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FINAL

ENVIRONMENTAL ASSESSMENT

for the

PROPOSED GUAM NATIONAL WILDLIFE REFUGE

Territory of Guam

July 1993

DEPARTMENT OF THE INTERIOR
U.S. FISH AND WILDLIFE SERVICE
REGION 1, PORTLAND, OREGON

DEPARTMENT OF THE INTERIOR
U.S. FISH AND WILDLIFE SERVICE
Region 1, Portland, Oregon

FINDING OF NO SIGNIFICANT IMPACT

Proposed Establishment
Guam National Wildlife Refuge
Territory of Guam

The U.S. Fish and Wildlife Service (Service) has prepared an Environmental Assessment (EA) for the proposed establishment of the Guam National Wildlife Refuge (Refuge). The EA evaluated the effects associated with the land acquisitions needed to protect and manage endangered and threatened species of plants and wildlife and their habitats, migratory species and their habitats, and the native biological diversity of Guam.

Proposed Action

The Service proposes to establish a Refuge on certain Department of Defense lands (excluding operational areas), including the former U.S. Naval Facility at Ritidian Point, and on certain Government of Guam lands. The proposed Refuge would also include submerged lands offshore from certain Department of Defense facilities and the former U.S. Naval Facility at Ritidian Point to the 30-meter (100-foot) isobath.

The Service proposes to acquire and manage approximately 11,489 hectares (28,389 acres) of native habitats including limestone forests, ravine forests, wetlands, clifflines, caves, beaches, and other habitats under cooperative agreements, transfers of real property through the General Services Administration, and other agreements. Approximately 1,321 hectares (3,265 acres) of submerged lands would be acquired under cooperative agreements, transfers of real property through the General Services Administration, or other agreements. Lands included within the proposed Refuge are currently owned either by the Government of Guam or the Department of Defense. Terrestrial habitats and submerged lands would be managed cooperatively with the Government of Guam and the Department of Defense.

The purposes for establishing the proposed Guam National Wildlife Refuge are to: (1) protect and restore essential habitats and provide for recovery actions for several endangered and threatened species; (2) conserve migratory species and their habitats; (3) protect and manage migratory species and other native wildlife and their habitats in order to conserve the biological diversity of Guam; (4) control predation upon native species, particularly by the brown tree snake; (5) complement ongoing Government of Guam and Department of Defense programs in natural resource management,

conservation, law enforcement, research, and education; (6) provide opportunities for public education, enjoyment of wildlife, cultural use of resources, and scientific research; and (7) maintain the scenic values of the protected areas.

The authorities to undertake the establishment of the Guam National Wildlife Refuge are provided by the Endangered Species Act of 1973, as amended (16 U.S.C. 1531-1544, 87 Stat. 884), the Fish and Wildlife Act of 1956, as amended (16 U.S.C. 742a-742j, 70 Stat. 1119), and the Migratory Bird Conservation Act of 1929 (16 U.S.C. 715-715d, 715e, 715f-715r, 45 Stat. 1222).

The Service considered and dismissed several alternatives to the proposed action including: (1) establish a Refuge on Department of Defense lands (including operational areas), including the former U.S. Naval Facility at Ritidian Point, and certain Government of Guam lands; (2) establish a Refuge on certain Department of Defense lands (excluding operational areas), including the former U.S. Naval Facility at Ritidian Point, but excluding Government of Guam lands; (3) establish a Refuge at the former U.S. Naval Facility at Ritidian Point only and manage the other Refuge lands under cooperative agreements with the Department of Defense and the Government of Guam; and (4) no action. The Service also considered and dismissed several options for submerged lands including: (1) include submerged lands to 4.8 kilometers (3 miles) offshore from certain Department of Defense facilities; (2) include submerged lands only within existing Department of Defense and Government of Guam marine conservation areas; and (3) no action.

The proposed establishment of the Guam National Wildlife Refuge will not have a significant effect on the human environment for the following reasons:

1. The natural processes under which much of the area has evolved will be permitted to continue, with the exception of the control of alien species such as the introduced brown tree snake.
2. The proposed action is consistent with the current uses of the land by the Department of Defense and the Government of Guam.
3. No private lands are included within the proposed Refuge.
4. The proposed action will not have adverse impacts to the local economy, cultural resources, or the social environment because the current land uses will be essentially unchanged.
5. The proposed action will not have an adverse impact upon threatened or endangered species.

6. The proposed action is consistent with the goals of the recovery plans for several endangered species on Guam.
7. An archaeological records search revealed that the affected areas are rich in archaeological and historical sites. The archaeological and historical resources will be protected. Prior to the implementation of any management activities which may affect these sites, the Service shall undertake the necessary surveys and planning to avoid and conserve the archaeological and historical sites.
8. The Service has evaluated the proposed action with respect to various rules, regulations, and legislation and has found the action to be consistent with and in conformance with the following: (1) Executive Order 12372 (Intergovernmental Review of Federal Programs); (2) Executive Order 11990 (Protection of Wetlands); (3) Executive Order 11988 (Floodplain Management); (4) Executive Order 11593 (Protection of Historical, Archaeological, and Scientific Properties); (5) Endangered Species Act of 1973; (6) Migratory Bird Treaty Act of 1918; (7) Comprehensive Environmental Responses, Compensation, and Liability Act of 1980; (8) National Wildlife Refuge Administration Act of 1966; (9) Secretarial Order 3127 (regarding contaminants); and (10) Uniform Relocation Assistance and Real Property Acquisition Policies Act of 1970.
9. This action is comparable to and has been preceded by similar actions taken by the Service whereby lands are acquired for and made a part of the National Wildlife Refuge System.

Related Documents

The project supports the goals of the Native Forest Birds of Guam and Rota of the Commonwealth of the Northern Mariana Islands Recovery Plan; the Recovery Plan for the Mariana Islands Population of the Vanikoro Swiftlet, *Aerodramus vanikorensis bartschi*; the Guam Mariana Fruit Bat and Little Mariana Fruit Bat Recovery Plan; the Recovery Plan for the Mariana Common Moorhen (= Gallinule) *Gallinula chloropus guami*; the Draft Recovery Plan for *Serianthes nelsonii* (Mimosaceae); and the Regional Wetlands Concept Plan pursuant to the Emergency Wetlands Resources Act of 1986.

Any lands acquired would be managed as part of the National Wildlife Refuge System as outlined in the Operation of the National Wildlife Refuge System, Final Environmental Impact Statement FES 76-59.

Public Availability

The draft EA was distributed for a 30-day public review and comment period in June 1992 to Federal and Territorial congressional delegations; Federal, Territorial, and local agencies; public libraries; universities; private landowners; private groups; and individuals. The Service also held a public meeting on Guam on June 1992. Following the review of public comments, the Service prepared another draft EA that was distributed for a 30-day public review and comment period in January 1993. The Service also detailed an employee to Guam to provide interviews to radio and television stations and newspapers and to hold informational meetings with affected agencies and individuals.

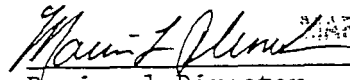
Copies of the final EA and the "Finding of No Significant Impact" will be distributed to those that received the draft EA and any others who have requested copies. Additional copies are available upon request from the following office:

Project Leader
U.S. Fish and Wildlife Service
Hawaiian and Pacific Islands National Wildlife Refuge Complex
P.O. Box 50167
Honolulu, HI 96850 Telephone: (808) 541-1201

Determination

Based upon information contained in the EA, as well as numerous and similar acquisitions that have preceded this action, the Service has determined that this action would not constitute "a major Federal action significantly affecting the quality of the human environment." Therefore, an Environmental Impact Statement will not be prepared. This "Finding of No Significant Impact" is being made available for public review for 30 days before any action is undertaken.

Issued in Portland, Oregon, July 9, 1993.


MARVIN L. PILE
Regional Director

FINAL ENVIRONMENTAL ASSESSMENT
July 1993

for the
PROPOSED GUAM NATIONAL WILDLIFE REFUGE
Territory of Guam

LEAD AGENCY: Department of the Interior
U.S. Fish and Wildlife Service

RESPONSIBLE OFFICIAL: Regional Director
U.S. Fish and Wildlife Service
Portland, Oregon

CONTACT: Ray Rauch
Project Leader, Hawaiian and Pacific Islands
National Wildlife Refuge Complex
U.S. Fish and Wildlife Service
P.O. Box 50167
Honolulu, Hawaii 96850

EXECUTIVE SUMMARY

Over the past 30 to 40 years, Guam's native wildlife has undergone a catastrophic decline from a variety of causes including predation by the introduced brown tree snake, loss and degradation of habitats from development, and overexploitation by humans. Several of Guam's endemic forest birds may have become extinct within the past ten years. The Guam broadbill, the Guam bridled white-eye, and the rufous-fronted fantail were unique to Guam and have not been observed in recent times. Other endangered birds, such as the Mariana crow and the Mariana common moorhen, persist on Guam at extremely low numbers. The last sighting of the little Mariana fruit bat was in 1968. The endangered Mariana fruit bat is limited to a single colony at Pati Point on northern Guam. The endangered Guam rail and the Guam Micronesian kingfisher exist only in captivity. All of Guam's native terrestrial mammals and birds are on the threshold of extinction in the wild.

The endangered species problems on Guam are so complex that a cooperative approach among the Government of Guam, the U.S. Fish and Wildlife Service (Service), and the Department of Defense (DOD) is necessary to stem the rising tide of extinction. Both the Government of Guam and the Federal government share common goals for the recovery of endangered and threatened species, the protection of native flora and fauna, the conservation of unique ecosystems, and the maintenance of native biological diversity. Both the Government of Guam and the Federal government have obligations to their citizens to provide opportunities to better understand and appreciate wildlife, natural landscapes, and the relationship between humans and the environment. The Government of Guam and the Federal government must continue cooperative

efforts to develop and implement programs for the recovery of endangered and threatened species, and to protect key habitats in perpetuity with the common goal of reversing the wildlife extinction crisis facing Guam.

To meet these shared goals and responsibilities, the Service is studying the feasibility of establishing a National Wildlife Refuge (Refuge) on certain lands and waters on Guam to be managed in coordination with the Government of Guam and the DOD. The proposed Refuge would be established to: (1) protect and recover endangered and threatened species; (2) protect and restore essential habitats for listed species and implement recovery actions; (3) protect and manage migratory birds and other native wildlife and their habitats in order to conserve Guam's biological diversity; (4) control predation upon native wildlife by harmful alien species, particularly by the brown tree snake, and protect wildlife from poaching; (5) complement ongoing Government of Guam and Federal programs in natural resources management, conservation, law enforcement, research, and education; (6) provide opportunities for public education, enjoyment of wildlife, cultural use of resources, and scientific research; and (7) maintain the scenic values of the protected areas. The proposed Refuge would be established on Federal and Government of Guam lands through a memorandum of understanding and managed through cooperative agreements among the U.S. Navy, the U.S. Air Force, the Government of Guam, and the Service.

Some of the best remaining habitats for endangered and threatened species are found on DOD lands. Outstanding natural areas are also found on Government of Guam lands and on certain privately owned tracts. Areas under study for inclusion in the proposed Refuge include Government of Guam and DOD lands that contain essential habitats for endangered native forest birds, the Vanikoro swiftlet, the Mariana fruit bat, and the Mariana common moorhen, and nesting and foraging habitats for endangered and threatened sea turtles. These areas have been identified in recovery and conservation plans. The majority of areas under consideration for incorporation into the proposed Refuge are also under formal review by the Service for designation as critical habitat for six endangered species including the little Mariana fruit bat, the Mariana fruit bat, the Guam broadbill, the Mariana crow, the Guam Micronesian kingfisher, and the Guam bridled white-eye. Private lands are not being studied for inclusion in the proposed Refuge.

The Service considered a number of different alternatives for the proposed Refuge with input from Government of Guam, the DOD, and the general public. The alternatives for including terrestrial lands in the proposed Refuge included:

- Alternative 1. Establish a Refuge on certain DOD lands (including operational areas), including the former U.S. Naval Facility at Ritidian Point and certain Government of Guam lands.
- Alternative 2. Establish a Refuge on certain DOD lands (excluding operational areas), including the former U.S. Naval Facility at Ritidian Point and certain Government of Guam lands.
(Preferred)
- Alternative 3. Establish a Refuge on certain DOD lands (excluding operational areas), including the former U.S. Naval Facility at Ritidian Point, but excluding Government of Guam lands.
- Alternative 4. Establish a Refuge only at the former U.S. Naval Facility at Ritidian Point. Manage natural resources on certain DOD and Government of Guam lands through cooperative agreements.
- Alternative 5. No action related to terrestrial lands.

The Service also considered a number of different options for including submerged lands in the proposed Refuge including:

- Option 1. Include submerged lands offshore from certain DOD lands to 4.8 kilometers (3 miles).
- Option 2. Include submerged lands offshore from certain DOD lands to the 30-meter (100-foot) isobath.
(Preferred)
- Option 3. Include submerged lands only within established DOD and Government of Guam marine conservation areas.
- Option 4. No action related to submerged lands.

The Service selected Alternative 2 as the preferred terrestrial lands alternative and Option 2 as the preferred submerged lands option under which to establish a Refuge. The final Environmental Assessment provides detailed justifications for these recommendations. However, the inclusion of Government of Guam terrestrial lands and submerged lands did not receive a positive Federal consistency determination from the Guam Coastal Management Program. Upon the approval by the appropriate Government of Guam authority to include Government of Guam lands in the proposed Refuge, and upon the resolution of the issue of ownership of submerged lands, the Service will seek Federal consistency determinations from the Guam Coastal Management Program.

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FINAL ENVIRONMENTAL ASSESSMENT
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I. NEED FOR AND PURPOSE OF THE PROPOSED ACTION

A. Need for the Proposed Action

All of Guam's native terrestrial mammals and birds are on the threshold of extinction in the wild. The rapid extirpation of native birds from Guam over the past 30 to 40 years has greatly alarmed natural resource agencies, the public, and the national and international conservation communities. Several of Guam's native birds may have recently become extinct including the endemic Guam broadbill (*Myiagra freycineti*), last seen in 1984; the endemic Guam bridled white-eye (*Zosterops conspicillatus conspicillatus*), last seen in 1983; the endemic rufous-fronted fantail (*Rhipidura rufifrons uraniae*), last seen in 1984; and the little Mariana fruit bat (*Pteropus tokudae*), last seen in 1968. The last pair of the endemic Guam rail (*Rallus owstoni*) was recorded in the wild in 1985. The last sighting of the Micronesian kingfisher (*Halcyon cinnamomina cinnamomina*) in the wild occurred in northern Guam in 1988. Populations of the endangered Mariana crow (*Corvus kubaryi*), the endangered Mariana common moorhen (*Gallinula chloropus guami*), and the endangered Mariana fruit bat (*Pteropus mariannus mariannus*) on Guam are at precariously low numbers. The last individuals of the federally listed endangered hayan lagu tree (*Serianthes nelsonii*) are found on Andersen Air Force Base in northern Guam. Other rare native wildlife and plants found within the study area include endangered and threatened sea turtles, the ufa tree (*Heritiera longipetiolata*), and several species of land and tree snails.

All twelve of Guam's native forest birds are listed as endangered under the Government of Guam's Endangered Species Act (Appendix A). Seven of these forest birds are also listed as endangered by the U.S. Fish and Wildlife Service (Service). The Guam Division of Aquatic and Wildlife Resources (Guam DAWR) and the Service have prepared several recovery plans for the native forest birds of Guam and Rota (U.S. Fish and Wildlife Service 1990a), the Guam Mariana fruit bat and the little Mariana fruit bat (U.S. Fish and Wildlife Service 1990b), the Vanikoro swiftlet (U.S. Fish and Wildlife Service 1991a), and the Mariana common moorhen (U.S. Fish and Wildlife Service 1991b). The Service and Guam DAWR are also preparing a recovery plan for the endangered hayan lagu tree. Based on these recovery plans, the protection and recovery of these endangered species will require the combined and coordinated efforts of the Service, Guam DAWR, and the U.S. Department of Defense (DOD).

To date, captive breeding programs for the Guam rail and the Guam Micronesian kingfisher have successfully prevented their extinction. However, even with these captive propagation programs, these birds will not be able to thrive in the wild until the numbers of the highly predatory, introduced brown tree snake (*Boiga irregularis*) are substantially reduced, and native habitat is protected from other threats including human disturbance and development.

