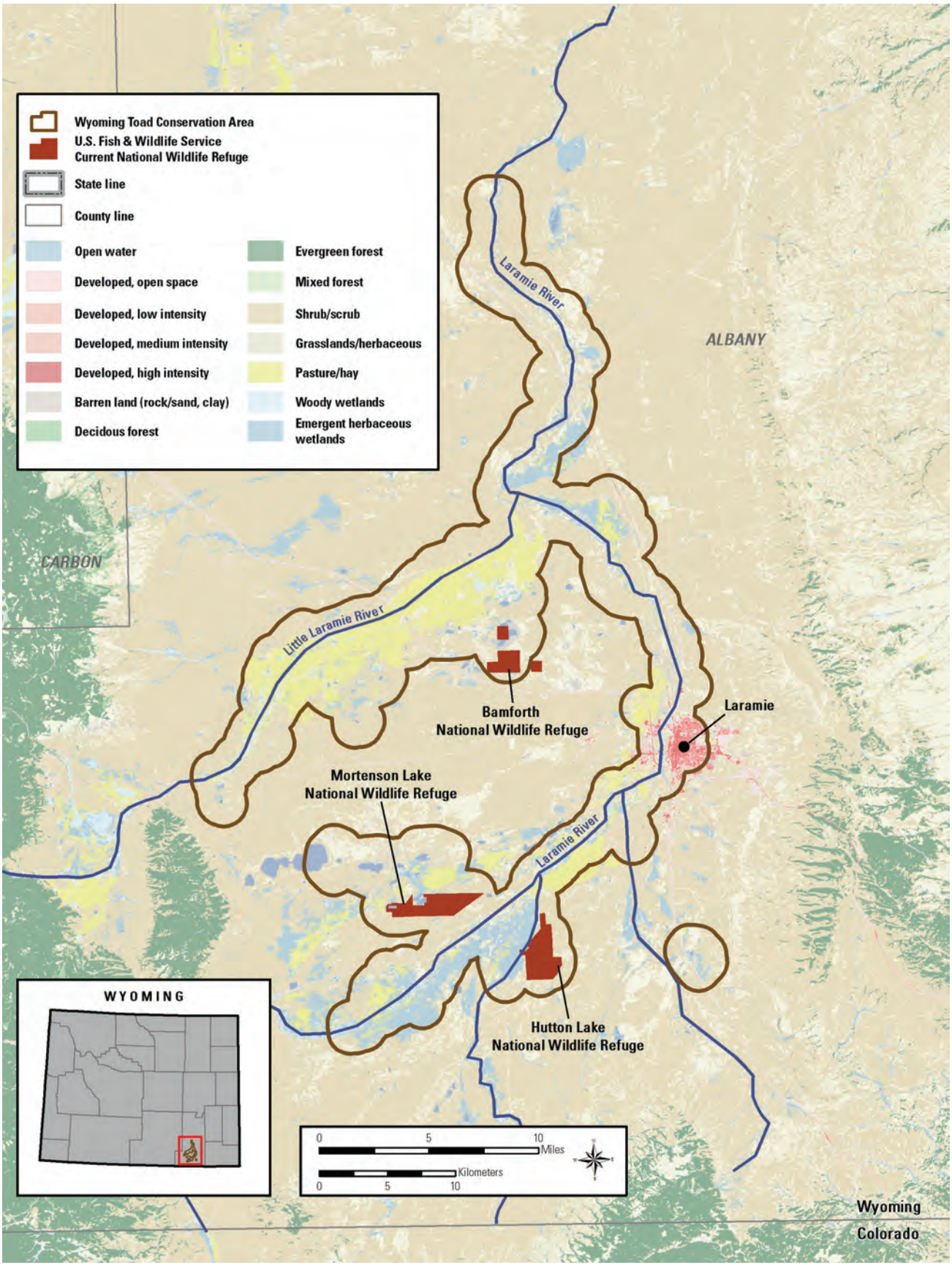

Figure LPP-3. Land cover within the Laramie Plains in Wyoming.

describes the wildlife and species of concern found in these habitats. See appendix E for a list of species found in the project area.

Wetlands

Wyoming is an arid state and lacks the surface water needed to support expansive wetland complexes (Hubert 2004). Before Euro-Americans arrived, wetlands covered about 3.2 percent of Wyoming (Dahl 1990); however, less than 2 percent of the historical wetlands remain today (Wyoming Joint Venture Steering Committee 2010). Although wetlands cover only a small area, about 90 percent of the wildlife in Wyoming uses wetlands and riparian habitats during some part of their life cycles (Nicholoff 2003, Copeland et al. 2010a). Within the Intermountain West, more than 140 bird species and 25 mammal species are either dependent on or associated with wetlands (Gammonley 2004, Copeland et al. 2010a). Although wetland complexes tend to have greater overall use by wildlife (Wyoming Joint Ventures Steering Committee 2010), isolated wetlands in arid environments, such as many of the wetlands found on the Laramie Plains, are also extremely valuable for wildlife because they provide a crucial water source as well as needed food and cover. In these environments, wetlands are a hub of activity for the terrestrial wildlife that inhabits the surrounding area (WGFD 2010). However, Copeland et al. (2010a) found that wetlands within Wyoming's desert shrublands and grasslands are poorly protected and therefore vulnerable, especially in the face of anticipated future land use changes.

Wetlands in the Laramie Plains consist of small ephemeral ponds, stock ponds, irrigated and nonirrigated meadows, playas, lakes, and riverine oxbows and floodplains. These different wetland types provide important breeding, staging, and stopover habitats for migrating waterfowl, shorebirds, and colonial waterbirds each spring and fall (Copeland et al. 2010b). Wetlands provide food-rich habitat so that these species can acquire the energy and nutrients needed to complete the long flights from wintering grounds to breeding grounds and back, as well as places to rest. Many bird species also use the wetlands in the Laramie Plains for breeding.

Many other wildlife species are dependent on these wetlands as well, including amphibians and reptiles. Amphibians, including the Wyoming toad and other species of toads, frogs, and salamanders, need water for breeding and larval development as well as to prevent desiccation. Reptiles such as garter snakes also prefer wetland habitats because they can feed on aquatic species.

Irrigated and Nonirrigated Meadows and Pastures

Privately owned wet meadow habitats are some of the most important unprotected wetlands in the Intermountain West. Since the early 1900s, flood irrigation has created many wet meadows in western North America (Peck and Lovvorn 2001). Irrigated wet meadows that are hayed and grazed annually (hay meadows) represent a particularly important subset of wetland habitat. These privately owned wetlands typically occur at mid- to high elevations (4,500 to 8,500 feet) in landscapes that are dominated by intact wetland, grassland, and shrub habitats. These areas are often made up almost entirely of native plant communities and can support high nesting densities of wetland- and grassland-nesting birds. These areas provide brood habitat for waterfowl and other waterbirds by supplying both protective cover from predators and productive foraging sites for rapidly growing ducklings and chicks.Wet meadows also provide crucial foraging habitat for migrating waterfowl and shorebirds. The quality and availability of spring migration habitat has direct implication for the survival and breeding productivity of migratory birds. The Laramie Plains provides important complexes of wet meadow, flooded pasture, and hayfields used by many species of waterfowl, shorebirds, and other waterbirds, including northern pintail, Clark's grebe, white-faced ibis, American bittern, Wilson's phalarope, American avocet, marbled godwit, long-billed dowitcher, and sandhill crane. The irrigated meadows and floodplain of the river are also believed, based on Baxter's observations, to be important historical habitats for the Wyoming toad.

Riparian Areas

Riparian areas are vegetation communities that are immediately adjacent to and influenced by the hydrology of creeks, streams, and rivers. Riparian plant communities can be dominated by trees, shrubs, herbaceous vegetation, or a combination of these types. Riparian areas account for less than one percent of the western landscape, but they can be relatively more productive than other ecosystems (Svejcar 1997). Breeding bird densities can be up to 10 times greater in riparian areas than in adjacent, nonriparian habitats (Lohman 2004, Copeland et al. 2010). It is estimated that riparian habitat covers less than 2 percent of the State of Wyoming (Merrill and Fishery 1996).

Riparian habitats support high species diversity and density as well as promote the exchange of energy, nutrients, and species between riparian, aquatic, and upland systems (Johnson and McCor-

mack 1979, Gregory et al. 1991, Poff et al. 2011). It is estimated that about 90 percent of the total wildlife species in Wyoming use wetlands and riparian habitats either daily or seasonally and about 70 percent of Wyoming bird species depend on wetlands or riparian areas (Nicholoff 2003). Riparian areas are important migration and dispersal corridors that enable species to readily move through harsh grassland and desert environments.

Many bird species use the riparian corridors of the Laramie Plains during spring and fall migration, and many others stay through the summer to breed. Insect production is high in riparian communities, leading to locally abundant concentrations of insectivorous birds and bats. In the Laramie Plains, narrow-leaf cottonwoods and several willow species are adapted to the natural flow dynamics of the streams and rivers in the area, but throughout the west, many riparian areas have declined because of widespread damming and water diversion. Many riparian and wetland areas within the Laramie Plains now support a variety of exotic and invasive plants, such as Russian olive and Canada thistle. Both the ranching and wildlife conservation communities have devoted significant resources in efforts to control invasive plants in the region.

Grasslands and Shrublands

The composition and structure of grasslands are affected by short growing seasons as well as frequent and occasionally intense natural disturbances such as drought, fire, and herbivory (Nicholoff 2003). Between 1950 and 1990, the grasslands west of the Mississippi River declined by 27.2 million acres (Conner et al. 2001). The greatest threats to grassland and shrubland ecosystems are oil and gas development, increasing urban and agricultural development, and invasive species. Usually dominated by grazers, grasslands are known to support large numbers of wildlife and have a significant influence on the plant and animal composition of grassland habitats (WGFD 2010).

In Wyoming, prairie grasslands usually occur below the elevation of 7,000 feet, but the Laramie Plains, which is at approximately 8,000 feet, contains the highest elevation grasslands in Wyoming (Knight 1996). Grasslands in Wyoming are characterized by interspersed short- and mixed-grass prairies and are typically unsuitable for farming; however, they provide an abundant grazing resource for cattle and sheep. Most of Wyoming's prairie grasslands are privately owned (WGFD 2010).

Prairie grasslands support an impressive array of wildlife. White-tailed prairie dogs thrive in recently disturbed areas, living in large colonies, digging burrows, and keeping the surrounding vegetation short. Their burrows and open patches of ground create habitat for other wildlife species, including the black-footed ferret, long-tailed weasel, swift fox, mountain plover, and burrowing owl (Kotliar et al. 1999, Kotliar 2000, WGFD 2010). Prairie dogs also provide a prey base for species such as black-footed ferret, ferruginous hawk, and golden eagle.

FWS

Pronghorn in the uplands of the Laramie Plains.

Wyoming once represented the western edge of the range for many species such as mountain plover, ferruginous hawk, swift fox, and pronghorn. Intensive conversion of grassland in the Great Plains resulted in the loss of these habitats outside of Wyoming. Populations in Wyoming have remained largely intact, and the core of these species' distributions is now considered to be in Wyoming (WGFD 2010).

Shrublands in the Laramie Plains are dominated by greasewood, saltbrush, and rabbitbrush, as well as some sagebrush. Shrublands are often intermixed with the prairie grassland community. Greasewood shrubland and saltgrass meadows are characteristic of the playas and other comparatively wet depressions (Knight 1996) that are scattered across the Laramie Plains. Shrubland communities provide habitat for a suite of wildlife species, including golden eagle, prairie falcon, mountain plover, Brewer's sparrow, jackrabbit, coyote, bobcat, badger, pronghorn, and mule deer. Pronghorn are more common than deer in salt-desert shrub vegetation; however, both are highly mobile and use associated habitats, especially sagebrush and grasslands (Blaisdell et al. 1984).

Wildlife

The habitats within the Laramie Plains support a wide variety of wildlife. Appendix E lists the species that are known and suspected to occur within the project area.

Amphibians and Reptiles

Due to the cold, arid climate, amphibian and reptile diversity within the Laramie Plains is low compared with other areas of the country, but there are several species that thrive here. The shrublands are home to the short-horned lizard as well as several species of snakes. Because of the arid nature of the region, amphibians are restricted to the riparian and wetland areas; these areas provide habitat for the tiger salamander, boreal chorus frog, Wyoming toad, and northern leopard frog. Although the northern leopard frog was once abundant throughout its range, it has experienced significant declines in the west (Smith and Keinath 2004a). A variety of factors, including habitat loss, disease, chemical contamination, introduced predators, and general environmental degradation have been linked to observed population declines, but no one primary factor has emerged as the cause of the decline, and most likely it is caused by multiple factors that can vary from site to site (Smith and Keinath 2004a). This species is listed as a Species of Greatest Conservation Need by the WGFD (2010). See the discussion of Wyoming toad under species of special concern below.

Birds

The Laramie Plains provides migratory and breeding habitat for many bird species, many of which are not found in any other area of Wyoming. The National Audubon Society (2011) has designated the Laramie Plains Lakes Complex as an Important Bird Area because of the diversity of birds found within the basin, which highlights the regional and continental significance of the area. Thirty-eight of the 55 birds on the WGFD Species of Greatest Conservation Need List and 59 of 97 birds on the Intermountain West Joint Venture priority species list occur in the Laramie Plains. More than 146 species of birds have been documented on the refuges. Some of these birds are year-round residents, but many migrate through the basin on their way to and from breeding and wintering grounds. Others come to the basin to breed or spend the winter.

Given the scarcity of water in the semi-arid landscape of the Laramie Plains, it is not surprising that wetlands within the basin are regionally important to both resident and migrant waterbirds (Nicholoff 2003). The marshes and open water of the basin support 26 species of waterfowl, including canvasback, northern pintail, Barrow's goldeneye, lesser scaup, and redhead, all of which are Species of Greatest Conservation Need in Wyoming (WGFD 2010). Many waterfowl species are also known to breed in the basin, including American wigeon, blue-winged teal, cinnamon teal, northern shoveler, canvasback, northern pintail, green-winged teal, lesser scaup, gadwall, ruddy duck, common merganser, and Canada goose. American avocet and Wilson's phalarope are shorebirds that migrate from their winter ranges in Mexico and Central and South America to breed in the wetlands of the Laramie Plains. At least 22 other species of shorebirds use these wetlands as either stopover or breeding habitat. Two shorebird species that migrate through the basin, the long-billed curlew and the marbled godwit, are focal species for the USFWS Migratory Bird Program and are USFWS Region 6 Birds of Conservation Concern. Seventy percent of Wyoming bird species are wetland or riparian obligates (Nicholoff 2003).

FWS

Northern pintail

The upland areas in the Laramie Plains provide essential habitat for many bird species. Shrub and grassland habitats support species such as golden eagle, burrowing owl, Brewer's sparrow, sage sparrow, and grasshopper sparrow. Prairie falcon is a common resident and uses the upland areas for feeding and resting. The mountain plover, a tier I Species of Greatest Conservation Need within the State of Wyoming, breeds in at least five concentrated areas in Wyoming, one of which is the Laramie Plains. The mountain plover is affected by the loss of breeding habitat as a result of fire suppression, conversion of native grasslands to croplands, and habitat loss to urbanization (WGFD 2010). Figures LPP–4 through

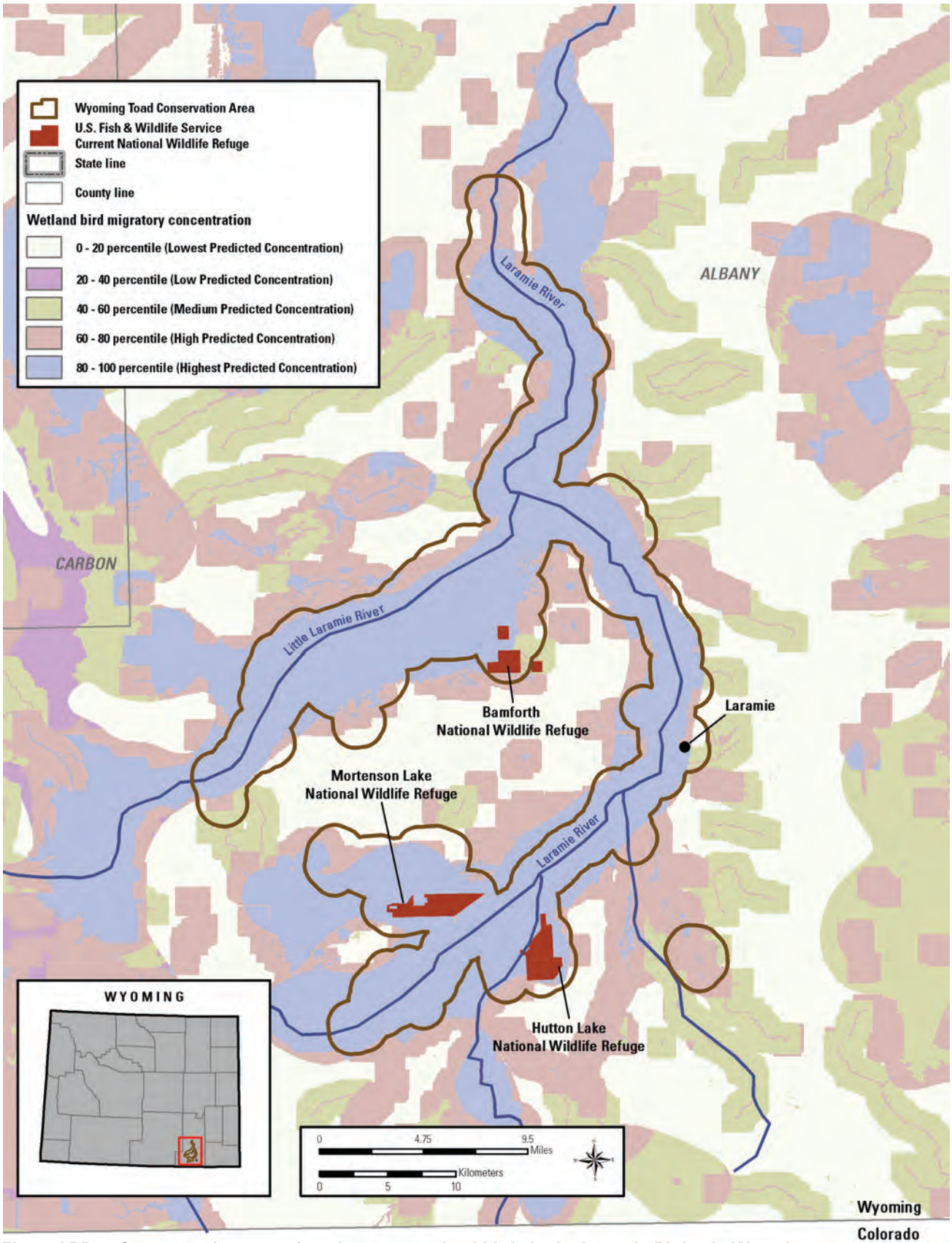

Figure LPP-4. Concentration areas for migratory wetland birds in the Laramie Plains in Wyoming.

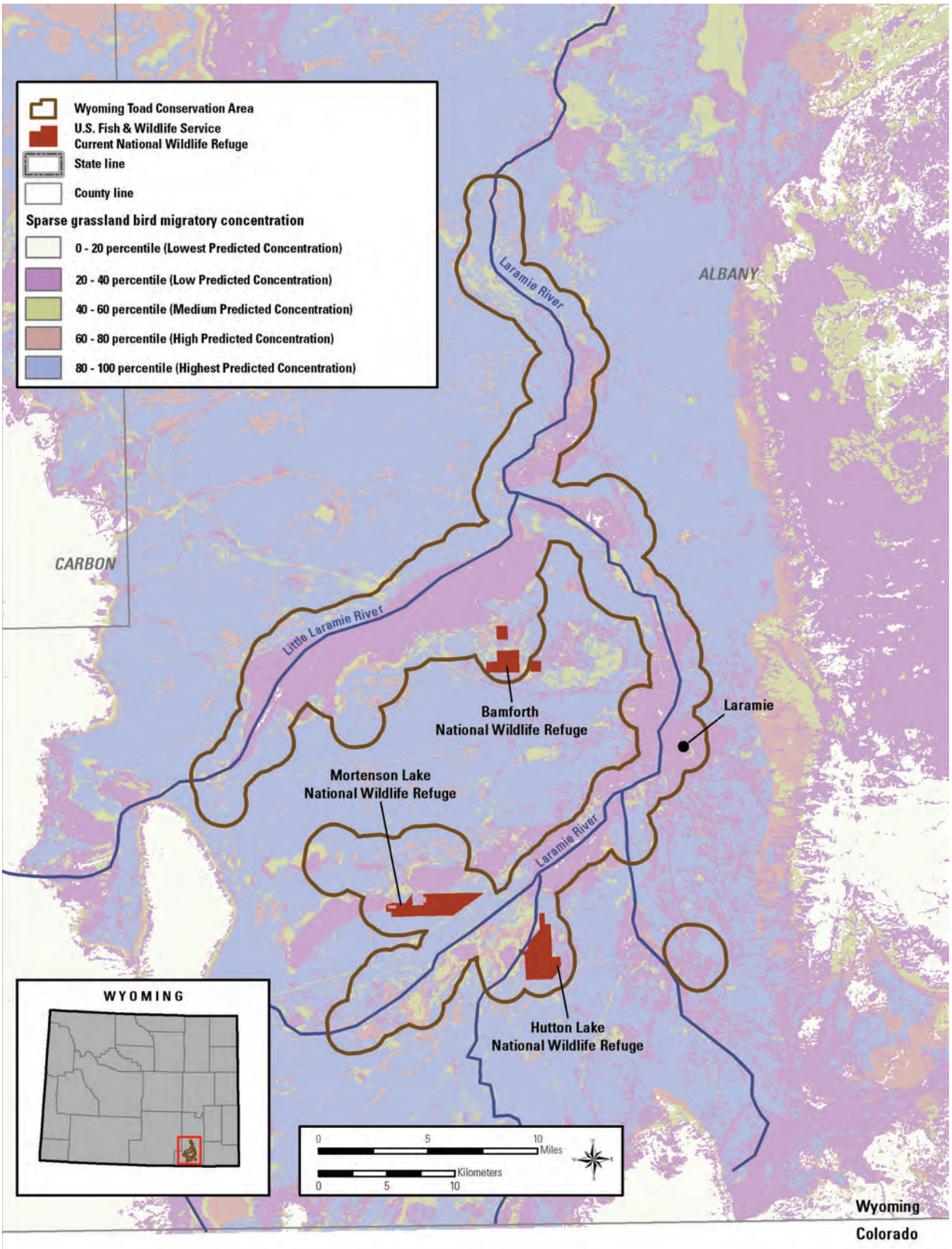

Figure LPP-5. Concentration areas for migratory grassland birds in the Laramie Plains in Wyoming.

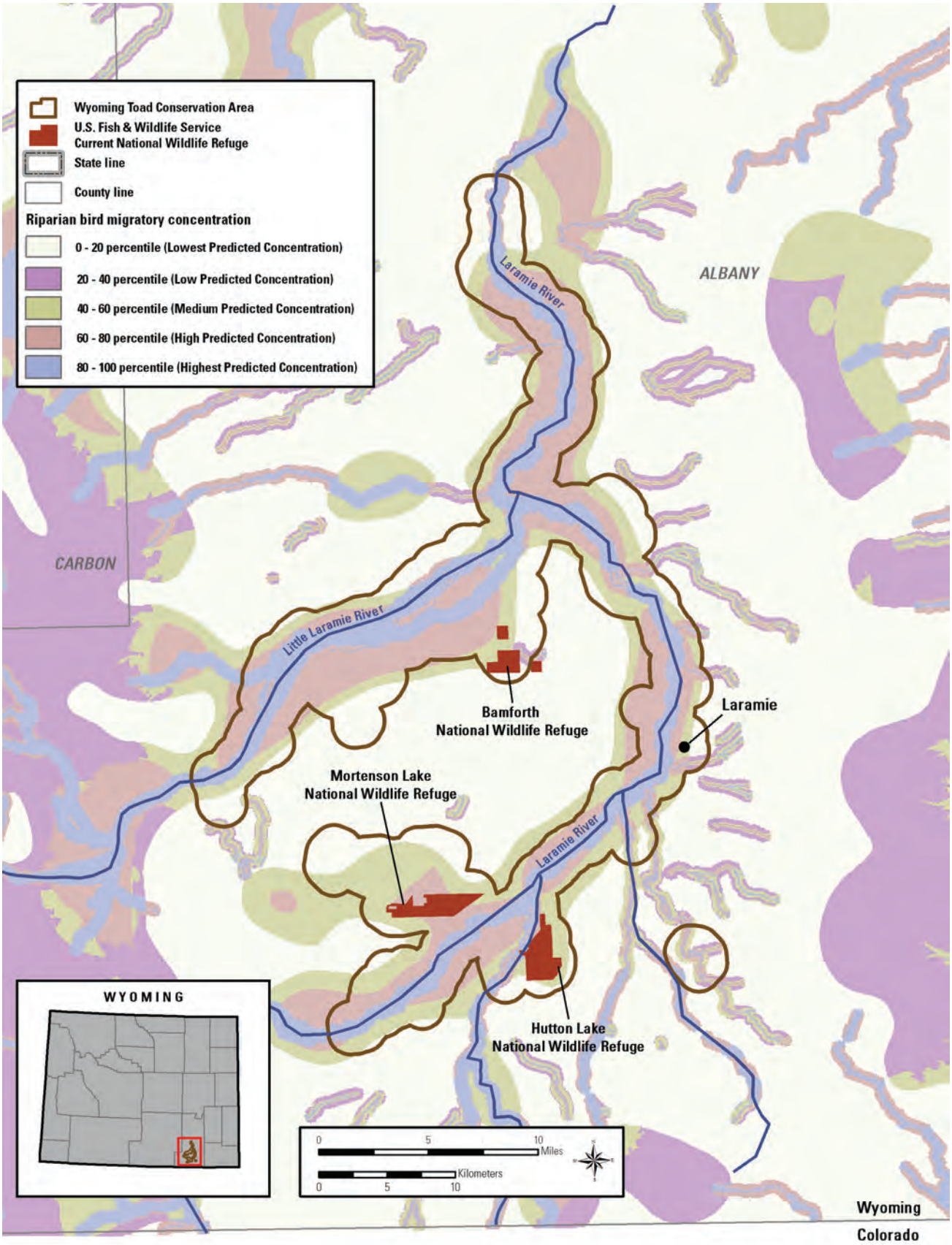

Figure LPP-6. Concentration areas for migratory riparian area birds in the Laramie Plains in Wyoming.

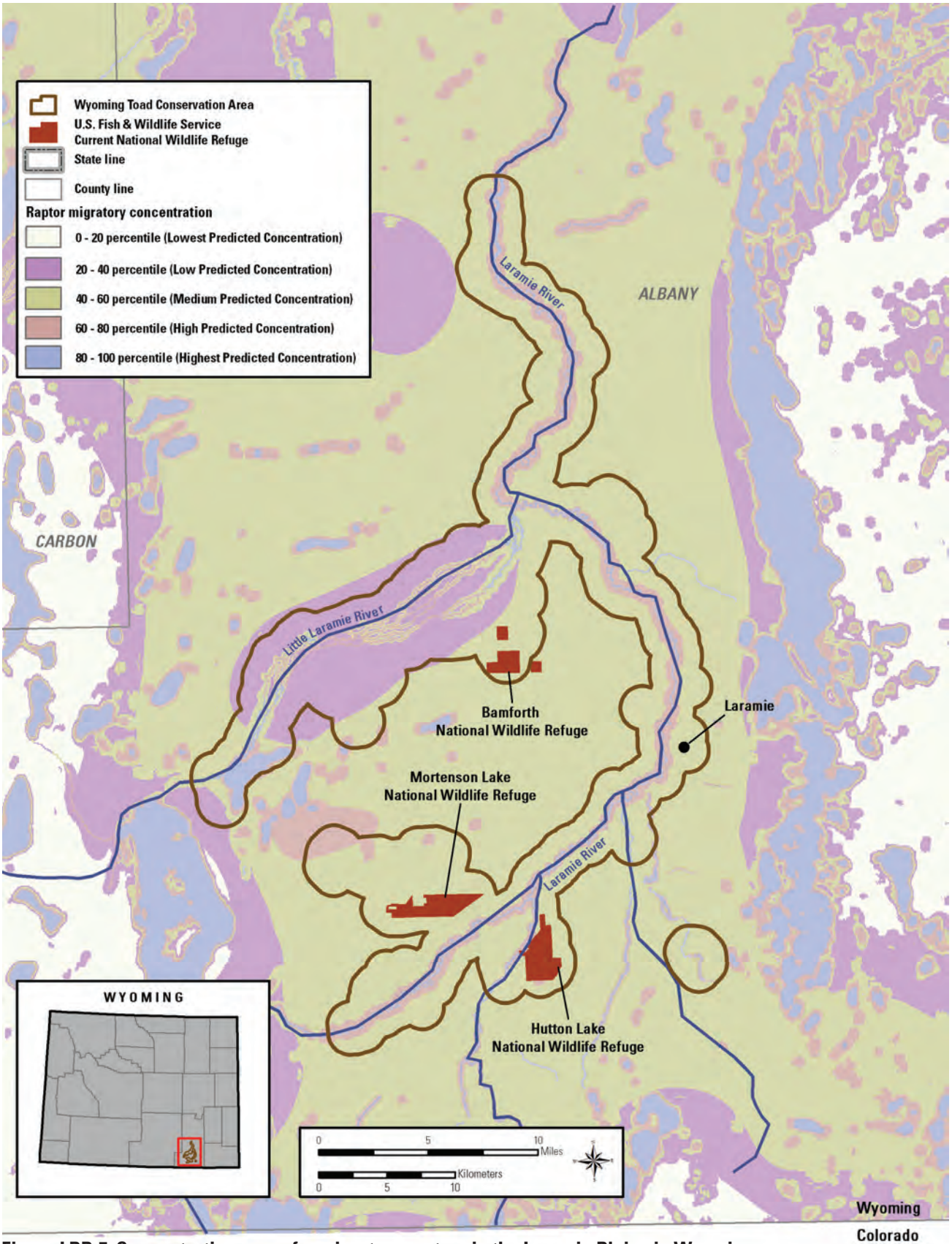

Figure LPP-7. Concentration areas for migratory raptors in the Laramie Plains in Wyoming.

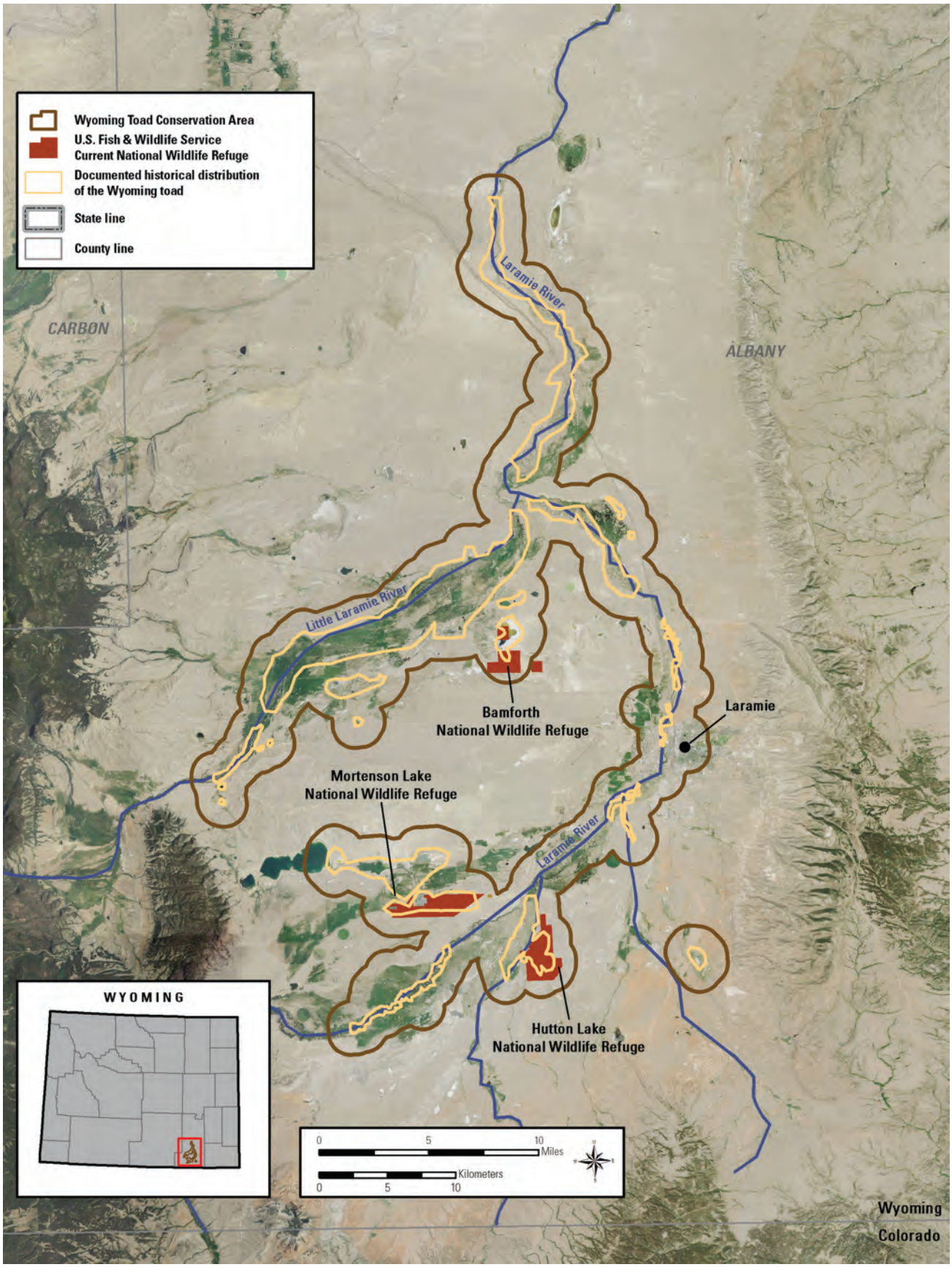

Figure LPP-8. Historical range of the Wyoming toad based on Dr. George Baxter and Ronald E. Beiswenger's paper maps displaying locations and field notes digitized by the Service.

LPP-7 show migratory bird concentrations for wetland birds, grassland birds, riparian birds, and raptors (Pocewicz et al. 2013). Pocewicz et al. (2013) used current migration literature and expert conservationists to get a clearer picture of where important bird migration habitat is throughout the region.

Mammals

Many species of small mammals live in the region, including the white-tailed prairie dog, muskrat, and American beaver, as well as multiple species of ground squirrel, mouse, vole, and shrew. The white-tailed prairie dog is considered a keystone species because species including black-footed ferret, swift fox, American badger, ferruginous hawk, and several other large raptors depend on prairie dogs as prey; species including black-footed ferret, burrowing owl, and swift fox depend on prairie dogs to provide burrows as cover and den substrate; and species including mountain plover and McCown's longspur depend on prairie dogs for shortgrass and semibarren habitats. Black-footed ferrets, in particular, depend so strongly on prairie dogs that ferret recovery and management is, in effect, prairie dog management.

Four of Wyoming's seven big game species, mule deer, white-tailed deer, elk, and pronghorn, are known to reside in or migrate through the project area.

Fish and Aquatic Invertebrates

Fish and aquatic invertebrate populations that were present before Euro-American settlement are not well known in much of the west, and the North Platte River basin, which contains the Laramie Plains, is no exception. The list of aquatic species in appendix E is short and likely incomplete, especially in regards to aquatic invertebrates. It is well accepted that there were no sport fish in the Laramie Plains, or elsewhere in the entire North Platte River basin, before Euro-American settlement (WGFD 2010). Small fish such as hornyhead chub and Iowa darter probably dominated fish assemblages, but these species were greatly affected by the deliberate introduction of various trout species and other exotic taxa, including carp, beginning during early Euro-American settlement and continuing until the present. It is believed that hornyhead chub is found only in the North Laramie River and the Lower Laramie River, and it is believed to be extinct in Montana, Colorado, North Dakota, South Dakota, Nebraska, and Kansas (WGFD 2010). Populations of native aquatic invertebrates were probably also dramatically changed by the introduction of nonnative fish.

Species of Special Concern

Several federally listed species live in, or have home ranges that overlap, the conservation area.

Wyoming Toad

The project area now supports one endangered species, the Wyoming toad (*Anaxyrus* (*Bufo*) *baxteri*). First described in 1946 by Dr. George T. Baxter, it is thought to be a glacial relict. The toad once flourished in the Laramie Plains, but in the 1970s the population dramatically declined, and by the 1980s, individuals were extremely rare (Baxter and Stromberg 1980, Stromberg 1981, Vankirk 1980, Baxter and Meyer 1982, Baxter and Stone 1985, Lewis et al. 1985). The species was federally listed as endangered in 1984 under the Endangered Species Act of 1973, as amended (16 U.S.C. 1531 et seq.). In 1993, under the authority of the Endangered Species Act, Mortenson Lake Refuge was established for the protection of the last known Wyoming toad population. It is considered the most endangered amphibian in North America (IUCN 2012).

The historical distribution of the Wyoming toad, based on scientific records from Dr. George Baxter and Ronald Beiswenger's research, includes the floodplain ponds and small seepage lakes associated with the Big and Little Laramie Rivers as well as other wetlands within the shortgrass communities of the Laramie Plains in Albany County, Wyoming (figure LPP-8). Current distribution is limited to Mortenson Lake Refuge and one nearby Safe Harbor Act site. There are very few Wyoming toads thought to be in the wild and approximately 500 in captivity. The small number of individuals is considered one of the severe threats to the toad. Another major threat to the Wyoming toad is infectious disease, including the amphibian fungus *Batrachochytrium dendrobatidis (Bd)* which has been linked to amphibian declines worldwide (Berger et al. 1998). *Bd* was documented in wild Wyoming toads from Mortenson Lake in 2000 and in 2001 (USFWS 2013). The other severe threat to the Wyoming toad that is discussed in the recovery plan is the lack of perpetually protected habitat. The proposed action directly addresses this severe threat to the Wyoming toad by protecting habitat that is needed for the next step of recovery and which is important for the future of Wyoming toad conservation.

Little is known about the habitat requirements for the Wyoming toad but the current thought is that the toad historically occurred in rivers and associated floodplains (lotic habitats) of the Big and Little Laramie Rivers and ponds and lakes (lentic habitats). Ongoing research, supported by the Service and a

multitude of public and private partners on the Wyoming toad recovery team, is focused on practical aspects of Wyoming toad recovery, such as defining optimal habitat for the early stages (egg, tadpole, and metamorph) of the toad's life cycle in terms of thermal regimes, and devising optimal early stage rearing pens that will optimize the survival of released tadpoles.

Black-footed Ferret

The black-footed ferret (*Mustela nigripes*) is a nocturnal predator that is an extreme habitat-prey specialist, meaning that it lives only in prairie dog burrows and it eats mostly prairie dogs. First described in 1851 by Audubon and Bachman, the ferret was listed in 1967 under the Endangered Species Preservation Act and was listed in 1973 under the current Endangered Species Act (Esch et al. 2005). In 1981, a small population was discovered near Meeteetse, Wyoming (USFWS 1988), and captive breeding and reintroduction efforts began that continue today.

Although the species does not now live in the project area, there are black-footed ferret colonies to the north that could expand to the Laramie Plains within the next few years from the original reintroduction center in the Shirley Basin. The project area is within the historical range of the black-footed ferret, and Albany County has been identified as a possible reintroduction area by the Black-Footed Ferret Recovery Team. While all of the colonies in the Laramie Plains have not been formally surveyed and monitored, an informal assessment of the area in 2010 noted that most prairie dog colonies were active. On Hutton Lake Refuge alone, 541 acres of white-tailed prairie dog colonies have been mapped.

Preble's Meadow Jumping Mouse

The Preble's meadow jumping mouse (*Zapus hudsonius preblei*) is a small rodent in the Dipodidae family and is one of 12 recognized subspecies of *Zapus hudsonius*, the meadow jumping mouse. The range of the Preble's subspecies in the Laramie Plains of Wyoming has not been documented with certainty, but there is some chance that it co-occupies the basin with the closely related and physically indistinguishable western jumping mouse (*Zapus princeps*). Preble's meadow jumping mouse lives in areas of lush riparian vegetation, usually with some woody overstory in the form of trees or shrubs, immediately next to streams, ditches, ponds, or lakes. The subspecies will range occasionally into upland habitats, but always returns to and centers its activities in dense vegetation near water. In Wyoming, Preble's meadow jumping mouse has been definitively documented east of the Laramie Mountains in eastern Albany, western Laramie and Platte, and southern Converse Counties. If Preble's meadow jumping mouse is documented in the future, the proposed action will have direct and positive effects on the subspecies' recovery by providing and maintaining high-quality riparian habitat.

FWS

Black footed ferret.

Little Brown Bat

The little brown bat (*Myotis lucifugus*), which is one of the most common bats in southeastern Wyoming, may use the project area. The species roosts during the day in cavities and other sheltered areas in a wide variety of substrates—buildings, caves, cliffs, boulders, trees (both live and dead), downed logs, and similar habitats—and feeds at night on a variety of insects over wetlands and riparian corridors. The little brown bat does not migrate, but rather hibernates through the winter in secure cavities. The species is now being reviewed for listing under the Endangered Species Act due primarily to huge losses in little brown bat populations in the eastern United States that have been caused by an exotic fungus, termed "white-nose syndrome." The fungus and associated syndrome have been moving steadily westward over the past 6 years, but have not yet reached Wyoming or affected Wyoming bat populations (Griscom et al. 2012). However, there is reason to assume that this fungus will eventually threaten bats in the region. Preservation of wooded riparian corridors that provide roosting and feeding habitat,

FWS

Little brown bat

as well as wetlands and wet meadows that provide feeding habitat, would help alleviate the possible negative effects of "white-nose syndrome."

Mountain Plover

The mountain plover (*Charadrius montanus*) is a migratory shorebird that is native to shortgrass prairie and shrub-steppe habitat of the western Great Plains and Colorado Plateau. The plover nests in regions that were historically affected by a variety of herbivores, including prairie dogs, bison, and pronghorn. Breeding and wintering habitats for the species often reflect some measure of disturbance, be it through fire, grazing, or the presence of digging or burrowing mammals such as prairie dogs (Smith and Keinath 2004b). In Wyoming, five mountain plover breeding areas have been identified, including one in the Laramie Plains.

Cultural Resources

Archeological remains representing 12,000 years of human occupation have been found in the Laramie Plains. Although there have been few formal investigations completed in the area, evidence from the earliest Paleo-Indian occupation through the advent of rural and agricultural development by Euro-Americans in the early 20th century has been documented in a variety of geographical settings. Although these sites exhibit a wide range of artifacts and features, definite trends in site types and changes through time are clear.

Current archaeological evidence shows that the earliest humans, called the Paleo-Indians, migrated to the region at the close of the last Ice Age approximately 12,000 years ago, and, although the record is thin, there was probably significant use of the area by indigenous people (Larson and Letts 2003). These people had a highly mobile lifestyle that depended on big game hunting, including for such now-extinct species as mammoths and ancient bison. The hallmarks of most Paleo-Indian sites are the spear points that are generally recovered from animal kill and butchering sites and small temporary camps. Evidence of the Paleo-Indian occupation of the Laramie Plains area is sparse and most often consists of isolated spear points.

There was a gradual but definite shift in the pattern of human use of the region beginning about 9,000 years ago. These changes were because of regional climatic fluctuations and an increasing human population, coupled with tremendous social change and technological innovation. Although this stage, which is referred to as the Archaic stage, lasted until about 2,000 years ago, it is better represented in the archaeological record than the preceding Paleo-Indian stage. The interpretation of the remains is difficult. On many sites, evidence of a greater diversity of tools and increased use of native plants is found, but the remains also suggest a more localized and less mobile population.

Approximately 1,500 years ago, the use of the bow and arrow marked the beginning of the Late Prehistoric Period. The increase in the number of known archaeological sites for this period may show a growing human population or the influx of peoples from other regions, or it may just reflect our ability to locate these more recent sites. Remains of these early occupations include fire hearths, lithic scatters (stone tools and the byproducts from making them), quarry sites, and stone circles that are probably tipi rings. Fewer than 20 of these sites have been formally recorded in the Laramie Plains.

Euro-American diseases such as smallpox and influenza probably affected Native American populations in the region far in advance of direct contact with Euro-Americans themselves, possibly as early as 1600. Similar dynamics may have occurred with Eurasian livestock diseases and native ungulates. Rocky Mountain tribes adopted the horse, imported by early Spanish colonists, as a central advancement

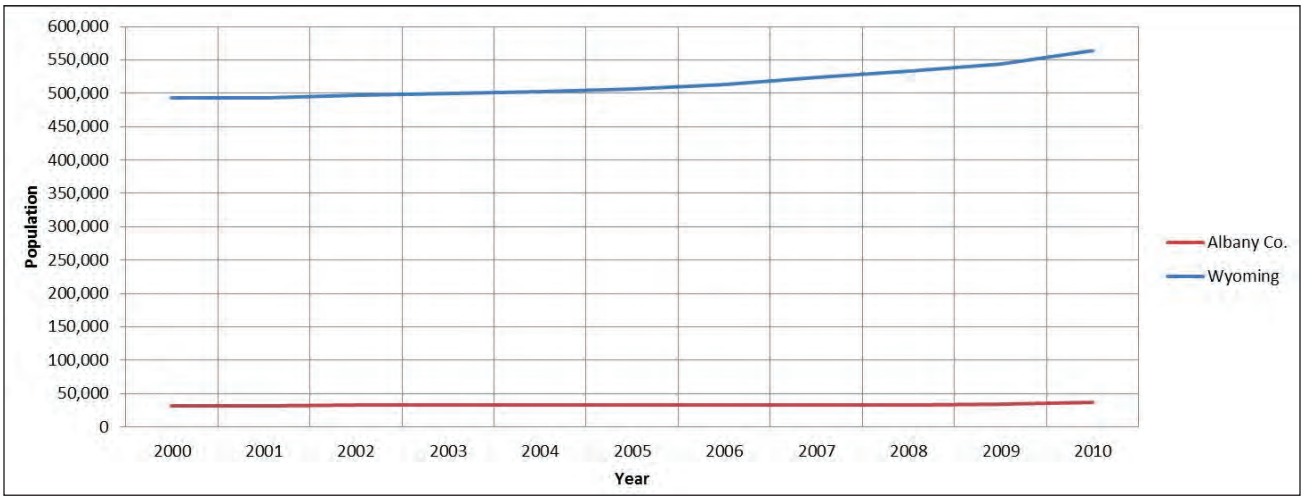

Figure LPP-9. Change in population size in Albany County, Wyoming, from the 2000 census to the 2010 census.

by approximately 1750. By the early 1800s, Euro-Americans were becoming more common in the area and evidence of trade with the Native Americans in horses, firearms, and ornamental items is increasingly evident in the archaeological record. Native American tribes, including the Crow, Cheyenne, Sioux, and Arapaho, lost their lands with the Fort Laramie Treaty of 1868, and many were relocated to reservations outside Wyoming.

As is the case with much of the West, the early Euro-American exploration of the Laramie Plains owes much of its beginnings to the fur-trapping trade. In 1820, Jacques Laramie trapped along the river that now bears his name. Although thousands of Euro-Americans traveled through what is now the State of Wyoming in the 1840s and 1850s, most were heading farther west on the nearby Oregon, California, Overland, and Mormon trails, and few of them settled in what would become Wyoming. From 1862 to 1868, approximately 20,000 people per year traveled along the Overland Trail, which ran approximately 3 miles north of what is now Hutton Lake

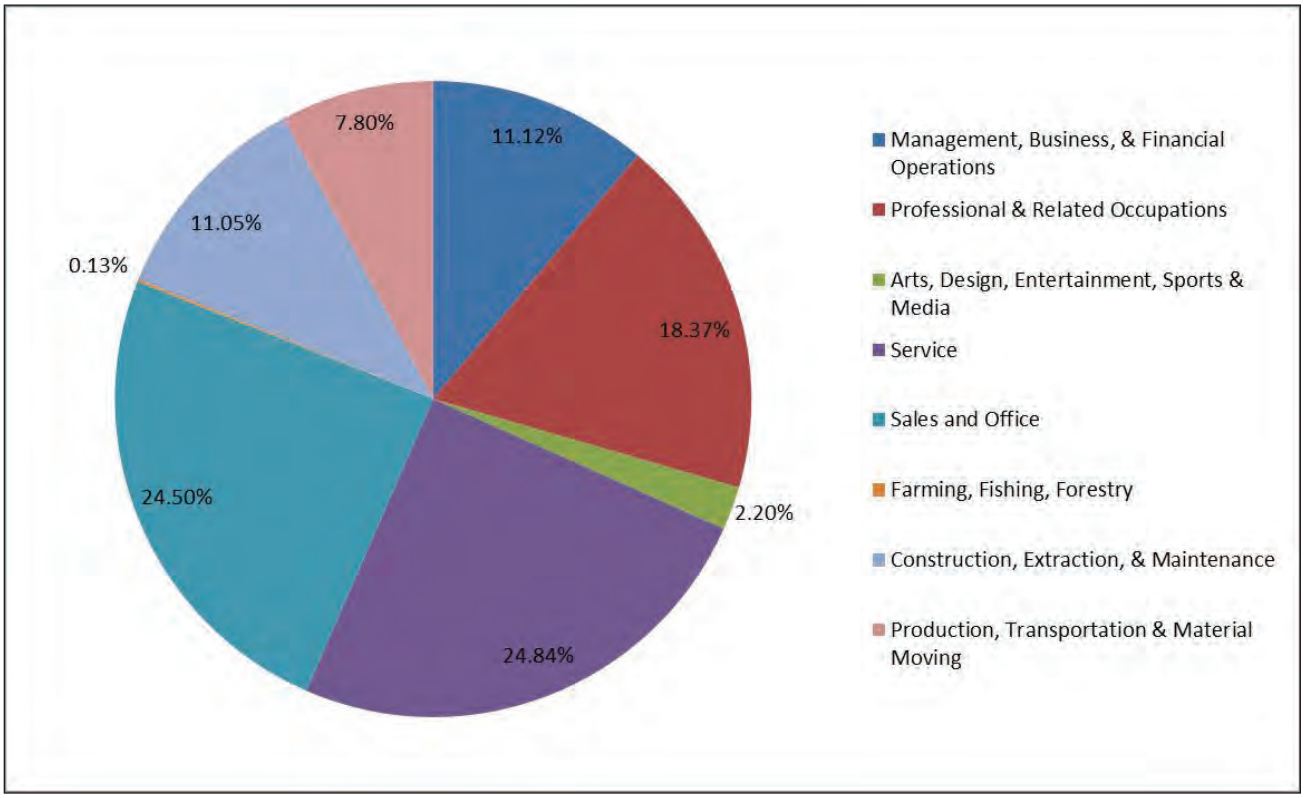

Figure LPP-10. Employment distribution in Albany County, Wyoming, 2010.

National Wildlife Refuge. The stage stations established by the Overland Stage Company became the first permanent Euro-American structures in the area (Larson and Letts 2003).

The first homestead in the basin was built in 1864 by Phillip Mandel along the Little Laramie River. It also served as a stage station for the Overland Trail. Mandel sold replacement stock to travelers and later cut and sold hay to soldiers at Fort Sanders, which was established in 1866 just south of present-day Laramie and about 10 miles northeast of Hutton Lake Refuge. Until 1882, when the fort closed, it helped protect the early settlers and travelers in the basin during the many conflicts with Native Americans. The construction of the Union Pacific Railroad through the area in the late 1860s was one of the most influential events in the history of the region. The development of the railroad lead to the growth of Laramie and was the catalyst for expanding the cattle and sheep ranching industries that are still present today.

The Service has a trust responsibility to Native American tribes that includes protection of tribal sovereignty and preservation of tribal culture and other trust resources. The Service does not now propose any project, activity, or program that would result in changes in the character of, or adversely affect, any historical cultural resource or archaeological site. When such undertakings are considered, the Service takes all necessary steps to comply with Section 106 of the National Historic Preservation Act of 1966, as amended. The Service complies with Section 110 of the act by surveying, inventorying, and evaluating cultural resources

Socioeconomic Environment

Landownership, property taxes, public use, and wildlife-dependent recreational activities of the Laramie Plains are discussed in this section.

The proposed project area is located in Albany County, Wyoming, which has a population of 36,299 (U.S. Department of Commerce 2011). Most of the population (30,816) lives in Laramie, the largest city in Albany County. Wyoming has a population of 563,626 (U.S. Department of Commerce 2011). Over a 10-year period (2000–2010), the population of Wyoming increased by 14.1 percent and the population of Albany County increased by 13.4 percent. In 2010, the county's population rose 6.8 percent or by 2,320 persons. Within this 10-year span, 84 percent of the growth was within the boundaries of the city of Laramie (see figure LPP-9).

The economy of the project area is tied to the city of Laramie. The presence of the University of Wyoming strongly influences Albany County's occupational demographics, with 41 percent of the 2010 population working in management, professional, and related occupations (including education) (see figure LPP-10). Farming, fishing, and forestry account for 0.13 percent of the workforce, a reduction from 1.4 percent in 2006 (Wyoming Department of Workforce Services 2012) (see figure LPP-10).

Landownership

The agricultural trend within the Laramie Plains follows statewide trends. From 2002 to 2007, the number of farms in Albany County increased from 320 to 448, a 40-percent increase. Although the number of farms increased, the acreage being farmed decreased by 22 percent, indicating that while there are more farms, they are smaller in size (USDA 2007).

Wyoming ranks eighth among States in total acres (42.3 percent) owned by the Federal government (U.S. General Services Administration 2010). The State government owns 6 percent (3,854,800 acres) of all Wyoming lands.

Property Taxes

Property taxes constitute the largest source of local government revenue (Urban Institute and Brookings Institution 2008) and are not expected to be substantially affected by conservation easements in the proposed WTCA. Property taxes are assessed based on the value of property. For most types of properties, county assessors use fair market value to calculate property tax liabilities; however, agricultural land is often assessed differently. In many States, the assessed value of agricultural land is calculated based on the productive value of the land rather than on the fair market value of the property.

The fair market value of a property is calculated by an appraisal. This value includes both the productive value of the land and any speculative value associated with the possibility of developing the land. Conservation easements reduce the fair market value of property by removing the speculative value associated with possible development; however, conservation easements generally do not affect the productive value of agricultural land.

Wyoming landowners now pay property taxes on their private lands to the counties. These taxes are based on a fair market value, and agricultural land is

taxed based on the land's productive capability under normal conditions. Since most of the properties within the proposed project area are classified as agricultural land and any easements would allow private landowners to keep ownership, there will be little effect on the current property tax base for Albany County.

The buying of any fee-title lands will reduce the amount of property tax revenue collected by local governments because the Service is exempt from taxation on its property holdings. However, counties would qualify for reimbursement of some property tax revenue through the Refuge Revenue Sharing Act of 1935, which allows the Service to make annual payments to local governments in areas where fee-title purchases have removed land from the tax rolls. Payments are based on the greater of 75 cents per acre or 0.75 percent of the fair market value. The exact amount of the annual payment depends on Congressional appropriations, which in recent years have tended to be substantially less than the amount needed to fully provide the authorized level of payments. In fiscal year 2010, actual payments were 22 percent of authorized levels.

Public Use and Wildlife-dependent Recreational Activities

Residents of and visitors to the Laramie Plains are attracted to the area, in part, by the abundance of wildlife. This area offers many wildlife-dependent activities, including hunting, fishing, birding, and wildlife photography, which generate millions of dollars for the State's economy (Hulme et al. 2009).

In 2006, the WGFD estimated expenditures of $107.7 million by resident and nonresident hunters pursing the six big game species in the State: white-tailed deer, mule deer, moose, elk, bighorn sheep, and pronghorn. Resident hunters accounted for 67 percent of the total (Hulme et al. 2009). The National Survey of Fishing, Hunting, and Wildlife-Associated Recreation (USFWS 2008) found that in 2006, $137.3million was spent in Wyoming by both resident and nonresident hunters. Wildlife watchers, both residents and visitors, spent a total of $394.9 million in the State of Wyoming that year as well (USFWS 2008).

Chapter 3—Threats to and Status of Resources

Prairie dog burrows and open patches of ground create habitat for several species, including mountain plover.

Threats to Resources

In the Laramie Plains, as in much of the West, communities tend to be located near riparian areas. Planning for expected development and other land use changes is needed for conserving wildlife habitat in the area. The Wyoming toad, along with an estimated 90 percent of the total wildlife species and 70 percent of bird species in Wyoming (Nicholoff 2003), uses wetlands and riparian habitats either daily or seasonally.

Development

Population growth in the State of Wyoming is expected to continue. Between 2000 and 2005, Wyoming ranked 31st in population growth, but from 2006 to 2007, Wyoming jumped to ninth in population growth (Hulme et al. 2009). From 1978 to 2007, total land in agriculture in Wyoming declined from 33.6 million acres to 30.2 million acres, a decrease of more than 10 percent. Albany County alone saw a 6-percent decrease in farm lands from 2002 to 2007 (USDA 2007). However, much of the residential growth in Wyoming is considered rural, with a housing density of 1 unit per 40 acres (Hulme et al. 2009). Increasingly, these exurban homes are often second homes. From 1990 to 2000, Wyoming saw a 30-percent increase in second home buying, and 7.2 percent of total housing units in Albany County are second homes. People are drawn to the open space, abundant wildlife, and recreational opportunities that are available, but exurbanization leads to increased habitat fragmentation and a shift from traditional agriculture practices.

Wyoming ranked seventh in production of crude oil and second in the production of natural gas in 2010, with production occurring throughout the State (Petroleum Association of Wyoming 2012). Also, Wyoming ranks 10th in the nation in proven reserves of crude oil and second in proven reserves of natural gas. Proven reserves are the amount estimated to be recoverable from well-established or known reservoirs. Because of high proven reserves within the State and the increased nationwide need for energy, oil and gas development is likely to continue throughout the State.

Over 43 percent of Wyoming has the potential for development of wind energy (U.S. Department of Energy 2011). Wyoming ranks 10th in potential wind energy development, with 27.3 million acres (42,631.28 square miles) of available land with an installed capacity of 552,072.6 megawatts and an annual generation of 1.9 million gigawatt-hours. Most of this potential is within the southeast part of the State. Most of the land with potential for wind development would still be available with the Wyoming Toad Conservation Area.

Fragmentation

Changes in land cover resulting from residential development, energy development, and roads not only cause a loss of habitat, they also fragment remaining habitat. There is a robust body of literature on the effects of habitat fragmentation that has been summarized by Collinge (2009). Countless manipulative and observational studies have shown that habitat area and connectivity between similar habitats are important at all trophic levels ranging from soil decomposers (Rantalainen et al. 2005) to passerine birds (Telleria and Santos 1995). Intact corridors between fragments promote use of, and persistence in, those habitats by migratory birds (Haas 2002), large carnivores (Shepherd and Whittington 2006, Tremblay 2001), and ungulates (Tremblay 2001) that are native to the WTCA. Perhaps the most obvious way to protect migration routes as well as valuable habitat in the WTCA is to focus on the conservation of the riparian corridors that cross and connect existing protected areas. This action would protect wildlife movement corridors for seasonal migration as well as colonization following large-scale disturbances or environmental change.

Invasive Species

Increased human disturbance associated with development has also been shown to negatively affect adjoining habitat because of the introduction and establishment of invasive plant species. Invasive plants can have many detrimental effects, including displacement of native vegetation, alteration of nutrient cycling and soil chemistry, alteration of hydrology, increased erosion, and changes in fire regimes (Dukes and Mooney 2004). Collectively, such changes can have severe negative effects on wildlife habitat, such as reducing the quality of nesting and foraging areas.

Another invasive species that is threatening the Wyoming toad and other amphibian populations in the Laramie Plains is chytrid fungus. Mortality caused by this fungus has been documented in the Wyoming toad population at Mortenson Lake Refuge and is thought to be one of the main causes of the toad's decline in the 1970s. However, toad populations have been sucessfully maintained recently despite the widespread presence of chytrid. Other diseases such as "white-nose syndrome" in bats and chronic wasting disease in cervids may also threaten the wildlife in the Laramie Plains, although these diseases have not been documented in the area to date.

Water Use

The Laramie River and its tributaries are the primary source of water in the area. Because the open plains receive little precipitation, most surface and ground water is a result of snowpack runoff from the surrounding mountains. The potential for wetland management, creation, and restoration is con-

FWS

High flows on the Big Laramie River.

strained by the applicable provisions of State water law. Water can be appropriated and applied only to a beneficial use recognized by the State of Wyoming, and though a considerable number of water rights have been approved by the Wyoming State Engineers Office, there is no formal list of approved or defined beneficial uses in Wyoming (Wyoming Joint Venture Steering Committee 2010). Without formal recognition of wildlife habitat creation, maintenance, enhancement, or management as a beneficial use in the State of Wyoming, the rulings for water appropriation can be inconsistent and can lead to wetland habitat loss that would directly affect wetland-dependent wildlife populations. As fragmentation increases, remaining habitats become geographically isolated and wildlife populations with limited dispersal abilities may potentially become genetically and spatially isolated.

Climate Change

Climate change has become one of the paramount conservation issues and management challenges. The term "climate" refers to the mean and variability of different types of weather conditions over time, with 30 years being a typical period for such measurements, although shorter or longer periods also may be used (Parry et al. 2007). The term "climate change" refers to a change in the mean or variability of one or more measures of climate (such as temperature or precipitation) that persists for an extended period, typically decades or longer, whether the change is because of natural variability, human activity, or both (Parry et al. 2007). Various types of climate change can have direct or indirect effects on species. These effects may be positive, neutral, or negative, and may change over time, resulting in different effects on species and associated habitats (Parry et al. 2007).

Mountain ecosystems in the western United States are expected to be especially sensitive to climate change. Data shows that many places in the Rocky Mountains have experienced three times the global average temperature increase over the past century. The magnitude of warming in the northern Rocky Mountains has been particularly significant, as shown by an 8-day advance in the appearance of spring phenological indicators since the 1930s (Cayan et al. 2001). The hydrologic regime in the northern Rockies has also changed in response to the shift in global climate, and is projected to experience further changes (Bartlein et al. 1997, Cayan et al. 2001, Stewart et al. 2004). Under global climate change scenarios, the mountainous areas of northwest Wyoming may eventually experience milder, warmer, wetter winters and drier summers (Bartlein et al. 1997). Furthermore, the pattern of snowmelt runoff may change, with a reduction in spring snowmelt (Cayan et al. 2001) and an earlier peak runoff (Stewart et al. 2004), resulting in relatively lower annual discharge during spring and summer.

There is no available information on the potential threats of climate change on the Wyoming toad, and there is no evidence of direct effects to the species at this time (USFWS 2013). Many species that are already listed as endangered or threatened may be particularly vulnerable to changes in climate; it is also recognized that, for some listed species, the likely effects may be positive or neutral. However, some studies have predicted that amphibians will be even more susceptible to climate change than bird or mammal populations because of their physiology; dependence on microhabitats and predictable hydrological regimes; limited dispersal abilities (Blaustein et al. 1994); and susceptibility to diseases that may be intensified by climate change (Pounds et al. 2006). Some models predict substantially larger changes in amphibian populations than in birds or mammals, based primarily on potential future range contractions and expansions. This multitude of projected impacts could exacerbate the current population declines of many amphibian species (Stuart et al. 2004). Many wetland and riparian habitats, such as those found within the boundary of the conservation area, are dependent on snowmelt from surrounding high-mountain ecosystems and are therefore expected to be more acutely affected by changes in runoff amount, timing, and quality than other habitats (Parry et al. 2007). Because the snowpack in high-elevation montane ecosystems directly affects the phenology of lower elevation watersheds, species associated with these systems may be more acutely affected than species in more temperate ecotypes.

For amphibians and reptiles, the timing of key ecological events is influenced by environmental conditions such as air and water temperatures and precipitation patterns. The timing of breeding, egg laying, metamorphosis, dispersal, and migration may shift in response to higher temperatures and changes in rainfall (Beebee 1995). As temperatures warm and the water in aquatic habitats becomes more variable, amphibians are likely to experience lower rates of survival to metamorphosis. Temperatures outside of their thermal optima can also cause physiological stresses (Gibbons et al. 2000). Because of their affinities to aquatic habitats and their small size, amphibians typically have relatively small home ranges and low dispersal rates (Duellman and Trueb 1994, Wells 2007), making them more vulnerable to changes in their environment. The Wyoming toad, in particular, is a glacial relict that is adapted to a cool montane climate with a reliably high spring runoff. As climate

change shifts temperature and hydrologic profiles beyond their historical ranges of variability, it is reasonable to assume that the Wyoming toad will experience population stress.

Migratory waterbirds are similarly adapted to a particular range of climate-related habitat conditions, including the timing and amount of water provided by runoff as well as the phenology of plant emergence and growth. Again, as climate change causes these conditions to shift outside of their historical ranges of variability, populations of wetland and riparian birds are likely to be stressed in novel ways.

Adaptation, Mitigation, and Engagement

The Service's strategic response to climate change involves three core strategies: adaptation, mitigation, and engagement (USFWS 2009). As the climate changes, the abundance and distribution of wildlife and fish will also change in response to changing habitat conditions. Some species will adapt successfully to a warming world, many will struggle, and others will disappear.

The exact changes in temperature and precipitation that the Laramie Plains will experience are unknown. Equally unknown are the responses of wildlife and habitats to these changes. For example, some species will be more vulnerable to climate change than others. To help fish and other wildlife species adapt, keeping large areas of intact wetlands, robust riparian corridors, and open spaces will become increasingly important. The project area provides an anticipatory, rather than a reactive, response.

Forests, grasslands, wetlands, and soils have a large influence on atmospheric levels of carbon dioxide. Carbon sequestration forms one of the key elements of mitigation. The World Resources Institute estimates that, of the global stock of carbon in terrestrial ecosystems, grasslands store approximately 34 percent, forests store approximately 39 percent, and agro-ecosystems store approximately 17 percent of the total (White et al. 2000). It is as important to protect existing carbon stores from further degradation as it is to sequester atmospheric carbon.

Historically, the destruction of wetlands through land use changes has had the largest effects on carbon fluxes and the resulting radiative forcing of North American wetlands. Radiative forcing is the measure of the amount that the Earth's energy budget is out of balance. The primary effects have been a reduction in the ability of the wetlands to sequester carbon (a small to moderate increase in radiative forcing), oxidation of their soil carbon reserves on drainage (a small increase in radiative forcing), and reduction in methane emissions (a small to large decrease in radiative forcing). It is uncertain how global changes will affect the carbon pools and fluxes of North American wetlands (Bridgham et al. 2006). The WTCA project could secure the carbon already stored within the soils of the Laramie Plains by preventing the conversion of native vegetation to various types of development and thus preventing the carbon liberation that accompanies ground-disturbing development.

Engagement involves cooperation, communication, and partnerships to address the conservation challenges presented by climate change (USFWS 2009). The WTCA serves as a model for engagement by working with landowners, nongovernmental organizations, State agencies, and Federal agencies.

One of the key recommendations that came from a climate change workshop that was held by The Nature Conservancy was to coordinate management of shared resources. Given that some regions are experiencing warming more rapidly than others, natural resource managers would benefit by coordinating their activities with others who are managing common resources. Regional and coordinated management of shared habitat may be the only way to make sure that some habitat can be kept in a resilient state while other habitat transitions to a different state (Robles and Enquist 2010).

Taking action on these recommendations will be crucial for achieving conservation and management goals in the face of a changing climate. Reduced snowpack in the mountains combined with earlier seasonal melting caused by rising temperatures may increase the intensity and length of late summer droughts and reduce the availability of water, especially in the western United States. Finding enough water is becoming an increasingly difficult challenge for western fish and wildlife species. Spring is arriving earlier, and plants and animals are being found farther and farther north of their historical ranges in the U.S. Wildlife biologists are concerned that this will mean some migratory species may not arrive in their breeding habitats when, or where, their particular food sources are available.

Effects of the Wyoming Toad Conservation Area on the Natural and Human Environment

For a thorough discussion of the effects of the easement and fee-title acquisition program, see chapter 4 of the EA in this volume (appendix A).

Chapter 4—Project Implementation

Sarah Armstrong/FWS

Wyoming toad

During development of the alternatives for this project, the Service considered the following land protection options:

- county zoning
- various configurations of project boundaries (much larger or smaller areas)
- Safe Harbor Act agreements only
- easements only
- fee title only

The above protection options were found to be unable to meet the purpose, need, or objectives of the Wyoming Toad Conservation Area and therefore were not considered further in the EA.

No-action Alternative

Under the no-action alternative evaluated in the EA, Refuge System conservation efforts would continue on existing refuge units according to establishment purposes and as outlined in the Comprehensive Conservation Plan. Habitat and species management and restoration would continue on lands owned by the Service to help meet the needs of migratory birds and endangered species. Existing habitat enhancement and restoration projects on private lands such as water developments, grazing systems, wetland protection, and grassland management would continue through cooperative efforts between private landowners and various conservation programs administered by the Service or nongovernmental organizations like The Nature Conservancy and Wyoming Stock Growers Land Trust.

Under this alternative, management tools (easements or fee title) that landowners within the boundary could have chosen to carry out on their land to help them with habitat preservation would not be available from the Service. This alternative could lead to further fragmentation of the landscape, residential and commercial development, and other uses of the land that are not compatible with wildlife conservation.

The no-action alternative would likely cause further declines in the quality and health of local natural resources and the overall ecosystem. It would negatively affect the recovery and eventual delisting of the Wyoming toad. It would be anticipated that recovery efforts would continue with the limited pace and minimal success of recent efforts. Without multiple parcels of suitable habitat dedicated to the establishment of sustainable populations of the toad within its historical range, it would be unlikely that the Wyoming toad would ever fully recover.

Conservation Easements and Limited Fee-title Acquisition

It is the Service's long-established policy to acquire the minimum interest in land from willing sellers that is necessary to achieve habitat protection goals. The Service seeks to protect up to 43,200 acres through conservation easements and limited fee-title land (up to 10,000 acres) within the Laramie Plains. The Service would seek to strategically buy conservation easements on privately owned lands that provide potentially valuable wildlife habitat. The easements would provide perpetual protection of habitat for Federal trust species (migratory birds and threatened and endangered species) by restricting some types of future development. Development for residential, commercial, or industrial purposes such as energy and aggregate extraction; alteration of the natural topography; and conversion of native wetlands, riparian areas, shrublands, and grasslands to cropland would be prohibited. Conservation easements would also prohibit the draining, filling, or leveling of wetlands.

The Service would also work to strategically protect wetland habitat for the reintroduction and establishment of up to five independent, self-sustaining populations of Wyoming toads that would be perpetually protected through fee-title purchase from willing sellers.

Acquisition of fee-title lands, from willing sellers only, would be prioritized based on specific criteria that would help with meeting the criteria of the Wyoming Toad Revised Recovery Plan (USFWS 2015). These criteria are meant to contribute to the recovery and delisting of the Wyoming toad. The Wyoming Toad Revised Recovery Plan (USFWS 2015) calls for the establishment of five independent, self-sustaining populations within the historical range of the Wyoming toad for the toad to be delisted. Furthermore, these five populations should be distributed across at least two basic habitat types: rivers and associated floodplains (lotic habitats) and ponds and lakes (lentic habitats). To accomplish this goal, more lands that are managed to conserve the species within its historical range will be necessary to secure habitat for toad reintroduction and to protect established Wyoming toad populations in perpetuity. Management practices on fee-title lands could include using prescribed fire, livestock grazing with periodic resting of pastures, nonnative fish exclusions, invasive species control, and disease management. Using a combination of conservation easements and up to 10,000 acres of fee-title lands would ensure the maximum likelihood of achieving the recovery of the Wyoming toad. A compatibility determination would be completed to establish whether any land acquired in fee title could be opened for public use.