The unprecedented decline and extinction of wildlife in recent years is believed to be attributed in large part to predation by the introduced brown tree snake (Savidge 1987; Conry 1988). Other threats to native wildlife on Guam include competition with introduced species, habitat destruction by other non-native species (e.g. feral ungulates and introduced predators), habitat fragmentation and losses due to development for agriculture and urban uses, and the direct impact of human activities (Savidge 1984, 1987; Conry 1988; Wiles et al. 1989; and Stinson et al. 1991). Fruit bat populations have been decimated by overhunting, poaching, and habitat destruction (Wiles 1987). Sea turtles that nest on relatively isolated beaches along the north coast face hazards from off-road vehicles that crush nests and destroy nesting habitat, as well as from proposed development projects and poaching. Wildlife populations, already depressed to extremely low levels, are highly vulnerable to naturally occurring disturbances such as typhoons. Projected increases in human populations will place additional pressures on remaining areas that are essential to the survival of endangered and threatened species and other native wildlife unless these areas are protected and managed.

The Government of Guam and the Federal government play key roles in stemming the tide of extinction that is facing Guam's wildlife. Both governments share common goals for the recovery of endangered and threatened species, the protection of native flora and fauna, the conservation of unique ecosystems, and the maintenance of native biological diversity. Both the Government of Guam and the Federal government are obligated to their citizens to provide opportunities for the public to gain a better understanding of and appreciation for wildlife, natural landscapes, and the relationship between humans and the environment.

To address the complex ecological and endangered species issues facing Guam, the Service studied the feasibility of establishing a National Wildlife Refuge (Refuge) on certain Federal and Government of Guam lands. The Service developed a number of alternatives that varied in size and location. The areas that were under study for inclusion in the proposed Refuge included Federal and Government of Guam lands that have been identified in recovery plans as essential to the recovery of the endangered Mariana crow, the Guam broadbill, the Guam bridled white-eye, the Guam Micronesian kingfisher, the Mariana fruit bat, the Vanikoro

swiftlet, and the Mariana moorhen. Certain nesting beaches and nearshore foraging habitats of endangered and threatened sea turtles were also considered for inclusion in the proposed Refuge.

Establishment of a Refuge would provide a coordinated program for the protection of endangered and threatened species and other native flora and fauna, unique ecosystems, and the conservation of native biological diversity in coordination and cooperation among the Guam DAWR, the Service, and the DOD.. In addition to providing increased opportunities for wildlife management, a Refuge would provide the public with increased opportunities for access to northern Guam for natural history education and other uses that are compatible with the proposed Refuge.

B. Purpose of the Proposed Action

The primary purposes of the proposed Refuge are to halt and reverse the decline of Guam's endangered and threatened species and to protect migratory birds and other native wildlife. Protection and recovery of endangered and threatened species and the conservation of Guam's native biological diversity are dependent upon securing the best remaining wildlife habitats and implementing restoration and enhancement projects. Brown tree snake control and anti-poaching initiatives would be high priorities of initial protection and recovery programs. A secondary purpose of the proposed Refuge is to develop and implement educational and other public informational programs concerning Guam's wildlife and habitat resources. Including submerged lands in the proposed Refuge would contribute to the protection and recovery of endangered and threatened sea turtles and complement programs to manage nearshore marine resources of biological, recreational, and commercial value.

The preferred alternative should enable the Service to meet the following specific objectives:

- 1) effect a long-term, comprehensive program to conserve and recover endangered and threatened species, migratory birds, and other native flora and fauna on Guam;
- 2) enable the Service, Guam DAWR, and the DOD to carry out the protection and recovery of endangered and threatened species and migratory birds. This includes protecting essential and other important habitats from additional degradation; implementing aggressive brown tree snake control programs, anti-poaching initiatives, and other recovery actions outlined in recovery plans; and conducting other conservation actions;

- 3) complement Government of Guam's and Federal agencies' ongoing programs in natural resources and wildlife management, conservation, protection of historic and cultural resources, law enforcement, research, and education;
- 4) provide on-site technical assistance to DOD agencies by the Service to ensure compliance with Federal wildlife conservation and environmental protection mandates;
- 5) provide Service law enforcement expertise to supplement ongoing Guam DAWR, DOD, and Department of Commerce - National Marine Fisheries Service (NMFS) wildlife law enforcement programs; and
- 6) provide for the development of research and environmental education programs, compatible public use, and public access to enhance the public's enjoyment and appreciation of Guam's unique natural resources.

The preferred submerged lands option should enable the Service to meet the following specific objectives:

- 1) ensure adequate protection and management of sea turtle foraging and nesting areas and migratory bird foraging and loafing habitat;
- 2) complement the Government of Guam's and other Federal agencies' ongoing management of nearshore marine resources; and
- 3) provide for the development of research and environmental education programs, compatible public use, and public access to enhance the public's enjoyment and appreciation of Guam's marine resources.

II. BACKGROUND AND ISSUES

A. Government Agency Responsibilities for Wildlife Management

1. U.S. Fish and Wildlife Service

The Service is the Federal agency with the responsibility for the welfare of most endangered and threatened species, migratory birds, and certain anadromous fishes occurring in the United States. The Fish and Wildlife Act of 1956 as amended (16 USC 742a-742j) and the Endangered Species Act of 1973 as amended (16 USC 1531-1543) provide the authority for the Service to establish wildlife refuges for the protection and preservation of endangered and threatened species. The Fish and Wildlife Coordination Act of 1958 (16 USC; 661 et

seq.) and the Fish and Wildlife Act of 1956 (16 USC 742a-742j) authorize the Service to acquire lands to establish refuges or to enter into cooperative agreements for wildlife management.

Within the Service's organization, the Division of Refuges and Wildlife is responsible for resource management (including land, water, wildlife, and other interests), law enforcement, public use, and research in units of the National Wildlife Refuge System or in areas that are protected through other conservation programs.

The Division of Ecological Services (ES) coordinates and conducts activities related to the protection and recovery of endangered and threatened species and their habitats both on and off of refuges. The ES staff provides technical assistance to government agencies regarding endangered species, project permitting, project mitigation, and environmental contaminants. The ES Division is also responsible for Section 7 consultation, listing and delisting species, the consideration of critical habitat for endangered species, and the development of endangered species recovery plans.

The Division of Law Enforcement enforces Federal and international laws and treaties that protect endangered and threatened species and migratory birds.

The Division of Fisheries and Federal Aid administers and provides Federal funds for the Sport Fish and Wildlife Restoration and Endangered Species Conservation programs. These programs are federally funded under the Sport Fish Restoration Act of 1950, as amended; the Wildlife Restoration Act of 1937, as amended; and the Endangered Species Act of 1973, as amended.

2. Guam Division of Aquatic and Wildlife Resources

The Guam DAWR is the lead Government of Guam agency responsible for fisheries, wildlife, and other natural resource management. Guam DAWR has an extensive natural resource management program that includes research on the natural history of endangered species, recovery of endangered species, captive breeding of the endangered Guam rail, monitoring of endangered species populations and trends, wetland studies and delineations, research in the control of the brown tree snake, control of nest predation by brown tree snakes on the Mariana crow, fisheries surveys, fisheries management and enhancement programs, sea turtle monitoring, environmental education, public hunting, game management, control of alien species, and other programs.

The Government of Guam administers several Conservation areas including Bolanos, Cotal, Anao, and Y-Pigo. The designation of additional conservation areas is under consideration by the Government of Guam. Currently, 5,099 hectares (12,599 acres) of public land, or 51% of the public lands on Guam, have been proposed for designation as Conservation lands. This land use category includes environmentally sensitive lands that should be protected from development pressures (Bureau of Planning 1984, as revised).

The Government of Guam has concurrent jurisdiction over all Federal lands on Guam in accordance with 48 USC 1704 and an implementing Memorandum of Agreement. Conservation Officers with the Guam DAWR have jurisdiction on Federal lands for the enforcement of Guam wildlife laws. Guam Conservation Officers have also been deputized by the Service and are authorized to enforce Federal fish and wildlife laws. Guam DAWR is a party, with the Service, to cooperative agreements for the protection, development, and management of fish and wildlife resources on seven separate U.S. Navy installations and on Andersen Air Force Base in accordance with the Sikes Act.

While a significant portion of the funding for the Guam DAWR is provided by the Service through the Fisheries and Federal Aid program, Guam DAWR has pursued increased local funding for Division programs, public education, and brown tree snake research. The Conservation Officer programs are locally funded.

3. Department of Defense Agencies

In many instances, certain lands within DOD installations have become *de facto* nature preserves. Security measures have restricted access by the general public and protected certain lands from development. As a result, some of the best remaining habitats for endangered and threatened wildlife are found on lands under Federal jurisdiction. The DOD has demonstrated an awareness of and leadership role in environmental protection and enhancement on Guam by allocating significant resources towards environmental planning and reserving large portions of their lands for wildlife conservation.

DOD installations on Guam are required under a number of Federal laws and departmental policies to implement natural resources stewardship programs. Public Law 86-797, as amended (the Sikes Act), was implemented by DOD Directive 4700.4, Natural Resources Management Program, and requires DOD agencies to implement and maintain an integrated program of natural resources management. Each agency has specific

implementing instructions and guidance on comprehensive programs for land management, fish and wildlife management, forest management, cultural resources, and outdoor recreation.

Each DOD installation has an office that is responsible for compliance with natural resource management mandates. Natural resource management at Andersen Air Force Base is coordinated by the Environmental Flight staff of the Civil Engineering Squadron. Air Force natural resource management programs include endangered species recovery work, cooperative biological surveys with Guam DAWR, predator and feral animal exclusion studies, predator and feral animal control, public hunting programs, and law enforcement.

The U.S. Navy employs a Fish and Wildlife Biologist and a Natural Resources Management Specialist for the Pacific Region who oversee fishery and wildlife management programs on six separate facilities on Guam. Navy wildlife management programs include cooperative biological surveys with Guam DAWR and the development and implementation of Comprehensive Natural Resource Management Plans for each installation.

4. Other Federal Agencies

The National Marine Fisheries Service (NMFS) within the U.S. Department of Commerce has the Federal responsibility for the management of cetaceans (whales and dolphins) found in the coastal waters of Guam under the authority of the Marine Mammal Protection Act of 1972. The Service and NMFS share jurisdiction over sea turtles that are listed as endangered or threatened under the Endangered Species Act of 1973, as amended. The Service has jurisdiction over sea turtles when they come ashore, while NMFS retains management control when sea turtles are in the ocean. In addition, both agencies enforce Federal laws concerning wildlife trade in endangered species. NMFS coordinates with other Federal agencies and Guam DAWR in the review of projects that impact coastal marine resources. NMFS also maintains law enforcement personnel on Guam to enforce certain provisions of the Marine Mammal Protection Act, Endangered Species Act, and the Fishery Conservation and Management Act of 1976.

U.S. Department of Agriculture inspectors play a role in the prevention of illegal plant and animal introductions to Guam and in the interdiction of alien species. Animal Damage Control has stationed personnel on Guam to implement brown tree snake control programs.

The National Park Service manages the War in the Pacific National Park for its historical, educational, natural, and wildlife values.

5. Other Government of Guam Agencies

Other public agencies on Guam have responsibilities for wildlife protection, conservation planning, and enforcement as stated in their policy directives. The Guam Bureau of Planning is the coordinating agency for all projects on Guam and oversees the Coastal Management Program. Other agencies with a role in wildlife protection and natural resource conservation include the Guam Environmental Protection Agency, the Guam Department of Parks and Recreation, and the Guam Department of Land Management. The Guam Department of Education develops and supports public educational programs relating to wildlife conservation.

B. Special Issues and Concerns

1. Environmental Contaminants

There are significant contaminants on some DOD lands being considered for incorporation into the proposed Refuge. On October 13, 1992, Andersen Air Force Base was added to the National Priorities List by the U.S. Environmental Protection Agency (USEPA) to expedite investigations and clean-up. The U.S. Air Force (Air Force) is conducting an intensive investigation to locate potential contamination sources above the groundwater protection zone and drinking water aquifer. The Air Force has been working with the USEPA to begin remedial investigations and implement interim environmental protective measures to prevent any further deleterious effects to the environment from contaminants.

A Federal Facility Agreement (FFA) is being developed by the Air Force, the USEPA, and the Guam Environmental Protection Agency (GEPA). The FFA assigns liability for existing contamination on Andersen Air Force Base to the Air Force and commits the Air Force to fund the remediation of Andersen Air Force Base. The final FFA would assure that the Service would not acquire liability for the cleanup of existing contaminants on the proposed Refuge.

The U.S. Navy (Navy) has a similar legal responsibility for the contaminants at Ritidian Point and on other Navy installations. The Navy has initiated several Site Investigations and Remedial Investigations. These activities are included in the Navy's Installation Restoration Program and are conducted in accordance with the Comprehensive Environmental Restoration, Compensation and Liability Act of 1986, and as amended by the Superfund

Amendments and Reauthorization Act. Prior to establishing a Refuge on these lands, the Service would establish assignment of liability to the Navy and secure a commitment for remediation and funding from the Navy.

A number of designated hazardous waste sites are found in areas containing significant wildlife habitat values. Investigations and remediation of all areas will be conducted in close cooperation with the Service and Guam DAWR to avoid or minimize disturbances to endangered species. All contaminant cleanup operations will be subject to a Section 7 consultation in compliance with the Endangered Species Act whether or not a Refuge is established on these areas.

2. Proposed Critical Habitat Designation

Critical habitat is a legal designation under the Endangered Species Act that identifies those specific geographical areas on which are found the biological and physical features essential to the conservation of endangered species and which may require special management considerations or protection. While critical habitat designation does not establish sanctuaries or provide for active management of listed species, Federal actions which may affect critical habitat would be reviewed by the Service under Section 7 of the Endangered Species Act.

In response to two petitions submitted under authority of the Endangered Species Act and the Administrative Procedures Act, the Service published a proposed rule to designate critical habitat for endangered Guam forest birds and fruit bats in June 1991 (56 FR 115; June 14, 1991; 27485-27493). The critical habitat proposal encompasses roughly 10,118 hectares (25,000 acres) and includes lands owned by the Federal government, the Government of Guam, and private lands at Urunao and Jinapsan. A final decision has not been made by the Service at this date regarding critical habitat designation on Guam.

It is important to recognize that the decision of whether or not to establish a Refuge and the decision of whether or not to designate critical habitat are separate decisions. In this particular case, however, the decision to establish a Refuge and the decision to designate critical habitat may be interrelated. The final decision for critical habitat designation hinges largely upon whether there is a continuing need for special management on those lands identified in the proposed rule. Therefore, the Service will make a final decision on critical habitat designation after the decision is made on the Refuge proposal.

3. Potential Funding for Wildlife Management Programs

The level of wildlife management that could be provided depends upon the development of the Memorandum of Understandings (MOUs) and cooperative agreements and the appropriation of Federal funds for management activities. The proposed Refuge would be managed under these agreements by the Service, Guam DAWR, and the DOD. The Service recognizes that the special expertise on the fishery and wildlife resources of Guam resides with the staff of the Guam DAWR and environmental staffs of DOD. The issues, problems, and natural resources are so complex that a cooperative approach involving the Guam DAWR, the DOD, and the Service is necessary.

Funding for the development and operation of the proposed Refuge is dependent upon being included in an approved budget or being specifically funded through other mechanisms. The Service would request start-up and operational funds for the establishment and operation of the Refuge. Additional funding for specific programs could come from a number of possible sources including DOD programs, direct Congressional appropriations, and private donations.

III. AFFECTED ENVIRONMENT

A. Physical Environment

The U.S. Territory of Guam is the southernmost and largest of the islands within the Mariana Islands archipelago. Located in the western Pacific Ocean at 13°30' north latitude and 145° east longitude, Guam is nearly equidistant from Japan to the north, the Philippines to the west, and New Guinea to the south (Figure 1). Geographically it is a part of Micronesia which covers a vast expanse of ocean and islands and includes the Marshall, Caroline, Gilbert, and Mariana island groups. Guam is approximately 51 kilometers (32 miles) long and 6 to 13 kilometers (4 to 8 miles) wide, with a land area of about 549 square kilometers (212 square miles). It is the largest and most developed of all the islands in Micronesia. Several U.S. Air Force and Naval installations have been constructed and maintained on Guam prior to and since World War II.

Guam's warm tropical climate is relatively consistent during the year. Temperatures range between 22° C (72° F) and 33° C (91° F) on a daily basis, with cooler temperatures during the dry season. Annual rainfall varies considerably among years, averaging 218 cm (86 inches) per year. Most of the rain falls from July to November at an average of 28 cm (11 inches) per month. The dry season occurs between January and May when rains diminish to less

than 15 cm (6 inches) per month. Winds are typically from the east at less than 22 kilometers/hour (12 knots), but are variable in late summer. Typhoons typically occur once or twice a year. "Super typhoons" having sustained winds in excess of 193 kilometers/hour (150 miles/hour) can be expected to cause severe damage. During Super Typhoon Pamela in 1976, winds of 257 kilometers/hour (160 miles/hour) were recorded. Super Typhoon Omar hit Guam in August 1992 with winds up to 257 kilometers/hour (160 miles/hour) (Wiles 1987 and 1992a)..