Priority Areas

Areas considered for fee-title and conservation easements within the project area will be prioritized based on the biological needs of the Wyoming toad, habitat quality, the threat of development, and connectivity with other protected lands (see figure LPP-2 in chapter 1 of this LPP). Other Federal trust species (migratory birds as well as threatened and endangered species) and resident species may also benefit from habitat conservation in the project area.

The acreage totals for fee-title acquisition and conservation easements are based in part on the amount of available habitat and the land needed to effectively carry out desired conservation efforts throughout the historical range of the Wyoming toad.

Management

All land enrolled in conservation easements would remain in private ownership, so property taxes and land management, within the guidelines of the easements, would remain the responsibility of the landowner. Public access would remain under the control of the landowner. Service staff from Arapaho NWR, which is near Walden, Colorado, would be responsible for monitoring and administering all easements. Monitoring would include periodically reviewing compliance with easement requirements through site visits and correspondence with landowners or their designees. Photographs of the property would be

taken at the time the easements are established to document baseline conditions.

The land bought through fee-title agreements would be managed cooperatively by staff at the Arapaho NWR near Walden, Colorado, and the staff at the Wyoming Ecological Services Office in Cheyenne, Wyoming. They now cooperatively manage Mortenson Lake NWR for the benefit of the endangered Wyoming toad. They would be responsible for monitoring and administering the newly acquired lands according to the Service's legal mandates and policies. They will also continue to work with private landowners, researchers, and all other partners on the recovery team for the Wyoming toad.

Project Objectives and Actions

The objectives of establishing the WTCA are to:

- acquire and permanently protect wetland and riparian habitat to support Wyoming toad recovery and promote the establishment of multiple viable toad populations;
- support the recovery and conservation of other Federal trust species that may occur in the WTCA;
- protect, conserve, maintain, and enhance key migratory bird stopovers and breeding areas that serve as important feeding, resting, and nesting habitat for waterfowl, shorebirds, and neotropical migrants; and
- promote ecological resiliency by connecting public and private conservation lands, conserving existing habitats, and working with willing private landowners who are interested in common goals.

The Service proposes to conserve Wyoming toad habitat on up to 43,200 acres, mainly through acquisition (or donations) of perpetual conservation easements from willing landowners within the WTCA project boundary. A maximum of 10,000 acres could be acquired in fee-title. Within the project boundary, the Service will strategically identify the most important areas to acquire conservation easements or fee-title lands from interested landowners on a voluntary basis.

After completion of the EA (appendix A), public scoping, and a public comment period on the draft EA, the proposed action of acquiring conservation easements and limited fee-title (alternative B) was chosen for the Wyoming Toad Conservation Area land protection plan. The finding of no significant impact documents the Service's selection of alternative B, modified to reflect all applicable comments, as the preferred alternative. Appendix C contains the environmental action statement, the environmental compliance certificate, and the Finding of No Significant Impact. Appendix D contains the Service Director's Approval. Appendix F includes comments from the public, organizations, and state and local agencies. Appendix G is the intra-Service section 7 biological evaluation for federally listed species, which documents the Service's concurrence that the project actions will not affect, or may affect but not adversely, the listed, proposed, and candidate species within the project area.

Easement Terms and Requirements

The Service has successfully used easements in many projects, and the language and guidelines that have been written for previous projects would contribute substantially to the drafting of the WTCA easement language. Given the Service's conservation goals in the WTCA, the easements will be drafted with standard language to preclude subdivision and development, as well as to protect existing wetlands from being drained or filled.

In addition, because of the scarcity of water resources on the Laramie Plains, there may be additional provisions about water use. The types of wetland and associated upland habitats in which the Service is interested are largely supported by current water use practices. Easements may include a stipulation that changes in water use cannot adversely affect the quality of habitats or species that the WTCA seeks to protect, and that water rights now used on a property under easement could not be sold or transferred for use on other properties unless such a transfer was deemed to be beneficial to wildlife.

All the land under easement would remain in private ownership. Property taxes and land management, including control of noxious weeds and other invasive plants, remain the responsibility of the landowner. Control of public access to the land also remains under control of the landowner.

Contaminants or Hazardous Materials

The Service is required to invest in healthy lands. Surveys for contaminants would be conducted before any land interests are acquired. A level 1 pre-acquisition site assessment would be conducted on each individual tract before the purchase of any land interests. Any suspected contaminant problems that would require further surveys would be referred to a contaminant specialist located in the Service's Ecological Services office in Cheyenne, Wyoming.

Acquisition Funding

The Service would acquire fee-title and conservation easement lands in the WTCA primarily through the use of Land and Water Conservation Fund monies generated primarily from oil and gas leases on the Outer Continental Shelf, motorboat fuel tax revenues, and the sale of surplus Federal property. The Service could also buy land through the use of Federal Duck Stamp revenue from the Migratory Bird Hunting and Conservation Stamp Act of 1934, other monies that meet fish and wildlife conservation purposes as identified by Congress, or donations from nonprofit organizations.

The WTCA project area has several other government and nongovernmental organizations with overlapping conservation objectives. In the development of the WTCA, we have set priorities for land acquisition by the Service, but this document may also guide acquisitions for conservation by the NRCS's Wetland Reserve Program, The Nature Conservancy, and Wyoming Stock Growers Land Trust, among others.

Ecosystem Management and Landscape Conservation

To help with carrying out the project, the Service will use the expertise of the landscape conservation cooperative (LCC), which is responsible for delivering applied science to inform resource management decisions on landscape-scale issues such as climate change. Each landscape conservation cooperative is a partnership that has individuals from State and Federal governments, nongovernmental organizations, and universities. Planning across agency jurisdictions and boundaries is necessary to make sure that conservation happens at the scale necessary to ensure that wildlife can adapt, migrate, and colonize new areas in response to environmental change.

The conservation area is located within the Great Northern LCC, which includes portions of Colorado, Idaho, Montana, Oregon, Utah, Washington, and Wyoming in the United States and parts of Alberta and British Columbia in Canada (figure LPP–11). While the scale of the conservation area is relatively small compared to extent of the Great Northern LCC, the project fits with three of the conservation goals in the Great Northern LCC Strategic Conservation Framework (2012). These goals are to maintain large, intact landscapes or naturally functioning terrestrial and aquatic community assemblages; to conserve a permeable landscape with connectivity across aquatic and terrestrial ecosystems, including species movement, migration, dispersal, life history, and biophysical process; and to maintain hydrologic regimes that support native or desirable aquatic plant and animal communities in still and moving water systems.

The existing conservation partnerships and earlier conservation efforts in this region of Wyoming have greatly contributed to the sustainability of imperiled species such as Wyoming toad, greater sage-grouse, and Canada lynx as well as migratory birds throughout the region. For example, the Service has collaborated with other Federal agencies including the Bureau of Land Management, U.S. Department of Agriculture's Animal and Plant Health Inspection Service and the NRCS, Environmental Protection Agency, and U.S. Geological Survey; State agencies including WGFD; local government agencies including Laramie Rivers Conservation District; and nongovernmental organizations including The Nature Conservancy and the Aquarium and Zoo Association, to keep, protect, or restore habitats and populations of the Wyoming toad within the WTCA. These science and management partnerships could provide the necessary framework for designing and carrying out future conservation strategies to achieve population and habitat goals for the restoration of the Wyoming toad. Ultimately, the Great Northern LCC will contribute to strategic habitat conservation, land acquisition prioritization, partnership development, and landscape-level planning within one of the most intact and functional ecosystems in the United States.

The Secretary of the Interior recently outlined the importance of LCCs as a response to climate change (USFWS 2010). The WTCA would link existing protected land held by the Bureau of Land Management, U.S. Forest Service, and the State of Wyoming.

These cooperatives will continue to grow as a means of delivering strategic habitat conservation.

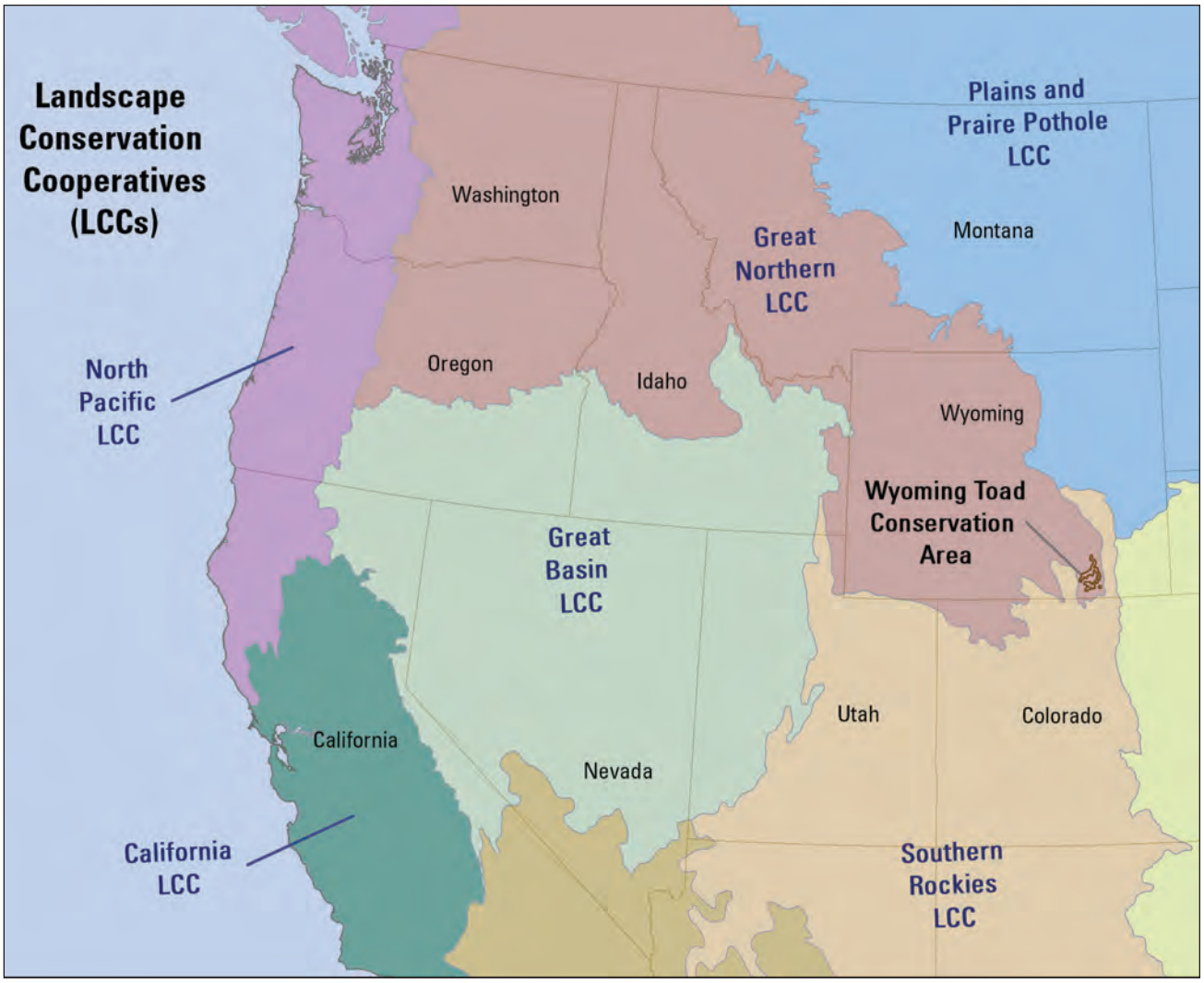

Figure LPP-11. Great Northern Landscape Conservation Cooperative.

The Service and the U.S. Geological Survey signed a memorandum of understanding to strengthen the relationship between science and management in landscape-level conservation.

Strategic Habitat Conservation

The WTCA would apply the strategic habitat conservation framework as outlined in the National Ecological Assessment Team Report (2006). Strategic habitat conservation involves an ongoing cycle of biological planning, conservation design, conservation delivery, outcome-based monitoring, and assumption-based research. It is also the process by which the Service continues to develop and apply science-based management to improve the capability of ecosystems to support populations of priority species at desired levels. Also, strategic habitat conservation provides the framework by which the Service develops and applies science to address landscape-level factors that limit populations.

The U.S. Fish and Wildlife Service, Region 6 Refuges Program has and will continue to coordinate with the Wyoming Ecological Services Field Office and the Wyoming Natural Diversity Database (WYNDD) located at University of Wyoming, the Zone Biologist and Region 6 Inventory and Monitoring Coordinator, and science support staff in Fort Collins, Colorado, to provide support for the biological planning, conservation design, conservation delivery, and monitoring and research elements of strategic habitat conservation necessary to carry out the WTCA project. This LPP addresses the five key elements of strategic habitat conservation:

- biological planning (setting targets)
- conservation design (developing a plan to meet the goals)

- conservation delivery (implementing the plan)
- monitoring and adaptive management (measuring success and improving results)
- research (increasing our understanding)

Biological Planning

Biological planning requires the identification of priority species, development of population objectives, and identification of landscape-level limiting factors that keep the populations of priority trust species below desired levels. To decide which habitat resources are the most important to conserve for the long-term sustainability of wildlife populations, a prioritization strategy is needed. The Service has evaluated the conservation priorities and concerns in a number of regional plans, including the North American Waterfowl Management Plan, the Intermountain West Joint Venture's Waterbird and Shorebird Plans, the Partners in Flight plans, the Wyoming State Wildlife Action Plan, the Comprehensive Conservation Plan for the Laramie Plains refuges, and the Wyoming Toad Revised Recovery Plan. Based on these plans and input from other partners, initial biological planning uses one focal species to model the distribution and habitat needs of a larger group of wildlife species with similar needs. While other species may benefit from habitat protected within WTCA priority areas, the Service will focus conservation efforts on the Wyoming toad.

Protection Priorities

The Service and its partners recognize the tremendous opportunity within the Laramie Plains to expand existing blocks of conservation lands, including lands protected under fee-title or easement ownership by the Federal government and conservation-oriented nongovernmental organizations. There is considerable interest by landowners in an additional conservation effort within the conservation area.

In applying conservation ecology, focal species have been used as a practical bridge between single- and multiple-species approaches to wildlife conservation and management prioritization. By focusing our limited resources on a species that represents other species or habitat, we can achieve maximum conservation impact. As new data becomes available or conditions change to the point that this conservation strategy is no longer effective, biological planning will be revisited and adaptive management applied.

Focal Species

The Wyoming toad, *Anaxyrus* (*Bufo*) *baxteri*, which is the focal species for the project, has already been the subject of habitat modeling in the State of Wyoming by the WYNDD in a collaborative project to help the WGFD refine estimates of range and distribution for the State Wildlife Action Plan. The procedures used in generating these models are commonly used within wildlife modeling studies. The environmental characteristics of locations where a species has been documented to occur were then statistically extrapolated to identify other areas that are potentially suitable for occupation (Keinath et al. 2010).

The Wyoming toad was first described in 1946 by Dr. George T. Baxter. The toad is thought to be a glacial relict. The toad once flourished in the Laramie Plains, but in the 1970s the population dramatically declined, and by the 1980s, individuals were extremely rare (Baxter and Stromberg 1980, Stromberg 1981, Vankirk 1980, Baxter and Meyer 1982, Baxter and Stone 1985, Lewis et al. 1985). The species was federally listed as endangered in 1984 under the Endangered Species Act of 1973, as amended (16 U.S.C. 1531 et seq.). In 1993, under the authority of the Endangered Species Act, the Mortenson Lake National Wildlife Refuge was established for the protection of the species' last known population.

The historical distribution of the Wyoming toad, based on scientific records from Dr. George Baxter and Ronald Beiswenger's research, includes the floodplain ponds and small seepage lakes associated with the Big and Little Laramie Rivers as well as other wetlands within the shortgrass communities of the Laramie Plains in Albany County, Wyoming. In June 2016, approximately 900 adult Wyoming toads were release on Mortenson Lake National Wildlife Refuge and two privately owned properties along the Lariamie River. There are very few additional Wyoming toads thought to be in the wild and approximately 500 in captivity, and the low population alone makes the species vulnerable. Another major threat to the Wyoming toad is infectious disease, including the amphibian *Batrachochytrium dendrobatidis* (*Bd*) fungus, which has been linked to amphibian declines worldwide (Berger et al. 1998). *Bd* was documented in wild Wyoming toads from Mortenson Lake in 2000 and in 2001 (USFWS 2013). The other severe threat to the Wyoming toad discussed in the recovery plan is the lack of perpetually protected habitat. The proposed action directly addresses this threat to the

Wyoming toad by protecting habitat that is needed for recovery goals to be met and that is important for the future of Wyoming toad conservation.

Little is known about specific habitat requirements for the Wyoming toad, but the current thought is that the toad historically occurred in river oxbows and associated floodplains of the Big and Little Laramie Rivers and nearby ponds and lakes (lentic habitats). Ongoing research supported by the Service and a multitude of public and private partners on the Wyoming toad recovery team is focused on practical aspects of Wyoming toad recovery, such as defining optimal habitat for the early stages (egg, tadpole, and metamorph) of the toad's life cycle in terms of thermal regimes, and devising optimal early stage rearing pens that will optimize the survival of released tadpoles. As well as conducting research on *Bd* and the use of outdoor microcosms to prepare toads for release into the wild, all of the previous and ongoing research went into the biological planning for this project.

The goal for the Wyoming toad is to restore multiple self-sustaining populations within the historical range and habitat and subsequently downlist and eventually delist the toad. The Wyoming Toad Revised Recovery Plan (USFWS 2015) outlines the population objectives that must be met for the toad to be downlisted from endangered to threatened and the additional criteria that must be met for the toad to be delisted entirely.

The Wyoming toad occupies wetland, floodplain, and riparian habitats, which is used by waterbirds, such as Wilson's phalarope and white-faced ibis. Riparian species, including the little brown bat and willow flycatcher also depend on these areas (Nicholoff 2003, Griscom et al. 2012).

Conservation Design

Conceptual and quantitative models have been developed to help predict key habitat for the Wyoming toad and to aid in the initial conservation design and delivery efforts. As new information becomes available, the models will be updated throughout the implementation of this project.

The Wyoming toad, like many species, requires more than one type of habitat during its life history. Although historically the toad has lived in close association with rivers and floodplains near Laramie, some specific information about the toad's life history is still unknown. It has been found that different habitats around Mortenson Lake are associated with breeding, tadpole production, toadlet growth, and hibernation during early summer and in winter. The WTCA would help maintain connectivity between the different types of habitat required by the Wyoming toad.

Focal Species Model

Prior to the 1950s and 1960s, the Wyoming toad was dispersed throughout the entire Big and Little Laramie floodplains. A variety of information and data sources were used to determine a project boundary for the WTCA that could meet the objectives for recovery of the Wyoming toad. Formal documentation of this historical range is limited to verbal accounts by area residents.

Occurrence data (from 1939 to present day) were made available through the WYNDD at the University of Wyoming. The data are derived from a combination of population observations, specimen sampling information, surveys, and paper maps from a wide variety of researchers and Wyoming toad observers (WYNDD 2013). A large amount of the information, known as the "Baxter Historic Area Polygons," came from George Baxter, Ron Beiswenger, and Bill Gern. The information for the polygons was collected after a noticeable decline in the Wyoming toad population in the early 1970s. Archival data were documented as either hand-drawn polygons or individual researcher-collected points on reference maps which were digitized into an electronic format. When converting the paper data to digitized data, WYNDD established a precision error determination to account for historic map quality or potential scale errors on these archived maps. All data with a precision error over 800 meters (0.5 mile) were eliminated from inclusion in the project area development.

The Wyoming Toad Conservation Area project boundary was determined through analysis of habitat and locations where toads were known to be present historically. Modern data were plotted using GPS coordinates collected by observers. The occurrence information typically represents spring and summer observations associated with the presence of egg masses, tadpoles, young of the year, observed adults, or breeding vocalization. In order to ensure that Wyoming toads' year-round habitat needs were being met within the project boundary, including the need for upland hibernacula, the occurrence data were buffered by 1 mile (see figure LPP-12). The basis for the 1-mile buffer on both polygons and points is supported by a 2011 telemetry study conducted by the Wyoming Ecological Services Field Office that tracked several toads originating at Mortenson Lake; at least one individual migrated just over 1 mile from breeding habitat to its chosen hibernaculum (USFWS 2012b).

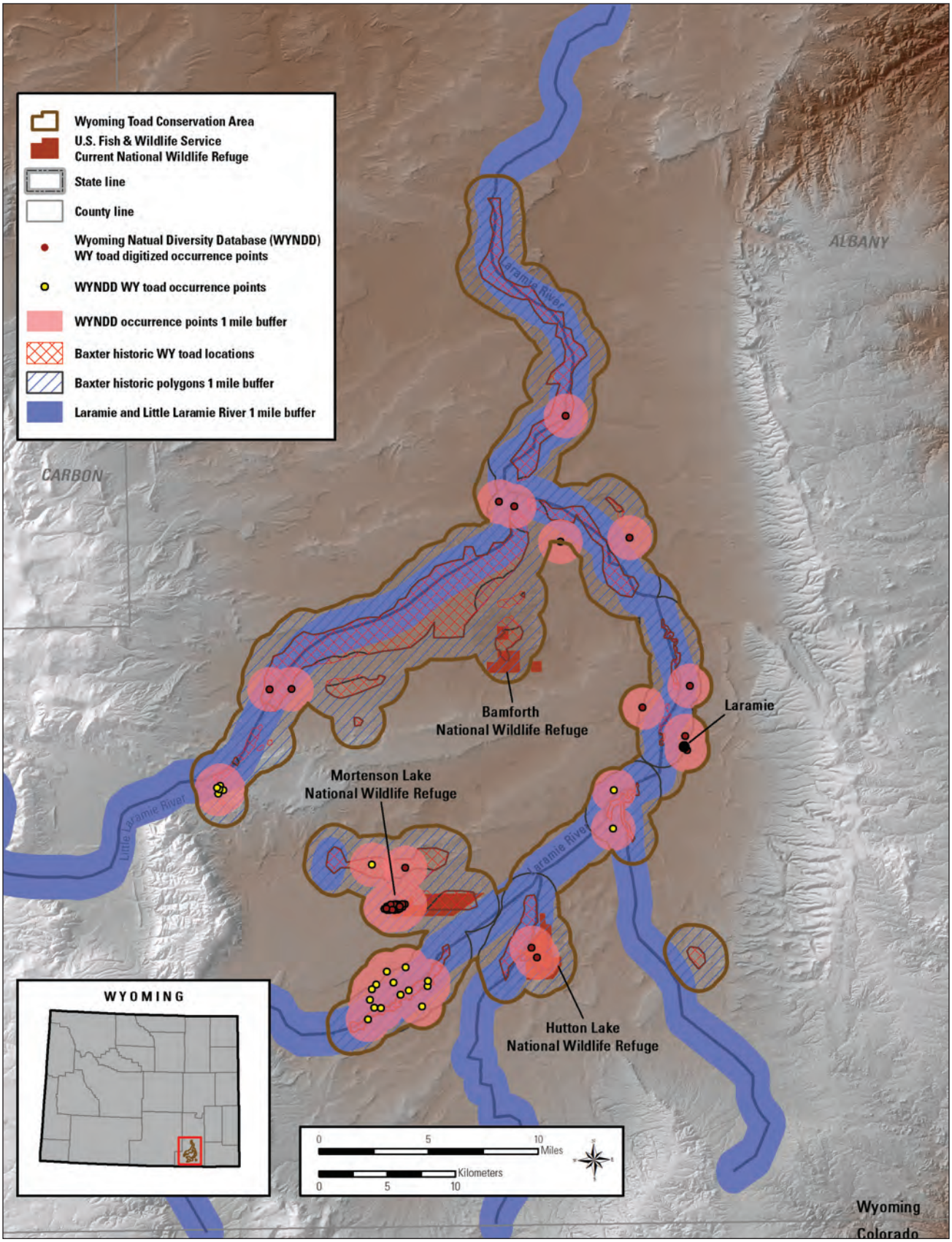

Figure LPP-12. Wyoming toad predicted habitat and historical range based on Dr. George Baxter and Ronald E. Beiswenger's paper maps displaying locations and field notes digitized by the Service.

The Wyoming toad was never observed upstream from Sodergreen Lake on the Big Laramie River. The upper limit of Wyoming toad habitat on the Little Laramie River is less precisely located somewhere below Highway 130 and the lower end of the Vee Bar Ranch. Upstream from these locations, the shape, pattern, and profile of the two rivers suggests a change in stream type and habitat that is undesirable to the Wyoming toad. Upstream habitat has a higher gradient, lower water temperatures, higher bed load transport capability, and a narrower floodplain. The Baxter Historic Area Polygons (buffered by 1 mile) were used to generate the upper reach limitations on both rivers (see figure LPP-12). Upper reaches on the rivers were clipped to the Baxter Historic Area Polygons (buffered by 1 mile).

The downstream extent of the historic Wyoming toad range below the confluence of the two rivers is not well-defined, as a result, the buffered Baxter Historic Area Polygons, which are the best available source of information, were selected to represent the downstream extent of WTCA project boundary.

These locations, in combination with historical location records and field notes, were used to create a digital map. The second mapping layer is a model produced by the WYNDD based on geo-referenced records of documented field observations that were collected, quality-checked, and compiled into a central database. The information depicted in figure LPP-13 was used to determine the WTCA project boundary, which includes year-round toad habitat, and where land acquisition efforts should be focused for the recovery of the Wyoming toad.

Prioritization of Habitat

The Service analyzed the areas within the WTCA boundary to determine where the most important habitat is to help recover the Wyoming toad populations. Suitable breeding habitat is essential to the recovery of the toad and is the highest conservation priority. A key factor in defining potential breeding habitat is water permanency. Water must be available through late September to early October to provide adequate wetland habitat needed by developing young toads. USDA National Agricultural Imaging Program (NAIP) and USFWS high resolution imagery was collected in early October of 2015 to assess water availability within the project area. Riverine oxbows, palustrine, and lacustrine wetland systems with water during this period were considered to be potential breeding habitat. Using Public Land Survey System (PLSS) data, quarter sections (approximately 160 acres) containing classified potential breeding habitat were identified as priority areas for protection through conservation easements or fee-title acquisition on approximately 73,000 acres (see figure LPP-13). Fee-title acquisition will be targeted for areas that require more intensive, ongoing activities for water control, toad rearing or reintroduction site conditions management.

As updated habitat requirements are developed by the Service in the future, the criteria will be used to refine prioritization of wetland areas to be considered for acquisition from willing sellers.

The remaining areas in the project boundary may also include habitats associated with other Federal trust species but are not currently considered to be high priority areas for the WTCA project. The historic habitat requirements of the toad in and around river floodplains are poorly understood today. As specific knowledge about the toad's life history, impacts of climate change, and disease management increases, prioritization of habitat conservation areas within the WTCA will change. Additional areas may be determined to have a high conservation value for the Wyoming Toad in the future.

Integrated Conservation Delivery

Staff members from Arapaho National Wildlife Refuge Complex and the Ecological Services Office in Cheyenne have worked with a wide variety of agencies, nongovernmental organizations, and private landowners on wildlife conservation issues and opportunities. Partners for Fish and Wildlife biologists have worked with landowners on habitat restoration projects and in developing partnerships that provide the foundation for a successful easement program. The ongoing involvement of the Partners for Fish and Wildlife program as well as the many partner organizations and agencies will be essential for the effective delivery of a sustainable conservation program. Application of the strategic habitat conservation framework will build on existing partnerships while also supporting the development of new partnerships for conserving habitats throughout the Laramie Plains. The WTCA would serve as a model for engagement in that it would work with landowners, nongovernmental organizations, local agencies, State agencies, and Federal agencies.

Landscape Prioritization

The priority land protection area map (figure LPP–13) is useful for deciding where in the landscape the key habitats are for the Wyoming toad. This map informs decision makers about which areas would provide the most effective conservation returns overall. Besides the presence or absence of suitable habitat for the Wyoming toad, it is important to take into account issues such as habitat connectivity, cost, and unequal conservation need.

Evaluation of Easement and Fee-title Potential

The relative importance of any potential conservation easement or fee-title purchase will be decided by the amount and quality of Wyoming toad habitat on the parcel. The prioritization modeling and ranking criteria described above will be used by Service staff and realty specialists to objectively evaluate and prioritize individual tracts of land.

Monitoring Adaptive Management and Research

Strategic habitat conservation requires an effective monitoring program to make sure that conservation efforts are resulting in net positive benefit for the Wyoming toad. The land protection prioritization map (figure LPP-13 is primarily a guide for effective fee-title and easement acquisition from interested landowners. Population monitoring will help to guarantee the efficacy of the program; if populations of Wyoming toad continue to decline within the project area, then further literature review, targeted research, or both can be applied to adjust conservation planning for the WTCA. As understanding of the functional relationships between the toads and habitat increases, the Service would adapt its land acquisition strategies to better meet the needs of the Wyoming toad. Some of the monitoring phase of strategic habitat conservation can be carried out by Refuge staff with help from the Service Inventory and Monitoring Initiative, as well as the Ecological Services Office in Cheyenne, Wyoming. However, it is important to recognize that similar monitoring will be carried out by partner agencies, and communication among these agencies is crucial for effective monitoring in the face of limited staff and financial resources. Furthermore, Service staff should work with regional academic institutions to facilitate basic and applied research while addressing research gaps. Specifically, monitoring and research should include:

- developing, improving, and assessing models for the Wyoming toad. Existing models have a great degree of uncertainty regarding limiting factors including non-breeding and over-winter habitat requirements. Data from continuing surveys will be evaluated and incorporated into spatial models. Further data will be collected to evaluate assumptions used in the modeling process and assessments will be adjusted accordingly. These methods will provide an estimate of the population response of the Wyoming toad on project and non-project lands;

- evaluating assumptions and addressing uncertainties found through the biological planning, conservation design, and conservation delivery elements of strategic habitat conservation will be conducted by the Service in cooperation with partners such as nongovernmental organizations and universities;

- assessing the contribution of land protection toward meeting the Wyoming toad population recovery goals. This will allow the Service and conservation partners to evaluate the contribution of the WTCA to meeting population goals and refine conservation delivery to guarantee maximum effectiveness;

- determining how changing environmental conditions may influence the effectiveness of this conservation design as increased evaporation, socially and economically driven changes in water use, and evolution of the type and timing of precipitation and runoff influence the hydrology of the WTCA.

Socioeconomic Considerations

Please see the discussion of socioeconomic considerations in chapert 2 of this LPP.

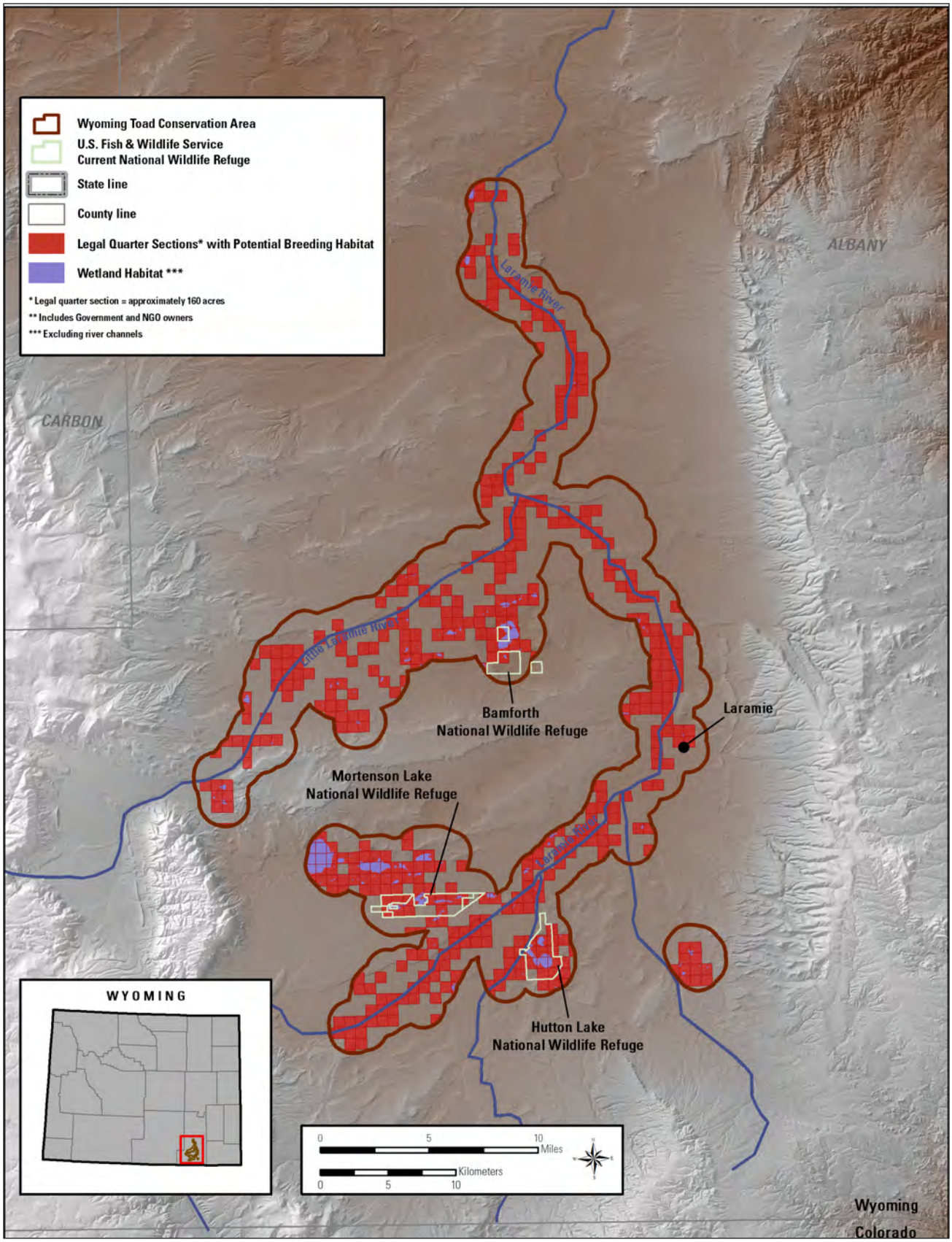

Figure LPP-13. Land protection priorities within the boundary of the proposed Wyoming Toad Conservation Area, Wyoming.

Public Involvement and Coordination

A public meeting was held on December 4, 2014 in Laramie, Wyoming, to discuss the draft EA and LPP for the WTCA project. Comments also were provided by email and written letters.

Distribution and Availability

Copies of the draft EA and LPP were made available to Federal and State legislative delegations, tribes, agencies, landowners, private groups, and other interested individuals. Copies of the final LLP/EA are available from the following offices and contacts:

Arapaho National Wildlife Refuge Complex
953 County Road 32
Walden, CO 80480
970 / 723 8202

U.S. Fish and Wildlife Service
Region 6, Branch of Refuge Planning
Branch of Land Protection Planning
P.O. Box 25486–DFC
Denver, CO 80225
303 / 236 4378
303 / 236 4792 fax
http://www.fws.gov/mountain-prairie/refuges/wtca.php

Glossary

alternative—A reasonable way to solve a problem or satisfy the stated need (40 CFR 1500.2); one of several different means of accomplishing refuge purposes and goals and contributing to the Refuge System mission (The Fish and Wildlife Service Manual, 602 FW 1.5).

amphibian—A class of cold-blooded vertebrates, including frogs, toads, and salamanders.

biological diversity, also biodiversity—The variety of life and its processes, including the variety of living organisms, the genetic differences among them, and the communities and ecosystems in which they occur (The Fish and Wildlife Service Manual, 052 FW 1.12B). The National Wildlife Refuge System's focus is on indigenous species, biotic communities, and ecological processes.

cervid—All members of the family Cervidae and hybrids, including deer, elk, moose, caribou, reindeer, and related species.

comprehensive conservation plan—A document that describes the desired future conditions of the refuge and guides long-range management direction for the refuge manager to accomplish the purposes of the refuge, contribute to the mission of the Refuge System, and to meet other relevant mandates (The Fish and Wildlife Service Manual, 602 FW 1.5).

conservation easement—A legally enforceable encumbrance or transfer of property rights to a government agency or land trust for the purposes of conservation. Rights transferred could include discretion to subdivide or develop land, to change current land use practices, and to sever water rights, or other rights, and are specified by a contract between the landowner and the conservation entity.

cultural resources—The remains of sites, structures, or objects used by people in the past.

ecological resiliency—The ability to absorb disturbances, to be changed, and then to reorganize and still have the same identity, that is, keep the same basic structure and ways of functioning. A resilient system is forgiving of external shocks; a disturbance is unlikely to affect the whole. A resilient habitat (1) sustains many species of plants and animals and a highly variable structural composition; (2) is asymmetric; (3) exemplifies biological integrity, biological diversity, and environmental health; and (4) adapts to climate change.

ecosystem—A dynamic and interrelating complex of plant and animal communities and their associated nonliving environment; a biological community, with its environment, functioning as a unit. For administrative purposes, the Service has designated 53 ecosystems covering the United States and its possessions. These ecosystems generally correspond with watershed boundaries, and their sizes and ecological complexity vary.

endangered species—A plant or animal species listed under the Endangered Species Act of 1973, as amended, that is in danger of extinction throughout all or a significant part of its range.