The northern portion of Guam is characterized by a large, uplifted limestone plateau with elevations ranging from 92 to 183 meters (300 to 600 feet) above sea level. Tall cliffs and steep hillsides drop precipitously to narrow terraces and beaches or directly into the ocean. The coastal bench may be 92 to 274 meters (300 to 900 feet) wide. Considerable groundwater exists and serves as the sole-source aquifer in the north, but there are no permanent streams in northern Guam due to the porous nature of the limestone.

Southern Guam is mountainous and volcanic in origin, although some hills are capped with limestone. Mount Lamlam rises 407 meters (1,335 feet) above sea level. River valleys, coastal plains, relatively wide beaches, and protected bays are also characteristic of the region. There is little or no developable groundwater in southern Guam, but there are numerous springs and perennial streams and a man-made reservoir (Fena Lake). Several aquaculture ponds have been constructed adjacent to estuarine wetlands near the mouths of rivers in southern Guam. The volcanic soils of southern Guam are subject to significant erosion which is accelerated by inappropriate land uses. In turn, this siltation damages a valuable reef fishery, aquatic recreation activities, and the invaluable aesthetics of the reef (BioSystems Analysis 1990).

B. Biological Environment

1. Natural Communities

Prior to human habitation, tropical forest may have covered all or most of the island (Fosberg 1960). Today this native forest has been replaced in large areas by non-native plants, converted to open fields and savannas or developed as urban areas, military installations, roads, or airports. In general, the remaining natural areas in the northern portion of Guam comprise diverse forest, whereas undeveloped areas on southern Guam feature savannas on the exposed uplands and forests in the more sheltered valleys. Because of frequent storms, exposed areas often contain scrubby "typhoon forest" with a relatively low canopy.

The lands under consideration for inclusion in the proposed Refuge encompass a number of major habitat types. Study areas on northern Guam include primary limestone cliff forests, typhoon forests, scrub forests, coconut forests, coastal scrub, sand beaches, intertidal platforms, fringing coral reefs, deep-water habitats, open fields, isolated palustrine wetlands, and agriforests. The study areas in central and southern Guam include limestone cliff forests, ravine forests, savannas, the Fena Reservoir, perennial streams, isolated palustrine wetlands, riparian wetlands, salt marshes, mangrove swamps, mud flats, fringing coral reefs, and deep-water habitats. The study areas include essential and other important habitats for endangered and threatened species and migratory birds.

The general terrestrial habitat types and their characteristic locations on Guam are described as follows:

Mature limestone forest -- found around northern limestone cliffs; typically forested with *Pisonia*, *Ficus*, *Elaeocarpus*, *Guamia*, *Aglaia*, *Neisosperma*, *Macaranga*, *Premna*, *Tristiropsis*, *Intsia*, *Cycas*, *Pandanus*, and *Ochrosia*.

Mature ravine forest -- found on southern slopes and in ravines; dominated by *Barringtonia*, *Hibiscus*, *Areca*, *Cocos*, *Cynometra*, and *Pandanus*.

Mixed woodlands -- found mainly on the northern limestone plateau; similar to mature limestone forest, but having a much lower canopy and more open vegetation; typified by *Artocarpus*, *Pandanus*, *Neisosperma*, and *Cocos*.

Second growth -- cleared of mature growth and presumably returning to climax vegetation; primarily found on Northwest Field at Anderson Air Force Base; typified by little or no closed canopy and dominated by *Casuarina*, *Pandanus*, *Neisosperma*, *Scaevola*, *Morinda*, *Hibiscus*, and *Elaeocarpus*.

Scrub vegetation -- found on northern limestone plateau; lower growing than mixed woodlands and second growth; typified by *Pandanus*, *Scaevola*, *Hibiscus*, *Bikkia*, and *Cynometra*.

Coastal strand vegetation -- open sandy beaches; typified by *Cocos*, *Casuarina*, *Ipomoea*, *Canavalia*, *Scaevola*, *Triumfetta*, etc.; found on the perimeter of the island.

Savannas -- grassland communities; typified by *Miscanthus*, *Dimeria*, and *Phragmites*; found on southern volcanic soils.

Marshes -- wetlands; typified by *Phragmites*, *Scirpus*, and *Cyperus*; found primarily in southern and central Guam.

Mangrove swamps -- wetlands; typified by *Rhizophora*, *Bruguiera*, *Lumnitzera*, and *Avicennia*; found mostly in Apra Harbor.

Leucaena forest -- nearly pure stands of *Leucaena leucocephala*, an introduced legume used for reforestation after World War II; found over much of Guam.

2. Wildlife

a. Endangered and Threatened Species

(1) Avifauna

The Government of Guam has long recognized the need for wildlife protection. In 1960, the enactment of Guam Public Law 6-87 prohibited the taking, buying, or selling of wild birds and their eggs. It also authorized the Guam DAWR to determine hunting seasons and set bag limits on game birds, which at that time included the Guam rail (*Rallus owstoni*). The first controlled hunting season for Guam rails occurred in 1964 and continued on a yearly basis until the hunting season was closed in 1976. In 1981, Public Law 16-39 provided the Mariana crow (*Corvus kubaryi*) and the Guam Micronesian kingfisher (*Halcyon cinnamomina cinnamomina*) legal protection under Guam law. In 1981, the Guam population of the Vanikoro swiftlet (*Aerodramus vanikorensis bartschi*) was protected by the Guam Endangered Species Act. The Guam Endangered Species Act now also formally protects the Guam rail, the Mariana crow, the Guam Micronesian kingfisher, the Micronesian megapode (*Megapodius laperouse*), the Guam bridled white-eye (*Zosterops conspicillatus conspicillatus*), the Guam broadbill (*Myiagra freycineti*), the rufous-fronted fantail (*Rhipidura rufifrons uraniae*), the Mariana fruit dove (*Ptilinopus roseicapilla*), the white-throated ground dove (*Gallicolumba x. xanthonura*), the Micronesian starling (*Aplonis opaca guami*), the cardinal honeyeater (*Myzomela rubrata saffordi*), the Mariana common moorhen (*Gallinula chloropus guami*), and the nightingale reed-warbler (*Acrocephalus luscini*).

In 1970, the Micronesian megapode and the nightingale reed-warbler were included on the Federal Endangered Species List. The Mariana mallard (*Anas oustaleti*) was federally listed as endangered in 1977. In August 1984, seven additional Guam birds were listed as endangered species by the Service, including the Guam bridled white-eye, the Guam broadbill, the Mariana common moorhen, the Guam rail, the Mariana crow, the

Guam Micronesian kingfisher, and the Vanikoro swiftlet.

Several species of birds may have become extinct on Guam including the Micronesian megapode, the Mariana mallard, the white-browed crake (*Porzana cinerea*), the wedge-tailed shearwater (*Puffinus pacificus*), the nightingale reed warbler, the Guam bridled white-eye, the Guam broadbill, and the rufous-fronted fantail (Engbring and Ramsey 1984; Engbring and Fritts 1988; Guam Division of Aquatic and Wildlife Resources 1982-1991).

Guam's native birds now are believed to occupy small fractions of their formerly island-wide historical ranges. Current known distributions of native land birds are as follows: Mariana crows are restricted to northern Guam with the center of distribution and nesting being Northwest Field, Conventional Weapons Storage Area, and adjacent clifflines on Andersen Air Force Base (Aguon and Wiles 1992). Crows have also been reported to nest at Ritidian Point and are found in the coastal basin areas of northern Guam. The Micronesian starling may be found on Andersen Air Force Base, Cocos Island, the southern coasts of Guam, and in Agana (Aguon and Wiles 1992).

The Guam rail and Guam Micronesian kingfisher are being bred in captivity on Guam and in mainland zoos. An experimental release of the Guam rail on the nearby island of Rota is being attempted by the Guam DAWR and Service to promote a self-sustaining population in the wild (Wittelman and Beck 1991). The ultimate objectives of these conservation programs are to preserve the genetic diversity of Guam's native species and to provide individual birds for reintroduction to Guam once brown tree snakes and other threats to their survival are controlled. It is, therefore, imperative to protect, restore, and manage the best remaining habitats for these species throughout Guam and the Mariana Archipelago.

The loss of wetland habitat on Guam is believed to be the primary cause for the decline of the Mariana mallard and the Mariana common moorhen (U.S. Fish and Wildlife Service 1991b). The endangered Mariana common moorhen is found in wetlands in central and southern Guam. Many of these wetlands are threatened by development.

While the reasons for the decline of the endangered Vanikoro swiftlet are not completely understood, human

disturbance of nesting and roosting caves and predation upon swiftlets by brown tree snakes have contributed to their current status. The last two caves that are inhabited by swiftlets are located at the Naval Magazine in southern Guam. Snakes were reported to be found in and around a study cave by biologists monitoring swiftlet populations (U.S. Fish and Wildlife Service 1991a; Aguon and Wiles 1992).

(2) Fruit Bats

Two species of fruit bats, the Marianas fruit bat (*Pteropus mariannus mariannus*) and the little Marianas fruit bat (*P. tokudae*), were listed as endangered on Guam by the Service in 1984. These species have been listed as endangered by the Government of Guam since 1981. The little Marianas fruit bat has not been observed on Guam since 1968. Overhunting of the Marianas fruit bat, which is considered a delicacy, is believed to have been a principal cause for its decline. Poaching has been an ongoing problem since 1966 when fruit bats were first given limited legal protection. Predation by the brown tree snake has contributed to the decline of the Mariana fruit bat, and along with the poaching problem, is believed to be preventing their recovery. Because the Guam population is so small and because of low reproductive rates, the remaining colony is highly vulnerable to the effects of predation, poaching, and loss of roosting and feeding trees and other effects of typhoons.

The first known census of fruit bats on Guam was made in 1958 and reported an estimated 3,000 fruit bats. A drastic decline during the 1960's and 1970's left only an estimated 50 bats in 1978. A sudden increase in 1980-82 to approximately 850 to 1,000 bats probably resulted from a movement of bats from nearby Rota. By the late 1980's, the Guam fruit bat population was estimated to be 425 to 500. Almost all of the animals are restricted to the limestone forests of the cliffs on Andersen Air Force Base. Approximately 8,700 to 9,000 Marianas fruit bats currently exist in the Mariana Islands; most of these occur north of Saipan. The distance between the northern (bat-populated) islands and the Guam-Rota bat population essentially separates the two populations, effectively eliminating genetic interchange between the two subpopulations (Wiles et al. 1989).

Fruit bats are a traditional food item on Guam, selling for up to \$25 or more per pound. They have

been legally protected from hunters on Guam since 1977, although poaching continues. Both species were placed on the Government of Guam endangered species list in 1981 and were federally listed in 1984. Eight cases of poaching at colonies and seven cases of hunting at night along flyways were documented from 1981 to 1984 on Guam. Other undocumented cases undoubtedly occur, but the severity of the problem is difficult to assess. Bat poachers are difficult to apprehend due to rough terrain and the nature of the thick, remote forest in which fruit bats are found. Very few bat poachers have been arrested or convicted.

The existence of DOD bases on Guam has been important in protecting endangered fruit bats and their habitat by limiting public access and restricting land development. The last remaining bat colony is found at Andersen Air Force Base, although individuals may be found on other areas of the island.

(3) Sea Turtles and Marine Mammals

Green sea turtles (*Chelonia mydas*) and hawksbill sea turtles (*Eretmochelys imbricata*) are frequently reported on Guam. Leatherback sea turtles (*Dermochelys coriacea*) are rarely seen on Guam. Of these, only the green sea turtle is commonly observed. The hawksbill turtle and leatherback turtle are listed as endangered, and the green sea turtle is listed as threatened in the Western Pacific by the Service. Green sea turtles are known to nest on Guam beaches at Tarague, Ritidian, Urunao, Cocos Island, Asiga Beach, and other sites (Pritchard 1977).

Marine mammals are protected under the Marine Mammal Protection Act. Whales and dolphins are found in the coastal waters surrounding Guam.

(4) Plants

The hayan lagu (*Serianthes nelsonii*), tsatsa (*Cyathea lunulata*), and ufa (*Heritiera longipetiolata*) are plants listed as endangered by the Government of Guam. Only *S. nelsonii*, a member of the pea family, is listed by the Service as an endangered species. *H. longipetiolata*, endemic to the Mariana Islands, is found on northern Guam in limited numbers. The only two known adult *Serianthes* trees on Guam were found on Andersen Air Force Base. One of these trees was felled by high winds during Typhoon Omar, however, eleven seedlings still survive under this tree (Wiles 1992a). *Cyathea lunulata* is exceedingly rare on Guam

and is found in the hills of southern Guam in the Bolanos Conservation Area and near Mt. Lamlam at Naval Magazine. This indigenous tree fern occurs elsewhere in Micronesia and Polynesia (Stone 1970).

b. Migratory Birds and Other Native Wildlife

The coastal islets, reef flats, and open ocean surrounding Guam support a number of seabird species, most of which are protected under the Migratory Bird Treaty Act of 1918, as amended (Appendix B). Common seabird species include brown noddy terns (*Anous stolidus*), black noddy terns (*A. minutus*), white terns (*Gygis alba*), and brown boobies (*Sula leucogaster*). The coastal mud flats are particularly valuable loafing and feeding habitat for over 28 species of Pacific migratory shorebirds recorded from the Mariana Islands. The more common shorebirds frequenting the area include wintering birds such as lesser golden plovers (*Pluvialis dominica*), Mongolian plovers (*Charadrius mongolus*), wandering tattlers (*Heteroscelus incanus*), Siberian tattlers (*H. brevipes*), whimbrels (*Numenius phaeopus*), and ruddy turnstones (*Arenaria interpres*). Pacific reef herons (*Egretta sacra*) forage on exposed reefs.

Endemic and indigenous tree snails, once abundant on the island, are today in a state of serious decline and are disappearing from their former ranges due in part to overcollecting and the loss of habitat (Hopper and Smith 1992). Predation by introduced predatory snails and a recently introduced predatory flatworm poses a serious threat to these snails. Recent surveys found no evidence of the endemic tree snail, *Partula salifana*, which may be extinct. Another native snail, *Partula gibba*, is now restricted to Haputo along the northwest coast.

A number of native plants are harvested for food, medicinal, recreational, or religious purposes. These plants may be found on lands proposed for inclusion in the proposed Refuge.

c. Alien Species

The primary cause of the loss of forest birds on Guam is believed to be predation by the introduced brown tree snake (*Boiga irregularis*). This snake, which occurs naturally in the Indo-Malayan archipelago, New Guinea and Australia, is believed to have been accidentally introduced after the second World War.

Bird eggs and chicks constitute a major portion of its diet. It has been estimated that up to 12,000 snakes per square mile may occur in forested areas on Guam. The increase in brown tree snake numbers paralleled the dramatic decrease in numbers of forest birds on Guam (Jenkins 1983; Savidge 1984; Conry 1988). This is the first documented case of a snake causing the near extinction of an entire insular forest avifauna (Savidge 1987).

Feral Sambar deer (*Cervus unicolor*), pigs (*Sus scrofa*), and goats (*Capra hircus*) provide recreational and subsistence hunting opportunities for residents but are also responsible for severe damage to native habitats from foraging, rooting, and wallowing. Feral Asiatic water buffalo (*Bubalus bubalis*) also cause localized habitat damage from wallowing and foraging on Naval Magazine (Conry 1988; Biosystems Analysis, Inc. 1989).

Other established alien species on Guam that are potential threats to native wildlife include monitor lizards (*Varanus indicus*), three species of rats (*Rattus norvegicus*, *R. rattus*, and *R. exulans*), and domestic and feral dogs and cats.

Introduced birds have the potential to displace, compete with, or transmit diseases to native birds, and therefore, are of concern. Black drongos (*Dicrurus macrocercus*) are conspicuous and aggressive birds that may interfere with nesting in the endangered Mariana crow and other native forest birds. Black francolins (*Francolinus francolinus*), released in 1961 for hunting purposes, are established throughout southern Guam and appear to be expanding their range into shrub-grass habitats in central and northern Guam (Aguon 1992). Various species of love birds (*Agapornis* spp.) have been observed flying free in central Guam.

3. Marine Resources

Marine ecosystems in the study area include lagoons, estuaries, fringing reefs, barrier reefs, patch reefs, reef channels, mangrove swamps, seagrass beds, limestone intertidal benches, submarine cliffs, and pelagic waters within 4.8 km (3 miles) offshore of DOD lands. Guam has no officially endangered or threatened fish, invertebrates, or algae in its coastal marine waters (Bakus 1979, Stojkovich 1977).

Threats to Guam's marine resources include overexploitation of marine resources and habitat destruction. Guam's growing tourist industry has stimulated shoreline development and increased the demand for corals and shells for souvenirs, private collections, or commercial use. Overharvesting or illegal capture methods also pose threats to marine resources. Laws protecting marine resources and regulating fisheries are not well understood by the public (Savidge 1984). Guam's marine resource protection laws are promulgated and enforced by the Guam DAWR. However, apprehension of violators is difficult given the large geographic area involved. Prosecutions for illegal taking of marine resources are increasing.

C. Wildlife and Habitat Management Programs

1. Existing Government of Guam Natural Resource Management Programs

Guam DAWR is the lead Government of Guam agency for wildlife management. Guam DAWR has a number of natural resource programs and employs staff specialists in aquatic resources, wildlife resources, public relations and education, and law enforcement. Ongoing conservation programs include endangered species monitoring, captive breeding of endangered species, brown tree snake eradication, and public education.

The Government of Guam has formally designated a number of conservation areas including Bolanos, Cotal, Y-Piga, and Anao Conservation Areas that total approximately 1,650 hectares (4,077 acres) and encompass limestone and ravine forests, typhoon forests, savannas, streams, wetlands, coastal areas, and public recreation areas.

Guam DAWR has signed multi-agency cooperative agreements for the protection, development, and management of fish and wildlife resources on seven separate U.S. Naval installations and on Andersen Air Force Base in accordance with the Sikes Act. Guam DAWR biologists conduct routine population surveys and produce annual reports. Guam DAWR works cooperatively with the Service on a number of cooperative wildlife research programs being conducted on Federal lands including endangered species surveys and brown tree snake research.

Conservation laws on Guam are primarily enforced by Guam DAWR Conservation Officers. Conservation Officers are required to graduate from the Guam Criminal Justice Academy and have full law enforcement authority. Guam DAWR has a Memorandum of Agreement for Cooperative Law Enforcement with

the Service that grants Federal law enforcement authority to designated Conservation Officers.

2. Existing Service Natural Resources Management Programs on Guam

The Service currently funds a number of wildlife management programs. Through its Fisheries and Federal Aid Program, the Service provides financial support to Guam DAWR's fisheries and wildlife conservation and management programs. The Service contributes significantly to brown tree snake control programs, natural resources planning, research, public education, and other programs. In Fiscal Year 1992, the apportionment of Federal Sport Fish and Wildlife Restoration Funds to Guam amounted to \$927,000. A \$300,000 brown tree snake control research program is underway by the Service through the Division of Research and is funded by the DOD Legacy Program. The Service also has a \$500,000 DOD Legacy Program grant to undertake recovery actions on endangered and threatened species on DOD lands on Guam. The Service has a Special Agent and a Wildlife Inspector stationed on Guam under the Division of Law Enforcement to investigate illegal activities, apprehend suspects, and collect evidence to prosecute offenders of international, Federal, and local wildlife laws.

The Service recently entered into an Interagency Service Agreement with the Air Force to prepare a Comprehensive Natural Resources Management Plan for Andersen Air Force Base, Guam. This plan will include specific recommendations regarding endangered species protection, habitat management, and wildlife-oriented recreation management. The Service recently stationed a biologist with the Division of Ecological Services on Guam to conduct a survey of the Mariana crow.

3. Existing DOD Natural Resources Management Programs on Guam

DOD installations on Guam have prepared natural resources management plans which outline specific activities to conserve these resources. Implementation of the plans is coordinated through existing cooperative agreements, inter-agency service agreements, and memoranda of understanding with other Federal agencies and with Guam DAWR.

The Air Force designated approximately 304 hectares (750 acres) of cliffline and forested land from Tagua Point to Anao Point as the Pati Point Natural Area in 1973. The Air Force recently established the Andersen Air Force Base Marine Resources Preserve (MRP) along 14 kilometers (9 miles) of northwestern beaches from the east end of Tarague beach, eastward around Pati Point and south to the base's

southeast property boundary. Seaward, the MRP includes the area from 20 meters (65 feet) landward beyond the mean high tide mark extending seaward to the point where spearfishing is unfeasible. DOD Legacy Program funds have been allocated for baseline studies of the marine resources in both areas. These studies will be conducted cooperatively by the University of Guam, Guam DAWR, and the Air Force Environmental Division staff.

Andersen Air Force Base (AFB) has contracted with the Service for the preparation of a Comprehensive Natural Resources Management Plan as detailed above under Service programs. Andersen AFB's Environmental Office currently oversees research programs including predator exclusion studies, feral game control, habitat management, and Mariana crow recovery. The Environmental Office staff rely upon Guam DAWR and surveys to guide resource management decisions. Other Air Force management programs include public hunting programs, law enforcement, and cultural and historic resource management programs.

Programs on U.S. Navy facilities include ongoing monitoring programs for endangered Mariana crows and Mariana fruit bats. Naval Magazine has a program for reforestation and public access. The Haputo Ecological Reserve Area and the Orote Ecological Reserve Area were designated for the protection and enhancement of marine resources.

D. Social and Cultural Environment

1. General Social and Cultural Environment

The Mariana Islands were originally settled by people whose ancestors probably originated from insular Southeast Asia. The Chamorros lived in villages of 50 to 600 people located along the coast and river valleys of the south end of the island. Garden crops and fishing, supplemented by foraging and hunting, were the basis of the subsistence economy in a society that may have been based partially on the division of labor and land ownership. A "chief" controlled access to and utilization of the land (Nolan 1979).

The arrival of Ferdinand Magellan in 1521 began a long history of Spanish influence. Guam was claimed for Spain in 1565 by Miguel Lopez de Legaspi who named the archipelago after Queen Mariana of Spain. For nearly 250 years, Guam served as a provisioning port for galleons carrying silver from Mexico bound for the Philippines and returning to Spain with exotic items from the Orient. A Spanish outpost was established on Guam to protect the galleons at port (Nolan 1979).

Beginning in 1668, the Spanish established churches and missions in an attempt to promote Christianity and counteract traditional beliefs. Efforts by the Spanish to control the Chamorro people was met with resistance and rebellion. After 25 years of intermittent warfare, a Chamorro-Spanish peace was reached by 1698. This era of Spanish colonization and religion had a profound influence on the traditional Chamorro culture and influences the local culture to this day.

Through the years, epidemics, wars, and natural disasters have had devastating effects on Guam's human populations. The prehistoric population, estimated at 40,000 to 100,000 people, had dropped to 1,500 by 1783. The original settlers are believed to have intermarried with Spaniards, Mexicans, and other nationalities providing Guam with a rich multi-racial heritage.

Guam was ceded by Spain to the United States in 1898 at the end of the Spanish-American War, terminating the Spanish period on Guam (Nolan 1979). The U.S. Navy began administering Guam after the Spanish-American War. Though English became the official language, Chamorro remained the dominant language and is widely spoken today.

The culture of Guam has undergone additional change in this century. During the three-year wartime occupation of Guam by the Japanese (1941-1944), the people were again often forced to move and subjected to forced labor. After the U.S. liberated Guam from Japanese occupation, much of the island was controlled for national security purposes and administered by the DOD. The DOD government was replaced with a civilian government in 1946. Efforts to gain political control by residents resulted in an Organic Act in 1950, at which time all Chamorros became U.S. citizens.

Today Guam is the largest and most populated of the Mariana Islands. It has had the longest and most extensive contact with the outside world of any Micronesian island. Guam's population is estimated at approximately 126,000 people including 24,000 U.S. active duty military personnel and their dependents. Guam's local population is characterized by a mix of nationalities. It is estimated that Chamorros constitute the largest ethnic group, with Filipinos, Chinese, Koreans, Japanese, Micronesians, and Caucasians making up the balance of the population. Public facilities on Guam include an international airport, hospitals, schools, a university, residential subdivisions, a well-developed deep-draft harbor, an extensive road system, and a large economic center.

Like many Pacific islands, there is a revitalized interest in Chamorro cultural traditions and beliefs. There is also a political movement in Guam to obtain Commonwealth status.

2. Archaeological and Historical Resources

The prehistoric period is divided into the pre-*latte* and *latte* periods. A *latte* is a pillar of volcanic stone or coral topped with a separate hemispherical capstone. These structures are generally believed to be the supporting structures for houses and are usually found in parallel rows of like number, length, and height. The *latte* period probably extended from 500-800 A.D. until the 1600's.

Many sites of archaeological and historical significance, including sites listed on the National Register of Historic Places, may be found within the areas under study for Refuge establishment. The administration and management of these unique resources on the Refuge would be the responsibility of the underlying landowner.

Archaeological and historical resources at Ritidian Point would be the responsibility of the Service if Ritidian Point were to be transferred to the Service. To date, no intensive archaeological surveys have been conducted by the Service of Ritidian Point. However, reviews by the Guam State Historic Preservation Office, discussions with the Navy Archaeologist, and literature reviews indicate the presence of significant cultural sites at Ritidian Point, including two sites listed on the Guam Historic Register. Prior to any development project, a detailed archaeological survey would be carried out. If any cultural resources were revealed prior to or during construction activities, these activities would be halted and a qualified archaeologist would be consulted. Any proposed project would be designed and built to avoid significant historical and cultural deposits.

3. Public Education and Scientific Research

There are few public education programs related to natural resources on DOD lands on Guam, and most opportunities are restricted to military personnel and their dependents. Opportunities for scientific research are available on a limited basis on DOD lands and Government of Guam Conservation Areas.

4. Recreational Programs

Recreational activities such as hiking, fishing, and picnicking are enjoyed by the military on a limited basis within DOD installations. Fishing, hunting, and hiking are available to military personnel, dependents, civilian employees, and retirees at most bases where resources are adequate to support these activities.

General public use at certain bases is provided several times a year for boonie-stomps, athletic events, and other activities. At other times, general public access to these areas is strictly regulated for public safety and DOD security reasons. Certain lands like Masso Reservoir, Acfalle Beach, and Tanguisson Beach have been leased or licensed to the Government of Guam for public uses. The Navy is currently discussing a license to Government of Guam for the use of a portion of Ritidian as a public recreation area.

At certain times, a limited amount of public hunting is allowed on designated areas of Andersen Air Force Base. Public fishing is allowed in waters offshore from Andersen Air Force Base and off of all Naval installations with the exception of certain areas, such as the ammunition wharf in Apra Harbor. Public hiking, hunting, and fishing are allowed on Government of Guam Conservation Areas.

5. Public Use of the Study Area

Public access to DOD installations has been strictly regulated for public safety and DOD security reasons. There is currently no general public access to lands on DOD bases. The Government of Guam, the DOD, and the Service are working together to resolve public access along Route 3A and to the former Naval Facility at Ritidian Point. We anticipate that the public access issue will be resolved through negotiations for the proposed license to Government of Guam for public use at the former Naval Facility. Any future licenses for the use of buildings or property would require formal consultation with the Service under Section 7 of the Endangered Species Act. Public use of Guam Conservation Areas is less restricted than on DOD lands.

6. Access to Private Lands

Three parcels of privately owned land are adjacent to and surrounded by DOD lands under consideration for the proposed Refuge. Landowner access has been restricted by the military, however, the DOD has recently allowed a greater degree of access to these parcels. A Memorandum of Understanding was executed in February 1992 between the

private landowners of the Jinapsan Basin area and the DOD to establish a foundation for future access to this area. The Air Force currently allows access to the Castro family through Tarague Beach on Andersen Air Force Base. The Navy and Air Force allow access to the Artero family through Andersen Air Force Base and the former Naval Facility at Ritidian Point.

E. Economic Environment

1. General Land Ownership and Land Use on Guam

In the mid-1980's, about 47 percent of Guam's land was privately owned, 35 percent was under Federal jurisdiction, and 18 percent was administered by the Government of Guam (Young 1988). A total of 10,013 hectares (24,742 acres) of public lands were identified in the Guam Public Land Use Plan (Bureau of Planning 1984, as amended). In this plan, which has not been formally adopted by the Legislature, public lands were proposed for classification into 3 categories: development accounts for 2,835 hectares (7,006 acres); agriculture for 2,266 hectares (5,599 acres); and conservation for 5,099 hectares (12,599 acres). DOD lands in the study area are not included in the Guam Public Land Use Plan.

2. Land Ownership in the Study Area

All of the lands under consideration for the proposed Refuge are owned by either the Government of Guam or the Federal government. Private lands are not included in the proposal.

3. Land Use in the Study Area

There are no existing or planned privately owned commercial ventures or developments on lands under study for inclusion in the proposed Refuge, because the areas under consideration are either on DOD installations or are on Government of Guam conservation lands.

The primary mission of DOD agencies on Guam is to maintain U.S. combat readiness. DOD activities that are conducted on lands under consideration for inclusion in the proposed Refuge include training exercises, explosive ordinance detonation, and operations. Lands on DOD bases may be used for solid waste storage or disposal, wastewater treatment, harbors, airfields, and industrial, residential, medical, and administrative and logistical support operations. Recreational facilities on DOD bases include beach and picnic areas, golf courses, gymnasiums, and tennis courts. The DOD also manages natural resources on its lands.

The Government of Guam conservation areas under study are all zoned for conservation use.

Illegal land uses may be occurring on lands in the study area. These uses include trespass, illegal planting or harvesting, and wildlife poaching.

Proposed land uses by the DOD and the Government of Guam in the study area include the possible expansion of operational areas in response to the closure of Philippine bases and contaminant cleanup by the DOD. The Government of Guam is considering water development projects on the study area which encompasses the northern aquifer.

4. Land Use on Private Lands Surrounded by DOD Lands in the Study Area

Private lands that are surrounded by DOD lands under study for incorporation in the proposed Refuge are currently used for small-scale tourism ventures and private family use. Plans for the use of these privately owned lands range from limited family use to resort developments of varying sizes.

5. Local Economy

Gross business receipts in Guam for 1990 totalled approximately \$4.1 billion, an increase of 61 percent since 1988. Growth has been rapid in recent years; the 1988 receipts represented an increase of about 18 percent over 1987 and an increase of nearly 130 percent since 1980. The private business sector accounts for 35 percent of Guam's 1988 total gross business receipts. Other significant sectors are services (16 percent), construction (11 percent), and wholesale (2 percent). Agriculture, manufacturing, and transportation account for the balance of gross receipts.

DOD expenditures add considerably to Guam's private sector economic activities through indirect spending of DOD personnel, employment of civilian personnel, construction contracts, materials and services purchases, and refunding of Federal income taxes paid by DOD personnel. DOD expenditures on Guam totalled over \$327 million in 1990.

Over 59,000 people were employed on Guam at the end of 1990. Of these, 69 percent were employed in the private sector and 31 percent worked in the public sector. Trade and services dominate private sector employment. In the last five years, total private and public employment has risen by nearly 18,000, an increase of 58 percent. Unemployment rates are low and were estimated to be only 2.8 percent in 1991. The standard of living is relatively high. Guam has one of the

best deepwater harbors between Hawaii and the Philippines. With its strategic location, harbor, and airfields, Guam is assuming a growing importance for DOD and private trade activities in the western Pacific (Engbring 1991).

The driving force behind the recent acceleration in economic growth has been foreign interest in resort facilities on the island, largely from Pacific rim nations. The construction of hotels, golf courses, residential communities, office buildings, and condominiums has been accelerated by heightened foreign investment activities. The value of the 2,164 construction permits issued in 1990 was estimated to be \$486 million. The 37,159 land parcels within Guam's 549 square kilometers (212 square miles) were appraised at \$3.66 billion in 1990 (Bureau of Planning 1992).

No other economic activity contributes as much to Guam's economy as tourism. A study by the Guam Visitors Bureau estimated that tourism produced 13,000 direct and indirect jobs or about one-third of all private sector employment in 1985 (Engbring 1991). From 1985 to 1989, tourism arrivals have increased tremendously with an annual growth rate of up to 20 percent per year. Visitor arrivals to Guam in 1989 and 1990 exceeded the 1988 projected increases of 700,000 by 80,404 and 37,260, respectively. Visitor arrivals are expected to reach more than 1.5 million by the year 2000.

IV. ALTERNATIVES

A. Development of the Alternatives

1. Land Selection

A number of alternatives were developed with input from Federal agencies, Government of Guam agencies, private citizens, and other interested parties. To determine which lands the Service should include within the boundaries of the proposed Refuge, parcels were evaluated on the basis of their biological importance to endangered and threatened species, migratory birds, other native wildlife, and the conservation of biological diversity. Table 1 provides a list of the various land parcels considered for inclusion in the proposed Refuge.

Federal and Government of Guam lands that were identified as "essential habitat" in published recovery plans for endangered forest birds, waterbirds, and fruit bats were considered priority areas for protection. Other areas with outstanding conservation values that were considered for inclusion in the proposed Refuge included wetlands, migratory bird foraging and loafing areas, and sea turtle nesting beaches.