Endangered Species Act—A U.S. law passed by Congress in 1973 with the purpose of protecting and recovering imperiled species and the ecosystems on which they depend.

endemic species—Plants or animals that occur naturally in a certain region and whose distribution is relatively limited.

environmental assessment (EA)—A concise public document, prepared in compliance with the National Environmental Policy Act, that briefly discusses the purpose of and need for an action as well as alternatives to such action, and provides sufficient evidence and analysis of impacts to determine whether to prepare an environmental impact statement or finding of no significant impact (40 CFR 1508.9).

extinction—The complete disappearance of a species from the earth; no longer existing.

Federal trust species—All species for which the Federal Government has primary jurisdiction, including species Federally listed as endangered or threatened, migratory birds, anadromous fish, and certain marine mammals.

fragmentation—The alteration of a large block of habitat that creates isolated patches of the original habitat that are interspersed with a variety of other habitat types; the process of reducing the size and connectivity of habitat patches, making movement of individuals or genetic information between parcels difficult or impossible.

focal species—A single species that is used as a representative of many species which occupy a simi-

lar habitat and which are vulnerable to similar threats.

habitat—Suite of existing environmental conditions needed by an organism for survival and reproduction; the place where an organism typically lives and grows.

inholding—Non-Service land owned by private parties, other agencies, or other groups that is within the executive boundary of a National Wildlife Refuge.

invasive plant—A species that is nonnative to the ecosystem under consideration and whose introduction causes, or is likely to cause, economic or environmental harm or harm to human health.

land protection plan (LPP)—A document needed by USFWS policy before the establishment of new units of the National Wildlife Refuge System, or major expansions of existing units.

landscape conservation cooperative (LCC)—A public-private partnership intended to facilitate cross-political boundary conservation in the face of a changing environment through application of science.

migration—Regular extensive, seasonal movements of animals between their breeding regions and their wintering regions; to travel from one region or climate to another for feeding, breeding, or wintering.

migratory birds—Birds that follow a seasonal movement from their breeding grounds to their wintering grounds. Waterfowl, shorebirds, raptors, and songbirds are all migratory birds.

mission—Succinct statement of purpose or reason for being.

mitigation—Measure designed to counteract an environmental impact or to make an impact less severe.

monitoring—The process of collecting information to track changes of selected parameters over time.

national wildlife refuge—A designated area of land or water, or an interest in land or water within the National Wildlife Refuge System, but not including coordination areas; a complete listing of all units of the Refuge System is in the current Annual Report of Lands Under Control of the U.S. Fish and Wildlife Service.

National Wildlife Refuge System (Refuge System)—Various categories of areas administered by the Secretary of the Interior for the conservation of fish and wildlife, including species threatened with extinction; all lands, waters, and interests therein administered by the Secretary as wildlife refuges; areas for the protection and conservation of fish and wildlife that are threatened with extinction; and wildlife ranges, game ranges, wildlife management areas, and waterfowl production areas.

National Wildlife Refuge System Improvement Act of 1997—Sets the mission and the administrative policy for all refuges in the Refuge System; defines a unifying mission for the Refuge System; establishes the legitimacy and fitness of the six priority public uses (hunting, fishing, wildlife observation, wildlife photography, environmental education, and interpretation); establishes a formal process for determining appropriateness, fitness, and compatibility; establishes the responsibilities of the Secretary of the Interior for managing and protecting the Refuge System; and requires a comprehensive conservation plan for each refuge by the year 2012. This act amended parts of the Refuge Recreation Act and National Wildlife Refuge System Administration Act of 1966.

nongovernmental organization—Any group that is not a for-profit business or a Federal, State, tribal, county, city, town, local, or other governmental entity.

objective—An objective is a concise target statement of what will be achieved, how much will be achieved, when and where it will be achieved, and who is responsible for the work, derived from goals and providing the basis for selecting management strategies. Objectives should be able to be achieved and time specific and should be stated quantitatively to the extent possible. If objectives cannot be stated quantitatively, they may be stated qualitatively (The Fish and Wildlife Service Manual, 602 FW 1.5).

proposed action—The alternative proposed to best achieve the purpose, vision, and goals of a refuge (contributes to the Refuge System mission, addresses the significant issues, and is consistent with principles of sound fish and wildlife management).

public—Individuals, organizations, and groups; officials of Federal, State, and local government agencies; Native American tribes; and foreign nations. It may include anyone outside the core planning team. It includes those who may or may not have shown 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 an opportunity to become informed about, and to express their opinions on, Service actions and policies. In the process, these views are studied thoroughly and thoughtful consideration of public views is given in shaping decisions for refuge management.

purpose of the refuge—The purpose of a refuge is specified in or derived from the law, proclamation, executive order, agreement, public land order,

donation document, or administrative memorandum establishing authorization or expanding a refuge, a refuge unit, or a refuge subunit (The Fish and Wildlife Service Manual, 602 FW 1.5).

raptor—A carnivorous bird such as a hawk, falcon, or vulture that feeds wholly or chiefly on meat taken by hunting or on carrion (dead carcasses).

Region 6—An administrative unit of the Service known as the Mountain-Prairie Region, which covers eight States: Colorado, Kansas, Montana, Nebraska, North Dakota, South Dakota, Utah, and Wyoming

restoration—Management emphasis designed to move ecosystems to desired conditions and processes, such as healthy upland habitats and aquatic systems.

Safe Harbor Agreement (SHA)—A voluntary agreement involving private or other non-Federal property owners whose actions contribute to the recovery of species listed as threatened or endangered under the Endangered Species Act (ESA). The agreement is between cooperating non-Federal property owners and the U.S. Fish and Wildlife Service or the National Oceanic and Atmospheric Administration, which is responsible for most listed marine and anadromous fish species.

Service—United States Fish and Wildlife Service

shorebird—Any of a suborder (Charadrii) of birds which includes plovers and sandpipers.

strategic habitat conservation—An iterative adaptive management framework designed to make sure that decision making and management within the Service is science-based. Consists of four stages: biological planning, conservation design, delivery of conservation action, and monitoring and research.

threatened species—Species listed under the Endangered Species Act of 1973, as amended, that are likely to become endangered within the foreseeable future throughout all or a significant part of their range.

vision statement—A concise statement of the desired future condition of the planning unit, based primarily on the Refuge System mission, specific refuge purposes, and other relevant mandates (The Fish and Wildlife Service Manual, 602 FW 1.5).

waterfowl—A category of birds that consists of ducks, geese, and swans.

watershed—The region draining into a river, a river system, or a body of water.

Appendix A
Environmental Assessment

FWS

View of Mortenson Lake National Wildlife Refuge with Sheep Mountain in the background.

This environmental assessment (EA) documents the purpose of and the issues, alternatives, and analysis for the prposed WTCA. The WTCA is located in the southern part of the Laramie Plains along a section of the Laramie River in Albany County, Wyoming. Chapter 1 of this EA provides background information and describes the conditions that led to the proposal to create the WTCA for the protection of important wetland and upland habitats. These lands would be protected primarily through voluntary perpetual conservation easements and limited fee-title acquisition from willing landowners.

1.1 Introduction

The Laramie Plains is an isolated mountain basin that was once covered by wetlands, riparian corridors, meadows, shrublands, and native prairie. In the spring, snow melt would fill streams and waterways as well as many shallow depressions scattered throughout the valley. These wetlands provided an oasis of food and rest for thousands of waterfowl and shorebirds making their northward migration to their breeding grounds. Linear riparian corridors bordered the Big and Little Laramie Rivers and their tributaries, supporting scattered woodlands of cottonwoods and willows. The relatively fine soils and low annual precipitation kept the uplands in short mixed-grass prairie with scattered patches of shrubland. The Wyoming toad, a species endemic to the Laramie Plains, was once a common sight. Waterfowl, shorebirds, and grassland birds would dominate

the skies, with raptors following the migration. Many mammals that depended heavily on white-tailed prairie dogs for prey and burrow habitats also lived in the area, including the swift fox and the black-footed ferret. Big game herds, including the American bison, once occupied almost all parts of the basin.

Today, the landscape has changed. Some wetlands have been filled or drained, others have been altered, and new wetlands in the form of flood-irrigated fields have been created. Only 4 percent of existing wetlands within the Laramie Plains are protected (Copeland et al. 2010a). Much of the water in the area is managed to support various human needs such as residential use, hay and crop production, and recreation.

The strong ranching culture in the area has kept many of the habitats of the basin from being converted to other uses and has left much of the region's biodiversity intact. There are growing concerns that a significant increase in residential development threatens the remaining natural character of this landscape, in particular the habitats and species that make the Laramie Plains regionally important for biological diversity. Rural development on exurban lots has been growing at a rate of 10 to 15 percent a year (USDA 2006). Such development will likely diminish the future value of these important biological resources and working landscapes.

Once the western fringe of the range for many short mixed-grass prairie species, the Laramie Plains has increased in relative habitat value because of habitat loss, fragmentation, and conversion of native prairie to cropland elsewhere in the Great Plains. Because of the relatively large, intact ecosystem still available, the basin has become crucial habitat for many species. Without increased conservation measures to protect upland habitat from degradation and conversion to other uses, species that now depend on the high-elevation prairie as a last remaining refuge would be vulnerable.

The remaining wetlands play a vital role in providing resting and feeding areas for the thousands of migratory birds that continue to use the central flyway each spring and fall. However, increased sedimentation, nutrient runoff, salinization, and decreased water runoff jeopardize the functions and values of these wetlands with increasing development. Similarly, riparian corridors are also affected by problems such as sedimentation, nutrient runoff, decreased water runoff, and stream channelization (Copeland, et al. 2010, Wyoming Game and Fish, 2010), which in turn affect fish and other aquatic species such as the endangered Wyoming toad. With decreasing water quality and natural water flow in the rivers and remaining wetlands, the recovery of the Wyoming toad could be impaired.

Increased human activity in the Laramie Plains has impacted habitat and wildlife populations in a variety of ways. For example, irrigated hay meadows provide nesting cover for waterfowl. Some of the same flood-irrigated meadows may also hold water longer during the summer months, helping to retain higher late-summer flows in the surrounding rivers. Large ranches in the basin also provide large blocks of habitat that benefit wildlife. While it is generally accepted that land development increases sedimentation, runoff, and nutrient loads, it is difficult to quantify the impacts across a large area such as the Laramie basin, especially since we have incomplete baseline information.

The proposed WTCA would contribute to bird, mammal, reptile, and amphibian conservation efforts, as described in the Wyoming Toad Revised Recovery Plan, North American Waterfowl Management Plan, United States Shorebird Conservation Plan, Partners in Flight's North American Landbird Conservation Plan, Wyoming Partners in Flight's Wyoming Bird Conservation Plan, North American Waterbird Conservation Plan, Wyoming Game and Fish Department Strategic Habitat Plan, Wyoming Game and Fish Department State Wildlife Action Plan, Platte/Kansas River Ecosystem—Analysis and Conservation Focus Area Development Plan, Black-footed Ferret Recovery Plan, Laramie Plains Wetland Complex—Regional Wetland Conservation Plan, and Wyoming Wetlands Conservation Strategy.

1.2 Proposed Action

The Service is proposing the WTCA to conserve vital wildlife habitat for the Wyoming toad in the Laramie Plains. The project would protect up to an additional 43,200 acres in the Wyoming Basin ecoregion (Bailey 1995) and the Great Northern Landscape Conservation Cooperative (LCC) (USFWS 2012). The entire footprint of this project would be located in south-central Albany County, Wyoming, and would encompass three existing refuges: Bamforth, Mortenson Lake, and Hutton Lake National Wildlife Refuges. The WTCA would focus on the protection of wetlands, riparian corridors, and upland habitat with the objective of conserving habitat, through acquisition of 43,200 acres on a voluntary basis, mainly in conservation easements, and up to 10,000 acres in fee-title from willing sellers only.

Acquisition of fee-title and easement lands would be prioritized based on specific criteria that would help with meeting the criteria of the Wyoming Toad Revised Recovery Plan (USFWS 2015). These criteria are meant to contribute to the recovery and eventual delisting of the Wyoming toad. The Wyoming

Table EA-1. Summary of current and proposed acreage for the proposed Wyoming Toad Conservation Area, Wyoming.

National wildlife refuge	*Executive boundary acres*	*Acquired acres*	*In-holding acres*
Mortenson Lake	2,500	1,927	573
Hutton Lake	1,968	1,968	0
Bamforth	1,166	1,166	0
	Potential new acres	*Proposed fee title acres*	*Proposed conservation easement acres*
Proposed project area	43,200	Up to 10,000	Balance of 43,200 less fee title
Project boundary total acres	186,185		

Toad Revised Recovery Plan (USFWS 2015) calls for the establishment of five independent, self-sustaining populations within the toad's historical range. Furthermore, these five populations should be distributed across at least two basic habitat types: rivers and associated floodplains (lotic habitats) and ponds and lakes (lentic habitats). To accomplish this goal, more lands need to be acquired and protected within the Wyoming toad's historical range to reintroduce and conserve its populations in perpetuity. Management practices on fee-title lands could include prescribed fire, livestock grazing with periodic resting of pastures, exclusion of nonnative fish, invasive species control, and disease management. Fee-title lands acquired under the WTCA would be managed in accordance with the CCP for Mortenson Lake NWR. A compatibility determination would be completed to establish whether any land acquired in fee title could be opened for public use.

Conservation easements would be bought from willing sellers on parcels that contain habitat suitable to support conservation efforts. Easement acquisitions would focus on the protection of the Wyoming toad, but would also benefit other Federal trust resources (threatened and endangered species and migratory birds). Lands protected via easements would remain in private ownership and could continue to be grazed, hayed, farmed, or otherwise managed in accordance with current practices. However, subdivision and development would be restricted and subject to stipulations agreed on by the landowners and the Service. Furthermore, easements may include stipulations related to exercising water rights that could only be changed if the proposed changes would be beneficial to wildlife. Easement terms would be negotiated with landowners interested in a conservation easement. The WTCA, in conjunction with other conservation efforts in the region, would help to keep unfragmented blocks of wetland, grassland, and upland habitat. The WTCA would complement the conservation efforts of land trusts and entities such as The Nature Conservancy, Wyoming Stock Growers Land Trust, Wyoming Game and Fish Department (WGFD), and the Natural Resources Conservation Service (NRCS) (see figure EA–1).

FWS

Captive Wyoming toads at the Saratoga National Fish Hatchery in Wyoming.

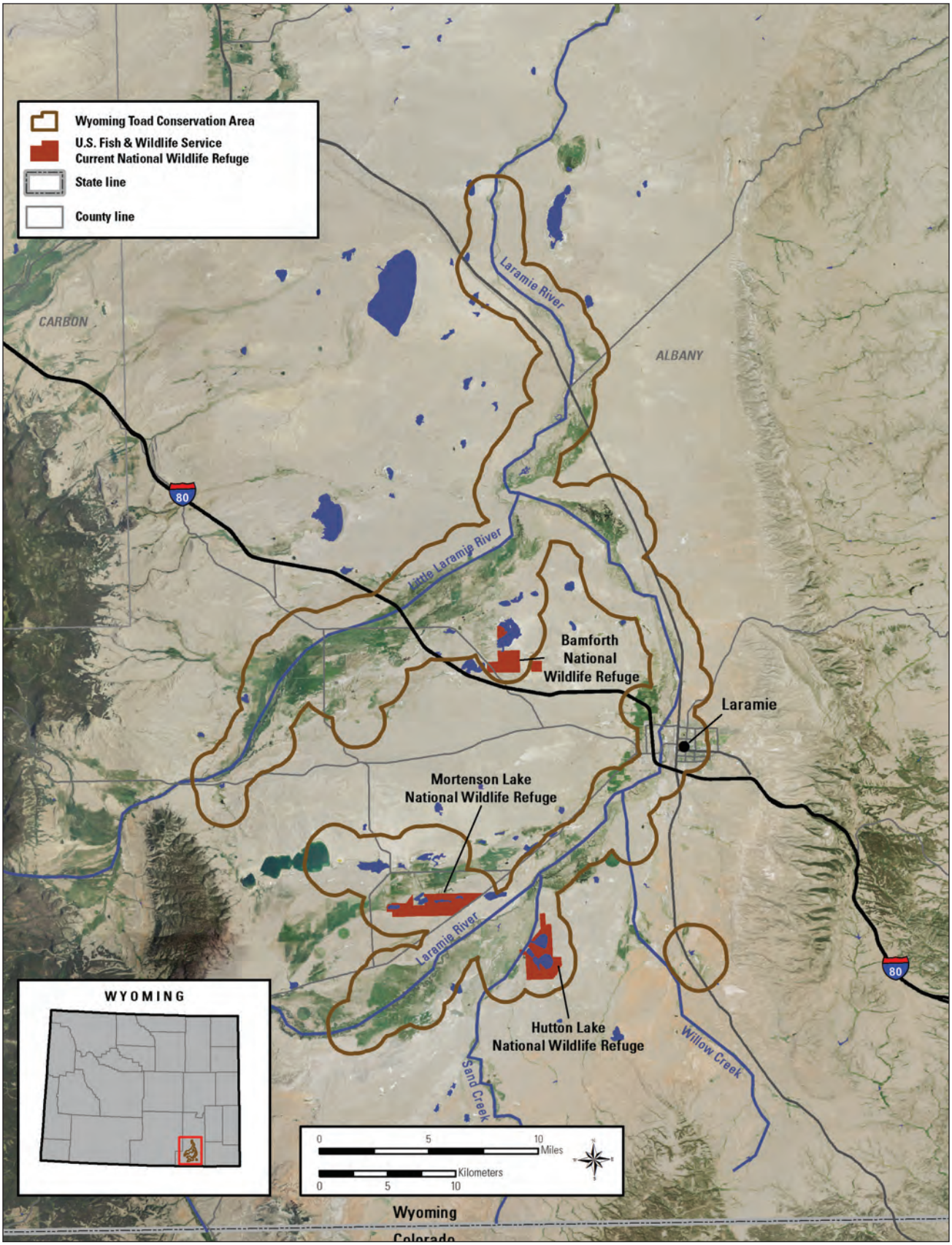

Figure EA-1. Map of the Wyoming Toad Conservation Area in Wyoming.

1.3 Purpose of and Need for Proposed Action

The purpose of this project is to provide strategic habitat conservation measures that are necessary to conserve, restore, and enhance the wetland, riparian, and associated upland habitats that are essential for the recovery of the endemic, endangered Wyoming toad. This habitat also is important for breeding, foraging, and nesting populations of migratory shorebirds, waterfowl, and neotropical songbirds. Other native habitats that make up the Laramie Plains include shrublands, shortgrass prairie, and mixed-grass prairie, which are important for a variety of wildlife species including white-tailed prairie dog, pronghorn, and many grassland birds such as mountain plover and McCown's longspur. There are several goals for this project:

- Acquire and permanently protect wetland and riparian habitat to support Wyoming toad recovery and promote the establishment of multiple viable toad populations.
- Support the recovery and protection of other threatened and endangered species that occur in the WTCA.
- Protect, conserve, maintain, and enhance key migratory bird stopovers and breeding areas that serve as important feeding, resting, and nesting habitat for waterfowl, shorebirds, and neotropical migrants.
- Promote ecological resiliency by conserving existing wildlife habitats and working with willing private landowners who are interested in common goals.

1.4 Decisions to Be Made

The Service's planning team (see appendix B) used the EA to review the environmental and management alternatives. Based on this EA, the Service's Director of Region 6, with the concurrence of the Director of the U.S. Fish and Wildlife Service, will make two decisions:

- Determine whether the Service should establish the WTCA, in accordance with its land protection planning policy.
- If yes, determine whether the selected alternative could have a significant impact on the quality of the human environment as required by the National Environmental Policy Act of 1969. If the quality of the human environment would not be significantly affected, a finding of no significant impact will be signed and made available to the public. If the alternative could have a significant impact, an environmental impact statement would be prepared to further address potential impacts.

1.5 Issues Identified and Selected for Analysis

During the first half of 2011, internal scoping meetings and several opportune conversations occurred between the project leader for the Arapaho National Wildlife Refuge and stakeholders interested in conserving wildlife in the Laramie Plains. Thoughts, concerns, issues, priorities, and values discussed during these meetings were noted. The Service's planning team solicited additional comments about the WTCA from the public through direct mailings, news releases, and direct contacts including a public meeting held December 2014 in Laramie, Wyoming.

Topics and issues identified during the initial scoping process and during internal conversations among the WTCA planning teams that would be addressed by the proposed WTCA are as follows.

Biological Issues

- The ability to successfully recover the Wyoming toad within the current configuration of landownership.
- The potential negative effects on wildlife and other natural resources because of development, including residential development, oil and gas exploration and development, wind development, gravel mining, and water and petroleum pipelines. Threats include noxious weed colonization and proliferation, decreased water quantity and quality, and decreased air quality.
- The ability to maintain habitat connectivity that is necessary to preserve the Wyoming toad and other wildlife.

Socioeconomic Issues

- The potential impacts of more urban/exurban sprawl and energy development on working landscapes, rural values, tourism, tax revenues, cultural resources, water quantity and quality, and air quality.
- The potential impacts of the Service's acquisition of land either by fee title or conservation easement, including impacts on tax revenue, public access to fee-title lands, and future management choices for conservation easements.
- The different philosophical views held by members of the public on landownership by the government.
- The ability to protect open views and the ranching heritage of the area.

1.6 National Wildlife Refuge System and Authorities

The WTCA would be part of the National Wildlife Refuge System (Refuge System), whose mission is "…to preserve a national network of lands and waters for the conservation, management and, where appropriate, restoration of 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). National wildlife refuges provide important habitat for native plants and many species of mammals, birds, fish, insects, amphibians, and reptiles. Refuges also play a vital role in conserving threatened and endangered species. Refuges offer a wide variety of wildlife-dependent recreational opportunities, and many have visitor centers, wildlife trails, and environmental education programs.

Land acquisition and conservation activities undertaken within the WTCA would also be consistent with the following policies and management plans:

- Migratory Bird Treaty Act (1918)
- Migratory Bird Hunting and Conservation Stamp Act (1934)
- Bald and Golden Eagle Protection Act (1940)
- U.S. Fish and Wildlife Act (1956)
- Land and Water Conservation Fund Act (1965)
- Endangered Species Act (1973)
- North American Waterfowl Management Plan (1994)
- Migratory Non-game Birds of Management Concern in the U.S. (2002)

The acquisition authorities for fee-title and easement lands within the proposed WTCA boundary are the U.S. Fish and Wildlife Act of 1956 (16 U.S.C. 742a–j) and the National Wildlife Refuge System Administration Act of 1966 (16 U.S.C. 668dd–ee), as amended.

1.7 Related Actions and Activities

The Service is currently working with other public and private entities to protect wildlife habitat within the project area. Many organizations in Wyoming recognize the ecological significance of the Laramie Plains and the need to conserve this valuable landscape and the region's ranching heritage. Various organizations have been working for more than a decade to conserve the natural resources and open space of the Laramie Plains. The Wyoming Stock Growers Association, NRCS, Audubon Rockies, Bureau of Land Management, WGFD, Laramie Rivers Conservation District, City of Laramie, and The Nature Conservancy have all been active in preserving parts of the Laramie Plains (see figure EA–2). Organizations and agencies that currently hold conservation easements within the conservation boundary include The Nature Conservancy, Wyoming Stock Growers Land Trust, the City of Laramie, and WGFD.

Audubon Rockies, which is the National Audubon Society's State office, has been a strong, unified voice for an ethic of conservation in Wyoming, focusing on birds, other wildlife, and their habitats for the benefit of present and future generations. One of the National Audubon Society's Important Bird Areas, the Laramie Plains Lakes Complex, overlaps the Service's proposed project area. The National Audubon Society recognizes this area as an Important Bird Area because its habitats provide important stopovers for migrating birds and breeding sites for species such as the American white pelican, American bittern, white-faced ibis, and black-crowned night-heron (National Audubon Society 2011).

Bureau of Land Management has a multiple-use mission and administers more public land than any other Federal agency, including more than 17.5 million acres in Wyoming. In the Laramie Plains, the Bureau of Land Management owns several sections

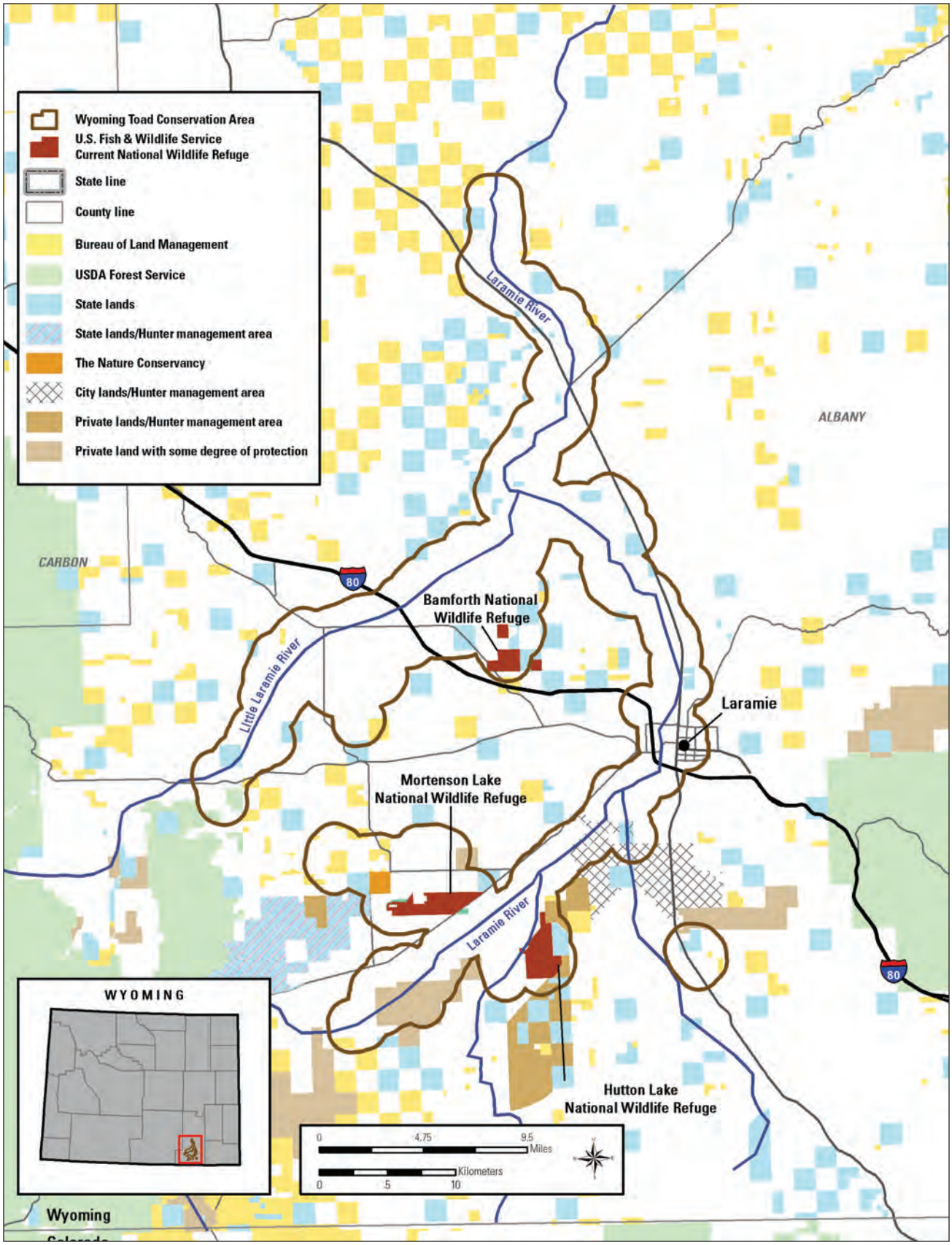

Figure EA-2. Protected lands in the Laramie Plains in Wyoming.

of land, some of which have been set aside for wildlife as the Laramie Peaks Wildlife Habitat Management Area as identified in the Resources Management Plan for the district. The Laramie Peaks Wildlife Habitat Management Area is scheduled for management planning in the near future, and the Bureau of Land Management is interested in partnering with the Service.

Intermountain West Joint Venture strives to conserve priority bird habitats through partnership-driven, science-based projects and programs. It brings people and organizations together to make the best use of technical and financial resources, building a collective capacity to achieve conservation at meaningful scales. Each state within the Intermountain West Joint Venture has conservation partnerships. The Wyoming Bird Habitat Conservation Partnership's mission is to facilitate habitat conservation planning and projects that help achieve priority State, regional, and continental bird objectives through the North American Wetlands Conservation Act and other programs.

Laramie Rivers Conservation District is one of 34 conservation districts in Wyoming that were established to help landowners and resource users with conservation practices and provide leadership in natural resource management issues and efforts. Individual conservation districts offer a wide variety of programs to help anyone interested in conservation. They also play a key role in Federal land management planning processes and Federal and State legislative and administrative initiatives that affect local conservation and land use activities.

Natural Resources Conservation Service actively works in the Laramie Plains through its Wetlands Reserve Program, a voluntary easement program that offers landowners the opportunity to protect, restore, and enhance wetlands on private property. One property in the area is now under an easement agreement and is a Safe Harbor Act site for the Wyoming toad. NRCS does not own land in fee title, but rather provides technical and financial support to help landowners with wetland restoration efforts.

Partners for Fish and Wildlife is a program administered by the Service that works cooperatively with landowners to provide financial and technical support to voluntarily restore and enhance wildlife habitat on private land. Since the inception of the Partners for Fish and Wildlife program in 1992, the Service has had a successful history of working with private landowners in Wyoming. Areas that have been targeted for wetland projects include the Laramie Plains, Goshen Hole, Wind River Indian Reservation, Great Basin, and the New Fork Pothole Region of the Upper Green River Basin. Statewide goals are to restore 15,000 acres of wetlands, restore or enhance 5 million acres of upland habitat, restore 1,000 miles of riparian habitat, and restore 1,000 miles of instream habitat. Much of the wetland work accomplished to date has been in the upper Wind River Basin and the Goshen Hole Wetland Complex.

Private landowners and ranchers have been instrumental in working with the various organizations and agencies to carry out conservation projects. More than 60 percent of the project area, including important habitat for wildlife, is in private landownership. Landowners in the area have already placed easements on 22,106 acres, showing local interest in conserving agriculture and open space.

The Nature Conservancy recognized the biological significance of the Laramie Plains wetlands in the 2008 Shirley Basin–Laramie Rivers Conservation Plan, which established a goal of protecting 125,000 acres of mixed-grass prairie and 100,000 acres of sagebrush steppe or shrubland (Pocewicz and Lathrop 2008). The plan also stated that at least 10 percent of these acres should be permanently protected from development through threat abatement and improved stewardship.

USFWS Ecological Services provides biological advice to Federal and State agencies, industry, and members of the public about the conservation of fish and wildlife and their habitats that may be affected by development activities. Ecological Services determines whether plant and animal species should be listed under the Endangered Species Act, as well as plans and coordinates the recovery of listed species and reviews Federal projects that may affect listed species. The Ecological Services program has been instrumental in the protection and planned recovery of the Wyoming toad.

Wyoming Game and Fish Department has been a strong partner in the region. The WGFD manages 12 public access areas within the Laramie Plains through landowner agreements, shared management, and fee title. The WGFD also owns and manages one conservation easement within the Laramie Plains.

Wyoming Stock Growers Land Trust holds conservation easements on over 201,000 acres of ranchland throughout the State. The Wyoming Stock Growers Land Trust is dedicated to conserving Wyoming's working family ranches and farms as well as the wide-open spaces, natural habitats, and rural communities they support.

Wyoming Wildlife and Natural Resource Trust was created as an independent State agency by the Wyoming legislature in 2005. The purpose of the Wyoming Wildlife and Natural Resource Trust is to enhance and conserve wildlife habitat and natural resource values throughout the State. The Wyoming Wildlife and Natural Resource Trust has funded 250 projects in all 23 counties in the State and has worked with the Service on wildlife improvements on

fee-title lands at Hutton Lake National Wildlife Refuge.

1.8 Habitat Protection and Acquisition Process

Following the approval of a project boundary, habitat protection will occur through conservation easements and limited fee-title acquisition. It is the Service's long-established policy to acquire the minimum interest in land from willing sellers that is necessary to achieve habitat protection goals.

The acquisition authorities for fee-title and easement lands within the proposed WTCA boundary are the U.S. Fish and Wildlife Act of 1956 (16 U.S.C. 742a–j) and the National Wildlife Refuge System Administration Act of 1966 (16 U.S.C. 668dd–ee), as amended. Land would be acquired primarily through the use of Land and Water Conservation Fund monies generated primarily from oil and gas leases on the Outer Continental Shelf, motorboat fuel tax revenues, and the sale of surplus Federal property. The Service could also buy land with Federal Duck Stamp revenue from the Migratory Bird Hunting and Conservation Stamp Act of 1934, other funds that meet fish and wildlife conservation purposes as identified by Congress, or donations from nonprofit organizations.

The basic considerations in determining whether land should be acquired through an easement or fee-title purchase include the biological significance of the area, existing and anticipated threats to wildlife resources, and landowner interest in the project. The buying of fee-title lands or conservation easements would occur with willing sellers only and would be subject to available funding. The biological, social, and economic impacts of conservation easements and fee-title acquisition are shown in table EA–2.

Conservation Easements

An easement is a conservation tool that has been extensively employed by the Service and other organizations. Easements are bought from willing sellers and they involve the acquisition of specific property rights, such as the right to subdivide or develop certain types of new infrastructure, while all other rights are kept by the property owner. Easements tend to be a cost-effective means of habitat conservation that is acceptable to landowners, particularly in areas where current agricultural land use practices are consistent with wildlife resource protection.

Fee-Title Acquisition

Fee-title acquisition will be limited to lands that can be bought from willing sellers in areas that would facilitate Wyoming toad recovery and promote the reintroduction of toads onto the land. Fee-title acquisition could triple or quadruple the cost of land conservation and add significant increases to Service management costs compared to conservation easements. Up to 10,000 acres are targeted for potential fee-title acquisition.

Chapter 2—Alternatives

This chapter describes the two alternatives identified for this project:

- The no-action alternative
- The proposed action, which gives the Service the authority to create the WTCA and the ability to use conservation easements and limited fee-title purchase within the new boundary for the purpose of wildlife and habitat conservation

These alternatives were developed in accordance with the requirements of the National Environmental Policy Act §102(2)(E) to "study, develop, and describe appropriate alternatives to recommended courses of action in any proposal which involves unresolved conflicts concerning alternative uses of available resources." The alternatives consider the effects of a conservation easement program and limited fee-title purchase within the project area boundary as shown in this EA.

Alternatives that were eliminated from detailed study are also briefly discussed.

2.1 Alternative A (No Action)

Under the no-action alternative, the areas that are not currently protected would remain largely in private ownership and would be subject to changes in land use or habitat type. Habitat conservation and restoration projects on private lands would continue through conservation easement initiatives in the Laramie Plains by public and private entities such as the NRCS, Wyoming Stock Growers Land Trust, and The Nature Conservancy. Public agencies and private land trusts would continue conservation efforts through securing easements but landowner choices for easements would be reduced without the Ser-

Table EA-2. Social, economic, and biological effects of conservation easements and fee-title acquisitions for the proposed Wyoming Toad Conservation Area, Wyoming.

Issue	*Conservation easements*	*Fee-title acquisitions*
Conservation value	■ Wyoming toad recovery efforts would be supported with a tool that is preferred over fee title by many local partners. ■ Used in combination with fee title, easements would ensure the maximum likelihood of achieving the recovery of the Wyoming toad. ■ Habitat for migratory birds, and other and deer would be preserved.	■ Fee-title lands are essential to meeting the recovery goals for the Wyoming toad. ■ The conservation value of fee-title lands may be greater than easement lands because the Service's ability to control habitat management would be increased.
Effects on local communities	■ The public would enjoy increased biodiversity, recreational quality, and hunting opportunities on nearby publicly accessible refuges and other public lands. ■ Neighboring property values may increase. ■ Traditional and historical ranching and farming landscapes would be preserved. ■ Open space would be preserved.	■ Same as for easements except traditional and historical ranching and farming practices may not be preserved at the same level. ■ Positive economic impacts may also result from increased Service habitat improvement expenditures injected into the local economy. ■ Possible increase in refuge visitation and associated impacts of visitor spending in the local economy. However, neighbors and other public may be affected by increased visitation to refuge lands. ■ Preservation of open space.
Landowner compensation	■ Landowners would be compensated for the fair market value of the easement. ■ Easements would reduce the fair market value of the property. ■ Easements would help keep land in agriculture. ■ Landowners would keep the majority of use rights, but would sell their right to develop or subdivide the land. Other possible restrictions include development of vertical structures and diversion or sale of water rights.	■ Landowners would be compensated for the fair market value of the land. ■ Landowners would sell all rights of ownership and turn ownership of the property over to the Service. ■ Fee-title acquisition, for willing sellers, would meet landowner's long-term conservation objectives for their land.
Effects on local government net revenue	■ No changes to property tax revenues would be expected for agricultural lands. ■ Other government revenues, such as personal income tax, may be changed throughout the region. ■ Land protection through conservation easements could result in reduced future service costs for local governments and municipalities. ■ Nearby land values may increase because of open views.	■ The Service does not pay property taxes on land it owns; thus, county tax revenue would decline. ■ Lost property tax revenues would be partially replaced with Refuge Revenue Sharing payments.

Adapted from Thomas et al. 2012

vice's ability to offer easements or purchase fee-title land from willing sellers. It would be unlikely that the acreage amount and type of habitat required for the recovery of the Wyoming toad would be successfully conserved.

2.2 Alternative B (Proposed Action)

Under the proposed action, the Service would establish the WTCA in south-central Albany County, Wyoming, with the objective of conserving up to 43,200 acres of wetlands, riparian areas, shrubland, and short mixed-grass prairies. This would be accomplished mainly through conservation easements, but up to 10,000 acres in fee-title lands could be purchased from willing sellers.

The Service would work to strategically acquire fee-title lands from willing sellers only that would protect and conserve wetland and riparian habitat in perpetuity for the reintroduction and establishment of up to five independent, self-sustaining populations of Wyoming toads. Potential fee-title lands would be prioritized based on specific criteria that would help with meeting the recovery and delisting goals that are outlined in the Wyoming Toad Revised Recovery Plan (USFWS 2015). The land bought through fee-title agreements would be managed cooperatively by staff at the Arapaho Refuge near Walden, Colorado, and the staff at the Wyoming Ecological Services office in Cheyenne, Wyoming. They are now working cooperatively to manage Mortenson Lake Refuge to conserve the endangered Wyoming toad. They would be responsible for monitoring and administering the newly acquired lands according to the Service's legal mandates and policies. Service staff would also continue to work with private landowners, researchers, and all other partners on the Wyoming toad recovery team.

The Service would also seek to strategically buy conservation easements from willing sellers on privately owned lands that provide potentially valuable habitat for the Wyoming toad and other species. The easements would provide perpetual protection of habitat for Federal trust species (migratory birds and threatened and endangered species) by restricting some types of future development. Development for residential, commercial, or industrial purposes such as energy and aggregate extraction; alteration of the natural topography; and conversion of wetlands, riparian areas, native grasslands, and shrubland to cropland would be prohibited. Conservation easements would also prohibit the draining, filling, or leveling of wetlands.

All lands that are protected by conservation easements would remain in private ownership; property taxes and land management, including invasive weed control, would remain the responsibility of the landowner. Control of public access to the land, including hunting, would remain under the control of the landowner. Perpetual easements may provide opportunities for the Partners for Fish and Wildlife program and other conservation organizations to work with interested landowners on conservation projects.

Melanie Olds/FWS

Yellow-headed blackbirds are found at Mortenson Lake and throughout the project area.

The easement program would be managed by Service staff located at Arapaho Refuge near Walden, Colorado, who would be responsible for monitoring and administering all easements. Periodic visits and correspondence with landowners or their designees would ensure that land protection goals are being met. Photographs of the property would be taken when the easements are established to document baseline conditions.

The areas considered for fee-title acquisition and conservation easements within the project area would be prioritized based on the biological needs of the wildlife species of concern (migratory birds and threatened and endangered species), the threat of development, connectivity with other protected lands, and the quality of habitat for the Wyoming toad and other Federal trust species that occupy the same habitat. The acreage totals for fee-title acquisition and conservation easements are based in part on the amount of available habitat and the total acreage needed to effectively carry out desired conservation measures throughout the historical range of the Wyoming toad. The attached land protection plan (LPP) describes these priorities in detail.

2.3 Alternatives Considered but Eliminated from Further Analysis

The five alternatives that the Service considered but eliminated from further consideration are described below.

County Zoning

In a traditional approach used by counties and municipalities, the local government would use zoning as a means of designating what types of development could occur in an area. According to Wyoming State Statutes 18–5–202(b), "the planning and zoning commission may prepare and amend a comprehensive plan including zoning for promoting the public health, safety, morals and general welfare of the unincorporated areas of the county." The Albany County Comprehensive Plan (2008) has been adopted and serves as a guide for future land use and development in Albany County. It is an advisory document rather than a regulatory document, but is the foundation for land management documents such as zoning, subdivision regulations, and other decisions made by the County. This alternative was not considered for further analysis because zoning would be subject to changing public sentiment and could result in frequent changes that would not guarantee the long-term prevention of residential or commercial development in the project area.

Various Configurations of the Boundary

Several other configurations of the WTCA project boundary were considered during the initial scoping discussions. Some of the possible project boundaries contained smaller areas while others contained much larger areas. The discussions of the various boundary configurations were based on several considerations. The area encompassed by the boundary would need to provide sufficient habitat to achieve the population goals for Federal trust resources such as migratory birds and threatened and endangered species, particularly the Wyoming toad. Large watershed-scale boundaries would be larger than what would be necessary for the toad to meet recovery goals and would be difficult to manage effectively and efficiently with current Refuge staffing levels. Conversely, a smaller area would not meet the objectives outlined in the Wyoming Toad Revised Recovery Plan (USFWS 2015), and would not adequately protect habitat required by other Federal trust species. Small, noncontiguous parcels would not allow toads to successfully migrate to new areas and establish new toad populations.

Safe Harbor Act Agreements Only

Reintroduction of the Wyoming toad on private lands is now done through Safe Harbor Agreements with landowners. Although such agreements are an important species conservation tool, they may not provide permanent protection because landowners can opt out of these agreements at any time (USFWS 2013). Safe Harbor Agreements where Wyoming toads are reintroduced on private lands, with incidental take being exempted, can count towards recovery if there has been a sufficient history of proactive conservation and there is no expectation of things changing in the future.

Easement-Only Acquisition (Exclusion of Fee Title)

It is the Service's policy to acquire the minimum interest in lands that is necessary to meet conservation objectives. The possibility of using an easement-only approach to habitat conservation was discussed internally. However, it was decided that the inclusion of some fee-title lands was necessary to achieve the recovery objectives in the Wyoming Toad Revised Recovery Plan (USFWS 2015) that would lead to the delisting of the species. Conservation easements on private lands may be used to supplement Wyoming toad recovery goals but are not a replacement for fee-title lands (USFWS 2013).

FWS

Creighton Lake

Fee-Title Acquisition (Exclusion of Easements)

Fee-title ownership provides the strongest habitat protection and allows the greatest flexibility for adaptive management in response to new data or changing conditions. However, the exclusive use of fee title without easements would not be consistent with Service policy to use the minimum interest necessary to meet conservation objectives. Easements could contribute, and may be necessary, to meeting the minimum amount of permanently protected habitat required to achieve the recovery objectives for the Wyoming toad.

Chapter 3—Affected Environment

Discussions of the resources and affected environment are in chapter 2 of the LPP.

Chapter 4—Environmental Consequences

This chapter assesses the environmental impacts that are expected to occur from the implementation of each of the alternatives described in chapter 2. Environmental impacts are analyzed for each alternative and the issues are discussed in the same order as in chapter 2. Several aspects of environmental effects are evaluated, including whether the impacts are negative or beneficial, direct or indirect, or cumulative with actions independent of the proposed action. The duration of the effect, whether it is a short- or long-term effect, is also used in the evaluation of the environmental consequences. The amount of time that project implementation would require would depend on the availability of funding and the level of landowner interest. Alternative B would likely be a long-term process to fully implement.

4.1 Effects on the Physical Environment

The estimated effects of each alternative on mineral, soil, and water resources as well as on the Service's ability to address climate change are described below.

Alternative A (No Action)

Under the no-action alternative, future protection of lands that are not currently protected by the Service would be limited to the efforts of other agencies and organizations in the area. The Service's role would be limited to programs, such as Partners for Fish and Wildlife, that provide financial and technical

assistance to willing landowners interested in improving their lands for wildlife. No Land and Water Conservation Fund monies would be expended in the project area by the Service for further land protection other than within the approved acquisition boundaries of the existing refuge units. Some partnership opportunities would be lost because the Service would not have the ability to fully work cooperatively within the area. Development and associated habitat loss could continue on lands outside of existing protected areas. Environmental benefits provided by wetlands and other natural vegetation such as water filtration, sediment reduction, and carbon sequestration would be reduced in the long term. Water quality and quantity could decline over time in areas with the increase in various types of development.

Aquifers would receive more demand, resulting in potential degradation of the hydrology of some wetland areas. Important wildlife habitat would remain vulnerable to degradation through reallocation of surface water offsite that may change existing water management practices.

This alternative could also negatively affect local mitigation efforts by reducing options for conserving and storing carbon through land protection and habitat restoration. Carbon sequestration capabilities would be reduced with the increased development and disturbance of native vegetation that is likely to occur under the no-action alternative.

Alternative B (Proposed Action)

Under the proposed action, the WTCA would provide additional protection of water resources in the Laramie Plains from increased nonpoint source pollution from residential subdivision, commercial development, and increased erosion as well as prevent the draining of wetlands on up to 43,200 acres of conservation easements and up to a maximum 10,000 acres of fee-title acquisition. Habitats that depend on the continuation of current water availability and management would receive some protection from degradation caused by substantial changes to water use.

The WTCA would not supersede existing third-party mineral rights and is therefore unlikely to affect mineral resources. If the mineral estate has not been severed from the surface estate, the easement may include restrictions on surface occupancy, but the Service would not, and cannot, prevent a mineral owner from accessing minerals on the property. It is unlikely that the Service would pursue acquisition of interests in lands with outstanding surface mineral leases or rights because the associated destruction of surface vegetation and need for reclamation would diminish the wildlife value of such land.

4.2 Effects on the Biological Environment

This section describes the likely effects of the project on species and their habitats under alternatives A and B.

Alternative A (No Action)

Under the no-action alternative, the Service's Partners for Fish and Wildlife program would continue to work cooperatively with landowners to voluntarily improve habitat on private land within the project area. Furthermore, habitat for wildlife would continue to be protected and restored through the ongoing efforts of agency partners and nongovernmental organizations, primarily through easement programs. However, because of the limited resources of these partners and nongovernmental organizations, available funding may not be enough to address the amount of landowner interest and need for habitat conservation in the area. Decreases in habitat quality and ecological resiliency because of land cover changes and associated fragmentation, introduction of exotic species, and construction of structures that are incompatible with habitat use by some wildlife would likely continue under the no-action alternative.

Habitat loss and fragmentation caused by development of land for commercial and residential use would negatively affect riverine, riparian, grassland, and shrubland habitat that many wildlife species use. Changes from natural land cover to agricultural crops, the spread of invasive species, or significant changes to irrigation regimes would likely further fragment wildlife habitat. The effects of fragmentation on wildlife have been well documented (Collinge 2009). Davies et al. (2011) found that exurban growth decreases native plant and animal diversity; increases the number of exotic species, including nonnative predators; and restricts ecosystem management options, such as using fire, which is a historical disturbance.

All of these potential impacts, whether alone or in combination, could result in the further decline of migratory birds, resident wildlife, and listed species. In particular, the no-action alternative would negatively affect the likelihood of recovery and potential delisting of the Wyoming toad. It is anticipated that recovery efforts would continue, but habitat protection and the success achieved with recent reintroduction efforts would be limited. Given that land conservation and protection are the primary actions identified in the recovery plan, it is unlikely that recovery of the Wyoming toad could occur if addi-

tional parcels of suitable riparian and wetland habitat are not protected and dedicated to the reintroduction and establishment of sustainable populations of the toad within its historical range.

Similarly, migratory birds that depend on available wetland and riparian habitats, such as canvasback, northern pintail, white-faced ibis, and black tern, would likely decline with the anticipated increase in land use change and reduction in water quality. The Laramie Plains is designated as an Important Bird Area by the National Audubon Society (2011) because of the number and variety of spring and fall migrant species; although this designation would probably not change, the Service would not be able to provide any further protection.

Although scientific predictions of future climate in the region differ, almost all indicate that water will become increasingly limited in the future (Arnell 1999). Therefore, increasing water conservation efforts now is a prudent investment toward preserving future wildlife and native habitats. One of the greatest ecological concerns about climate change is that species that are now adapted to specific environmental conditions will need to either shift their geographic ranges or adapt to new conditions. If these species become isolated from their preferred habitats, they could potentially become regionally extirpated or extinct (Loss et al. 2011). This alternative would likely result in negative effects on connectivity of wildlife habitat, the resiliency of the watershed, and the ability of the ecosystem to adapt to a changing climate and changing land uses.

Alternative B (Proposed Action)

Under the proposed action, the establishment of the WTCA would enable the Service to permanently protect up to 43,200 acres of vital wildlife habitat in addition to that which is already held in the Mortenson Lake and Hutton Lake Refuges. While there are several conservation initiatives by other agencies and private land trusts underway in the project area, the WTCA would strategically target habitats that are necessary for recovery of the Wyoming toad and other federally listed species such as migratory birds and the black-footed ferret.

This alternative would allow Wyoming toad populations to be reintroduced in areas with suitable habitat that would supplement earlier reintroduction efforts at Mortenson Lake National Wildlife Refuge.

Melanie Olds/FWS

Rush Lake in winter at Hutton Lake National Wildlife Refuge.

The establishment of distinct populations would increase the chance of toads surviving the occurrence of a disease outbreak or other unpredictable event. Priority would be given to wetland areas, including riverine and riparian areas, that historically were the preferred habitat of the toad. Protection of riverine and riparian areas would benefit other species that depend on this habitat type, including little brown bat, willow flycatcher, yellow warbler, and deer. Riparian areas also provide travel corridors for a wide variety of other wildlife species.

The authority to purchase conservation easements and fee-title lands from willing sellers within the WTCA would help to make sure that several conservation goals, such as those listed in the Shirley Basin–Laramie Rivers Conservation Plan (Pocewicz and Lathrop 2008), could be met. Permanently protecting lands that link existing public and private conservation areas would significantly enhance the ecology of the Laramie Plains as a whole.

Species that are sensitive to vertical structures would be provided with greater protection through development restrictions that would make sure that intact habitats would continue to be available. Conservation through easements or fee-title purchases would lessen the negative impacts of the existing threats to wildlife populations by maintaining larger tracts of undeveloped land. This would have long-term positive effects on the connectivity and quality of wildlife habitat and ecological resiliency, which would benefit migratory birds, threatened and endangered species, and native plants within this area of the Laramie Plains.

By protecting habitat, reducing habitat fragmentation, and increasing connectivity between habitats, the proposed action would also help native species and ecosystems to adapt to a changing climate. Climate change mitigation efforts would be positively affected by this alternative because carbon sequestration that is now provided by native vegetation would be retained.

4.3 Effects on Cultural Resources

This section describes the likely effects of the project on the cultural resources in the area under alternatives A and B.

Alternative A (No Action)

Under the no-action alternative, cultural resources on the lands within the proposed WTCA boundary would remain subject to State and local regulation and permitting. Some cultural resources could be adversely affected by activities such as development and road construction on lands that are outside of existing public and private conservation lands. Activities that do not require permits could contribute to the loss or damage of cultural resources, especially if resources have not yet been discovered.

Alternative B (Proposed Action)

As a Federal agency, the Service must comply with many laws pertaining to cultural resources, including the National Historical Preservation Act (16 U.S.C. 470 et seq.; Public Law 89–665), the Archaeological Resources Protection Act of 1970 (16 USC 470aa–mm; Public Law 96–95) as amended, and the Native American Graves Protection and Repatriation Act of 1990 (25 U.S.C. 3001 et seq.; Public Law 101–601). Although conservation easements would preclude or limit most forms of surface disturbance, these requirements would not apply to or be fully effective in protecting cultural resources on private lands with easements. However, the proposed action provides benefits to cultural resources when compared to the no-action alternative because easements would limit surface disturbance. On Federal fee-title lands, cultural resources would be fully protected.

4.4 Effects on the Socioeconomic Environment

This section describes the estimated effects of alternatives A and B on landownership, land use, public use, development (including oil and gas, wind

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White-tailed prairie dog at Hutton Lake National Wildlife Refuge.

energy, and residential), and intact ecosystem values.

Land Ownership and Land Use

Alternative A (No Action)

Landownership would not be affected by the no-action alternative and land use would likely continue to follow observed patterns of increased residential and commercial development, resulting in further fragmentation of the landscape. Sustainable ranching opportunities would continue to be reduced if landowners begin to split tracts into smaller lots for development. However, landowners who subdivide could increase their revenue in the short term by developing residential home sites or by selling land for commercial development, such as oil and gas.

The community would continue to lose open space, and the stunning views in the area would be diminished.

Alternative B (Proposed Action)

There are many variables to consider when assessing the social and economic effects of buying conservation easements and fee-title lands because acquisition may span decades. The social and economic effects of the easements cannot be quantified in this analysis because of the uncertainty of such factors as the likelihood and timing of gaining easements or fee-title purchases, the availability of Service money, population growth, land values, and agricultural commodity prices. However, a qualitative assessment of some effects can be provided.

Under alternative B, the easement and fee-title programs would help preserve the aesthetics and open landscape of the Laramie Plains, as well as provide another option for landowners who want to maintain open space and historical land use. These programs would also conserve wildlife habitat and protect the land from surface disturbance, development, and fragmentation on lands within the WTCA boundary.

Conservation easements provide financial benefits for landowners that may enable them to preserve the natural and historical value of their ranch and open space lands, and to pass this legacy on to future generations. Besides keeping a cultural heritage, the preservation of farming and ranching operations can result in economic benefits to the local economy. Conservation easements can protect values associated with biodiversity and wildlife abundance, maintain aesthetic beauty, and protect socially and culturally significant features of landscapes and livelihoods (Millennium Ecosystem Service Assessment 2005, Ehrlich and Ehrlich 1992, Daily et al. 1997).

Up to 10,000 acres could be purchased in fee title, which would then be removed from the Albany County tax rolls. Under Federal fee-title ownership, counties would qualify for reimbursement of some foregone property tax revenue through the Refuge Revenue Sharing Act of 1935, which allows the Service to make annual payments to local governments in areas where fee-title purchases have removed land from the tax rolls. Under provisions of the Refuge Revenue Sharing Act, payments are based on the greater of 75 cents per acre or 0.75 percent of the fair market value. The exact amount of the annual payment depends on Congressional appropriations, which in recent years have tended to be substantially less than the amount needed to fully provide the authorized level of payments. In fiscal year 2013, actual Refuge Revenue Sharing payments were 25 percent of authorized levels on average.

Refuge lands could also provide grazing or haying opportunities, or both, which could be used as habitat management tools and which could provide an economic benefit to cooperators. Positive effects may occur from increased tourism, public wildlife viewing, fishing, and hunting opportunities on the areas near the existing refuges. Open space may also enhance property values on lands near the conservation area. It is also well documented that open space and protected natural areas can increase surrounding property values (see McConnell and Walls, 2005, for a comprehensive review). The reciprocating value of open space on property values will vary depending on landscape characteristics and location attributes (for example, distance to the conserved area) (Kroger, 2008). The permanence of the open space is also an influencing factor (Thomas, Huber, Gascoigne, and Koontz 2012).

Public Use

This section describes the likely effects of the project on public use in the area under alternatives A and B.

Alternative A (No Action)

Under the no-action alternative, landowners would continue to control all access and public use on their lands.

Alternative B (Proposed Action)

Under the proposed action, landowners who enter into conservation easement agreements would continue to manage public access, including hunting access, to their property. Properties acquired in fee title would be closed to public access unless deemed compatible with Wyoming toad population recovery objectives. Public access could be allowed for wildlife-dependent uses that the Service determines to be

compatible with the refuges' wildlife management objectives.

Development

This section describes the likely effects of the project on development in the area under alternatives A and B.

Alternative A (No Action)

Under the no-action alternative, increased infrastructure related to residential, oil, gas, and wind development in the Laramie Plains would likely result in the fragmentation of habitat now used by wildlife. Over the long term, these activities would likely result in the continuation, and possibly the acceleration, of the decline in wildlife populations in the project area.

Over time, subdivision and development would reduce tourism, hunting, and wildlife observation opportunities, resulting in diminished economic benefits associated with these activities to local communities.

With the anticipated increase in development, landowners and the surrounding communities would lose open space, and the wide-open views would be diminished.

Residential Development

Rural development on exurban/rural lots (1.7 to 40 acres) has been growing at a rate of 10 to 15 percent per year, exceeding urban and suburban expansion rates (USDA 2006). This trend started in the 1960s, when demographers documented that for the first time in American history more people were leaving cities for rural areas than were making the return trip (Fuguitt 1985). Residential development and subdivisions not only fragment wildlife habitat, but they generally increase the costs to county governments that have to provide services to rural subdivisions.

Oil and Gas Exploration and Development

Oil and gas development would continue to occur on private lands in the Laramie Plains. Protection of the surface estate would be governed by existing State regulations.

Wind Energy Development

The lands within the project area would remain in private ownership and have no further Service restrictions. Landowners could potentially profit by allowing wind energy to be developed on their land.

Alternative B (Proposed Action)

Under the proposed action, up to 43,200 acres could be protected by keeping various forms of development from fragmenting the habitat. Ongoing traditional agricultural uses such as livestock grazing and ranching would continue. This alternative would help protect open space and the rural lifestyle in the Laramie Plains.

Residential Development

Preventing subdivision and residential development could decrease future tax revenues in a defined market area. However, protecting open space could actually provide a net savings to Albany County citizens when compared to the revenues generated and costs of services associated with residential development (Haggerty 1996). Not only could open space lands themselves increase in value, but nearby developed areas could also increase in value due to the recreational opportunities and views associated with nearby protected lands.

Oil and Gas Exploration and Development

The proposed easement and fee-title programs would preclude oil and gas exploration and any other type of development requiring surface occupancy from occurring. Typically, conservation easements do not affect subsurface estates, such as oil and gas deposits, because the Service only acquires rights associated with surface ownership. In many places where the subsurface estate has been severed from surface ownership, the landowner does not own the subsurface rights and the easement or fee-title lands that the Service would acquire from the landowner would be junior to the subsurface rights.

For easements that have been put in place on land where the owner has not sold or leased the mineral or subsurface estate, the Service easement would be senior to any subsurface interests later acquired by a developer. Since development of the mineral estate could significantly affect the resources that the Service is attempting to protect, the Service would prohibit surface development, and any minerals, oil, or gas would have to be accessed from off of the property.

Wind Energy Development

The proposed easement and fee-title programs would enhance the protection of wildlife habitat from surface disturbance and development of wind energy infrastructure. Easement payments made to landowners would offset some of the potential revenue loss from the sale of wind energy development leases. The development of wind energy on neighboring lands that are not fee-title lands or do not have Service conservation easements would not be affected. The potential for wind development within the Laramie Plains is rated moderate.

Other Conservation Impacts

Alternative A (No Action)

Under the no-action alternative, the threat of fragmentation and lowered water quality will continue unabated. Landowners may continue to face economic pressures to subdivide their ranches and lease or sell parts of their property rights. Residential development will further fragment the Laramie Plains region, leaving fewer large parcels of intact habitat.

Alternative B (Proposed Action)

Under the proposed action, existing wetland, riparian, grassland, and shrubland habitat would remain intact through fee title and conservation easement purchases. Because conservation easements would keep wildlife habitat intact on working lands, ecosystem services would be available for local residents (Millennium Ecosystem Service Assessment 2005). Ecosystem services such as pollination, water purification, nutrient cycling, carbon sequestration, soil conservation, and control of pest insects by birds are often unrecognized or are considered "free." These services would not be provided in areas that have undergone residential or commercial development.

Conservation easements on private lands would strengthen habitat resiliency and provide opportunities for wildlife movement and adaptation for years to come.

4.5 Unavoidable Adverse Impacts

Any adverse effects that may be unavoidable while carrying out alternatives A and B are described below.

Alternative A (No Action)

Under the no-action alternative, habitat degradation and fragmentation would be expected to become more widespread in the project area. Some habitat protection would continue through existing authorities and funding.

Alternative B (Proposed Action)

No direct or indirect unavoidable adverse impacts to the biological or physical environment would result from the proposed action. The selection of an approved boundary and the concurrent authorization to obtain easements would not, by themselves, affect landownership or management activities by other agencies or organizations, or other aspects of the socioeconomic environment.

Fee-title acquisition would reduce taxes paid to the county by landowners. However, this would be partially offset by the Refuge Revenue Sharing program.

4.6 Irreversible and Irretrievable Commitments of Resources

Any commitments of resources that may be irreversible or irretrievable as a result of carrying out alternatives A and B are described below.

Alternative A (No Action)

There would be no commitment of resources by the Service if the no-action alternative is selected. The Service could still exercise its authority to acquire inholdings or other lands that would result in minor expansion of existing refuges, but it would not be obligated to do so.

The continued introduction of new residential and commercial infrastructure to the Laramie Plains would result in an irretrievable loss of habitat that may eventually lead to an irreversible loss or population decline of some wildlife species.

Alternative B (Proposed Action)

The establishment of the WTCA would not, in itself, constitute an irreversible or irretrievable commitment of resources. However, if interests in land were acquired through the use of the Land and Water Conservation Fund or donations, the administration of the easement provisions or donated property would result in an irreversible and irretrievable commitment of resources. The monitoring of easements would represent a minor increase in overall Service costs borne by the Arapaho National Wildlife Refuge Complex.

4.7 Short-term Use Versus Long-term Productivity

This section describes the short-term effects versus long-term productivity from the expected actions in alternatives A and B.

Alternative A (No Action)

Some habitat would be conserved through ongoing efforts of Service programs like Partners for

Fish and Wildlife along with the efforts of other agencies and nonprofit partners. Loss of important wetland and upland habitats would be expected to continue at the current rates of development, resulting in long-term negative implications for the habitats in and the ecology of the Laramie Plains.

Ranches and agricultural lands could be sold to developers for short-term monetary gains, but the expected rates of development would have an adverse effect on the long-term biological and agricultural productivity of the area.

Over the long term, the costs to counties to sustain development in rural areas could be significant (see the "Landownership and Land Use" section above). Development of wind energy and oil and gas resources would provide short-term income gains, but would have a long-term adverse impact on the Laramie Plains ecosystem.

Alternative B (Proposed Action)

Under the proposed action, the ability of the Service to acquire perpetual conservation easements and limited fee-title acquisition would conserve important wetland and upland areas and reduce the long-term loss and fragmentation of important habitats that the Wyoming toad and a variety of wildlife species depend on for survival.

The proposed conservation area would help to preserve the long-term biological productivity of the Laramie Plains wetland, riparian, and upland habitats; increase protection of endangered and threatened species; and maintain biological diversity.

The ability to sell conservation easements would provide an immediate short-term economic benefit to landowners who take part in the program while keeping the long-term agricultural heritage and productivity of the area.

These habitat types would be protected, both for the wildlife species that depend on them and so that future generations of Americans may enjoy them.

4.8 Cumulative Impacts

Cumulative impacts are defined by the National Environmental Policy Act as the impacts on the environment which result from the incremental impacts of the action when added to other past, present, and reasonably foreseeable future actions regardless of what agency (Federal or non-Federal) or person undertakes such other actions (40 CFR § 1508.7)

This section describes the cumulative impacts that could result from the combination of reasonably foreseeable actions with other biological and socioeconomic conditions, events, and developments.

Past Actions

Past land protection efforts within the Laramie Plains have included the establishment of three national wildlife refuges: Bamforth (1,166 acres), Hutton Lake (1,928 acres), and Mortenson Lake (1,968 acres). The Partners for Fish and Wildlife program has worked with private landowners to restore or enhance habitat for wildlife. Organizations such as The Nature Conservancy and Wyoming Stock Growers Land Trust have also worked to conserve land in the area.

Present Actions

The Service's proposed action to expand the number of acres in the Laramie Plains in fee title or in conservation easements would expand land acquisition authority in the area to 43,200 acres, and would potentially add another 10,000 acres to the Refuge System in fee title, and 33,299 acres in the form of conservation easements. Once approved, it would take some years for the program to begin to have a noticeable effect because the acquisition of fee title and easements would depend on available funding and willing sellers.

Reasonably Foreseeable Future Actions

Reasonably foreseeable actions are activities that are independent of the proposed action but could result in cumulative or additive effects when combined with the alternatives under consideration. Reasonably foreseeable actions are expected to occur regardless of which alternative is selected. Residential, oil and gas, and wind development; increased water demands; and future conservation efforts by a variety of organizations are the primary reasonably foreseeable actions that are anticipated in the Laramie Plains.

Development

Population growth in the State of Wyoming is expected to continue to increase. Between 2000 and 2005, Wyoming ranked 31st in population growth, but from 2006 to 2007, Wyoming jumped to 9th in population growth (Hulme et al. 2009). From 1978 to 2007, total land in agriculture in Wyoming declined from 33.6 million acres to 30.2 million acres, a decrease of more than 10 percent. Albany County alone saw a 6-percent decrease in farm lands from 2002 to 2007 (USDA 2007). However, much of the residential growth in Wyoming is considered rural, with a housing density of one unit per 40 acres (Hulme et al. 2009). Increasingly, these exurban homes are often second homes. From 1990 to 2000, Wyoming saw a 30-percent increase in second home

buying; 7.2 percent of total housing units in Albany County are second homes. People are drawn to the open space, abundant wildlife, and recreational opportunities that are available, but exurbanization leads to increased habitat fragmentation and a shift from traditional agriculture practices.

Wyoming ranked seventh in production of crude oil and second in the production of natural gas in 2010, with production occurring throughout the State (Petroleum Association of Wyoming 2012). Also, Wyoming ranks 10th in the nation in proven reserves of crude oil and second in proven reserves of natural gas. Proven reserves are the amount estimated to be recoverable from well-established or known reservoirs. Because of high proven reserves within the State and the increased nationwide need for oil and gas, development is likely to continue throughout the State.

Over 43 percent of Wyoming has the potential for development of wind energy (U.S. Department of Energy 2011). Wyoming ranks 10th in potential wind energy development, with 27.3 million acres (110,414.5 km^2) of available land with an installed capacity of 552,072.6 megawatts and an annual generation of 1.9 million gigawatt-hours. Most of this potential is within the southeastern part of the State. Most of the land with potential for wind development would still be available under the proposed action.

Alternative A (No Action)

Increased residential, oil and gas, and wind development in the Laramie Plains would likely result in the fragmentation of wetland, riparian, grassland, and shrubland habitats now used by wildlife. Over the long term, the combined effects of these activities would likely result in the continuation, and possibly the acceleration, of the decline in wildlife populations and may seriously affect the possible recovery of the Wyoming toad.

Alternative B (Proposed Action)

The proposed action would provide long-term protection of up to 43,200 acres of wildlife habitat from the combined effects of various future development activities by precluding surface occupancy and the resultant habitat fragmentation and infrastructure for the benefit of the public and wildlife.

Other Conservation Efforts

Ongoing efforts by a variety of organizations and agencies including The Nature Conservancy, Wyoming Stock Growers Land Trust, WGFD, and Partners for Fish and Wildlife have led to conservation of lands within the Laramie Plains. All these agencies and nongovernmental organizations have expressed interest in continuing conservation efforts. The Nature Conservancy has named the wetlands of the Laramie Plains as a conservation priority because of the large intact expanses of mixed-grass prairie and sagebrush steppe (Copeland et al. 2010).

Alternative A (No Action)

Under the no-action alternative, current Service programs such as Partners for Fish and Wildlife would continue within the Laramie Plains region. The Service would continue to work cooperatively with landowners to voluntarily improve habitat on private land through various conservation means such as prescribed fire, range management systems, or native plantings. Besides Service programs, landowners also can work with various nongovernmental organizations and other government conservation initiatives. Under the no-action alternative, landowners would have fewer choices for protecting their lands through conservation easements. It would be unlikely that the acreage amount and type of habitat required for the recovery of the Wyoming toad would be successfully conserved.

Alternative B (Proposed Action)

This action is important for the Service to meet several conservation objectives and is essential for meeting the Service's recovery objectives for the Wyoming toad (USFWS 2013). Ecological Services may pursue the development of a 10(j) rulemaking for the historic range of the Wyoming toad. Section 10(j) allows reintroduced "experimental non-essential populations" of endangered species to be managed as if they were threatened. Landowners can engage in lawful activities, such as recreation, forestry, and agriculture, and are relieved from liability for the unintentional take of a Wyoming toad. This would allow private landowners to continue to manage their lands with reintroduced toads. Federal lands and fee title lands acquired as part of the WTCA will be designated as essential populations, with full protection of an endangered species, and will not be subject to the 10(j) exemptions. The 10(j) rule would encompass only the toad's historic range within Albany County.

Chapter 5—Coordination and Environmental Review

This chapter describes how the Service coordinated with other entities and conducted environmental reviews of various aspects of the project proposal and analysis. If the proposed action is selected, further coordination and review will be needed.

5.1 Agency Coordination

The Service has discussed the proposal to establish the WTCA with interested stakeholders; landowners; conservation organizations; other Federal agencies; tribal, State, and county governments; and other interested groups and individuals.

The Service held internal scoping meetings and also had several informal conversations with landowners and other interested citizens to provide information and discuss the proposal.

At the Congressional level, Service staff has briefed Senators Enzi and Barasso and Representative Lummis's office in Cheyenne, Wyoming. The Service has also provided information about this project to four tribes.

Nongovernmental conservation groups are vital to the success of the proposed project. Service staff has coordinated with partner organizations such as The Nature Conservancy, Wyoming Stock Growers Land Trust, and Audubon Rockies.

5.2 Contaminants and Hazardous Materials

The Service is required to invest in healthy lands. Surveys for contaminants would be conducted before any land interests are acquired. A level 1 pre-acquisition site assessment would be conducted on each individual tract before purchase of any land interests. Any suspected contaminant problems that would require further surveys would be referred to a contaminants specialist located in the Service's Ecological Services office in Cheyenne, Wyoming.

5.3 National Environmental Policy Act

The Service conducted this environmental analysis under the authority of and in compliance with the National Environmental Policy Act, which requires an evaluation of all reasonable alternatives that will meet stated objectives, and an assessment of the possible effects on the natural and human environment.