Select DOD lands considered for inclusion in the proposed Refuge included lands that have been protected from development or other disturbance and contain habitats considered essential to the recovery of endangered and threatened species. These DOD lands included native forests and native scrub on Andersen Air Force Base, Naval Communication Station at North Finegayan, Naval Magazine and Reservation at Fena Reservoir, former Naval Facility at Ritidian Point, Orote, and Public Works Center, Guam (former Federal Aviation Administration facility); and wetlands on Naval Station, Naval Supply Depot, and Public Works Center.

"Operational" areas on DOD installations considered for inclusion in the proposed Refuge included runways, urbanized areas, and residential areas. The inclusion of operational areas in the proposed Refuge was considered to have some logistical and administrative merit, but those areas would not be considered essential to wildlife management efforts on the proposed Refuge.

Government of Guam lands considered for inclusion in the proposed Refuge included the Bolanos Conservation Area, the Cotal Conservation Area, and the Anao Conservation Area. Falcona Beach, a proposed Government of Guam conservation area, was also considered for inclusion within the proposed Refuge because of its native limestone forest and endangered species habitats. Legislation is pending that could add additional lands to these conservation areas.

Based on comments by the Government of Guam on the June 1992 draft EA, the Service excluded some DOD lands from consideration. The Service excluded certain lands identified in the proposed Guam Excess Lands Bill (H.R. 4164, 102d Congress) including 654 hectares (1,616 acres) at Harmon Annex, 180 hectares (445 acres) at U.S. Naval Communication Station (South Finegayan), and portions of Andersen Air Force Base including 160 hectares (395 acres) at South Andersen. Other economically important DOD lands that do not have significant value to wildlife were not considered for inclusion in the proposed Refuge including Naval Air Station, portions of Naval Station and Andersen Air Force Base, Naval Communication Station (Barrigada), and several other smaller DOD facilities.

Public comments on the June 1992 draft EA were generally supportive of the concept of the proposed Refuge, but a common theme of the comments included opposition to a Refuge that encompassed approximately one-third of the island. To address this concern, the Service developed additional alternatives that were significantly smaller than the maximum-sized alternative of 18,275 hectares (45,156 acres) described in the June 1992 draft EA. The five alternatives

ultimately considered ranged in size and included approximately 16,322 hectares (40,331 acres), 11,489 hectares (28,389 acres), 9,800 hectares (24,215 acres), 150 hectares (371 acres), and 0 acres.

Guam DAWR recommended that certain offshore islets owned by the Government of Guam (Anae, Alutom, Agrigan, and Cocos) and by the DOD (Orote and Neye) be included in the proposed Refuge. These islets support seabird colonies. The inclusion of offshore islets into the proposed Refuge would be made on a case-by-case basis based on negotiations with the Government of Guam and the affected DOD installation.

A number of alternatives were eliminated from consideration including: (1) Refuge establishment on private lands; (2) Refuge establishment on select DOD lands, but excluding the former Naval Facility at Ritidian Point; and (3) Refuge establishment to include offshore land and islets only. The reasons the Service did not consider these alternatives are discussed below.

Certain privately owned parcels contain essential habitat for a number of endangered and threatened species including forest birds, fruit bats, and sea turtles. A significant amount of nearly pristine native forest is found on private lands, particularly on the parcels owned by the Artero, Aguero, and Castro families located at Urunao, Ritidian, and Jinapsan basins, respectively. The acquisition of private lands was not considered in the proposal because the focus of the proposed Refuge was limited to lands owned by the Government of Guam and the Federal government. The Service would consider the inclusion of private lands in a proposed Refuge in the future should the landowners become willing sellers.

In developing the alternatives, the Service did not consider eliminating the former U.S. Naval Facility at Ritidian Point from the proposed Refuge because of its value to wildlife and as a potential Refuge headquarters.

The inclusion of Government of Guam conservation areas in the proposed Refuge did not receive a positive Federal Consistency Determination from the Guam Coastal Management Program. Upon the approval by the appropriate Government of Guam authority to include Government of Guam lands in the Refuge, the Service will seek the Federal Consistency Determinations from the Guam Coastal Management Program.

2. Submerged Lands

The Service considered including submerged lands offshore from select DOD lands in the proposed Refuge to protect

foraging and nesting habitat of the threatened green sea turtle (*Chelonia mydas*) and the endangered hawksbill sea turtle (*Eretmochelys imbricata*), and other trustee resources dependent on these areas. Reef flats used as foraging habitat by migratory shorebirds would also be protected. Including offshore areas in the proposed Refuge could allow the Service to contribute to the Government of Guam's and the DOD's ongoing management of important biological, economical, and recreational marine resources.

The Service decided to exclude submerged lands within Apra Harbor from the proposed Refuge because of potential conflicts with commercial harbor traffic and DOD operations. However, the relatively large shallow shoals (Jade, Western, and other unnamed shoals) within Apra Harbor provide important foraging habitat for green and hawksbill sea turtles. Endangered hawksbill turtle nesting has been reported from a site within Apra Harbor. These endangered species resources would be protected through the Section 7 review process rather than under the umbrella of the proposed Refuge.

The four submerged lands options differed from one another in the location and extent of submerged lands considered for inclusion in the proposed Refuge. The options were: Option 1. Include submerged lands to 4.8 kilometers (3 miles) offshore from certain DOD lands (estimated to include 25,195 hectares or 62,255 acres); Option 2. Include submerged lands to the 30-meter (100-foot) depth contour from certain DOD lands (estimated to include 1,321 hectares or 3,265 acres); Option 3. Include submerged lands only within marine preserves (estimated to include 566 hectares or 1,399 acres); and Option 4. Do not include submerged lands.

The Option to include submerged lands to the 4.8-kilometer (3-mile) limit (Option 1) was developed to provide trustee resource protection to the full extent of Territorial waters. The Option of including submerged lands to the 30-meter (100-foot) isobath (Option 2) was developed to protect foraging and loafing habitat of sea turtles along the reef slope and to protect the approaches to nesting beaches for female sea turtles, while reducing potential constraints to commercial and other economic interests.

The Option of including existing marine preserves (Option 3) was developed because those areas had been identified as having biological resources worthy of special protection. These marine conservation areas included the Haputo Ecological Reserve Area, the Orote Point Ecological Reserve Area, and the Andersen Air Force Base Marine Resources Preserve.

There is a dispute by the Government of Guam over the Federal government's claim to jurisdiction of submerged lands adjacent to DOD facilities. The legal resolution of this dispute lies outside of the Service's authority in establishing the proposed Refuge. Including submerged lands in the proposed Refuge recognizes the importance of these marine habitats for the protection of endangered and threatened sea turtles, migratory seabirds, and other marine resources. Under the selected Option, the Guam DAWR would retain the management of the local fisheries resources within submerged lands areas in cooperation and consultation with the Service and the National Marine Fisheries Service (NMFS).

The inclusion of submerged lands did not receive a positive Federal consistency determination from the Guam Coastal Management Program. Upon the approval by the appropriate Government of Guam authority to include Government of Guam lands in the proposed Refuge and upon the resolution of the issue of ownership of submerged lands, the Service will seek the Federal consistency determinations from the Guam Coastal Management Program.

3. Former U.S. Naval Facility at Ritidian Point

The former U.S. Naval Facility at Ritidian Point contains significant habitats for endangered forest birds, endangered fruit bats, threatened green sea turtles, and a number of migratory seabirds and shorebirds. Endangered Mariana crows nest within the Ritidian basin, endangered Mariana fruit bats forage in the area, and threatened green sea turtles nest on the beaches. Introduced deer and pigs also occur in the forested areas. In addition to beaches, native coastal strand habitat, and coastal coconut forest, native limestone forest and caves are found at Ritidian Point.

The former U.S. Naval Facility at Ritidian Point was listed as excess to the mission of the U.S. Navy. Because of its high value for migratory birds and endangered and threatened species, its prime location for public use, and availability of structures for educational and administrative facilities, the Service will seek the transfer of Ritidian Point in accordance with procedures promulgated in the General Services Administration Act. Title transfer would be requested for the management of migratory bird species and endangered and threatened species under the authority of the "Transfer of Certain Real Property for Wildlife Conservation Purposes Act of 1948" (16 U.S.C. 667d, PL 80-537). This Act provides for the transfer of real property no longer needed by a Federal agency to the Secretary of the Interior if the land has particular value for migratory birds.

Pending the final disposition of the former Naval Facility at Ritidian Point, it is the Service's understanding that the Navy will administer these lands through license agreements. The Service anticipates that the issues over public use of, and access to, Ritidian Point will be addressed under the pending license agreement being negotiated between the Government of Guam and the DOD. The Service is working with the DOD to insure that endangered and threatened species are protected from the public use of a portion of Ritidian Point. The Service intends to develop and implement compatible public use programs at Ritidian Point that will provide the local residents and visitors to Guam increased opportunities to enjoy the wildlife and scenic values of the area, while protecting endangered and threatened species and habitats.

B. Alternatives

1. Alternative 1. Under this Alternative, a Refuge would be established on certain DOD lands (including operational areas), including the former U.S. Naval Facility at Ritidian Point, and certain Government of Guam lands (Figure 2).
 - a. The Refuge would be established on certain DOD lands and would include operational areas. Management would focus on areas considered to contain essential habitats for endangered and threatened species. Cooperative agreements developed among the Service, Guam DAWR, and the DOD would provide for the coordination of biological monitoring, endangered species recovery, brown tree snake control, research, technical assistance, public hunting, and other management programs on the Refuge.
 - b. The former U.S. Naval Facility at Ritidian Point would be administered by the Service as a unit of the National Wildlife Refuge System and managed for the benefit of endangered and threatened species. Ritidian Point would serve as a Refuge headquarters and site for an educational center.
 - c. Certain Government of Guam lands would be included in the Refuge. The Government of Guam would retain ownership and cooperative agreements between the Service and Guam DAWR would be developed to coordinate management activities.

- d. Cooperative agreements developed among the Service, Guam DAWR, and the DOD would provide the coordination and direction for biological monitoring, endangered species recovery, brown tree snake control, research, technical assistance, and other management programs on the Refuge.
 - e. Public funds could be expended for the establishment, operation, and maintenance of the Refuge.
 - f. Alternative 1 resulted in a proposed Refuge size of approximately 16,322 hectares (40,331 acres).
2. Alternative 2. This is the Service's preferred Alternative. Under this Alternative, a Refuge would be established on certain DOD lands (excluding operational areas), including the former U.S. Naval Facility at Ritidian Point, and certain Government of Guam lands (Figure 3).
- a. The Refuge would be established on certain DOD lands. Management would focus on areas considered to contain essential habitats for endangered and threatened species. Cooperative agreements developed among the Service, Guam DAWR, and the DOD would provide for the coordination of biological monitoring, endangered species recovery, brown tree snake control, research, technical assistance, public hunting, and other management programs on the Refuge.
 - b. Operational areas excluded from the proposed Refuge would be managed through technical assistance agreements between the Service and the DOD on a case-by-case basis.
 - c. The former U.S. Naval Facility at Ritidian Point would be administered by the Service as a unit of the National Wildlife Refuge System and managed for the benefit of endangered and threatened species. Ritidian Point would serve as a Refuge headquarters and site for an educational center.
 - d. Certain Government of Guam lands would be included in the Refuge. The Government of Guam would retain ownership and cooperative agreements between the Service and Guam DAWR would be developed to coordinate management activities.
 - e. Public funds could be expended for the establishment, operation, and maintenance of the Refuge.
 - f. Alternative 2 would result in a proposed Refuge size of approximately 11,489 hectares (28,389 acres).

3. Alternative 3. Under this Alternative, a Refuge would be established on certain DOD lands (excluding operational areas), including the former U.S. Naval Facility at Ritidian Point, but excluding Government of Guam lands (Figure 4).
 - a. A Refuge would be established on certain DOD lands. Management would focus on areas considered to contain essential habitats for endangered and threatened species. Cooperative agreements developed among the Service, Guam DAWR, and the DOD would provide for the coordination of biological monitoring, endangered species recovery, brown tree snake control, research, technical assistance, public hunting, and other management programs on the Refuge.
 - b. Operational areas excluded from the Refuge would be managed through technical assistance agreements between the Service and the DOD on a case-by-case basis.
 - c. The former U.S. Naval Facility at Ritidian Point would be administered by the Service as a unit of the National Wildlife Refuge System and managed for the benefit of endangered and threatened species. Ritidian Point would serve as a Refuge headquarters and site for an educational center.
 - d. Public funds could be expended for the establishment, operation, and maintenance of the Refuge.
 - e. Alternative 3 resulted in a proposed Refuge size of approximately 9,800 hectares (24,215 acres).
4. Alternative 4. Under this Alternative, a Refuge would be established at the former U.S. Naval Facility at Ritidian Point. Natural resources on certain DOD and Government of Guam lands would be managed through cooperative agreements (Figure 5).
 - a. The former U.S. Naval Facility at Ritidian Point would be administered by the Service as a unit of the National Wildlife Refuge System and managed for the benefit of endangered and threatened species. Ritidian Point would serve as a Refuge headquarters and site for an educational center.
 - b. Management of wildlife resources on DOD lands would be through cooperative agreements among the Service, the DOD, and the Government of Guam.
 - c. Public funds could be expended for the establishment, operation, and maintenance of the Refuge.

- d. Alternative 4 resulted in a proposed Refuge size of approximately 150 hectares (371 acres).
5. Alternative 5. No Action. Under this Alternative, a Refuge would not be established on Guam.

Under this Alternative the Service would not take any further action to establish a Refuge on Guam. If a Refuge is not established on Guam, endangered species protection and recovery and other wildlife resource management programs would need to be carried out under existing Cooperative Agreements among the Service, the DOD, and Guam DAWR. Additional special management options for endangered species habitats on DOD lands would be limited. There would be no expenditure of Federal funds for Refuge establishment, operation, or maintenance.

Other Federal agencies, such as the National Park Service or DOD agencies could undertake additional habitat protection and wildlife management programs on Guam under their mandates to protect endangered species.

The Marianas Audubon Society is the only nonprofit organization on Guam with a stated interest in the protection and conservation of Guam's wildlife. The Marianas Audubon Society or international and national conservation organizations such as the National Audubon Society, The Nature Conservancy, or the World Wildlife Fund could attempt to initiate wildlife habitat protection and management efforts on privately owned lands on Guam.

C. Submerged Lands Options

1. Option 1. This Option included submerged lands offshore from certain DOD lands to 4.8 kilometers (3 miles) (Figure 6). This included an estimated 25,195 hectares (62,255) acres of submerged lands.
2. Option 2. This is the Service's preferred Option. The Service is proposing to include submerged lands offshore from certain DOD lands to the 30-meter (100-foot) isobath (Figure 7). This includes an estimated 1,321 hectares (3,265 acres) of submerged lands.
3. Option 3. This Option included submerged lands only within established DOD and Government of Guam marine conservation areas (Figure 8). This included an estimated 566 hectares (1,399 acres) of submerged lands.
4. Option 4. No action. This Option excluded submerged lands from the proposed Refuge.

V. ENVIRONMENTAL CONSEQUENCES OF THE ALTERNATIVES AND OPTIONS

This section provides an evaluation of the Alternatives and Options considered by the Service. "Environmental Consequences" refers to the physical, biological, social, cultural, and economic impacts of the proposed project. A summary of these effects may be found in Table 2.

A. Effects on the Physical Environment

The Service does not plan to undertake any substantial or significant cumulative modifications to the physical resources within the proposed Refuge. Since the proposed Refuge would be secondary to the DOD's mission, however, there remains the potential that the DOD may propose large development projects within the boundaries of the proposed Refuge. Informal discussions with DOD planners regarding potential future uses of lands identified as having important habitats for endangered and threatened species indicate a low likelihood of significant development projects on lands targeted for inclusion in the proposed Refuge. Therefore, the Service anticipates few, if any, adverse effects of any of the Alternatives upon the physical resources within the proposed Refuge boundaries.

Establishment of the proposed Refuge would increase the protection of certain physical resources such as freshwater supplies and soil. The degree of protection would depend upon the alternative selected. For example, the selection of Alternatives 1, 2, and 3 would help maintain groundwater quantity and quality underlying northern Guam by protecting large tracts of forested habitat from alteration. The protection of large acreages of forest would allow the continued percolation of rainfall into the northern lens and would maintain the recharge capacity of this important aquifer. While the bulk of native forests on DOD and Government of Guam lands would be managed under cooperative agreements under Alternatives 4 and 5, the forests that maintain the recharge of the northern lens would not be brought under the umbrella of the Refuge. Since the northern aquifer is the primary source of water for Guam, the reduction in the recharge rate or degradation of quality would have severe impacts on Guam. Under the assumption that there would be little significant change in the amount of forest in northern Guam because of limited DOD development, there is little difference in groundwater recharge and quality among the proposed alternatives. However, by specifically protecting forests overlying the northern lens, Alternatives 1, 2, and 3 signify the recognized importance of the value of the northern aquifer. In addition, the formal protection of the forests overlying the northern lens would preclude other future land uses that may degrade groundwater quality.