5.4 Environmental Assessment

This EA was the basis for determining whether the implementation of the proposed project constitutes a major Federal action that would significantly affect the quality of the natural and human environments. National Environmental Policy Act planning for this EA involved other government agencies and the public in the identification of the issues and alternatives for the proposed project.

5.5 Distribution and Availability

Copies of the draft EA (with the associated draft LPP in the same volume) were made available to Federal and State legislative delegations, tribes, agencies, landowners, private groups, and other interested individuals. Copies of the final LPP/EA are available from the following offices and contacts:

Arapaho National Wildlife Refuge Complex
953 County Road 32
Walden, CO 80480
970 / 723 8202

U.S. Fish and Wildlife Service
Region 6, Branch of Refuge Planning
P.O. Box 25486–DFC
Denver, CO 80225
303 / 236 4378
303 / 236 4792 fax
https://www.fws.gov/mountain-prairie/refuges/wtca.php

Appendix B

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Appendix C
Environmental Compliance

This appendix contains several environmental compliance documents:

- finding of no significant impact
- environmental action statement
- environmental compliance certificate

Finding of No Significant Impact

U.S. Department of the Interior, U.S. Fish and Wildlife Service
Region 6, Lakewood, Colorado

Wyoming Toad Conservation Area

Albany County, Wyoming

Introduction

The U.S. Fish and Wildlife Service (Service) has completed the Wyoming Toad Conservation Area Land Protection Plan and Environmental Assessment. This planning process considered the authorization of a new unit of the National Wildlife Refuge System, the Wyoming Toad Conservation Area (WTCA). The Service conducted a National Environmental Policy Act (NEPA) review of the proposed easement and limited fee-title program. The resulting environmental assessment (EA) evaluates two alternatives: alternative A, a no-action alternative; and alternative B, the preferred alternative, to establish the Wyoming Toad Conservation Area.

Purpose of the Proposed Action

The Wyoming Toad Conservation Area will help recover the Wyoming toad, one of the four most endangered amphibian species in North America. The project will use conservation easements, and limited fee-title acquisition, where it benefits recovery efforts for the Wyoming toad population, to conserve these habitats in a working agricultural landscape by maintaining compatible current land management practices while preventing the conversion of native vegetation to other uses. In so doing, habitat for federal trust species of wildlife associated with the Laramie and Little Laramie Rivers in the project area will be protected.

Public Participation

As part of the public scoping process associated with this action, staff members from Arapaho Refuge Complex and the Ecological Services Office in Cheyenne discussed the wildlife conservation issues and opportunities for the Wyoming Toad Conservation Area project with a wide variety of agencies, nongovernmental organizations, and private landowners. Partners for Fish and Wildlife biologists have worked with landowners on habitat restoration projects and in developing partnerships that provide the foundation for a successful easement program. On November 20, 2014, a press release was issued by the Service which announced the release of a draft EA and land protection plan (LPP) for 47 days of public comment. Approximately 80 people attended a public meeting held December 4, 2014, at the Albany County Fairgrounds in Laramie, Wyoming. Those in attendance were given an opportunity to express their ideas and concerns. An additional 16 emails and letters were received from individuals, nongovernmental organizations, and agencies by the close of the comment period on January 5, 2015. Public comments and responses used to refine the draft EA and LPP can be found in Appendix F of the LPP/EA (see the supporting references section).

Decision

On the basis of information contained in the attached EA, and the comments received, I have selected alternative B as the preferred alternative for implementation. Alternative B best meets the Service's mission to sustain fish and wildlife populations and to conserve a network of lands that provide their habitats and is preferable to the "No Action" alternative in light of physical, biological, economic, and social factors.

Finding and Basis for Decision

In determining whether this project is a major action significantly affecting the quality of the human environment, the Service looked at both the context and intensity of the action (40 CFR § 1508.27, 40 CFR § 1508.14) as required by NEPA. In terms of context, the preferred alternative will occur in the Laramie River Basin in Albany County, Wyoming, but the Service has evaluated whether it will have effects on the human environment on a broader scale. The project will be implemented over time, dependent on the Service's ability to obtain funding needed for easement acquisition. Of the approximate 186,185 acres within the overall project boundary, the Service may purchase conservation easements or fee-title land from willing sellers on a strictly voluntary basis on up to 43,200 acres. A maximum of 10,000 acres of the total acreage acquired by the Service can be fee title. Because the human environment is interpreted by NEPA to mean the natural and physical environment and the relationship of people with that environment (40 CFR § 1508.14), in addition to our thorough analysis of physical environmental effects, the Service carefully assessed the manner in which the local people and natural resources relate to the environment in the Laramie River Basin in Albany County, though economic or social effects are not intended by themselves to require the preparation of an environmental impact statement (40 CFR § 1508.14).

Establishment of the Wyoming Toad Conservation Area will enable the Service to seek permanent protection for important wildlife habitat for federal trust species including the federally endangered Wyoming toad as well as 146 other species of birds. Shorebirds such as the American avocet, Wilson's phalarope, long-billed curlew and marbled godwit are among the more than 22 species of shorebirds that migrate through or breed in the Laramie basin. Waterfowl known to breed in the basin include the American wigeon, blue-winged teal, cinnamon teal, northern shoveler, canvasback, northern pintail, green-winged teal, lesser scaup, gadwall, ruddy duck, common merganser, and Canada goose.

The establishment of the Wyoming Toad Conservation Area will not impact how other state and federal agencies manage their lands or how they allot permits for uses such as grazing on public lands.

Land protection efforts in the Wyoming Toad Conservation Area will provide connectivity between permanently protected areas within and around the conservation area. Easements will prevent habitat fragmentation resulting from land cover changes due to subdivision and infrastructure development. Easements preserve the open-space aesthetic on participating properties and preserve habitat that may provide for wildlife-dependent recreation near easement lands. Easements can provide a one-time boost to the local economy and provide capital for landowners while preserving the landowner's right to manage public access to their properties including allowing or restricting recreational access. Easements will reduce the sale amount of the property by the appraised value; however, the tax rate will likely remain the same (Wyoming tax rates are based on the agricultural value of the land) and the property will stay on the tax roll. Easements will not affect the mineral rights of third parties, if potential infrastructure uses were found compatible; the Service would work with the landowner and/or developer to reduce the environmental effects of the development.

Much like easements, fee-title lands prevent habitat fragmentation and preserve the open-space aesthetics of the area. Fee-title acquisitions will reduce the property tax revenue. That revenue would be partially replaced by funds from the Refuge Revenue Sharing Act (16 U.S.C. 715s § 401).

Based on the analysis of potential environmental impacts contained in the attached EA (see appendix A), and considering the significance criteria in 40 CFR § 1508.27, I find that authorizing the Wyoming Toad Conservation Area is not a major federal action that would significantly affect the quality of the human environment within the meaning of Section 102(2)(C) of the National Environmental Policy Act of 1969. Accordingly, the preparation of an environmental impact statement on the proposed action is not required.

Implementation of the preferred alternative:

- will not result in the jeopardy of any federally threatened or endangered species, or adversely modify existing designated critical habitat.
- may permanently protect thousands of acres of habitat for Endangered Species Act listed and candidate species;
- will pose no known risk to public health and safety;
- will not affect districts, sites, highways, structures, or objects listed in or eligible for listing in the National Register of Historic Places, nor would they likely cause any loss or destruction of significant scientific, cultural, or historical resources.
- will not adversely affect wetlands;
- will not adversely affact air, geology, soils, or water;

- will not contribute to global climate change;
- will not have a disproportionately high or adverse human health or environmental affect on minority or low-income populations; and
- will be in compliance with all federal, state, and local laws.

The Finding of No Significant Impact (FONSI) and supporting NEPA analysis will be available to the public upon request. The LPP and associated documents are on file at the U.S. Fish and Wildlife Service, Refuge Planning, P.O. Box 25486-DFC, Denver, Colorado 80225.

Supporting References

U.S. Fish and Wildlife Service. 2016. Wyoming Toad Conservation Area - Land Protection Plan and Environmental Assessment, Denver, Colorado.

U.S. Fish and Wildlife Service. 2015. Revised recovery plan for the Wyoming toad (*Bufo hemiophrys baxteri*, now known as *Anaxyrus baxteri*). U.S. Fish and Wildlife Service, Cheyenne, Wyoming.

Noreen Walsh Date
Regional Director
U.S. Fish and Wildlife Service, Region 6
Lakewood, Colorado

Environmental Action Statement

U.S. Department of the Interior, U.S. Fish and Wildlife Service
Region 6, Lakewood, Colorado

Within the spirit and intent of the Council on Environmental Quality's regulations for implementing the National Environmental Policy Act and other statutes, orders, and policies that protect fish and wildlife resources, I have established the following administrative record and have determined that the action to establish the Wyoming Toad Conservation Area and associated easement and land acquisition program:

____ is a categorical exclusion as provided by 516 DM 8.
No further documentation will be made.

_X_ is found not to have significant environmental effects as determined by the attached Finding of No Significant Impact and environmental assessment.

____ is found to have special environmental conditions as described in the attached environmental assessment. The attached Finding of No Significant Impact will not be final nor any actions taken pending a 30-day period for public review [40 CFR 1501.4(e)(2)].

____ is found to have significant effects and, therefore, a notice of intent will be published in the Federal Register to prepare an environmental impact statement before the project is considered further.

____ is denied because of environmental damage, Service policy, or mandate.

____ is an emergency situation. Only those actions necessary to control the immediate impacts of the emergency will be taken. Other related actions remain subject to National Environmental Policy Act review.

Other supporting document: U.S. Fish and Wildlife Service. 2016. Wyoming Toad Conservation Area - Land Protection Plan and Environmental Assessment, Denver, Colorado, 112p.

Noreen E Walsh — Nov 28, 2016

Noreen Walsh
Regional Director
U.S. Fish and Wildlife Service, Region 6
Lakewood, Colorado

Date

Environmental Compliance Certificate

U.S. Department of the Interior, U.S. Fish and Wildlife Service
Region 6, Lakewood, Colorado

Project: Wyoming Toad Conservation Area
State: Wyoming

Action (indicate if not applicable)	**Date**
National Environmental Policy Act (indicate one)	
Categorical Exclusion	N/A
Environmental Assessment and Finding of No Significant Impact	10/27/2016
Environmental Impact Statement and Record of Decision	N/A
Executive Order 11593—Protection of Historical, Archaeological, and Scientific Properties	10/27/2016
Executive Order 11988—Floodplain Management	10/27/2016
Executive Order 11990—Protection of Wetlands	10/27/2016
Executive Order 12372—Intergovernmental Review of Federal Programs	10/27/2016
Executive Order 12898—Federal Actions to Address Environmental Justice in Minority and Low-Income Populations	10/27/2016
Executive Order 12996—Management and General Public Use of the National Wildlife Refuge System	10/27/2016
Endangered Species Act, Section 7	10/12/2016
Coastal Zone Management Act, Section 307	N/A
Uniform Relocation Assistance and Real Property Acquisition Policies Act	Various
Level 1 Contaminants and Hazardous Waste (Secretarial Order 3127: 602 DM 2)	Various

I hereby certify that all requirements of the law, rules, and Service regulations or policies applicable to planning for the above project have met with compliance. I approve the establishment of the Wyoming Toad Conservation Area to be administered and managed as part of the National Wildlife Refuge System.

Noreen E Walsh — Nov 28, 2016

Noreen Walsh
Regional Director
U.S. Fish and Wildlife Service, Region 6
Lakewood, Colorado

Date

Statement of Compliance

The following Executive orders and legislative acts have been reviewed as they apply to the establishment of the Wyoming Toad Conservation Area:

1. *Executive Order 11593—Protection of Historical, Archaeological, and Scientific Properties.* Per the regional archaeologist, the creation of this document constitutes an "undertaking" as defined by the National Historic Preservation Act (36 CFR 800.16(y)). It is an undertaking that has no potential to cause effects on historic properties and therefore there are no further review obligations under the act. If, in the future, there are undertakings planned that would potentially cause adverse effects on historic properties, including ground disturbance or alterations to buildings or structures over 50 years of age, those projects should be reviewed under section 106 of the act before the start of the project.
2. *Executive Order 11988—Floodplain Management.* No structures that could be damaged by or that would significantly influence the movement of floodwater are planned for construction by the U.S. Fish and Wildlife Service on land acquired as part of this project.
3. *Executive Order 11990—Protection of Wetlands.* Conveyance of the lands and interests herein shall not exempt such lands and interests from all Federal, State, and local laws and regulations as applicable thereto by virtue of their characteristics as wetlands, subject to Executive Order 11990 (May 24, 1990).
4. *Executive Order 12372—Intergovernmental Review.* The Service has discussed or offered to discuss the proposal to establish the Wyoming Toad Conservation Area with landowners; conservation organizations; state, federal, and county agencies; tribes; and other interested groups and individuals.

   At the federal level, the Service staff has coordinated with the Bureau of Land Management, and the Natural Resource Conservation Service, as well as the congressional delegations for the affected region. At the State level, the service has worked with the Wyoming Game and Fish Department. The Service has consulted representatives from local governments including the City of Laramie Albany County Commissioners In addition, the Service has provided information to four Tribes with potential interest in this project.
5. *Executive Order 12898—Federal Actions to Address Environmental Justice in Minority and Low-Income Populations.* Establishing the Wyoming Toad Conservation Area will not have a disproportionately high or adverse human health or environmental effect on minority or low-income populations. Therefore, this action complies with this Executive Order.
6. *Executive Order 12996—Management and General Public Use of the National Wildlife Refuge System.* The public has been invited to participate in the planning process and has been engaged. The Service conducted public scoping and held a public comment meeting on the draft release of the draft environmental assessment and land protection plan for 47 days to get input on the project. The Service received 16 written public comments on the draft environmental assessment. Comments and issues raised by the public have been incorporated into the Land Protection Plan and Environmental Assessment. A copy of the final document will be sent to all interested landowners, agencies, private groups, and other parties. While the Wyoming Toad Conservation Area will be, by definition, be a unit of the National Wildlife Refuges System, the project is largely focused on conservation easements, and the Service will not manage or have control over public access to private lands with easements. This right will remain with the private landowner. Management of any fee-title lands purchased or donated will be in accordance with the Comprehensive Conservation Plan for the Mortenson Lake National Wildlife Refuge Complex until a compatibility determination can be completed on whether public use and access could potentially be allowed.
7. *Endangered Species Act, section 7.* An informal intra-Service section 7 consultation with the Ecological Services field office in Wyoming concluded with their concurrence that the establishment of the Wyoming Toad Conservation Area may affect, but is not likely to adversely affect, Endangered Species Act-protected species.
8. *Coastal Zone Management Act.* Due to the location of the project area, compliance with this act was determined not to be needed.
9. *Uniform Relocation Assistance and Real Property Acquisition Policies Act.* The relevant portions of the act relating to tax reimbursements, etc., will be implemented on a case-by-case basis as appropriate.

10. *Secretarial Order 3127—Contaminants and Hazardous Waste.* A level 1 pre-acquisition contaminant survey will be completed before the purchase of any easement.

I hereby certify that the Service has complied with all requirements of law, rules, or regulations applicable to pre-acquisition planning for the above project. I approve the establishment of an acquisition boundary for the Wyoming Toad Conservation Area and the subsequent acquisition of easements or fee title land from willing sellers on a strictly voluntary basis on up to 43,200 acres. A maximum of 10,000 acres of the total acreage acquired by the Service can be in fee title.

Noreen E. Walsh Nov. 28, 2016

Noreen Walsh Date
Regional Director
U.S. Fish and Wildlife Service, Region 6
Lakewood, Colorado

Appendix D

Service Director's Approval

United States Department of the Interior

FISH AND WILDLIFE SERVICE
Washington, D.C. 20240

JAN 19 2017

In Reply Refer To:
FWS/ANRS/NRCP/064737

Memorandum

To: Regional Director, Region 6

From: Director

Subject: Approval of the Wyoming Toad Conservation Area Land Protection Plan

Per your request dated November 28, 2016, I hereby approve the land protection plan (LPP) for the establishment of the Wyoming Toad Conservation Area (WTCA). With approval of this project, the U.S. Fish and Wildlife Service (Service) will be able to conserve up to 43,200 acres of habitat for Wyoming toad *(Bufo hemiophrys ssp. Baxteri)* recovery efforts in the Laramie River Basin of Albany County, Wyoming.

The Decision Package you submitted for my review included an Environmental Assessment, Land Protection Plan, and related documents. These documents comply with the requirements of the Director's land acquisition planning procedures memo dated August 11, 2000, which were supplemented with guidance provided in the Land Protection Planning Interim Guidance memo dated May 18, 2016.

If you have questions, please contact Ms. Cynthia Martinez, Chief of the National Wildlife Refuge System at (202) 208-5333 or cynthia_martinez@fws.gov.

Appendix E
Species Lists

The following species have been documented, or potentially occur, within the proposed Wyoming Toad Conservation Area.

These are the plant species found within the proposed Wyoming Toad Conservation Area.

Scientific name	*Common name*
AMARANTHACEAE	PIGWEED FAMILY
Atriplex gardneri	Gardner's saltbush
Atriplex micrantha	Two-scale saltbush
Kochia scoparia	Fireweed
Krascheninnikovia lanata	Winterfat
Salicornia rubra	Red swampfire
Salsola australis	Common Russian thistle
Salsola collina	Slender Russian thistle
Salsola kali	Prickly Russian thistle
Suaeda calceoliformis	Pursh seepweed
Suaeda nigra	Bush seepweed
AMARYLLIDACEAE	AMARYLLIS FAMILY
Allium textile	Textile onion
APIACEAE	PARSLEY FAMILY
Cicuta douglasii	Western water hemlock
Lomatium orientale	Northern Idaho biscuitroot
Musineon divaricatum	Leafy wildparsley
Sium suave	Hemlock waterparsnip
ASCLEPIADACEAE	MILKWEED FAMILY
Asclepias hallii	Hall's milkweed
Asclepias speciosa	Showy milkweed
ASPARAGACEAE	ASPARAGUS FAMILY
Yucca glauca	Soapweed yucca
ASTERACEAE	SUNFLOWER FAMILY
Achillea millefolium	Common yarrow
Agoseris glauca	Pale agoseris
Almutaster pauciflorus	Alkali marsh aster
Antennaria microphylla	Rocky mountain pussytoes
Antennaria rosea	Rosy pussytoes
Artemisia cana	Silver sagebrush
Artemisia frigida	Prairie sagewort
Artemisia ludoviciana	White sagebrush
Artemisia tridentata vaseyana	Mountain big sagebrush
Artemisia tridentata wyomingensis	Wyoming big sagebrush
Carduus nutans	Musk thistle
Chrysothamnus viscidiflorus	Douglas rabbitbrush
Cirsium arvense	Canada thistle
Cirsium canescens	Prairie thistle
Conyza canadensis	Canada horseweed
Crepis runcinata	Fiddleleaf hawksbeard
Dieteria bigelovii	Bigelow tansyaster
Dieteria canescens	Hoary tansyaster
Ericameria nauseosa	Rubber rabbitbrush
Erigeron lonchophyllus	Spearleaf fleabane
Erigeron nematophyllus	Needleleaf fleabane
Erigeron pumilus	Shaggy fleabane
Grindelia squarrosa	Curlycup gumweed
Grindelia subalpina	Subalpine gumweed
Gutierrezia sarothrae	Broom snakeweed
Helenium autumnale	Mountain sneezeweed
Helianthus nuttallii	Nuttall's sunflower
Heterotheca subaxillaris	Camphorweed
Heterotheca villosa	Hairy false goldaster
Iva axillaris	Povertyweed
Lygodesmia juncea	Rush skeletonplant
Packera pauciflora	Alpine groundsel
Pyrrocoma lanceolata	Lanceleaf goldenweed
Senecio hydrophiloides	Tall groundsel
Senecio spartioides	Broom groundsel
Seneio integerrimus	Lambstongue ragwort
Sonchus arvensis	Field sowthistle
Sonchus palustris	Marsh sowthistle

Scientific name	Common name
Stenotus armerioides	Thrift mock goldenweed
Symphyotrichum ascendens	Western aster
Symphyotrichum falcatum	White prairie aster
Taraxacum officinale	Common dandelion
Tetradymia canescens	Spineless horsebrush
Tetraneuris acaulis	Stemless four-nerve daisy
Townsendia hookeri	Hooker's townsend daisy
Tragopogon dubius	Yellow salsify
Xanthisma spinulosum	Lacy tansyaster
Xylorhiza glabriuscula	Smooth woodyaster
BORAGINACEAE	BORAGE FAMILY
Cryptantha thyrsiflora	Calcareous cryptantha
Cryptantha virgata	Miner's candle
Heliotropium curassavicum	Seaside heliotrope
Lappula occidentalis	Flatspine stickseed
Lappula squarrosa	European stickseed
Lithospermum incisum	Narrowleaf stoneseed
BRASSICACEAE	MUSTARD FAMILY
Alyssum desertorum	Desert madwort
Boechera retrofracta	Second rockcress
Camelina microcarpa	Littlepod false flax
Chorispora tenella	Crossflower
Descurainia pinnata	Western tansymustard
Descurainia sophia	Flaxweed tansymustard
Erysimum asperum	Western wallflower
Erysimum capitatum	Sand dune wallflower
Erysimum inconspicuum	Shy wallflower
Erysimum repandum	Spreading wallflower
Lepidium alyssoides	Mesa pepperwort
Lepidium appelianum	Hairy whitetop
Lepidium densiflorum	Common pepperweed
Lepidium montanum	Mountain pepperweed
Lepidium perfoliatum	Clasping pepperweed
Physaria ludoviciana	Foothill bladderpod
Physaria montana	Mountain bladderpod
Rorippa sinuata	Spreading yellowcress
Sisymbrium linifolium	Flaxleaf plainsmustard
Thelypodium integrifolium	Entireleaved thelypody
Thlaspi arvense	Field pennycress
CACTACEAE	CACTUS FAMILY
Escobaria vivipara	Spinystar
Opuntia polyacantha	Plains pricklypear
Pediocactus simpsonii	Simpson hedgehog cactus
Eremogone hookeri	Hooker's sandwort
Paronychia sessiliflora	Creeping nailwort
Chenopodium atrovirens	Dark goosefoot
Chenopodium rubrum	Red goosefoot
Peritoma serrulata	Rocky Mountain beeplant
Amphiscirpus nevadensis	Nevada bulrush
Bolboschoenus maritimus	Cosmopolitan bulrush
Carex duriuscula	Needleleaf sedge
Carex nebrascensis	Nebraska sedge
Carex praegracilis	Clustered field sedge
Eleocharis fallax	Creeping spikerush
Eleocharis macrostachya	Pale spikerush
Schoenoplectus americanus	American bulrush
Schoenoplectus lacustris	Lakeshore bulrush
Schoenoplectus pungens	Common threesquare
Schoenoplectus tabernaemontani	Softstem bulrush
Equisetum laevigatum	Smooth horsetail
Astragalus agrestis	Purple milkvetch
Astragalus bisulcatus	Two-grooved milkvetch
Astragalus bodinii	Bodin's milkvetch
Astragalus crassicarpus	Groundplum milkvetch
Astragalus missouriensis	Missouri milkvetch
Astragalus pectinatus	Narrowleaf milkvetch
Astragalus spatulatus	Tufted milkvetch
Astragalus tridactylicus	Foothill milkvetch
Glycyrrhiza lepidota	American licorice
Melilotus albus	White sweetclover
Melilotus officinalis	Yellow sweetclover
Oxytropis deflexa	Nodding locoweed
Trifolium hybridum	Alsike clover
Trifolium repens	White clover
Gentianella amarella	Autumn dwarf gentian
Lomatogonium rotatum	Marsh felwort
Ribes aureum	Golden currant

Scientific name	Common name
IRDACEAE	IRIS FAMILY
Iris missouriensis	Rocky mountain iris
Sisyrinchium implicatum	Blue-eyed grass
Sisyrinchium pallidum	Pale blue-eyed grass
JUNCACEAE	RUSH FAMILY
Juncus arcticus	Arctic rush
Juncus balticus	Baltic rush
Juncus bufonius	Toad rush
Juncus compressus	Roundfruit rush
Juncus longistylis	Longstyle rush
Juncus nevadensis	Sierra rush
Juncus nodosus	Knotted rush
Juncus torreyi	Torrey rush
JUNCAGINACEAE	ARROWGRASS FAMILY
Triglochin maritima	Common bog arrowgrass
Triglochin palustris	Marsh arrowgrass
LAMIACEAE	MINT FAMILY
Mentha arvensis	Wild mint
Scutellaria galericulata	Marsh skullcap
LINACEAE	FLAX FAMILY
Linum lewisii	Prairie flax
MALVACEAE	MALLOW FAMILY
Sphaeralcea coccinea	Scarlet globemallow
MELANTHIACEAE	FALSE HELLEBORE FAMILY
Toxicoscordion venenosum	Meadow deathcamas
NYCTAGINACEAE	FOUR O'CLOCK FAMILY
Mirabilis linearis	Narrowleaf four o'clock
ONAGRACEAE	EVENING PRIMROSE FAMILY
Epilobium ciliatum	Fringed willowherb
Epilobium palustre	Marsh willowherb
Gaura coccinea	Scarlet beeblossom
Oenothera coronopifolia	Crownleaf evening primrose
ORCHIDACEAE	ORCHID FAMILY
Platanthera hyperborea	Northern bog orchild
OROBANCHACEAE	BROOMRAPE FAMILY
Orobanche fasciculata	Clustered broomrape
Orobanche ludoviciana	Louisiana broomrape
Orthocarpus luteus	Yellow owl's-clover
Pedicularis crenulata	Meadow lousewort
PHRYMACEAE	PHRYMAS FAMILY
Mimulus glabratus	Roundleaf monkeyflower
Mimulus guttatus	Common monkeyflower
PLANTAGINACEAE	PLANTAIN FAMILY
Hippuris vulgaris	Common mare's tail
Penstemon angustifolius	Broadbeard beardtongue
Penstemon laricifolius	Larchleaf beardtongue
Plantago eriopoda	Redwool plantain
Achnatherum hymenoides	Indian ricegrass
Agropyron cristatum	Crested wheatgrass
Agropyron desertorum	Desert wheatgrass
Agrostis stolonifera	Creeping bentgrass
Alopecurus arundinaceus	Creeping meadow foxtail
Bouteloua gracilis	Blue grama
Bromus tectorum	Cheatgrass
Calamagrostis stricta	Narrowspike reedgrass
Deschampsia caespitosa	Tufted hairgrass
Distichlis spicata	Saltgrass
Elymus elymoides	Squirreltail
Elymus macrourus	Thickspike wheatgrass
Elymus trachycaulus	Slender wheatgrass
Hesperostipa comata	Needle and thread
Hordeum jubatum	Foxtail barley
Koeleria macrantha	Prairie junegrass
Leymus cinereus	Basin wildrye
Leymus simplex	Alkali wildrye
Muhlenbergia filiformis	Pullup muhly
Pascopyrum smithii	Western wheatgrass
Phleum pratense	Common timothy
Poa cusickii	Cusick's bluegrass
Poa fendleriana	Muttongrass
Poa pratensis	Kentucky bluegrass
Poa secunda	Sandberg bluegrass
Poa trivialis	Rough bluegrass
Psathyrostachys juncea	Russian wildrye
Pseudoroegneria spicata	Bluebunch wheatgrass
Puccinellia nuttalliana	Nuttall's alkaligrass
Sporobolus airoides	Alkali sacaton
Sporobolus cryptandrus	Sand dropseed
Ipomopsis spicata	Spiked ipomopsis
Leptodactylon pungens	Granite prickly phlox
Phlox hoodii	Hood's phlox
Eriogonum brevicaule	Shortstem buckwheat
Eriogonum effusum	Spreading buckwheat
Eriogonum flavum	Alpine golden buckwheat

Scientific name	*Common name*
Eriogonum ovalifolium	Cushion buckwheat
Eriogonum umbellatum	Sulphur flower buckwheat
Polygonum aviculare	Prostrate knotweed
Polygonum ramosissimum	Bushy knotweed
Rumex crispus	Curly dock
Rumex hymenosepalus	Canaigre dock
Rumex maritimus	Golden dock
Rumex triangulivalvis	White willow dock
POTAMOGETONACEAE	PONDWEED FAMILY
Stuckenia filiformis	Fineleaf pondweed
Stuckenia pectinata	Sago pondweed
PRIMULACEAE	PRIMROSE FAMILY
Glaux maritima	Sea milkwort
Primula incana	Silvery primrose
RANUNCULACEAE	BUTTERCUP FAMILY
Delphinium geyeri	Geyer's larkspur
Ranunculus cymbalaria	Alkali buttercup
ROSACEAE	ROSE FAMILY
Amelanchier utahensis	Utah serviceberry
Argentina anserina	Silverweed cinquefoil
Potentilla bipinnatifida	Tansy cinquefoil
Potentilla pensylvanica	Pennsylvania cinquefoil
Potentilla plattensis	Platte cinquefoil
Rosa woodsii	Wood's rose
SALICACEAE	WILLOW FAMILY
Populus angustifolia	Narrowleaf cottonwood
Populus tremuloides	Quaking aspen
Salix planifolia	Plainleaf willow
SANTALACEAE	SANDALWOOD FAMILY
Comandra umbellata	Bastard toadflax
SARCOBATACEAE	GREASEWOOD FAMILY
Sarcobatus vermiculatus	Greasewood
SAXIFRAGACEAE	SAXIFRAGE FAMILY
Parnassia palustris	Marsh grass of Parnassus
TAMARICACEAE	TAMARISK FAMILY
Tamarix ramosissima	Saltcedar
VALERIANACEAE	VALERIAN FAMILY
Valeriana edulis	Tobacco root
VIOLACEAE	VIOLET FAMILY
Viola nuttallii	Nuttall violet

E.2 List of Bird Species

These are the bird species found within the proposed Wyoming Toad Conservation Area.

Scientific name	*Common name*
GEESE, DUCKS, and SWANS	
Chen caerulescens	Snow goose
Branta canadensis	Canada goose
Cygnus columbianus	Tundra swan
Aix sponsa	Wood duck
Anas strepera	Gadwall
Anas americana	American wigeon
Anas platyrhynchos	Mallard
Anas discors	Blue-winged teal
Anas cyanoptera	Cinnamon teal
Anas clypeata	Northern shoveler
Anas acuta	Northern pintail
Anas carolinensis	Green-winged teal
Aythya valisineria	Canvasback
Aythya americana	Redhead
Aythya collaris	Ring-necked duck
Aythya marila	Greater scaup
Aythya affinis	Lesser scaup
Melanitta perspicillate	Surf scoter
Melanitta deglandi	White-winged scoter
Bucephala albeola	Bufflehead
Bucephala clangula	Common goldeneye
Bucephala islandica	Barrow's goldeneye
Lophodytes cucullatus	Hooded merganser
Mergus merganser	Common merganser
Mergus serrator	Red-breasted merganser
Oxyura jamaicensis	Ruddy duck
LOONS	
Gavia immer	Common loon
GREBES	
Podilymbus podiceps	Pied-billed grebe
Podiceps auritus	Horned grebe
Podiceps grisegena	Red-necked grebe
Podiceps nigricollis	Eared grebe
Aechmophorus occidentalis	Western grebe
Aechmophorus clarkii	Clark's grebe
PELICANS	
Pelecanus erythrorhynchos	American white pelican

Scientific name	Common name
CORMORANTS	
Phalacrocorax auritus	Double-crested cormorant
BITTERNS, HERONS, and EGRETS	
Botaurus lentiginosus	American bittern
Ardea herodias	Great blue heron
Egretta thula	Snowy egret
Bubulcus ibis	Cattle egret
Nycticorax nycticorax	Black-crowned night-heron
IBISES	
Plegadis chihi	White-faced ibis
NEW WORLD VULTURES	
Cathartes aura	Turkey vulture
HAWKS, KITES, and EAGLES	
Haliaeetus leucocephalus	Bald eagle
Circus cyaneus	Northern harrier
Accipiter striatus	Sharp-shinned hawk
Accipiter cooperii	Cooper's hawk
Accipiter gentilis	Northern goshawk
Buteo swainsoni	Swainson's hawk
Buteo jamaicensis	Red-tailed hawk
Buteo regalis	Ferruginous hawk
Buteo lagopus	Rough-legged hawk
Aquila chrysaetos	Golden eagle
FALCONS	
Falco sparverius	American kestrel
Falco columbarius	Merlin
Falco peregrinus	Peregrine falcon
Falco mexicanus	Prairie falcon
RAILS, GALLINULES, and COOTS	
Rallus limicola	Virginia rail
Porzana carolina	Sora
Fulica americana	American coot
CRANES	
Grus canadensis	Sandhill crane
PLOVERS	
Charadrius semipalmatus	Semipalmated plover
Charadrius vociferus	Killdeer
Charadrius montanus	Mountain plover
STILTS and AVOCETS	
Himantopus mexicanus	Black-necked stilt
Recurvirostra americana	American avocet
SANDPIPERS and PHALAROPES	
Tringa melanoleuca	Greater yellowlegs
Tringa flavipes	Lesser yellowlegs
Tringa solitaria	Solitary sandpiper
Tringa semipalmata	Willet
Actitis macularia	Spotted sandpiper
Numenius phaeopus	Whimbrel
Numenius americanus	Long-billed curlew
Limosa fedoa	Marbled godwit
Calidris alba	Sanderling
Calidris pusilla	Semipalmated sandpiper
Calidris mauri	Western sandpiper
Calidris minutilla	Least sandpiper
Calidris bairdii	Baird's sandpiper
Calidris melanotos	Pectoral sandpiper
Calidris alpina	Dunlin
Calidris himantopus	Stilt sandpiper
Limnodromus scolopaceus	Long-billed dowitcher
Gallinago delicata	Wilson's snipe
Phalaropus tricolor	Wilson's phalarope
Phalaropus lobatus	Red-necked phalarope
Larus pipixcan	Franklin's gull
Larus philadelphia	Bonaparte's gull
Larus delawarensis	Ring-billed gull
Larus californicus	California gull
Larus argentatus	Herring gull
Hydroprogne caspia	Caspian tern
Sterna hirundo	Common tern
Sterna forsteri	Forster's tern
Chlidonias niger	Black tern
Columba livia	Rock pigeon
Zenaida macroura	Mourning dove
Coccyzus erythropthalmus	Black-billed cuckoo
Bubo virginianus	Great horned owl
Bubo scandiacus	Snowy owl
Athene cunicularia	Burrowing owl
Asio otus	Long-eared owl
Asio flammeus	Short-eared owl
Chordeiles minor	Common nighthawk
Phalaenoptilus nuttallii	Common poorwill

Scientific name	*Common name*
Selasphorus platycercus	Broad-tailed hummingbird
Selasphorus rufus	Rufous hummingbird
KINGFISHERS	
Megaceryle alcyon	Belted kingfisher
WOODPECKERS	
Picoides pubescens	Downy woodpecker
Colaptes auratus	Northern flicker
TYRANT FLYCATCHERS	
Empidonax traillii	Willow flycatcher
Sayornis saya	Say's phoebe
Tyrannus verticalis	Western kingbird
Tyrannus tyrannus	Eastern kingbird
SHRIKES	
Lanius ludovicianus	Loggerhead shrike
Lanius excubitor	Northern shrike
CROWS, JAYS, and MAGPIES	
Pica hudsonia	Black-billed magpie
Corvus brachyrhynchos	American crow
Corvus corax	Common raven
LARKS	
Eremophila alpestris	Horned lark
SWALLOWS	
Tachycineta bicolor	Tree swallow
Tachycineta thalassina	Violet-green swallow
Stelgidopteryx serripennis	Northern rough-winged swallow
Riparia riparia	Bank swallow
Petrochelidon pyrrhonota	Cliff swallow
Hirundo rustica	Barn swallow
CHICKADEES and TITMICE	
Poecile atricapilla	Black-capped chickadee
Poecile gambeli	Mountain chickadee
NUTHATCHES and CREEPERS	
Sitta canadensis	Red-breasted nuthatch
Sitta carolinensis	White-breasted nuthatch
Certhia americana	Brown creeper
WRENS	
Salpinctes obsoletus	Rock wren
Troglodytes aedon	House wren
Cistothorus palustris	Marsh wren
THRUSHES	
Sialia currucoides	Mountain bluebird
Catharus guttatus	Hermit thrush
Turdus migratorius	American robin
MIMIC THRUSHES	
Dumetella carolinensis	Gray catbird
Oreoscoptes montanus	Sage thrasher
Toxostoma rufum	Brown thrasher
Sturnus vulgaris	European starling
Anthus rubescens	American pipit
Bombycilla garrulus	Bohemian waxwing
Bombycilla cedrorum	Cedar waxwing
Dendroica petechia	Yellow warbler
Dendroica coronata	Yellow-rumped warbler
Dendroica nigrescens	Black-throated gray warbler
Oporomis tolmiei	MacGillivray's warbler
Geothlypis trichas	Common yellowthroat
Piranga ludoviciana	Western tanager
Pipilo chlorurus	Green-tailed towhee
Pipilo maculatus	Spotted towhee
Spizella arborea	American tree sparrow
Spizella passerina	Chipping sparrow
Spizella pallid	Clay-colored sparrow
Spizella breweri	Brewer's sparrow
Spizella pusilla	Field sparrow
Pooecetes gramineus	Vesper sparrow
Chondestes grammacus	Lark sparrow
Amphispiza belli	Sage sparrow
Calamospiza melanocorys	Lark bunting
Passerculus sandwichensis	Savannah sparrow
Ammodramus savannarum	Grasshopper sparrow
Melospiza melodia	Song sparrow
Melospiza lincolnii	Lincoln's sparrow
Zonotrichia leucophrys	White-crowned sparrow
Calcarius mccownii	McCown's longspur
Calcarius lapponicus	Lapland longspur
Calcarius ornatus	Chestnut-collared longspur
Plectrophenax nivalis	Snow bunting
Spiza americana	Dickcissel

Scientific name	*Common name*
Dolichonyx oryzivorus	Bobolink
Agelaius phoeniceus	Red-winged blackbird
Sturnella neglecta	Western meadowlark
Xanthocephalus xanthocephalus	Yellow-headed blackbird
Euphagus cyanocephalus	Brewer's blackbird
Quiscalus quiscula	Common grackle
Molothrus ater	Brown-headed cowbird
Icterus bullockii	Bullock's oriole
Leucosticte tephrocotis	Gray-crowned rosy finch
Leucosticte atrata	Black rosy finch
Leucosticte australis	Brown-capped rosy finch
Carpodacus mexicanus	House finch
Acanthis flammea	Common redpoll
Spinus pinus	Pine siskin
Carduelis psaltria	Lesser goldfinch
Carduelis tristis	American goldfinch
Coccothraustes vespertinus	Evening grosbeak
Passer domesticus	House sparrow

E.3 List of Amphibian and Reptile Species

These are the amphibian and reptile species found within the proposed Wyoming Toad Conservation Area.

Scientific name	*Common name*
Ambystoma tigrinum	Tiger salamander
Anaxyrus baxteri	Wyoming toad
Pseudacris maculata	Boreal chorus frog
Lithobates pipiens	Northern leopard frog
Phrynosoma hernandesi	Short-horned lizard
Pituophis catenifer	Gopher snake
Thamnophis elegans vagrans	Intermountain wandering gartersnake
Crotalus viridis	Prairie rattlesnake

These are the mammal species found within the proposed Wyoming Toad Conservation Area.

Scientific name	*Common name*
ORDER ARTIODACTYLA	HOOVED ANIMALS
Antilocapra americana	Pronghorn
Cervus elaphus	Elk
Odocoileus hemionus	Mule deer
Odocoileus virginianus	White-tailed deer
ORDER CARNIVORA	PREDATORS
Canis latrans	Coyote
Lutra canadensis	River otter
Lynx rufus	Bobcat
Mephitis mephitis	Striped skunk
Mustela frenata	Long-tailed weasel
Mustela nigripes	Black-footed ferret
Mustela vison	Mink
Procyon lotor	Raccoon
Puma concolor	Mountain lion
Taxidea taxus	American badger
Ursus americanus	Black bear
Vulpes velox	Swift fox
Vulpes vulpes	Red fox
ORDER CHIROPTERA	BATS
Eptesicus fuscus	Big brown bat
Myotis ciliolabrum	Western Small-footed myotis
Myotis lucifugus	Little brown bat
ORDER INSECTIVORA	SHREWS and MOLES
Sorex cinereus	Masked shrew
Sorex palustris	Water shrew
ORDER LAGOMORPHA	PIKA, RABBITS, and HARES
Lepus townsendii	White-tailed jackrabbit
Sylvilagus audubonii	Desert cottontail
Sylvilagus floridanus	Eastern cottontail
ORDER RODENTIA	RODENTS
Castor canadensis	Beaver
Cynomys leucurus	White-tailed prairie dog
Dipodomys ordii	Ord's kangaroo rat
Erethizon dorsatum	Porcupine
Lemmiscus curtatus	Sagebrush vole
Microtus longicaudus	Long-tailed vole
Microtus montanus	Montane vole
Microtus ochrogaster	Prairie vole

Scientific name	*Common name*
Microtus pennsylvanicus	Meadow vole
Ondatra zibethicus	Muskrat
Onychomys leucogaster	Northern grasshopper mouse
Perognathus fasciatus	Olive-backed pocket mouse
Peromyscus maniculatus	Deer mouse
Reithrodontomys megalotis	Western harvest mouse
Reithrodontomys montanus	Plains harvest mouse
Spermophilus elegans	Wyoming ground squirrel
Spermophilus tridecemlineatus	Thirteen-lined ground squirrel
Tamias minimus	Least chipmunk
Thomomys talpoides	Northern pocket gopher
Zapus hudsonius preblei	Preble's meadow jumping mouse

E.5 List of Fish Species

These are the fish species found within the proposed Wyoming Toad Conservation Area.

Scientific name	*Common name*
Etheostoma exile	Iowa darter
Luxilus cornutus	Common shiner
Nocomis biguttatus	Hornyhead chub
Phenacobious mirabilis	Suckermouth minnow

Appendix F

Public Comments and Service Responses

F.1 Introduction

The purpose of this appendix is to address the substantive comments received on the draft EA and LPP. As defined by National Environmental Policy Act compliance guidelines, comments are considered substantive if they:

- Question, with reasonable basis, the accuracy of the information in the document
- Question, with reasonable basis, the adequacy of the environmental analysis
- Present reasonable alternatives other than those presented in the environmental impact statement
- Cause changes or revisions in the proposal

This appendix contains the Service's responses to substantive comments on the draft EA and LPP. The first section has copies of the letters and comments from tribes, State and local government agencies, and organizations that qualify as tax-exempt, nonprofit entities. The following section summarizes comments made by the public or other entities.

The Service responded to each substantive comment. Where appropriate, the text of the final LPP and EA has been revised to address comments. Some of the comments do not meet the definition of "substantive" (as defined previously), and those are shown as "comment noted," or "thank you for your comment." In some instances, the Service has chosen to respond to specific nonsubstantive comments if the public displayed a strong interest.

This appendix has the following components:

- Copies of comment letters from tribes, organizations, and State and local government agencies and the Service's response to their comments
- Comments from individuals and the Service's response to their comments

The draft EA and LPP was released to the public for review and comment on November 20, 2014. A 46-day comment period for the document closed on January 5, 2015. In addition, the Service held a public meeting on December 4, 2014.

During the comment period, the Service received 74 comments from individuals (emails, letters, and oral comments during public meetings), and 4 letters from tribes, State and local government agencies, and organizations.

In compliance with the spirit of the Privacy Act of 1974, it is the policy of the U.S. Fish and Wildlife Service to not publish the names, addresses, or other personal information of individuals (agencies, business, and organizations are excluded). Rather than print every letter from individuals and redact (black out) all personal information, and because many of the comments are similar, the Service has summarized the general nature of the comments received. This is also consistent with the Paperwork Reduction Act of 1995.

F.2 Comments from Agencies and Organizations

The Service received formal comments from the following tribes, State and local government agencies, and organizations:

1. Northern Arapaho Tribe
2. Wyoming Game and Fish Department
3. Laramie Rivers Conservation District
4. Laramie Audubon Society

Letters from these agencies and organizations are shown in the following pages. Next to each reproduced letter is our response, numbered to correspond to specific comments in the letter.

Comment number	LETTER 1—Northern Arapaho Tribe, page 1 of 1	RESPONSE

Hoinon'einino'
Northern Arapaho Tribe
TRIBAL HISTORIC PRESERVATION OFFICE

P.O. Box 67 - St. Stephens, Wyoming 82524 - PH: 307.856.1628 - narapahothpo_2009@ymail.com

December 3, 2014

Attention of:

United States Dept. of Interior
Fish and Wildlife Service
Mountain-Prairie Region
NWRS/Planning Mail Stop 60130
P.O. Box 25486 DFC
Denver, Colorado 80225-0486
134 Union Boulevard
Lakewood Colorado 80228-1807
Acting Director
WTCA_Comments@fws.gov

Subject: "Wyoming Toad Conservation Area Project in Albany County, WY"

The office of the Northern Arapaho Tribal Historic Preservation Office has reviewed this project of:

".Wyoming Toad Conservation Area Project in Albany County, WY"

Project for review: Tribal Consultation for the conservation of important riparian and wetland habitat for the endangered Wyoming toad and other wildlife resources in Albany, County.

1–1 Our office would like to comment that with Albany County being located in a historical migration area for our Northern Arapaho Tribe, along with the importance of cultural/wildlife resources in this area, we would agree that with the acquisition of minimal restrictive conservation easements and limits to fee land from willing sellers, that we would concur with keeping these areas in undeveloped stages and agree to support the idea of "using the land for

1–2 such enterprises as cattle production." A draft plan would be of importance to our office to include cultural/wildlife resources. However for future reference our office asks that with any

1–3 new raw land project involving ground disturbance we ask that if any inadvertent discoveries are found that we be contacted and provide report to our office.

Sincerely,

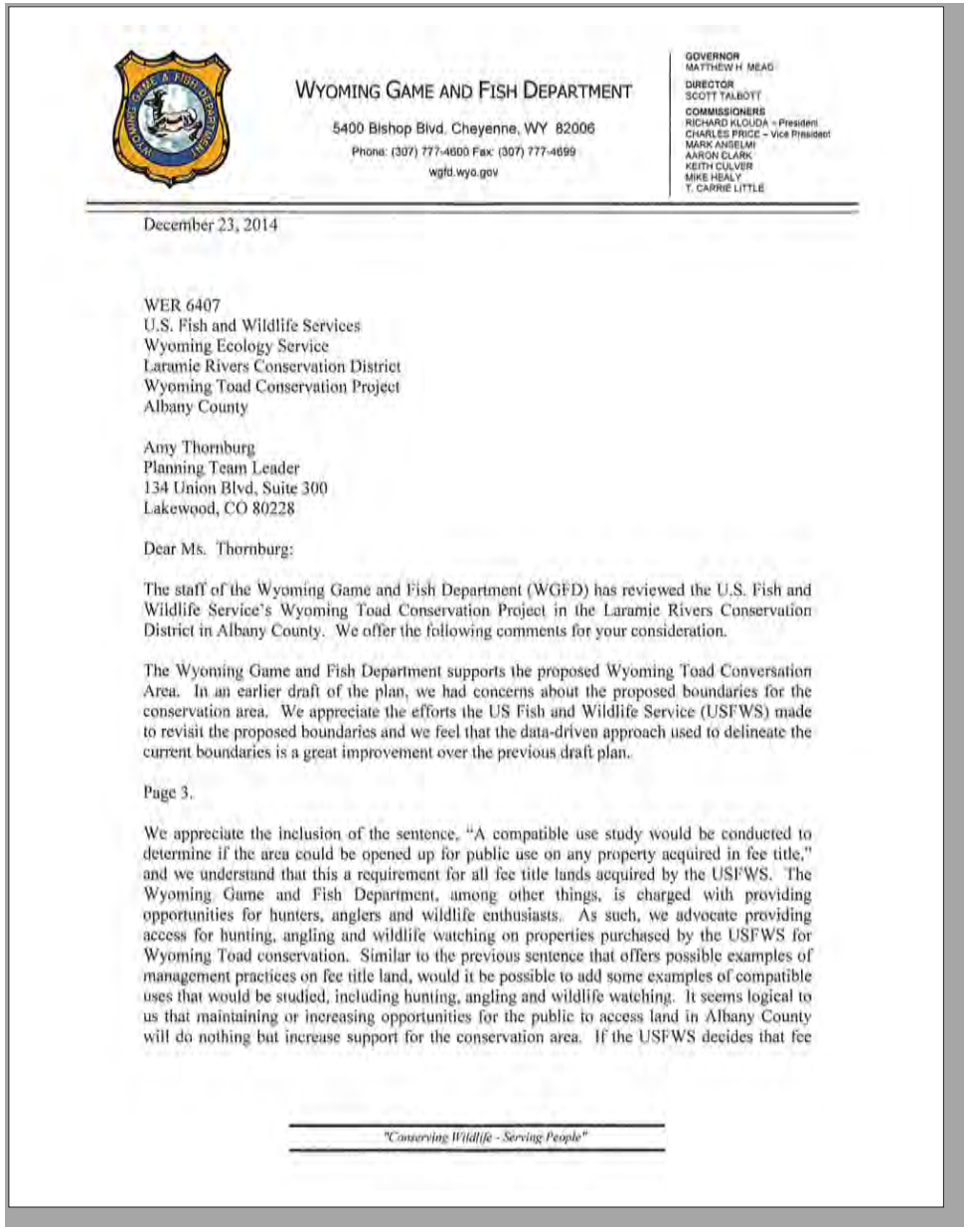
Darlene Conrad
Tribal Historic Preservation Office

1–1. Thank you for your comments. We agree that the Laramie River basin has very important cultural and wildlife resources.

1–2. A copy of the final LPP and EA will be made available to the Northern Arapaho Tribe.

1–3. As a Federal agency, the Service must comply with many laws pertaining to cultural resources, including the National Historical Preservation Act (16 U.S.C. 470 et seq.; Public Law 89–665), the Archaeological Resources Protection Act of 1970 (16 USC 470aa–mm; Public Law 96–95) as amended; the Native American Graves Protection and Repatriation Act of 1990 (25 U.S.C. 3001 et seq.; and Public Law 101–601).

Although conservation easements would preclude or limit most forms of surface disturbance, in most cases these requirements would not apply to or be fully effective in protecting cultural resources on private lands with easements. On Federal fee-title lands, cultural resources would be fully protected.



WYOMING GAME AND FISH DEPARTMENT
5400 Bishop Blvd. Cheyenne, WY 82006
Phone: (307) 777-4600 Fax: (307) 777-4699
wgfd.wyo.gov

December 23, 2014

WER 6407
U.S. Fish and Wildlife Services
Wyoming Ecology Service
Laramie Rivers Conservation District
Wyoming Toad Conservation Project
Albany County

Amy Thornburg
Planning Team Leader
134 Union Blvd, Suite 300
Lakewood, CO 80228

Dear Ms. Thornburg:

2–1 The staff of the Wyoming Game and Fish Department (WGFD) has reviewed the U.S. Fish and Wildlife Service's Wyoming Toad Conservation Project in the Laramie Rivers Conservation District in Albany County. We offer the following comments for your consideration.

The Wyoming Game and Fish Department supports the proposed Wyoming Toad Conversation Area. In an earlier draft of the plan, we had concerns about the proposed boundaries for the conservation area. We appreciate the efforts the US Fish and Wildlife Service (USFWS) made to revisit the proposed boundaries and we feel that the data-driven approach used to delineate the current boundaries is a great improvement over the previous draft plan.

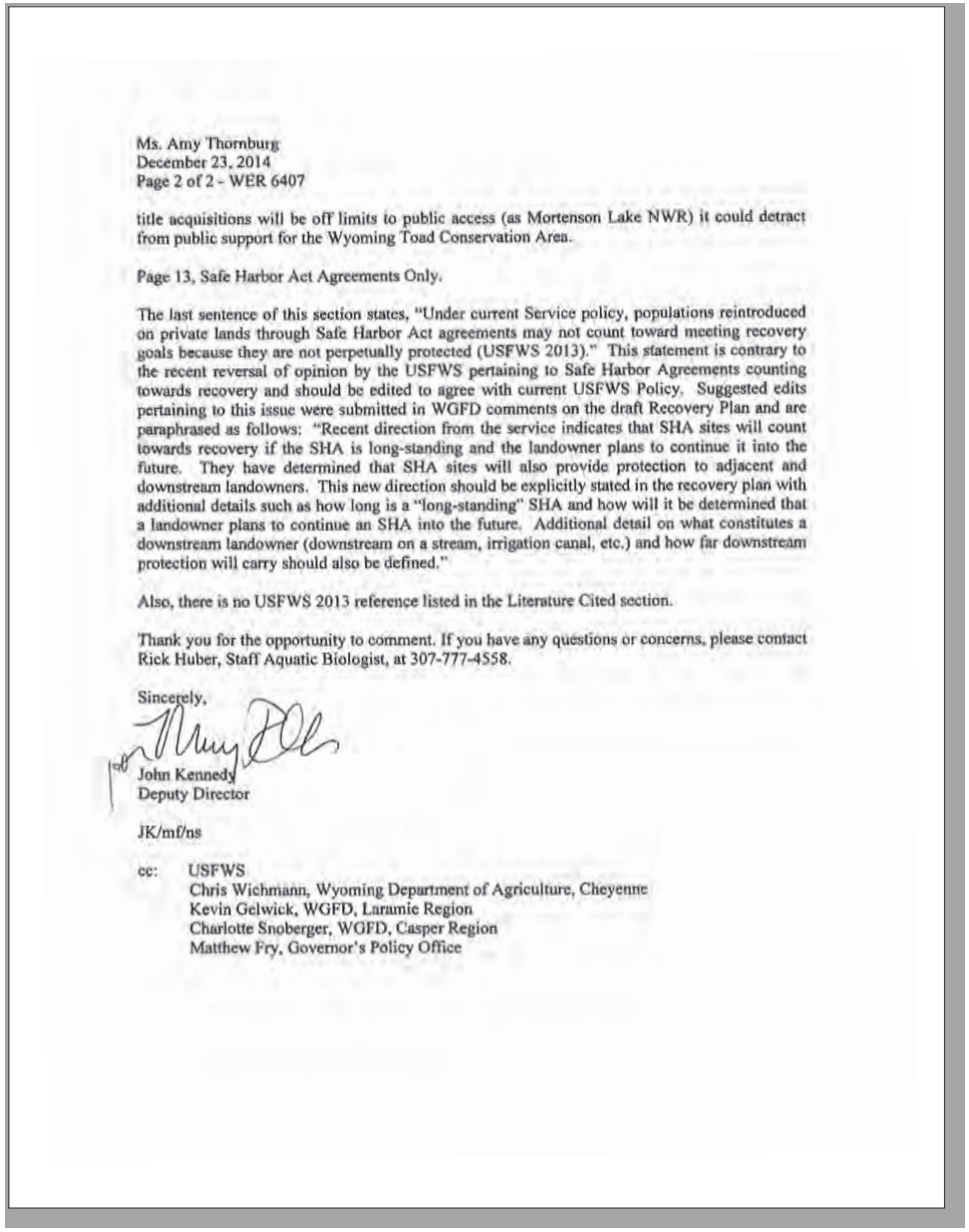
Page 3.

2–2 We appreciate the inclusion of the sentence, "A compatible use study would be conducted to determine if the area could be opened up for public use on any property acquired in fee title," and we understand that this a requirement for all fee title lands acquired by the USFWS. The Wyoming Game and Fish Department, among other things, is charged with providing opportunities for hunters, anglers and wildlife enthusiasts. As such, we advocate providing access for hunting, angling and wildlife watching on properties purchased by the USFWS for Wyoming Toad conservation. Similar to the previous sentence that offers possible examples of management practices on fee title land, would it be possible to add some examples of compatible uses that would be studied, including hunting, angling and wildlife watching. It seems logical to us that maintaining or increasing opportunities for the public to access land in Albany County will do nothing but increase support for the conservation area. If the USFWS decides that fee

2–1. Thank you for your support of the proposed WTCA project. We appreciate the information the Department has shared with us in assessing the conservation priorities and needs for the project.

2–2. Per the National Wildlife Refuge Administration Act, as amended, and USFWS policy, refuges are closed to public use until the determination is made that individual public uses are compatible with the purpose of the NWRS and the refuge itself. In the case of Mortenson Lake NWR, which was established expressly for the purpose of protecting the Wyoming toad, it was determined in the refuge's Comprehensive Conservation Plan that we cannot currently allow public uses because we do not know enough about the ongoing problems that have prevented establishment of a self-sustaining toad population. Fee-title lands acquired under the WTCA would be managed in accordance with the CCP for Mortenson Lake NWR. That said, as additional research broadens our understanding of what does and does not impede toad recovery, we welcome the partnership of WGFD in developing public uses that are not likely to conflict with that goal, such as wildlife observation and post-hibernation hunting opportunities.

Comment number	LETTER 2—Wyoming Game and Fish Department, page 2 of 2	RESPONSE



Ms. Amy Thornburg
December 23, 2014
Page 2 of 2 - WER 6407

title acquisitions will be off limits to public access (as Mortenson Lake NWR) it could detract from public support for the Wyoming Toad Conservation Area.

Page 13, Safe Harbor Act Agreements Only.

2–3 The last sentence of this section states, "Under current Service policy, populations reintroduced on private lands through Safe Harbor Act agreements may not count toward meeting recovery goals because they are not perpetually protected (USFWS 2013)." This statement is contrary to the recent reversal of opinion by the USFWS pertaining to Safe Harbor Agreements counting towards recovery and should be edited to agree with current USFWS Policy. Suggested edits pertaining to this issue were submitted in WGFD comments on the draft Recovery Plan and are paraphrased as follows: "Recent direction from the service indicates that SHA sites will count towards recovery if the SHA is long-standing and the landowner plans to continue it into the future. They have determined that SHA sites will also provide protection to adjacent and downstream landowners. This new direction should be explicitly stated in the recovery plan with additional details such as how long is a "long-standing" SHA and how will it be determined that a landowner plans to continue an SHA into the future. Additional detail on what constitutes a downstream landowner (downstream on a stream, irrigation canal, etc.) and how far downstream protection will carry should also be defined."

2–4 Also, there is no USFWS 2013 reference listed in the Literature Cited section.

2–5 Thank you for the opportunity to comment. If you have any questions or concerns, please contact Rick Huber, Staff Aquatic Biologist, at 307-777-4558.

Sincerely,

John Kennedy
Deputy Director

JK/mf/ns

cc: USFWS
Chris Wichmann, Wyoming Department of Agriculture, Cheyenne
Kevin Gelwick, WGFD, Laramie Region
Charlotte Snoberger, WGFD, Casper Region
Matthew Fry, Governor's Policy Office

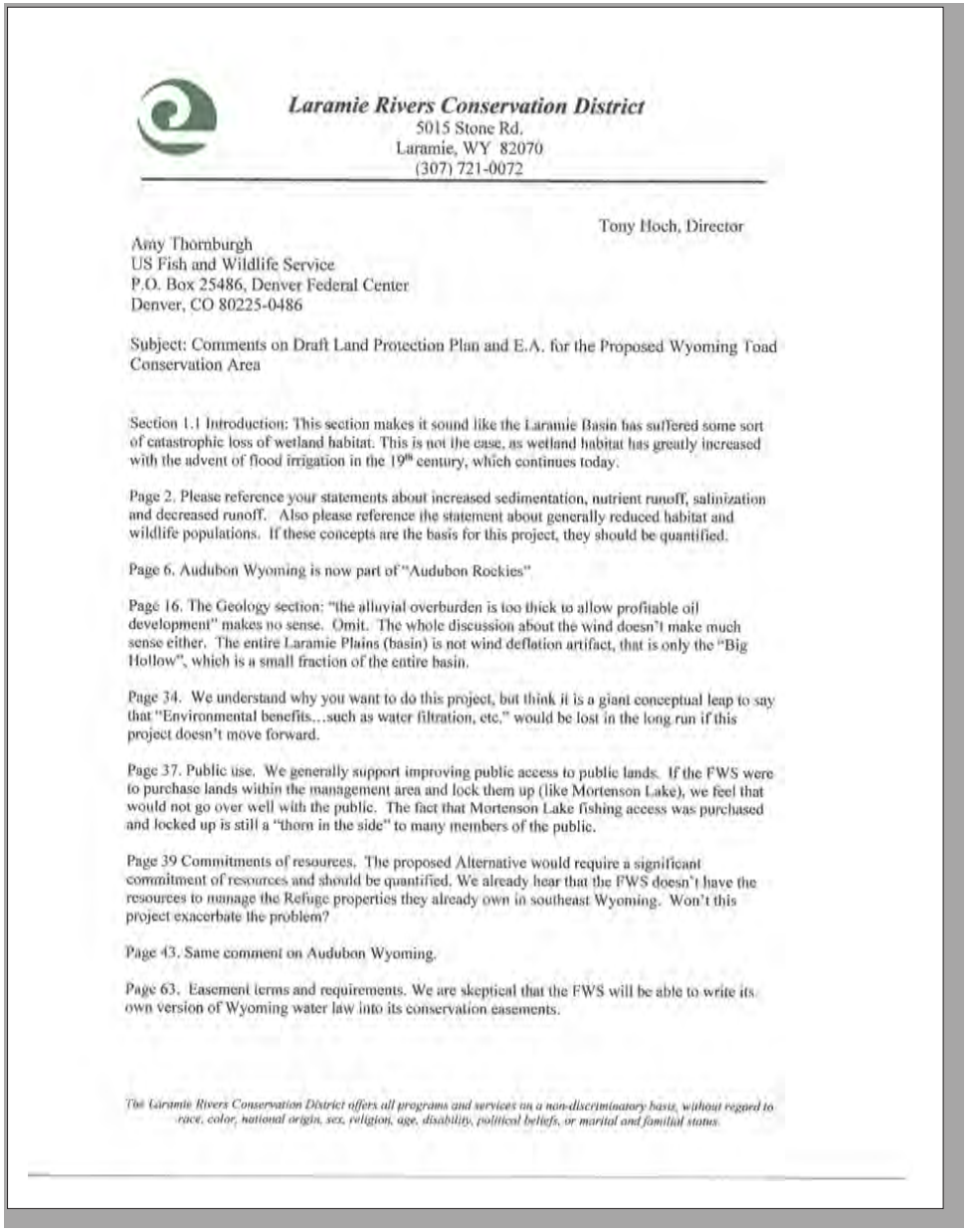
2–3. The EA/LPP has been corrected to reflect the language in the USFWS 2015 Revised Recovery Plan for the Wyoming toad: "Safe Harbor Agreements where Wyoming toads are reintroduced on private lands, with incidental take being exempted, can count towards recovery if there has been a sufficient history of proactive conservation and no expectation of things changing into the future."

Safe Harbor Agreements can be in place for up to 20 years.

There is no limit to what is considered to be "downstream" and to what is protected.

2–4. The final document has been corrected to include an updated USFWS citation for 2015.

2–5. Thank you for your comments and input.



Laramie Rivers Conservation District
5015 Stone Rd.
Laramie, WY 82070
(307) 721-0072

Tony Hoch, Director

Amy Thornburgh
US Fish and Wildlife Service
P.O. Box 25486, Denver Federal Center
Denver, CO 80225-0486

Subject: Comments on Draft Land Protection Plan and E.A. for the Proposed Wyoming Toad Conservation Area

3–1 Section 1.1 Introduction: This section makes it sound like the Laramie Basin has suffered some sort of catastrophic loss of wetland habitat. This is not the case, as wetland habitat has greatly increased with the advent of flood irrigation in the 19th century, which continues today.

3–2 Page 2. Please reference your statements about increased sedimentation, nutrient runoff, salinization and decreased runoff. Also please reference the statement about generally reduced habitat and wildlife populations. If these concepts are the basis for this project, they should be quantified.

3–3 Page 6. Audubon Wyoming is now part of "Audubon Rockies"

3–4 Page 16. The Geology section: "the alluvial overburden is too thick to allow profitable oil development" makes no sense. Omit. The whole discussion about the wind doesn't make much sense either. The entire Laramie Plains (basin) is not wind deflation artifact, that is only the "Big Hollow", which is a small fraction of the entire basin.

3–5 Page 34. We understand why you want to do this project, but think it is a giant conceptual leap to say that "Environmental benefits…such as water filtration, etc." would be lost in the long run if this project doesn't move forward.

3–6 Page 37. Public use. We generally support improving public access to public lands. If the FWS were to purchase lands within the management area and lock them up (like Mortenson Lake), we feel that would not go over well with the public. The fact that Mortenson Lake fishing access was purchased and locked up is still a "thorn in the side" to many members of the public.

3–7 Page 39 Commitments of resources. The proposed Alternative would require a significant commitment of resources and should be quantified. We already hear that the FWS doesn't have the resources to manage the Refuge properties they already own in southeast Wyoming. Won't this project exacerbate the problem?

3–8 Page 43. Same comment on Audubon Wyoming.

3–9 Page 63. Easement terms and requirements. We are skeptical that the FWS will be able to write its own version of Wyoming water law into its conservation easements.

The Laramie Rivers Conservation District offers all programs and services on a non-discriminatory basis, without regard to race, color, national origin, sex, religion, age, disability, political beliefs, or marital and familial status.

3–1. While Wyoming has lost approximately half of its wetlands, we are not suggesting that there has been a catastrophic loss of wetlands specifically in the Laramie Basin. As discussed in section 1.5.1.1 of the Draft Wyoming Toad Recovery Plan, flood irrigation in the watershed is crucial to the continued existence of much of the wetland habitat in the valley. However, diversions for a variety of purposes, including irrigation, have significantly altered the hydrology of the Laramie and Little Laramie Rivers, which themselves historically supported natural floodplain wetlands that are now much reduced. While irrigation-induced wetlands do provide important wildlife habitat, the acquisition of fee-title lands will allow us to directly manipulate wetland habitat for the benefit of the toad in a way that is not possible with these wetlands. Furthermore, protection of working lands through easements will ensure that wetlands that currently exist due to irrigation practices will not be lost due to conversion to other land uses such as residential development.

3–2. We have added "with increasing development" as follows: "The remaining wetlands play a vital role in providing resting and feeding areas for the thousands of migratory birds that continue to use the central flyway each spring and fall. However, increased sedimentation, nutrient runoff, salinization, and decreased water runoff jeopardize the functions and values of wetlands *with increasing development*. Similarly, riparian corridors are also affected by problems such as sedimentation, nutrient runoff, decreased water runoff, and stream channelization (Copeland, et al. 2010, Wyoming Game and Fish 2010), which in turn affect fish and aquatic species such as the endangered Wyoming toad."

We have changed the beginning of the first paragraph to read: "Increased human activity in the Laramie Plains has impacted wildlife habitat and wildlife populations in a variety of ways. For example, irrigated hay meadows…"

Comment number	LETTER 3—Laramie Rivers Conservation District, page 1 of 2 (continued)	RESPONSE

(Continued from previous page)

3–2. While it is generally accepted that land development increases sedimentation, runoff, and nutrient loads, it is difficult to quantify the impacts across a large area such as the Laramie basin, especially since we have incomplete baseline information. Several citations related to the impacts to riparian and wetland habitat have been added to this section.

3–3. The correction to the final document has been made.

3–4. We omitted last sentence of first paragraph on page 16: "The text on geology has been modified to provide better clarity."

3–5. Please see the comment above addressing water issues.

3–6. The majority of WTCA project acreage would be conservation easements, which would remain in private ownership and where access for fishing and other public uses would be controlled by the landowner.

Per the National Wildlife Refuge Administration Act, as amended, and USFWS policy, refuges are closed to public use until the determination is made that individual public uses are compatible with the purpose of the NWRS and the refuge itself. In the case of Mortenson Lake NWR, which was established expressly for the purpose of protecting the Wyoming toad, it was determined in the refuge's Comprehensive Conservation Plan that we cannot currently allow public uses because do not know enough about the ongoing problems that have prevented establishment of a self-sustaining population. Fee-title lands acquired under the WTCA would be managed in accordance with the CCP for Mortenson Lake NWR. That said, as additional research broadens our understanding of what does and does not impede toad recovery, we welcome the partnership of LRCD in developing public uses that are not likely to conflict with that goal, such

(Continued from previous page)

as wildlife observation and post-hibernation hunting opportunities.

3–7. The majority of WTCA project acreage would be in conservation easements, which remain in private ownership and do not involve ongoing active management by the Service other than monitoring for compliance with easement terms. Fee-title acquisition would be limited. The WTCA project is a long-term project that will allow the program and staffing to grow gradually, if needed.

3–8. The correction to the final document has been made.

3–9. Department of Interior Solicitors from two regional offices have reviewed the conservation easement document.

Historic water rights would continue and the conservation easements would not allow for any water rights to be sold or otherwise separated from the property. The easements would not allow change to or alteration of points of diversion, timing, or place of use for any water rights. Historic water use would be maintained in accordance with current practices. Specific language in the conservation easement between the landowner and the Service may include "unless prior approval in writing is granted by the U.S. Fish and Wildlife Service." This would allow for mutually agreed to changes in points of diversion, timing, or place of use of water to accommodate unforeseen changes or events to maintain the purposes and intent of the easement.

Comment number	LETTER 3—Laramie Rivers Conservation District, page 2 of 2	RESPONSE

3–10

3–11

3–12

3–13

3–14

3–15

Page 65. The Laramie Rivers Conservation District is not an NGO. It is a local government entity or a "special district" authorized by Wyoming statute 11-16-101. After 70 years in existence, we would hope that the FWS planners would understand who their "Partners" are.

General Comments:

- LRCD and the Wyoming Association of Conservation Districts have a policy of opposing the net increase of Federal Lands. If the USFWS acquires lands within the management area, it is our position that they should be giving up lands elsewhere. We are proponents of the Federal government relinquishing inaccessible inholdings when acquiring other additional lands. If this is not possible, only conservation easements should be pursued.

- We are concerned that only in-perpetuity easements will be pursued. Given the uncertainty of the future survival of the Wyoming Toad, we feel that easements on the order of 20 or 30 years should be offered, so that land owners may reevaluate their situation once more is known about the success or failure of the Wyoming Toad Recovery program. Our skepticism is based on 10 years of experience as the Safe Harbor Agreement holder for the Wyoming Toad on the Buford Foundation.

- An ongoing major topic in Wyoming Toad Recovery Team meetings (for the 10 years I have been involved) is the use of cattle grazing to enhance Wyoming Toad Habitat. There is a well-known story among local staff and cooperators involved in the project that when the FWS bought the Mortenson Lake property and removed cattle, the Wyoming Toad population crashed – cattle grazing has since been restored to enhance Wyoming Toad habitat.

Part of the NRCS easement requirements for the Wyoming Toad on the Buford Foundation, is to have a Compatible Use plan in place every year for cattle grazing to manicure the Wyoming Toad shoreline habit or it become too choked-out with vegetation.

One of the main reasons Laramie Rivers Conservation District is involved in the Wyoming Toad Safe Harbor program is that it is emblematic in the coexistence and even codependence between agriculture and T&E species in some cases. I would go so far as to say that cattle grazing is a major theme in on-the-ground management for the Wyoming Toad, but it is not discussed in this document, making it very incomplete. We would like to see cattle grazing discussed as a management technique, so that this planning document reflects reality.

Thanks for the opportunity to comment.

Tony Hoch

The Laramie Rivers Conservation District offers all programs and services on a non-discriminatory basis, without regard to race, color, national origin, sex, religion, age, disability, political beliefs, or marital and familial status.

3–10. The error has been corrected in the final document. The Service understands and appreciates the work of the Laramie Rivers Conservation District.

3–11. The recovery of the Wyoming toad and the success of the WTCA project will depend on landowners and partnerships in the Laramie Valley. In order to recover the Wyoming toad, additional areas and habitat types are required.

3–12. Repeatedly paying for short-term easements would not allow the Service to achieve our habitat goals and toad recovery objectives. There are several less-than-perpetual conservation easement options available to landowners through organizations and other Federal and State agencies.