The quality of surface waters that feed into Fena Reservoir and streams in southern Guam that drain the proposed Refuge would

benefit from the conservation of forests under Alternatives 1 and 2, to a lesser degree under Alternative 3, and not at all under Alternatives 4 and 5. Alternative 3 provides less protection to surface water quality in streams because the Bolanos Conservation Area is not included. The Bolanos Conservation Area is part of the watershed for the Ugum River, which has a surface water diversion to augment domestic water supplies.

Whether or not military operational areas are included in the Refuge, these areas will continue to have the potential to adversely affect the quality of certain physical resources, such as water quality, as a result of activities carried out in these areas. Operational areas will continue certain industrial and construction activities that could potentially affect physical resources.

The impacts of including submerged lands on marine water quality are a function of the selected option. The Service does not plan to undertake substantial or significant cumulative modifications to submerged lands within the proposed Refuge. Since the proposed Refuge is secondary to the DOD mission, there remains the potential that the DOD may propose significant development projects within the boundaries of the submerged portions of the proposed Refuge. However, informal discussions with the DOD regarding the future uses of submerged lands identified as significant habitats for endangered and threatened species indicate a low likelihood of large development projects in these habitats.

B. Effects on the Biological Environment

Alternative 1 incorporates the areas identified as essential habitat on certain DOD and Government of Guam lands for the Mariana crow, the Guam Micronesian kingfisher, the Guam broadbill, the Guam bridled white-eye, and the Mariana fruit bat. This Alternative also includes the only two known active nesting caves for the Vanikoro swiftlet on Guam and wetlands located on DOD lands that support the endangered Mariana common moorhen. Nesting beaches of the threatened green sea turtle along northern Guam would also be protected under this Alternative. The protection of essential habitats would be consistent with the recovery plans for the Mariana common moorhen, the Vanikoro swiftlet, the Mariana crow, the Guam Micronesian kingfisher, the Guam broadbill, the Guam bridled white-eye, and the Mariana fruit bat.

However, operational areas do not provide significant habitats for endangered, threatened, migratory or native species and the relatively large land area of Alternative 1 does not necessarily translate into greater protection for listed species and their habitats. Essential habitats at South Finegayan and Harmon Annex for endangered forest birds and fruit bats were excluded from

Alternative 1 because of their inclusion in the Guam Excess Lands Bill (H.R. 4164).

Alternative 2, though smaller in acreage, is similar to Alternative 1 in terms of benefits to wildlife. Alternative 2 incorporates the areas identified as essential habitat on military and certain Government of Guam lands for the Mariana crow, the Guam Micronesian kingfisher, the Guam broadbill, the Guam bridled white-eye, and the Mariana fruit bat. This Alternative also includes active nesting caves for the Vanikoro swiftlet and the wetlands located on military lands that support the Mariana common moorhen. Nesting beaches for the green sea turtle along northern Guam would also be protected under this alternative. The protection of essential habitats would be consistent with the recovery plans for the Mariana common moorhen, the Vanikoro swiftlet, the Mariana crow, the Guam Micronesian kingfisher, the Guam broadbill, the Guam bridled white-eye, and the Mariana fruit bat. Essential habitats at South Finegayan and Harmon Annex for endangered forest birds and fruit bats were excluded from this alternative because of their inclusion in the Guam Excess Lands Bill (H.R. 4164).

The selection of Alternative 3 would exclude Government of Guam conservation lands (Anao, Cotal, and Bolanos Conservation Areas and Falcona Beach) from the proposed Refuge. Both Falcona Beach and Anao Conservation Area are identified as containing essential habitat for the Mariana crow, the Guam Micronesian Kingfisher, the Guam broadbill, the Guam bridled white-eye, and the Mariana fruit bat. The Cotal and Bolanos Conservation Areas are identified as essential habitat for the Mariana fruit bat. Selection of Alternative 3 would result in a decrease in the amount of area protected by the proposed Refuge as compared with Alternatives 1 and 2. However, the Anao, Cotal, and Bolanos Conservation Areas have been designated by the Government of Guam. Since these lands are already owned by the Government of Guam and designated as conservation areas, exclusion of these parcels from the proposed Refuge would not necessarily decrease the level of protection already afforded these lands by the Government of Guam.

Alternative 4 alone would not likely meet the recovery goals for several listed species including the Mariana crow, the Guam Micronesian kingfisher, the Guam broadbill, the Guam bridled white-eye, the Mariana fruit bat, the Vanikoro swiftlet, and the Mariana common moorhen, without special agreements with the military commands to protect the lands identified as essential habitat for these species. Ritidian Point alone does not provide enough habitat or include a significant portion of essential habitat to insure the long-term maintenance of endangered species. Alternative 4 would contribute to the recovery of the green sea turtle by protecting nesting beaches at Ritidian Point.

Alternative 5 (no action) would not necessarily result in additional special management of endangered species. Under the no action Alternative, existing management and research activities undertaken by the Guam DAWR and the DOD would not be complemented by the establishment of a Refuge. There would be fewer opportunities for expanded management and recovery work by the Service, Guam DAWR or the DOD, both individually or cooperatively. The long-term protection of essential habitats and the special management of endangered species on DOD lands would not likely be met under this Alternative.

For Options 1, 2, 3, and 4, the Service considered incorporating submerged lands into the proposed Refuge. The inclusion of submerged lands in the proposed Refuge would benefit endangered and threatened species of sea turtles, migratory seabirds and shorebirds, and other fishery resources. However, the direct benefits to listed sea turtles by including submerged lands to 4.8 kilometers (3 miles) offshore from certain military facilities (Option 1) is not known since the habitat requirements of sea turtles between nesting periods is not well defined.

Under Option 2, protection to sea turtles would be confined to within the 30-meter (100-foot) depth contour to protect foraging habitat and the approaches to nesting beaches.

Option 3 would not provide protection to the major nesting beach at Ritidian Point since this area is not within an existing marine preserve.

Option 4 would not provide specific protection to nesting and foraging habitat for sea turtles. By not including submerged lands, the Service and the Guam DAWR would not be able to recover sea turtles by protecting nesting beaches. By not including nesting beaches, Options 3 and 4 are similar in that the single most important management action necessary for the recovery of green sea turtles could not be accomplished.

C. Effects on Wildlife and Habitat Management Programs

Wildlife management programs would benefit from the increased cooperation among the Service, Guam DAWR, and DOD under the umbrella of the proposed Refuge. The Service plans to maintain a resident staff on Guam to coordinate and conduct wildlife management, research, educational, and public use programs in cooperation and coordination with the Guam DAWR and the DOD. Biological monitoring, wildlife population and habitat enhancement and recovery programs, and brown tree snake control and eradication programs would be developed, coordinated, and implemented by the cooperating agencies within the framework of cooperative agreements. Refuge establishment would enable the Service to implement additional research and endangered species recovery programs. Law enforcement activities would continue and

would be conducted in conjunction with DOD and Guam DAWR. Management activities on DOD lands would be consistent with natural resource management plans prepared for the DOD installations.

The ongoing research and management programs for endangered species on military lands currently conducted by the Guam DAWR could continue with assistance and support from the Service once the proposed Refuge was established. The Service anticipates that Guam DAWR will play an important role in defining and focusing the management and research priorities regarding endangered species within the proposed Refuge. The roles and responsibilities for management activities by the Service, the Guam DAWR, and the DOD within the proposed Refuge would be formalized through separate interagency cooperative agreements. Similarly, the roles of each agency in game and wildlife law enforcement on the proposed Refuge would be formalized through these agreements. Cooperative agreements with the Service would recognize the primary defense-related purpose and mission of each DOD installation.

The public hunting programs on DOD lands that are part of the proposed Refuge would continue. Because of the impacts to native forests from feral pigs, there is the likelihood that public hunting opportunities on the proposed Refuge would be expanded. The responsibility for administration of public hunting programs would be coordinated in the cooperative agreements among the Service, the DOD, and Government of Guam.

On submerged lands, primary management of nearshore fishery resources would remain the responsibility of Guam DAWR. The Service would coordinate with the Guam DAWR and NMFS to insure that fishing and other activities are compatible with the conservation of threatened and endangered sea turtles and their habitats. This coordination could include examining the effect of gill-net fishing on snaring and drowning sea turtles that are foraging or coming ashore to lay eggs.

D. Effects on the Social and Cultural Environment

1. Effects on the General Social and Cultural Environment

Establishment of a Refuge would likely have a beneficial effect on the general social and cultural environment of Guam. Through public education programs and increased opportunities to experience protected natural areas, the public would gain an appreciation for Guam's unique natural and cultural history. A Refuge would not alter the characteristics of Guam's local communities.

2. Effects on Archaeological and Historical Resources

Archaeological and historical resources included in the boundaries of the proposed Refuge would receive additional protection under Service policies that seek to protect and preserve any significant sites on Refuges. As a management element of the proposed Refuge at Ritidian Point, an archaeological survey could be completed to determine the nature and extent of these resources, and an historical and cultural resources management plan would be developed to insure the protection and enhancement of these resources prior to any physical alterations on the proposed Refuge.

3. Effects on Public Education and Scientific Research

Establishment of a Refuge would likely increase opportunities for scientific research in the study areas through increased funding, interagency coordination, and wildlife and habitat protection and recovery programs. Opportunities for public education through compatible public use programs would be increased on the proposed Refuge.

4. Effects on Recreational Programs

If a Refuge were to be established, the Service would assume the license to the Government of Guam for the proposed beach park at Ritidian Point. Because the proposed park involves Federal land, it must comply with Section 7 of the Endangered Species Act.

A common goal of the Navy, the Government of Guam, and the Service is to insure that any proposed public use of the Refuge is managed to protect endangered and threatened species and their habitats. Special conditions may be incorporated within the proposed license to meet this shared goal. On areas that are included in the Refuge, any uses of the Refuge would be subject to a Refuge compatibility determination and approved through issuance of Special Use Permits. Recreational uses of DOD lands would be subject to DOD safety and security clearance.

5. Effects on Public Use of the Study Area

A Refuge on Guam would provide increased opportunities for the local residents and visitors to enjoy natural and cultural resources on areas that are currently restricted to the general public. Natural resources management plans and Refuge management plans would include compatible public use programs. Compatible public uses on refuges include such activities as public recreation, nature interpretation, education, and research. Potential public use activities include hiking programs, public hunting programs, limited

traditional herbal gathering for personal or educational use, and public fishing in waters offshore from the proposed Refuge.

Certain areas within the Refuge may be closed to public access for the protection of endangered species or for reasons of public safety or military security. Access to such restricted areas for scientific study or resource management would be coordinated with and be performed under the permission of the appropriate agency. Requests for access would be coordinated by the Refuge manager with the appropriate DOD or Government of Guam agency.

6. Effects on Access to Private Lands

Access by private landowners across the proposed Refuge would be subject to Refuge compatibility determinations by the Service in addition to Section 7 consultations. The Section 7 consultation would not be any different from the current legal requirements under the Endangered Species Act and is generally a more rigorous scrutiny than the Refuge compatibility determination. The Service would work with the affected private landowners in resolving the private lands access issue in accordance with Service policy.

E. Effects on the Economic Environment

1. Effects on General Land Ownership and Land Use on Guam

Because the Service is only considering including public lands within the proposed Refuge, there would be no change in overall land ownership with respect to Federal ownership of lands on Guam. The inclusion of certain DOD lands, Ritidian Point, and submerged lands in a Refuge would increase the percentage of land on Guam that is designated for conservation purposes.

2. Effects on Land Ownership in the Study Area

The proposed project would not affect land ownership in the majority of the study area. If a Refuge were to be established at Ritidian Point, the Service would apply to the General Services Administration to have title transferred. Thus, land ownership at Ritidian Point would transfer from the Navy to the Service.

3. Effects on Land Use in the Study Area

There would be no dislocation of existing businesses or other commercial activities on lands proposed for inclusion in the proposed Refuge. Any future commercial activities on

the proposed Refuge would need to be compatible with the purposes for which the Refuge was established.

The establishment of a Refuge may represent an opportunity cost by preventing urban or agricultural development of native forest lands currently owned by the DOD. Lands that are preserved in perpetuity for wildlife and public uses would not be available for commercial development and the future economic benefits from developing these lands would not be realized. However, the potential development of important native forest lands owned by the DOD, even without the protective umbrella of a Refuge, is not likely given the restrictions of the Endangered Species Act upon DOD lands. Urban and agricultural development of DOD lands that support listed species would still remain constrained by the application of the Endangered Species Act. While the establishment of the Refuge could result in an opportunity cost, large acreages of Federal lands with significant development potential are not included within the proposed Refuge. These lands include the Naval Air Station, South Finegayan, Harmon Annex, South Andersen, Naval Communication Station (Barrigada), and operational areas at Naval Station and Andersen Air Force Base.

The Service is proposing an overlay Refuge on DOD lands used for active military programs. Under this designation, the Service would recognize the primary defense-related mission of the DOD installations. Alternative 1, which included operational areas, could unnecessarily constrain military activities. Alternatives 2 and 3 would result in fewer constraints than Alternative 1, whereas wildlife management through cooperative agreements only, as proposed in Alternative 4, would result in the lowest level of constraints to military activities. However, Alternatives 2 and 3 would also benefit the DOD by augmenting natural resources management on DOD installations, and would assist the DOD with maintaining compliance with their environmental mandates. The Service anticipates that costs for wildlife management would be shared among agencies.

4. Effects on Land Use on Private Lands Surrounded by DOD Lands in the Study Area

The establishment of the Refuge would not necessarily represent an opportunity cost to private landowners because the Service would not have regulatory powers beyond Refuge boundaries. The establishment of a Refuge does not necessarily preclude development of private lands. Development of private lands would be regulated by Federal and Government of Guam laws that are external to the establishment of the proposed Refuge.

The Federal review of development projects on private lands that require Federal approvals or funds (such as right-of-entry permits issued by the Navy or the Air Force) would not be directly affected by the establishment of the Refuge. For projects on private lands that require Federal authorizations or use Federal funds and that affect listed species, the DOD is required to consult with the Service under Section 7 of the Endangered Species Act regardless of the presence of a Refuge. This fundamental review and consultation and the concerns for listed species on private lands affected by a Federal action would occur with or without the establishment of a Refuge. For example, the Service's concern for loss of endangered species habitats from large-scale resort development on private lands on northern Guam exists even without the presence of the proposed Refuge. The establishment of the Refuge would have a neutral effect on the development on private lands because the required consultation between the Service and DOD for projects on private lands that involve Federal authorizations or funds would still exist. However, the establishment of a Refuge on Guam may provide for closer coordination among the Service, DOD, Government of Guam, and private landowners, and therefore, could positively contribute to the resolution of the issue of access to private lands in northern Guam.

Development projects on private lands that do not involve Federal lands, funds, or authorizations would not be subject to consultation by the Service under Section 7 of the Endangered Species Act. However, private landowners would still be prohibited from the taking (harassing, harming, pursuing, hunting, shooting, wounding, killing, trapping, capturing, or collecting, or attempting to engage in such conduct) of listed species under Section 9 of the Endangered Species Act. The prohibitions against the taking of endangered and threatened species are not related to the establishment or operation of the proposed Refuge. Development projects on private lands would still be subject to local approvals by the Government of Guam. While the Government of Guam may seek comments from the Service on such a proposal, the acceptance of the Service's recommendations would be at the discretion of the local regulatory agencies.

5. Effects on the Local Economy

The direct economic benefits to the Government of Guam from establishing the proposed Refuge are a function of the allocation of Federal funds to manage the Refuge. The lands affected by the proposed Refuge are owned by the Government of Guam or the Federal government. These lands are not assessed a property tax by the Government of Guam. Thus,

there would be no direct loss or gain of property tax revenues to the Government of Guam resulting from the establishment of the proposed Refuge.

In the event that certain DOD lands are acquired by the Service through transfer by the GSA, the Service would provide payments to the Government of Guam under the Refuge Revenue Sharing Act (16 U.S.C. 715s). For acquired lands, the Service would pay the greater amount calculated on the basis of three-fourths of one percent of the appraised value, 75 cents per acre, or 25 percent of the net receipts produced from the land. Thus, the establishment of a Refuge on lands owned by the Service would result in direct revenues to the Government of Guam under the Refuge Revenue Sharing Act.