3–13. It is very difficult to establish wild populations of the Wyoming toad. Safe Harbor Agreements are one of several tools the Service would be able to use. Additional tools such as conservation easements and limited fee-title acquisition would help recover the Wyoming toad. An additional funding source, Land and Water Conservation Funds, would be available with the WTCA project.

3–14. The Service agrees that grazing is an important management tool for maintaining Wyoming toad habitat, and it is mentioned in multiple places throughout the LPP and EA.

The Service conservation easement does not purchase grazing rights and therefore grazing prescriptions are not addressed. Any grazing management that the Service would like to see used by the landowner would be proposed through our Partners for Fish and Wildlife program, which is strictly voluntary. The Partners program has the responsibility to work with landowners and other organizations to provide funding and technical assistance for projects that benefit wildlife species.

Grazing plans are not required for Safe Harbor Agreements either.

3–15. Thank you for your comments.

LARAMIE AUDUBON SOCIETY
PO Box 878 • Laramie, Wyoming 82073

Amy Thornburg
Planning Team Leader
National Wildlife Refuge System, Region 76
U.S. Fish and Wildlife Service
P.O. Box 25486 DFC
Denver, CO 80225-0486

January 5, 2015

Dear U.S. Fish and Wildlife Service,

4–1 We are writing to express our enthusiastic support for the U.S. Fish and Wildlife Service's proposed Wyoming Toad Conservation Area.

4–2 Laramie Audubon Society's members represent a wide variety of professions and interests. We are deeply engaged in our local community and are committed to wildlife conservation. As Albany County residents, we feel a great deal of pride and affection for our endemic, highly endangered Wyoming toad and we eagerly support any measures that might contribute to the recovery of this beleaguered species. We are excited that the Service is proposing to acquire fee-title lands and conservation easements from willing landowners to facilitate additional toad reintroductions and are particularly pleased that some of these reintroductions are slated to occur in the toad's native riparian habitat. The proposed Wyoming Toad Conservation Area seems to offer the best hope thus far for the toad's successful future.

4–3 We also are enthusiastic supporters of the proposed Wyoming Toad Conservation Area because we appreciate that the purchase of fee-title lands and conservation easements by the Service will offer additional protections for migratory birds and other wildlife. The Laramie Basin has tremendous biodiversity and Laramie Audubon sponsors many field trips to share the area's birds and other wildlife with Albany County residents and visitors. All are delighted by our abundant wildlife and our enviable open space. Many Laramie Audubon members have serious concerns about the potential impact of increased residential, oil and gas, wind energy, and other types of development on our resident and migratory birds. We therefore are especially grateful to the Service for its proposed efforts to secure more protected habitat for wildlife. We believe that additional protected lands will help facilitate wildlife movements in our area and may help mitigate the adverse effects of climate change on our local fauna and flora.

4–4 Our only concern regarding the project is that the Service is limiting itself to protecting intact habitats by acquiring conservation easements and fee-title lands on 42,299 acres (or 23% of the total WTCA) with a maximum of 10,000 acres allowable for fee-title lands. If area landowners are interested in selling more land or protecting more of their properties with conservation easements than the allotted acreage, we

4–1. Thank you for your comment and support.

4–2. We recognize that collaboration with landowners is the only way we will have success in the long term.

4–3. Riparian habitats support high species diversity and density as well as promote the exchange of energy, nutrients, and species between riparian, aquatic, and upland systems (Johnson and McCormack 1979, Gregory et al. 1991, Poff et al. 2011). It is estimated that about 90 percent of the total wildlife species in Wyoming use wetlands and riparian habitats either daily or seasonally and about 70 percent of Wyoming bird species depend on wetlands or riparian areas (Nicholoff 2003). (Page 50 of WTCA Draft Environmental Assessment and Land Protection Plan.)

The collaborative conservation efforts in the Laramie Valley will help provide wildlife habitat connectivity.

4–4. We believe the acquisition maximum of 43,200 acres will be sufficient with the information that is currently available. However, if is later determined that either the number of acres that can be acquired or that the project boundary needs to be increased, we would need to initiate another public process. The only exception is that, by policy, we can do a one-time increase of acquisition authority of 10 percent without having to reinitiate the public process.

Comment number	LETTER 4—Laramie Audubon Society, page 2 of 2	RESPONSE

4–5

sincerely hope that the Service would consider expanding its current purchase limits should funding become available.

We are encouraged by the many positive comments we have heard about the proposed project in our community—from our county commissioners, university professors and students, local landowners, amphibian supporters, endangered species advocates, bird watchers, and more. The proposed Wyoming Toad Conservation Area appears to be a win-win conservation effort for the critically endangered Wyoming toad and other wildlife, for Laramie Basin landowners, and for wildlife supporters.

We look forward to hearing how the project progresses and thank the Service for its efforts to secure additional protected habitat for Wyoming toads and other wildlife.

Sincerely,

Sophie Osborn
President
Laramie Audubon Society

Cc: Mark Sattelberg – U.S. Fish and Wildlife Service
Ann Timberman – U.S. Fish and Wildlife Service

4-5. Thank you for your comments and your support.

F.3 Responses to Individual Comments

This section includes general responses to individual comments, listed by the comment number in the following table. While we acknowledge many comments that expressed particular sentiments or concerns, many of those that were considered non-substantive are not addressed in the responses.

Project Information

Comment. *What about people who say "who cares about the toad?"*

Response. There are many reasons why landowners might be interested in participating in a conservation program. These include the desire to preserve agricultural heritage, open space, and habitat for other wildlife species. The Fish and Wildlife Service has a legal obligation and is committed to the toad's recovery. The Wyoming toad is the most endangered amphibian in the U.S., and our ultimate goal is to get it off of the endangered species list.

Comment. *If there is a lot of support for the program, can the limits on acreage be increased?*

Comment. *I'd like a larger cap of acres if there is enough public support/landowner interest.*

Response. If, after a conservation area project is approved, the number of acres that can be acquired or the project boundary needs to be increased, we would need to initiate another public process. The only exception is that, by policy, we can do a one-time increase of acquisition authority of 10% without having to reinitiate the public process.

Comment. *What is the timeframe to get the project through D.C.?*

Response. After addressing all of the substantive comments and incorporating any necessary documents into the EA/ LPP, the Regional Director for the Service will review the project to see if a Finding of No Significant Impact can be made. The project would then go to Headquarters for review by the Director of the U.S. Fish and Wildlife Service, who would approve or disapprove the WTCA. The amount of time this process takes varies considerably for each project.

Comment. *Does the plan go away after the toad is recovered?*

Response. Land Protection Plans are permanent, so the plan would remain in effect even if the toad was removed from the endangered species list. Priorities may change if we discover something new about the toad, but if we established the five populations necessary to recover the toad, we would be done with the objectives of this plan and we would not pursue more easements or fee title lands. Service conservation easements are perpetual, so easements already in place would remain in effect.

Comment. *Several landowners have suggested that the WTCA boundary should include a few additional tributaries of the Little Laramie River: Sprauge, Zigler, Brown, Sand, Dry, and Mill Creeks.*

Response. At this time, we have chosen not to modify the proposed project boundary in the interest of maintaining consistency with our objective to recover the Wyoming toad within suitable habitat in its historic range. The best available science at this time does not indicate that the additional watersheds are high priority areas for toad recovery, and as it is the policy of the USFWS to acquire the minimum interest in lands that is necessary to meet our objectives, we will go forward with seeking habitat protection in those locations that appear to be best supported by our modeling. Thank you for your comment and input.

Land Management

Comment. *What about the mosquito control program? Will you try to change the mosquito program?*

Response. This will not impact the mosquito control program. We determined years ago that mosquito control does not have major impacts on the toad. Permethrin-based adulticides and the larvicide Bacillus thuringiensis israelensis (BTI) are the primary pesticides currently being used for mosquito control in the town of Laramie. In rural areas adjacent to Laramie, BTI is applied aerially when larval counts are high. BTI is effective on most mosquito species, black flies, and midges in a wide variety of habitats. It is used to control mosquitoes on private properties on the western border of the refuge adjacent to Mortenson Lake as well as on nearby property managed by the Wyoming Game and Fish Department. There is no evidence that BTI has any detrimental effects to amphibian populations and it is considered to be a nontoxic biocontrol agent. Compared to active

agricultural areas, pesticide use is relatively low in the Laramie Basin, but this varies throughout the Wyoming toad's historic range and is difficult to monitor on private lands.

Comment. *But they avoid Mortenson Lake with spraying?*

Response. That was a historic agreement when we were still trying to figure things out, probably rooted in an abundance of caution because that was the only place known to have toads.

Comment. *I missed the meeting that addressed the problem of the continual survival of the Wyoming Toad. If I had been there I would have said that indeed there was a reason (which wasn't mentioned—the elephant in the room—in the newspaper article) for the toad's disappearance. To my mind there was no other cause but that of the spraying for mosquitoes. My family has ranched in the Big Laramie River valley since 1948, mainly producing hay. Well, it was around the mid-70's that, well, we didn't have to do this anymore because the rake didn't pick up anymore amphibians. I didn't really think too much on it at the time on what might be the reason for this or to note that their disappearance just happened to coincide with the absence of mosquitoes. Though, when I looked back at it, years later, I put, shall we say, zero and zero together; both absences occurring when annual mosquito spraying began. I don't think it was merely a coincidence. Now, as far as your plan to get more territory for the toad I don't think getting the rights to our 240 acres would help that much for my father never paid for the spraying—the planes would turn off the spray as they came over—yet, the amphibians still died out. (There are still frogs, but just the little ones.) Of course, I would have to convince my brother who is now running the ranch and, who, to my disappointment, decided to pay for the mosquito spraying. Now, why wasn't this discussed at your meeting? Here's my theory on why: Because it is not only ranchers that hate mosquitoes but it has been my experience that town folks are even more allergic to them. Well, let's say, that these toads are so sensitive to the spraying that even spraying in the general area affects them. Will you get all people, rural and urban, to tolerate the swarms that we used to have and that maybe are required for a heathy frog/toad (and bat) population? Good luck with that one.*

Response. Please see the response above regarding current pesticide use for mosquito control.

Comment. *Some ag practices are probably not compatible, like plowing and such.*

Comment. *The toad was found with cows. Me, my cows, and the toad get along fine.*

Response. Normal ranching practices would be allowed under a conservation easement. Easements would prohibit the draining of wetlands and the conversion of native meadows to croplands. The Service recognizes the importance of agricultural practices, including prescribed grazing, in providing Wyoming toad habitat.

Conservation Tools

Comment. *Laramie has a lot of toad supporters. I appreciate your emphasis on only working with willing sellers. Can you explain a little more about Safe Harbor Agreements?*

Response. Safe Harbor Agreements (SHAs) are voluntary agreements that allow us to work with landowners to put toads on their property while giving them flexibility to withdraw if they decide that it doesn't work for them and their circumstances. SHAs include protections for landowners who could accidentally harm toads as part of their normal operations. SHAs begin with a discussion about how the ranch operates, and those operations are written into the agreement. The agreements are adaptable and voluntary. If adjacent landowners do not participate in the SHA, they are still protected if they accidentally harm, or have "take," of Wyoming toads on their property. "Take" is defined under the Endangered Species Act as "to harass, harm, pursue, hunt, shoot, wound, kill, trap, capture, or collect, or to attempt to engage in any such conduct."

Comment. *Have you explored non-title easements like some of the programs that NRCS has that have a sunset date to provide some connectivity between the lands that you acquire?*

Comment. *The easements don't go away? Forever is too long.*

Response. The Service only uses perpetual easements. Repeatedly paying for short-term easements would not allow us to achieve our habitat goals and toad recovery objectives. We realize that our easements will not work for everyone. There are several less-than-perpetual conservation easement options available to landowners through private organizations and other Federal and State agencies. If a landowner was interested in an easement with a shorter duration with another organization, they could still participate in a Safe Harbor Agreement, which the landowner could terminate at any time. The collab-

orative conservation efforts in the Laramie Valley will help provide habitat connectivity.

Comment. *It is my belief that this will not eventually be a voluntary legal agreement between a landowner and the U.S. Fish and Wildlife Service if push comes to shove. It will be through whatever means you have necessary by law, since you have already determined the land to be purchased.*

Response. Service conservation easements are legal, binding contracts for both the landowner and the Service. The terms defined in the easement document will remain constant despite any changes in landowners or in refuge personnel. The Service has determined which areas will help meet the recovery objectives for the Wyoming toad. Which lands are actually purchased will be determined by the availability of willing sellers, quality habitat for the toad, and funding.

Comment. *Land use will create a low income status of the owner and the surrounding public.*

Response. WTCA is a voluntary program; landowners that considered it to be unfair would be able to choose other programs that may better suit their needs. Service appraisal will follow the "Uniform Appraisal Standards for Federal Land Acquisition" (41 CFR 114-50.305(c), which states that private property or property rights shall not be purchased without just compensation. It is the policy of the U.S. Fish and Wildlife Service to protect both private and public interests by using market value appraisals as the basis for all land transactions. The development right acquired with a Service conservation easement is what has market value and therefore is what is used for appraisal. Land value is tied to land use, and Service easements would remove the speculative development value of a property. The market value of the development right which would be acquired with a Service conservation easement is what is used for appraisal. Since the tax rate is based on the agricultural value of the land, the tax rate would likely remain the same. Because landowners retain ownership of easements, the property would stay on the local tax roll.

It is also well documented that open space and protected natural areas can increase surrounding property values (see McConnell and Walls, 2005, for a comprehensive review). The reciprocating value of open space on property values will vary depending on landscape characteristics and location attributes (for example, distance to the conserved area).

Comment. *You are wanting some control over water rights on those lands which could hinder the land owner's right to improve his or her land. It has also been stated that conservation easement contracts would specify perpetual protection of habitat for trust species. Specifically, there would be limits on draining or filling wetlands. However, this statement is in direct opposition of the reasons why many of these wetlands exist. It is through agriculture and the draining and filling (i.e., lakes/reservoirs) that the surrounding habitat areas and the wetlands in the basin are obtainable. These water diversion efforts support the water resources for the toad to exist as well as burrowing owl, loggerhead shrike, swift fox, migratory waterfowl, shorebirds, Sandhill cranes, black terns, and other birds. Changing these practices eliminates the need for conservation.*

Response. Historic water rights would continue and the conservation easements would not allow for any water rights to be sold or otherwise separated from the property. The easements would not allow change to or alteration of points of diversion, timing, or place of use for any water rights. Historic water use would be maintained in accordance with current practices. Specific language in the conservation easement between the landowner and the Service may include "unless prior approval in writing is granted by the U.S. Fish and Wildlife Service." This would allow for mutually agreed to changes in points of diversion, timing, or place of use of water to accommodate unforeseen events or to maintain the purposes and intent of the easement.

Comment. *It would be better for landowners to have a clear list of types of easements (including shorter-term easements thru NRCS or the Stockgrowers), Safe Harbor agreements, etc. so people don't get scared by the 'in perpetuity' aspect of some easements.*

Response. The FWS realizes that there is not a single easement contract that satisfies the requirements of all landowners. The availability of other easements and agreements is important so that landowners have choices and can potentially use one that satisfies their individual needs. We will work with landowners to find other options including less-than-perpetual-conservation options through other Federal, State, and conservation partners.

Comment. *Have you sought assistance from any conservation agencies that have a history of working with landowners in this area, like The Nature Conservancy or Wyoming Stockgrowers?*

Response. The Nature Conservancy and Wyoming Stockgrowers are valuable partners in our conservation efforts in the area. We hope to work with a variety of conservation organizations and agencies that already have successful projects underway, and would take into consideration any opportunities to work with these groups.

Toad Biology

Comment. *Is this the only place in WY where we have the toad?*

Response. Mortenson Lake NWR and Buford Trust are the only two known locations with wild Wyoming toads in the world.

Comment. *Is there a good hypothesis about what caused the near extinction of the toad?*

Response. It is not known for sure, but the decline was probably due to a combination of chytrid fungus and habitat alteration. Some people have suggested that the use of Fenthion (which is used for mosquito control) could have contributed to the decline. This lack of scientific knowledge is one reason why we need the flexibility of multiple toad reintroduction locations that this project will give us. Permethrin-based adulticides and the larvicide Bacillus thuringiensis israelensis (BTI) are the primary pesticides currently being used for mosquito control in the town of Laramie. In rural areas adjacent to Laramie, BTI is applied aerially when larval counts are high. BTI is effective on most mosquito species, black flies, and midges in a wide variety of habitats. It is used to control mosquitoes on private properties on the western border of the refuge adjacent to Mortenson Lake as well as on nearby property managed by the Wyoming Game and Fish Department. There is no evidence that BTI has any detrimental effects to amphibian populations and it is considered to be a nontoxic biocontrol agent. Compared to active agricultural areas, pesticide use is relatively low in the Laramie Basin, but this varies throughout the Wyoming toad's historic range and is difficult to monitor on private lands.

Comment. *Is there a risk of moving the fungus through recreation, like fly fishing, where you might require people to clean their waders before they move to different streams or lakes?*

Response. Because the chytrid fungus is assumed to be everywhere in the state, we have not considered any sort of recreational restrictions to control its spread.

Comment. *Is chytrid fungus an ongoing problem? Could it harm other animals, like cows?*

Response. Chytrid only affects amphibians, and it is still an issue with the Wyoming toad. It is a waterborne disease and may have been present for a long time in the environment before it became a problem. The first museum specimen with chytrid fungus was from the 1960s. It is not going away, but other efforts to create healthy amphibian populations should help animals like the toad adapt to its presence in the environment.

Comment. *Great first step, (it) would be important to consider connectivity if/when populations are established.*

Response. The collaborative conservation efforts in the Laramie Valley will help provide wildlife habitat connectivity.

General Concern

Comment. *Lots of ranchers are tired of government telling them what to do with their ground. Every time government gets involved it causes trouble. Ranchers need to make a living.*

Response. Participation in the WTCA project is voluntary, and if a landowner does not wish to participate, there will be no requirement to do so. If the project is successful, the toad will be delisted, which will be good for everyone. However, we can't succeed without willing partners. The money from the sale of an easement could help some ranchers with their operations. If others are uninterested, we would still talk to you and respect your opinions.

Comment. *Everything in the river ends up downstream. Even if I don't participate, the toads will end up downstream, right?*

Response. We view agricultural practices in the Laramie River basin as compatible with and contributing to toad habitat. We are still trying to determine which practices and in what intensity are most beneficial. If we are successful and can delist the species, the dispersal of toads will stop being a concern. Even if adjacent landowners do not participate in a Safe Harbor Agreement, they are still protected if they accidentally harm, or have "take," of Wyoming toads on their property. "Take" is defined under the Endangered Species Act as "to harass, harm, pursue, hunt, shoot, wound, kill, trap, capture, or collect, or to attempt to engage in any such conduct."

Comment. *Once The Nature Conservancy came out to survey for toads on my ranch and they found one. They left some sort of fence and cups [drift fence] and never came back to take them out. My haying lessee ran into it and wasn't happy. The guy who found the toad got a pat on the back and got a promotion to Denver or somewhere.*

Response. We have learned about the importance of good communications and positive relationships. It is important for us to maintain a reputation as good partners.

Comment. *What protection do participants have from 3rd party suit on behalf of the toad?*

Comment. *Wild Earth Guardians: As a frequent litigant in endangered species cases, I can say that, if anything, it would be the Fish and Wildlife Service getting litigated if there was a problem.*

Response. If there were a lawsuit from an outside interest, it would be directed towards the Service. An individual landowner could not be sued by the outside interest.

Comment. *I believe there is insufficient support of the management action plan for expansion of the Wyoming Toad Conservation Area. The proposed action plan that was to establish, purchase and manage the Mortenson Lake National Wildlife Refuge in 2007 has not created a stable enough environment to allow a continuation of such a conservation effort. In your statement you say, "The only wild population of the endangered Wyoming toad is at Mortenson Lake National Wildlife Refuge. Most of the remaining toads, about 500, are in captivity. " Since the purchase of Mortensen Lake area the toad population has not been stabilized nor has it grown. These results supports the doubt that any further purchases would create a better environment for the Wyoming toad. In my opinion, the purchase of more land would not alter the results.*

Response. It is very difficult to establish wild populations of the Wyoming toad. The success of the WTCA project will depend on landowners and partnerships in the Laramie Valley. Additional areas and habitat types are required for the recovery of the Wyoming toad. See the USFWS 2015 Wyoming Toad Revised Recovery Plan for additional details.

Comment. *If the purchases were to progress, it has been stated that these efforts are to buy from willing landowners. Also these efforts of management actions are means for responding to problems and issues raised by Service managers, the public and governmental partners even if they differ for each group in regards to environmental and social effects. In the past when issues were brought up or concerns for your efforts raised you proceeded forward with the disregard of the public.*

Response. All substantive comments have been addressed. We have reached out to landowners, tribes, organizations, and other agencies. There are a variety of perspectives and opinions represented by these groups. However, there has been an overall positive response to the project. Participation in the project is strictly on voluntary basis.

Comment. *In conclusion, it is my belief that the partnership with land owners, their guests and the public in general will not net the forecasted results. The maximized wildlife and habitat resources will be reduced for all concerned. Finally and most importantly, it will not create the environment necessary for the natural world. It is in my opinion that this acquisition should not proceed and further research is necessary. Slow down take a small piece of land and a landowner that wants to work with you and have a test plot so to speak, to see if your idea will work. You are asking landowners to sell one of their property rights when you have no idea if it will succeed.*

Response. Conservation easements are a proven tool for preserving habitat for wildlife. Many other wildlife species in the Laramie area would benefit from the protection of riparian habitat, wetlands, and uplands in the WTCA. Agricultural heritage and open space will also be preserved with the project.

Monitoring and adaptive management will be needed to address the challenges of Wyoming toad recovery. The results of ongoing research and field work will be incorporated into our habitat acquisition strategy to maximize success.

The WTCA project will be a long term process. The total amount of acres that will actually be required will be determined by the recovery objectives for the toad, availability of willing sellers, and funding. The acquired acreage may be a much smaller amount than the approved maximum.

Comment. *I think you are way over stepping your bounds when you don't know what is the reason the toads get the fungus that causes them to die. You are wanting to buy large conservation easements or limited fee title land to try out your project, when you don't know if it will work out or not.*

Response. We recognize there are a lot of questions about what has caused toads to decline. WTCA would maximize the opportunity to recover the Wyoming toad.

Comment. *Conservation easements are in perpetuity, if this does not work, you have tied up a lot of ranch land then what?*

Response. Conservation easements are purely voluntary in nature and only acquire development rights. Ranching and most agricultural practices could continue with a conservation easement. Conservation easement programs also help preserve agricultural heritage, open space, and habitat for other wildlife species.

Comment. *Work with what you already have and leave the landowners of the Laramie Valley out of this.*

Response. The current locations where the Wyoming toad is found in the Laramie Valley have been unsuccessful in supporting a sustainable population of toads to date. The Service will need to work with other interested conservation partners to achieve toad recovery objectives.

General Support

Comment. *I am with Wild Earth Guardians. We care about the Wyoming Toad and appreciate the efforts being made towards its recovery. I recreate at Hutton Lake. We like that the Fish and Wildlife Service is using willing seller purchases and voluntary agreements, rather than eminent domain.*

Response. We recognize that collaboration with landowners is the only way we will have success in the long term. Every agency has made mistakes in its history. These sorts of agreements are the way of conservation in the future. We have a chance to show people that agriculture and conservation are compatible.

Comment. *You are at least talking to land owners.*

Comment. *Toads are explosive breeders. They may help with mosquito control if they become well established.*

Response. Thank you for your comments.

Comment. *Restoring the Wyoming toad to its historic range by conserving habitat is great for the toad, for water quality, and for all the biodiversity that these riparian/upland areas support. Love the partnership approach between private landowners and agencies.*

Response. Thank you for your comments.

Comment. *From a biologist's perspective, if you guys are successful, it is guaranteed that downstream ranchers will have better water quality, soil conditions, etc. If toads do well, it indicates good conditions.*

Response. Conservation easements are a proven tool for preserving habitat for wildlife. Many other wildlife species would benefit from the protection of riparian habitat, wetlands, and uplands in the WTCA. Thank you for your comment.

The Service is thankful for the many individuals that provided letters, emails, or attended the public meeting to provide input on the WTCA project.

Appendix G

Section 7 Biological Evaluation

Intra-Service Section 7 Biological Evaluation Form - Region 6

Originating Persons: Tom Koerner, PL at Seedskadee & Arapaho NWR
Amy Thornburg, Division of Planning

Date: October 7, 2016

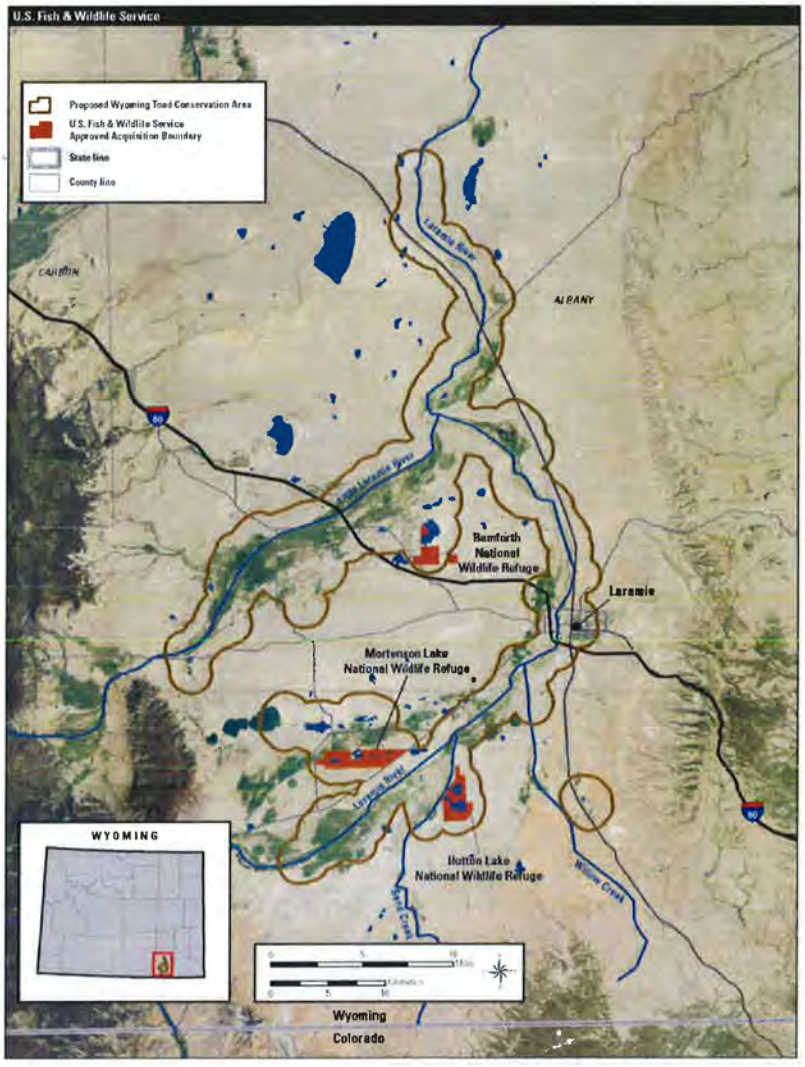
Telephone Number: (307) 875-2187 x 16, (303) 236-4345

I. **Service Program and Geographic Area or Station Name**:
Refuges, Arapaho NWR Complex and Refuges, Division of Planning, Denver Regional Office

II. **Flexible Funding Program** (e.g. Joint Venture, etc.) if applicable:
N/A

III. **Location**: Location of the project including County, State and TSR (township, section & range):

Albany County, Wyoming



IV **Species/Critical Habitat**: List federally endangered, threatened, proposed, and candidate species or designated or proposed critical habitat that may occur within the action area.

Wyoming toad (*Anaxyrus baxteri*) (Endangered)

Least tern (*Sterna antillarum*) (Endangered)

Piping plover (*Charadrius medodus*) (Threatened, Critical Habitat)

Whooping crane (*Grus americana*) (Endangered, Critical Habitat)

Pallid sturgeon (*Scaphirhynchus albus*) (Endangered)

Ute ladies'-tresses (*Spiranthes diluvialis*) (Threatened)

Western prairie fringed orchid (*Platanthera praeclara*) (threatened)

Black-footed Ferret (Mustela nigripes) (Experimental population, Non-essential)

Preble's meadow jumping mouse (*Zapus hudsonius preblei*) (Theatened)

V. **Project Description:** Describe proposed project or action or, if referencing other documents, prepare an executive summary (attach additional pages as needed):

The Service is proposing the Wyoming Toad Conservation Area (WTCA) to conserve vital wildlife habitat for the Wyoming toad in the Laramie Plains. The project would protect up to an additional 43,299 acres in the Wyoming Basin ecoregion and the Great Northern Landscape Conservation Cooperative. The entire footprint of this project would be located in south-central Albany County, Wyoming, and would encompass three existing refuges: Bamforth, Mortenson Lake, and Hutton Lake National Wildlife Refuges.

Conservation of the wetlands, riparian and associated upland habitat through the WTCA is essential for the recovery of the endemic, endangered Wyoming toad. Easement and limited fee-title acquisition for this project will focus primarily on habitat for the endangered Wyoming toad in accordance with Strategic Growth Policy. The 2015 revised recovery plan for the Wyoming toad states that acquiring additional protected habitat is essential to meeting the recovery objective of restoring at least five self-sustaining populations within and nearby the historical range, allowing for subsequent downlisting and delisting of the toad.

WTCA habitat also is important for other federal trust species including populations of migratory shorebirds, waterfowl, and neotropical songbirds. The region provides resident, nesting, and migration habitat for over 146 species of birds and over 320 species of plants. Approximately 186,185 acres are within the overall WTCA project boundary. Depending on available funding and willing sellers, the Service may purchase conservation easements or fee-title land on a strictly voluntary basis on up to 43,299 acres. A maximum of 10,000 acres of the total acreage acquired by the Service can be fee title.

The Service would seek to strategically buy conservation easements and fee-title lands on privately owned lands that provide potentially valuable wildlife habitat. The easements would provide perpetual protection of habitat for the endangered Wyoming toad and other Federal trust species (migratory birds and threatened and endangered species) by restricting some types of future development. Development for residential, commercial, or industrial purposes such

as energy and aggregate extraction; alteration of the natural topography; and conversion of native wetlands, riparian areas, shrublands, and grasslands to cropland would be prohibited. Conservation easements would also prohibit the draining, filling, or leveling of wetlands.

Areas considered for fee-title and conservation easements within the project area will be prioritized based on the biological needs of the Wyoming toad, habitat quality, the threat of development, and connectivity with other protected lands.

VI. **Determination of Effects:**

(A) Description of Effects: Describe the action(s) that may affect the species and critical habitats listed in item IV. Your rationale for the Section 7 determinations made below (B) should be fully described here.

Wyoming toad (*Anaxyrus baxteri*) - We anticipate the effects of our proposed action to be wholly beneficial to the Wyoming Toad. Bringing the additional lands into the conservation estate will ensure that this area, identified as important recovery lands, will remain largely undeveloped. The draft Recovery Plan sets the population goal of five sustaining populations for seven years. We expect that the permanent protection, enhancement, and restoration of these habitats will allow the Wyoming toad to maintain their existing populations and provide opportunities for future growth. It is expected that creation and management of the WTCA may affect, but would not adversely affect Wyoming toad.

Least tern (*Sterna antillarum*), Piping plover (*Charadrius medodus*), Whooping crane (*Grus americana*), Pallid sturgeon (*Scaphirhynchus albus*), and Western prairie fringed orchid (*Platanthera praeclara*) – All of these species that are covered in the Platte River Recovery Implementation Program (Program). In 2006, a landmark agreement was signed between the governors of Colorado, Nebraska, and Wyoming and the U.S. Secretary of the Interior to implement this basin-wide Program. The purpose of this Program is to provide ESA compliance for water users in the Platte River basin upstream of the Loup River confluence in Nebraska for effects on the target species and critical habitat, while managing certain land and water resources to provide benefits for those species. Since the establishment and management of the WTCA will not be depleting water from the Laramie River, a tributary to the Platte River, it will have no effect on any of the Program species.

Ute ladies'-tresses (*Spiranthes diluvialis*) – Ute ladies'-tresses is found in northern Albany County and western Laramie County, but have not been found nor are expected to be found in the project area. Therefore, establishment and management of the WTCA will have no effect on Ute ladies'-tresses.

Black-footed Ferret (*Mustela nigripes*) – Black-footed ferrets released in the Shirley Basin/Medicine Bow Management Area are designated as a non-essential experimental population under the Endangered Species Act. In the Shirley Basin non-essential experimental population, Federal agencies must confer with the Service on actions that are likely to jeopardize the continued existence of the species. Black-footed ferrets have not been seen in the project area, however, Shirley Basin is northwest of Laramie and the ferrets are expanding their territories. Black-footed ferrets are dependent on prairie dogs for food and shelter, and prairie dogs typically inhabit moderately sloped grasslands, desert grasslands, and shrublands. Therefore, the establishment and management of the WTCA will not jeopardize the continued existence of the species.

Preble's meadow jumping mouse (*Zapus hudsonius preblei*) - Preble's meadow jumping mouse (PMJM) exhibits a preference for lush vegetation along watercourses or herbaceous

understories in wooded areas near water. The mouse occurs in low undergrowth consisting of grasses or forbs, in wet meadows and riparian corridors, or areas where tall shrubs and low trees provide adequate cover. The species use upland habitats as far as 330 feet beyond the 100-year floodplain. The project area is on the extreme western edge of the PMJM range and the only PMJM captured have been downstream of the confluence of the Laramie River and the Little Laramie River. Protection, enhancement, and restoration of wetland and riparian habitat within the WTCA would likely increase the habitat for the PMJM, if they translocate into the area above the confluence. It is expected that creation and management of the WTCA may affect, but would not adversely affect the Preble's meadow jumping mouse.

(B) Determination: Determine the anticipated effects of the proposed project on species and critical habitats listed in item IV. Check all applicable boxes and list the species (or attach a list) associated with each determination.

	Determination
No Effect: This determination is appropriate when the proposed project will not directly or indirectly affect (neither negatively nor beneficially) individuals of listed/proposed/candidate species or designated/proposed critical habitat of such species. Least tern (*Sterna antillarum*), Piping plover (*Charadrius medodus*), Whooping crane (*Grus americana*), Pallid sturgeon (*Scaphirhynchus albus*), Western prairie fringed orchid (*Platanthera praeclara*), Ute ladies'-tresses (*Spiranthes diluvialis*), **No concurrence from ESFO required.**	X
May Affect but Not Likely to Adversely Affect: This determination is appropriate when the proposed project is likely to cause insignificant, discountable, or wholly beneficial effects to individuals of listed species and/or designated critical habitat. Wyoming toad (*Anaxyrus baxteri*), Preble's meadow jumping mouse (*Zapus hudsonius preblei*) **Concurrence from ESFO required.**	X
May Affect and Likely to Adversely Affect: This determination is appropriate when the proposed project is likely to adversely impact individuals of listed species and/or designated critical habitat. **Formal consultation with ESFO required.**	
May affect but Not Likely to Jeopardize candidate or proposed species/critical habitat: This determination is appropriate when the proposed project may affect, but is not expected to jeopardize the continued existence of a species proposed for listing or a candidate species, or adversely modify an area proposed for designation as critical habitat. Black-footed Ferret (*Mustela nigripes*) **Concurrence from ESFO optional.**	X
Likely to Jeopardize candidate or proposed species/critical habitat: This determination is appropriate when the proposed project is reasonably expected to jeopardize the continued existence of a species proposed for listing or a candidate species, or adversely modify an area proposed for designation as critical habitat. **Conferencing with ESFO required.**	

Signature Tom Kleven (Supervisor at Originating Station)

Date 10/12/2016

Ecological Services Office Evaluation (check all that apply):

A **Concurrence** X **Nonconcurrence**

Explanation for nonconcurrence

B Formal consultation required _____

List species or critical habitat unit

C. Conference required _____

List species or critical habitat unit

Name of Reviewing ES Office Tyler A. Abbott (Wyoming ES Field Office)

Signature _____ Date 10-12-16

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