The indirect effects of Refuge establishment on the appraised value of neighboring private lands and property taxes are difficult to assess. We speculate that the appraised value of private lands that are adjacent to DOD lands considered for inclusion in the Refuge would not change. Neither the land ownership nor the use of the lands as native forest would change as a result of a Refuge being established. Under this assumption, there would be no net change in the property value and in the property taxes received by the Government of Guam from private lands that border or are surrounded by the proposed Refuge.

In the case of establishing a Refuge where the Service becomes the landowner, property values on neighboring lands could increase because these DOD lands would no longer be available for use by the military for activities that are disruptive or harmful to private lands. These activities include training, storing of hazardous wastes, and flying aircraft at low altitudes. A potential mechanism that could cause private property values neighboring the Refuge to increase would be the perception of the exclusiveness of living adjacent to a National Wildlife Refuge or by the preservation of scenic vistas. Property values could decrease on private lands adjacent to the Refuge if increased public access to the proposed Refuge resulted in disturbances and uncontrolled trespass onto private lands. However, the Refuge would be managed to limit disturbances to neighboring lands.

The benefits and costs of changes in the appraised value of private lands as a result of establishing a Refuge on adjacent lands are different for landowners and the Government of Guam. Higher property taxes would be a benefit to the Government of Guam but would be considered an adverse impact by the landowner. However, an increase in the appraised value of private lands would represent an

increase in the landowner's equity in the event their land was sold and would therefore represent a benefit to the landowner.

The establishment of a Refuge on Guam could offer employment opportunities for residents. An increased number of Service employees could benefit the local economy through gains in income tax revenues and the diversification of the economy by the presence of other Federal agencies in addition to the DOD. The proposed Refuge would also benefit local businesses through contracts and purchases necessary for Refuge operations.

The Service anticipates that establishment of the Refuge would make a positive contribution to Guam's tourism industry. The preservation of scenic vistas and native forests, increased access to lands now restricted to the public, and greater opportunities for exposure to wildlife and natural history could enhance the visitor's experience on Guam. Tax receipts from businesses providing services to tourists may increase resulting in a net economic benefit to Guam. Tour operators, car rental companies, gasoline stations, lodging facilities, restaurants and other support businesses could benefit by the promotion of the Refuge as a scenic destination.

Establishment of the Refuge may also diversify the tourism base by encouraging ecotourism to develop on Guam. Ecotourism on private lands adjacent to, or surrounded by, the proposed Refuge could also benefit from the establishment of the Refuge.

As an example of the relationship between tourism and the National Wildlife Refuge System, the Kilauea Point National Wildlife Refuge and the scenic overlook of the Hanalei National Wildlife Refuge are highly popular stops for tourists and residents on the island of Kauai. In fact, the Kilauea Point National Wildlife Refuge receives approximately 350,000 visitors every year and is one of the most popular destinations for tourists on the island of Kauai. In this case, the Kilauea Point National Wildlife Refuge makes a positive economic contribution to the island of Kauai.

There are unquantified economic benefits to the residents and visitors of Guam that would result from the preservation of Guam's biological and cultural heritage within a Refuge in perpetuity. Visitors may be more likely to return to Guam if the natural beauty of the island is preserved. Residents may perceive a higher standard of living confident that a portion of the natural heritage of their island is protected in perpetuity.

VI. PREFERRED ALTERNATIVE, PREFERRED OPTION, AND DISCUSSION

A. Preferred Alternative and Preferred Option

The Service selected Alternative 2 as the preferred Alternative. Alternative 2 includes most DOD and Government of Guam lands possessing special importance for the recovery of endangered and threatened species, protection of migratory birds, and the conservation of native biological diversity. Alternative 2 would maximize benefits to endangered, threatened, and rare species and their habitats by including the following features within the proposed Refuge:

1. Alternative 2 includes the bulk of lands identified in approved Recovery Plans as essential habitats for the Mariana fruit bat, the Little Mariana fruit bat, the Mariana common moorhen, the Vanikoro swiftlet, the Mariana crow, the Guam broadbill, the Guam bridled white-eye, the Guam Micronesian kingfisher, and the Guam rail;
2. Alternative 2 includes the lands that support the last remaining individuals of the endangered hayan lagu tree;
3. Alternative 2 includes lands that support the last remaining colony of the endangered Mariana fruit bat;
4. Alternative 2 includes lands that support the last remaining population of the endangered Mariana crow on Guam;
5. Alternative 2 includes the lands that are used by the threatened green sea turtle for nesting;
6. Alternative 2 includes a variety of native habitat types including limestone forests, ravine forests, coastal strand, caves and wetlands;
7. Alternative 2 provides for the highest degree of cooperative management and coordination among the Government of Guam, the DOD, and the Service without usurping local management of natural resources by the Guam DAWR or diminishing the military mission on DOD lands;
8. Alternative 2 best addresses the common goals, objectives, and responsibilities held by the Government of Guam, DOD, and the Service for the protection and conservation of the natural resources on Guam.

The Service selected Option 2 as the preferred Option. Option 2 maximizes benefits to endangered and threatened species and minimizes negative impacts to the DOD and commercial shipping interests by including the following features within the proposed Refuge:

1. Option 2 would protect selected portions of the coastline used as habitat by endangered and threatened sea turtles;
2. Option 2 includes the access corridors to the major green sea turtle nesting beaches along northern Guam;
3. Option 2 incorporates the Orote Point Ecological Reserve Area, the Haputo Ecological Reserve Area, and the Andersen Air Force Base Marine Resources Preserve.

B. Alternatives and Options Considered but Not Selected

The Service rejected the other Alternatives and Options for the following reasons:

1. Alternative 1: Although Alternative 1 included more land than Alternative 2, the benefits to endangered and threatened species and their habitats did not increase proportionately. Alternative 1 included operational areas, such as runways, industrial facilities, and urbanized areas, that are generally not considered habitats for endangered and threatened species. Thus, Alternative 1 included more land than was necessary to support recovered populations of endangered and threatened species on Guam.

The DOD was concerned that the inclusion of operational areas would constrain military operations, support, and training activities. There was also concern by the Government of Guam and the public for a Refuge that encompassed approximately one-third of the island. In response to these concerns, the Service rejected the alternative that included the largest acreage of lands and lands that are currently used for military operations. However, the inclusion of DOD lands within the proposed Refuge depends upon developing approved cooperative agreements between the Service and the DOD installations.

2. Alternative 3: One of the purposes of the proposed Refuge is to effect a comprehensive and unified program to conserve endangered and threatened species on Guam. The exclusion of the Government of Guam lands that are considered essential to the recovery of endangered and threatened species on Guam may leave a gap in the management of these important lands. Therefore, the Service proposed to include these important lands within the proposed Refuge by selecting Alternative 2. However, the inclusion of Government of Guam lands within

the proposed Refuge depends upon approval by the Guam Legislature.

3. Alternative 4: A Refuge at Ritidian Point alone did not include the majority of lands identified as essential to the recovery of endangered and threatened species on Guam. While the other DOD and Government of Guam lands could be managed under cooperative agreements alone, the ability of the Service, Guam DAWR, and the DOD to develop and implement these agreements would be reduced without the presence of the Refuge. In addition, the long-term protection of the lands identified as essential to the recovery of endangered and threatened species cannot be assured without the umbrella of the proposed Refuge.
4. Alternative 5: The Service rejected the No Action Alternative because there would be no pro-active management role for the Service on Guam for the recovery of endangered and threatened species. The endangered species issues on Guam are so complex that the combined and cooperative efforts of the Guam DAWR, DOD, and the Service are necessary. Without a Refuge, the Service would be less able to contribute to the recovery of endangered and threatened species on Guam.
5. Option 1: The Service rejected Option 1 because the size was larger than necessary to protect foraging habitats for endangered and threatened sea turtles.
6. Option 3: The Service considered Option 3 because it would allow existing marine reserves to be folded within the protection of the proposed Refuge. However, the Service ultimately rejected Option 3 because it excluded other important areas for endangered and threatened sea turtles.
7. Option 4: The Service rejected Option 4 because there would be no pro-active management role for the Service on Guam for the recovery or protection of endangered and threatened sea turtles.

C. Controversies Associated with the Selection of the Preferred Alternative and the Preferred Option

1. The Government of Guam and several citizens expressed concern that the proposed Refuge might further restrict access to the privately owned Artero, Aguero, and Castro properties on northern Guam.

Access to the privately owned Artero, Aguero, and Castro properties across lands owned by the DOD would continue to be subject to the Endangered Species Act of 1973, the National Environmental Policy Act of 1969 (NEPA), and other

applicable Federal laws and regulations. Additionally, access across lands owned by the Service would be subject to the National Wildlife Refuge System Administration Act of 1966. The private use of the Refuge, such as the construction and operation of a roadway across the Refuge to access private lands, must first be determined to be compatible with the purposes for which the Refuge was established. A use may be determined to be compatible if it will not materially interfere with, or detract from, the purposes for which the Refuge was established. The compatibility determination would be done by the Division of Refuges and Wildlife. This Division would also initiate consultation with the Division of Ecological Services under Section 7 of the Endangered Species Act. Based upon previous experience on National Wildlife Refuges where endangered species are involved, access across Refuge lands is more restricted under the authority of the Endangered Species Act than by the Refuge compatibility determination under the National Wildlife Refuge System Administration Act.

Access to public lands, such as the proposed public recreational area at Ritidian Point, would also be subject to review and consultation under Section 7 of the Endangered Species Act. Under the proposal to issue the Government of Guam a license for the use of a portion of Ritidian Point as a public recreational area, the U.S. Navy would consult with the Service under Section 7 of the Endangered Species Act.

2. The Government of Guam and several citizens expressed concern that the proposed Refuge might place additional restrictions upon development of the Artero, Aguero, and Castro properties on northern Guam.

The application of the National Wildlife Refuge System Administration Act would not likely make access to private lands more rigorous than the current provisions of the Endangered Species Act. The issues of access to, and development of, private lands are related and would be addressed during the consultation under Section 7 of the Endangered Species Act for the granting of access to private landowners across Federal lands. Regardless of whether the lands were under the ownership of the Department of Defense or the Service, the Service would evaluate direct effects, indirect effects, cumulative effects, and interrelated and interdependent activities. As with the granting of access to private lands, the review of development on these private lands would remain under the purview of the Endangered Species Act, regardless of the decision on establishing the proposed Refuge. Development of private land would not be subject to the Refuge compatibility determination.

3. The Government of Guam and several citizens recommended that the local government play a significant role in the management of the proposed Refuge.

The Service fully intends to manage the proposed Refuge with the cooperation of and in coordination with the Guam DAWR and the DOD. The Service has numerous agreements with State natural resource agencies that define State and Federal partnerships. The Service will be seeking the recommendations of the Guam DAWR to identify specific agency roles and responsibilities in the management of the proposed Refuge. Agreed upon roles would be incorporated within a cooperative agreement. Collaborative efforts would be crucial to the success of the recovery programs for endangered and threatened species on Guam.

4. The Government of Guam and several citizens oppose the transfer of the former U.S. Naval Facility at Ritidian Point to the Service. The Government of Guam recommends that Ritidian Point be transferred to the local government. Several citizens recommended that Ritidian Point be returned to the original landowners.

The Service intends to acquire the former U.S. Naval Facility at Ritidian Point as an integral element of the proposed Refuge. Ritidian Point includes important native limestone forests that provide habitat for the endangered Mariana crow and the endangered Mariana fruit bat. A former nesting cave of the endangered Vanikoro swiftlet is found at Ritidian Point. The beaches at Ritidian Point are used by the threatened green sea turtle for nesting, and the exposed reef flats and beaches are used by migratory shorebirds.

The Service has been working with the DOD and the Government of Guam on the establishment of a public recreational area at Ritidian Point. The Service supports the proposed public recreational area at Ritidian Point and the efforts by the Government of Guam to make the operation of the recreational area compatible with the conservation of endangered and threatened species.

The inclusion of Ritidian Point within the proposed Refuge would benefit the largest number of Guam residents. Within the proposed Refuge, Ritidian Point would be held in trust for the enjoyment of the residents of Guam and for native wildlife in perpetuity.

5. The Government of Guam and several citizens oppose the transfer of excess DOD lands to other Federal agencies, including the Service. The Government of Guam believes that excess DOD lands should be transferred to the local

government. Several citizens recommended that excess DOD lands be returned to the original landowners.

The Service has attempted to be sensitive to land ownership issues on Guam. The January 1993 draft EA considered alternatives that excluded parcels that were identified in the pending Guam Excess Lands Bill (H.R. 4164, 102d Congress). Thus, key parcels such as Harmon Annex (646 hectares or 1,819 acres), and South Finegayan (180 hectares or 445 acres) are no longer proposed for inclusion into the Refuge.

The Service also excluded areas that were determined to have low wildlife habitat values including U.S. Naval Communication Station, Barrigada (748 hectares or 1,848 acres), and operational areas at the U.S. Naval Station and Andersen Air Force Base (4,833 hectares or 11,942 acres). U.S. Naval Air Station, Agana (896 hectares or 2,214 acres) and Andersen Air Force Base South (160 hectares or 395 acres) were never proposed for inclusion in the Refuge.

As other DOD lands become excess to that agency's mission, the Service will evaluate the potential contribution of these lands to the recovery of endangered and threatened species. Those areas that contain essential habitat for endangered and threatened species and that are proposed for inclusion in the proposed Refuge will be requested from GSA in a manner consistent with our decision on establishing the proposed Refuge and in compliance with NEPA.

6. The Government of Guam and several citizens recommended that the proposed Refuge have adequate funding.

The Service is considering numerous sources to adequately fund the proposed Refuge. We consider the availability of adequate funding to be a crucial requirement in our decision to establish the proposed Refuge. We also expect to receive funding support from the DOD to manage the Refuge. We anticipate that funding in the amount of \$500,000 would be required to initiate the proposed Refuge.

7. The Government of Guam expressed concern that the establishment of the proposed Refuge would restrict the relocation of the Naval Air Station, Agana to Andersen Air Force Base.

We understand that lands along the northern side of the Perimeter Road at Andersen Air Force Base may be used to accommodate the relocation of the Naval Air Station. The Department of Defense may choose to reserve these lands for the transfer of the Naval Air Station and not make them available for the proposed Refuge. In the event that these

lands are not included within the proposed Refuge, any impacts to endangered and threatened species from the transfer of the Naval Air Station to Andersen Air Force Base would be subject to consultation under Section 7 of the Endangered Species Act. We understand that the Department of Defense is attempting to take advantage of the existing infrastructure at Andersen Air Force Base and thereby avoid impacts to high value habitats for endangered species.

8. The Government of Guam recommended that the proposed Refuge should be 5,000 acres in southern Guam and 12,500 acres in northern Guam based on the habitat requirements for the endangered Mariana crow.

The proposed Refuge boundaries are based on lands identified as essential habitats for the recovery of the endangered native forest birds, the endangered Mariana fruit bat, the endangered Mariana common moorhen, and the endangered hayan lagu tree, and nesting beaches for the threatened green sea turtle. While the interim recovery objective for the Mariana crow is set at 700 birds on Guam (500 crows in the north and 200 crows in the south), the habitat requirements for this listed species are not completely understood. For example, the average Mariana crow density for the Tarague, Ritidian, and Urunao basins was 6.074 birds per square kilometer or the equivalent of 0.61 crows per 25 acres (Engbring, J. and F.L. Ramsey. 1984). These counts were probably depressed because of predation by the brown tree snake. On Rota, the average Mariana crow density was 16 birds per square kilometer or the equivalent of 1.62 crows per 25 acres (Engbring *et al.*). However, the density of the Mariana crow on Rota ranged from 5 crows per square kilometer (0.51 crows per 25 acres) to 23 birds per square kilometer (2.3 crows per 25 acres). Given the available information on the biology of the Mariana crow on Guam, we cannot make a general extrapolation of the acreage necessary to support a population of the Mariana crow that would be considered recovered. The acreage proposed for inclusion in the Refuge reflected the land area needed to recover endangered and threatened species based on the various recovery plans and to conserve the native biological diversity of Guam.

9. The Government of Guam, the Territorial Planning Council, and several citizens recommended that submerged lands not be included within the proposed Refuge as they questioned the jurisdiction of the Federal government over submerged lands.

The Service has recommended that submerged lands to the 30-meter (100-foot) isobath offshore from limited portions of the coastline be included within the proposed Refuge to protect foraging habitat for endangered and threatened green

sea turtles. The purpose of including submerged lands is to protect sea turtle habitat. This interest exists regardless of the ownership or the jurisdiction of the submerged lands. The submerged lands would be managed through cooperative agreements based upon management plans developed cooperatively by the Government of Guam and the Service. The inclusion of Government of Guam conservation lands and submerged lands did not receive a positive Federal Consistency Determination from the Guam Coastal Management Program. Upon the approval by the appropriate Government of Guam authority to include Government of Guam lands in the Refuge, and upon the resolution of the issue of ownership of submerged lands, the Service will seek the Federal Consistency Determinations from the Guam Coastal Management Program.

10. The Territorial Planning Council recommended that consideration be given to the long-range planning requirements of re-establishing Northwest Field as the replacement of Naval Air Station as the civilian airport.

Portions of northern Guam, including Northwest Field, support the last remaining population of the Mariana crow on Guam. Currently, the most intensive efforts by the Guam DAWR to protect and recover the Mariana crow are focused within the Northwest Field area. Because of the importance of Northwest Field for endangered species, we did not consider eliminating Northwest Field from the proposed Refuge.

D. Alternatives Considered but Eliminated/Dismissed

During the public comment period on the January 1993 draft EA, five new alternatives were suggested for consideration. These suggested alternatives and the Service's reasons for eliminating or dismissing them for consideration are as follows:

1. Establish a Refuge on DOD lands only with cooperative agreements for management on all non-Federal lands.

This suggestion was effectively the same as Alternative 3, so the Service dismissed it from consideration.

2. Include private lands in the proposed Refuge because of the outstanding wildlife habitat values of these areas.

The Service discusses the selection of lands in Section IV above. The Service has not ruled out protecting private lands in some way but is not considering this in the current proposal.

3. Return excess lands to former landowners or their heirs. Wildlife management would be conducted by the landowners.

The return of excess lands to former landowners is not currently feasible by law. The General Services Act details the process for disposal of excess lands. It is unlikely under the present disposal system excess properties would be returned to the landowners. Even if this were feasible, the suggested alternative would not provide guarantees of long-term protection of endangered and threatened species or habitat that has been identified as essential to their recovery, especially since privately owned lands in northern Guam face high pressures for development.

4. Include only DOD lands from Tarague to Anao Point.

This suggested alternative would not protect sufficient essential habitat needed to recover endangered and threatened species.

5. Establish a Refuge headquarters on 2 hectares (5 acres) at Ritidian Point and return the rest of the land to the original landowners or their heirs.

This suggested alternative would not protect sufficient essential habitat and sea turtle nesting habitat at Ritidian Point. It would not adequately address protection of the habitat of endangered and threatened species that forage and nest in the Ritidian basin.

E. Options Considered but Eliminated/Dismissed

1. A conservation organization suggested a new option that included all submerged lands to the 183-meter (600-foot) isobath to include the photic zone.

The Service did not consider extending the proposed submerged lands boundary to the 183-meter (600-foot) isobath because the increase in area would not result in proportionate increased benefits to sea turtles. In order to offset the potential impacts to DOD, commercial, and recreational activities, the Service did not propose to increase the boundaries of Option 2.

2. The submerged lands offshore from Ritidian Point seaward to 4.8 kilometers (3 miles) were listed as excess by the U.S. Navy. It was suggested that the Service request these submerged lands to maximize protection to the marine resources in this area.

The suggested option of including submerged lands offshore from Ritidian Point to 4.8 kilometers (3 miles) offshore was

considered excessive to the needs of the Service. While the Service supports a high degree of protection and management of marine resources in offshore waters, proportionate gains to endangered or threatened sea turtles or marine mammals with respect to the larger submerged lands area to be managed were not demonstrated.

VII. CONSULTATION AND COORDINATION

A. Environmental Review and Consultation

1. National Environmental Policy Act

As a Federal agency, the Service must comply with the provisions of the National Environmental Policy Act (NEPA). An Environmental Assessment (EA) is required under NEPA to evaluate reasonable alternatives that will meet stated objectives and assess the possible environmental, social, and economic impacts to the human environment. The EA serves as the basis for determining whether implementation of the proposed action would constitute a major Federal action significantly affecting the quality of the human environment. The EA facilitates the involvement of government agencies and the public in the decision making process.

The proposed action is described in its entirety in the final EA. The Service has considered every phase of the project, the expected consequences, both primary and secondary, and cumulative as well as short- and long-term effects of the action in making its recommendation.

The EA does not establish the proposed Refuge. The agreement to establish the Refuge would be incorporated in an interagency memorandum of understanding (MOU). Refuge boundaries, agency responsibilities, funding, and other provisions would be established through cooperative agreements negotiated among the Service, the Government of Guam, the U.S. Navy, and the U.S. Air Force, subsequent to approval of the MOU.

2. Endangered Species Act

Any Federal agency that funds, authorizes, or carries out actions that "may affect" federally listed species or designated critical habitat, must consult with the Service under Section 7 of the Endangered Species Act. Conferencing procedures are available for proposed species or proposed critical habitat. The proposed establishment of a Refuge under Alternative 2 and Option 2 is expected to have beneficial effects on endangered and threatened species. An intra-agency Section 7 consultation was completed for

Alternative 2 and Option 2, and resulted in a concurrence with the finding that there would be no adverse impacts to endangered or threatened species. Any project or activity conducted on the Refuge would also need to comply with Section 7 of the Endangered Species Act. Compliance would be determined through separate intra-agency Section 7 consultations for each proposed project or activity that may affect listed species.

3. Permits, Licenses, and Entitlements

The proposed establishment of the Refuge is in compliance with a number of Federal laws including: Public Law 92-583, the Coastal Zone Management Act; Executive Order 12372 related to Intergovernmental Review of Federal programs; Executive Order 11990 related to the Protection of Wetlands; Executive Order 11988 related to Floodplain Management; Executive Order 11593 related to the National Historic Preservation Act of 1966, as amended; 36 CFR, Part 800 related to the Protection of Historic Properties; Secretarial Order 3127, related to Hazardous Substances Determinations; Section 7 of the Endangered Species Act; and Public Law 91-646, the Uniform Relocation Assistance and Real Property Acquisition Policies Act.

The Service, the Air Force, the Navy, and the Government of Guam would enter into a memorandum of understanding which would reaffirm the common management missions and goals of the agencies with respect to the proposed Refuge. To establish the Refuge, identify the Refuge boundaries, and specify natural resource management responsibilities, separate cooperative agreements would be signed by the Service, the U.S. Navy, the U.S. Air Force, and the Government of Guam. The Service and each participating agency would develop an Annual Work Plan that would include negotiated and agreed upon work tasks, staffing, and funding sources. Annual Reports would document accomplishments and address program shortfalls.

The U.S. Army Corps of Engineers has the authority to issue Department of the Army (DA) permits under the Clean Water Act, the Rivers and Harbors Act of 1899, and the Marine Protection, Research and Sanctuaries Act. The establishment of a Refuge on Guam would not require a DA permit. However, the creation, restoration, or management of wetlands within the proposed Refuge would likely involve work in wetlands for which a DA permit would be required.

Guam legislative approval would be necessary to include any Government of Guam lands in the proposed Refuge.

B. Scoping and Public Involvement

The Service made extensive efforts to identify the major issues and concerns that could influence a decision to establish the proposed Refuge. The scoping process involved scientists, resource managers, land use planners, interested private organizations and individuals, landowners and other Guam residents, Government of Guam officials, the Guam Congressional Delegate, DOD agencies, and other Federal agencies.

A public meeting was held on Guam on June 22, 1992, in conjunction with the release of the initial draft EA. The Service received testimony from 20 people at that meeting. The 30-day public comment period for the initial draft EA resulted in over 44 letters. These concerns resulted in a decision to prepare a revised draft EA which was distributed for public review in January of 1993. The Service's response following the June 1992 public comment period is attached as Appendix C.

To facilitate coordination with the public, Mr. David Potter, a Project Leader with the Service's Division of Refuges and Wildlife, was detailed to Guam from January 4th to February 15, 1993. Mr. Potter functioned as an on-island Service representative to coordinate information about the proposed Refuge among the Service, the DOD, Government of Guam agencies, and the public. During his tenure on Guam, Mr. Potter conducted agency briefings, provided interviews for radio and television stations and newspapers, and held informational meetings with affected agencies and interested individuals. Mr. Potter also coordinated the on-island distribution of the revised draft EA.

C. Public Responses on the Revised Draft EA

The Service received 105 responses during the public comment period including 5 from Government of Guam agencies, 8 from Federal agencies, 28 from individuals (25 residents, 3 non-residents), 3 from conservation organizations, 20 from elementary school children, 40 petition signatures, and 1 from a State of Hawaii agency. Copies of the letters are attached as Appendix D. Comments on the initial draft EA and the record of the June 22, 1992, public hearing were reviewed again and incorporated along with the most recent comments into the final EA. The comments allowed the Service to fully evaluate the potential impacts of the project based on input from a broad spectrum of public and private interests and to select a preferred alternative based on the potential consequences of a final decision.

The response to this second public comment period indicated a sustained high level of interest in the proposed project. The vast majority of responses were from on-island residents or representatives of affected DOD or Government of Guam agencies.

Off-island responses were primarily from scientists familiar with the wildlife situation on Guam.

Although the majority of the written comments (34 out of 38) supported the establishment of the proposed Refuge, some people opposed the Refuge proposal including some of the people that testified at the June 1992 public hearing. The public testimony included more opposition to the proposed Refuge than was received through the written comments. Many of those testifying represented former landowners of Ritidian Point or their heirs. Further discussion of these concerns and others are found in Section VII. No one disputed the need for wildlife protection and recovery of endangered and threatened species; differences arose regarding the means of achieving this protection.

Alternative 2 received the majority of support from the respondents with 14 people (out of 21 opinions on the proposed Alternatives) supporting this Alternative. This total includes the provisional support of the Governor of Guam, and the support of the Guam DAWR, four out of five commenting DOD installations, and two conservation organizations. Alternative 1 was selected by five individuals and one conservation organization. Alternative 4 received support from one DOD installation. One individual was in favor of either Alternative 2 or 3. Only two residents selected the No Action Alternative.

Only 13 respondents commented on the submerged lands Options. Option 2 received more favorable comments than the other Options and was supported by natural resources management agencies, private individuals, and conservation organizations. Residents favored the high degree of protection provided by Options 1 and 2. Federal agencies selected Options 1, 2 and 3, with none selecting the No Action Option. Government of Guam agencies varied in their responses as well. The Governor of Guam and the Territorial Planning Commission endorsed the No Action Option for submerged lands, whereas Guam DAWR preferred the submerged lands Option 2.

One individual suggested that the Service hold another public hearing. The Service believes there would be no substantive gains to the public or the Service with respect to additional information or determining potential impacts or benefits of the project. Furthermore, the Service has provided ample opportunities for public comment on the project.

D. Revisions to the Final EA

The final EA does not contain new or revised alternatives. However, concerns and questions raised during the public comment period prompted the Service to clarify certain sections of the EA. The discussion of the impacts of the alternatives on the social and cultural environment was expanded to include an analysis of the impacts of the proposed Refuge on DOD activities and to the

proposed Government of Guam public recreation area at Ritidian Point. The final EA summarizes public input and discusses controversy that exists regarding the project. The other sections of the EA are not materially different from the revised draft EA.

E. Availability of Documents

Original response letters to both drafts of the EA and the transcript of the June 22, 1992, public meeting are on file at the U.S. Fish and Wildlife Service, P.O. Box 50167, Honolulu, Hawaii, 96850. Copies of the final EA are available for review from the Office of the Governor, Bureau of Planning, Governor's Complex, Adelup, P.O. Box 2950, Agana, Guam 96910, Phone: (671) 472-4201. Copies of the final EA are also available for review in Honolulu at the office of the U.S. Fish and Wildlife Service, Hawaiian and Pacific Islands National Wildlife Refuge Complex, P.O. Box 50167, Honolulu, Hawaii 96850, Phone: (808) 541-1201.

F. List of Agencies and Individuals Receiving a Copy of the Final EA

The final Environmental Assessment is being forwarded to the following agencies, groups, and individuals who have been involved with the development of the project or expressed an interest in the proposed Refuge:

1. Federal Agencies

U.S. Navy

Assistant Secretary of the Navy, Installations and Environment,
Department of the Navy, Washington, D.C.

Department of the Navy, Office of the Assistant Secretary for
Installations and Environment, Director, Environmental
Planning and Natural Resources Policy, Washington, D.C.

Commander Naval Forces Marianas, U.S. Navy, U.S. Pacific Fleet
Commander U.S. Naval Forces Marianas, Andersen Air Force Base,
Guam

Commander in Chief, U.S. Navy, U. S. Pacific Command, Camp H.M.
Smith, Hawaii

Commanding Officer, U.S. Naval Magazine, Guam

Commanding Officer, U.S. Naval Station, Guam

Commanding Officer, U.S. Naval Supply Depot, Guam

Commanding Officer, U.S. Navy Public Works Center, Guam

Commanding Officer, U.S. Naval Computer and Telecommunications
Area Master Station WESTPAC, Guam

Officer in Charge of Construction, Naval Facilities Engineering
Command, Contracts Marianas, Guam

U.S. Naval Supply Depot, Director, Department of Facilities and
Environment, Guam

U.S. Pacific Command (USCINCPAC), Director, Logistics-Security
Assistance, Camp H.M. Smith, Hawaii

Commander, PACNAVFACENGCOM, Pearl Harbor, Hawaii

Department of the Navy, Commander, Civil Engineer Corps,
PACNAVFACENGCOM, Pearl Harbor, Hawaii
Department of the Navy, Deputy Director, Real Estate Division,
Facilities Planning Department, PACNAVFACENGCOM, Pearl
Harbor, Hawaii
Director, Environmental Planning Division, PACNAVFACENGCOM, Pearl
Harbor, Hawaii
Legal Counsel, PACNAVFACENGCOM, Pearl Harbor, Hawaii
Natural Resources Management Specialist, PACNAVFACENGCOM, Pearl
Harbor, Hawaii
Archaeologist, PACNAVFACENGCOM, Pearl Harbor, Hawaii

U.S. Air Force

Headquarters, U.S. Air Force, HQ/USAF/CEVP, Washington, D.C.
Director of Environmental Management, Pacific Air Forces, DCS
Civil Engineering, Hickam Air Force Base, Hawaii
Natural and Cultural Resources, PACAF/DEVP, Hickam Air Force Base,
Hawaii
Staff Judge Advocate, 633rd Air Base Wing, Andersen Air Force
Base, Guam
Natural Resources Planner, 633rd SG/CEV, Andersen Air Force Base,
Guam
Commander, Civil Engineering Squadron, 633rd SG/CEV, Andersen Air
Force Base, Guam
Headquarters, U.S. Air Force, Environmental Quality, Bolling Air
Force Base, Washington, D.C.
Regional Compliance Officer IX, Department of the Air Force, San
Francisco, California

U.S. Army

Division Engineer, Pacific Ocean Division, Fort Shafter, Hawaii
Director of Engineering, Department of the Army, U.S. Army
Engineer District, Fort Shafter, Hawaii

Department of the Interior

Director, U.S. Fish and Wildlife Service, Washington, D.C.
Deputy Director, U.S. Fish and Wildlife Service, Washington, D.C.
Deputy Assistant Director, U.S. Fish and Wildlife Service,
Washington, D.C.
Office of Legislative Services, Washington, D.C.
Office of Territorial and Insular Affairs, Technical Assistance
Division, Washington, D.C.
Regional Director, U.S. Fish and Wildlife Service, Region 1,
Portland, Oregon
Wildlife Inspector, U.S. Fish and Wildlife Service, Division of
Law Enforcement, District #1, Agana, Guam
U.S. Fish and Wildlife Service, National Museum of Natural
History, Washington, D.C.

Other Federal Agencies

National Ecology Research Center, Fort Collins, Colorado
Officer in Charge, U.S. Department of Agriculture, Plant
Protection and Quarantine, Guam International Airport,
Tamuning, Guam
Pacific Area Director, National Park Service, Honolulu, Hawaii
U.S. Department of Commerce, Guam Customs and Immigration,
Tamuning, Guam
Honorable Norm Dicks, U.S. House of Representatives, Washington,
D.C.
Honorable Robert Packwood, U.S. Senate, Washington, D.C.
Director, Pacific Basin Area, U.S. Department of Agriculture, Soil
Conservation Service, Agana, Guam
State Soil Scientist, U.S. Department of Agriculture, Soil
Conservation Service, Honolulu, Hawaii
Area Coordinator, Federal Aviation Administration, Honolulu,
Hawaii
Department of Agriculture, Animal Damage Control, District
Supervisor, Animal and Plant Health Inspection Service,
Honolulu, Hawaii
Fishery Biologist, Pacific Area Office, National Marine Fisheries
Service, Honolulu, Hawaii
Office of the Attorney General, Agana, Guam
U.S. Environmental Protection Agency, National Pollutant Discharge
Elimination System Permitter, Region 9, San Francisco,
California
Director, Advisory Council on Historic Preservation, Western
Office of Review, Golden, Colorado
Airports District Office Manager, Honolulu, Hawaii
Assistant Secretary for External Affairs, Smithsonian Institution,
Washington, D.C.
Office of Real Estate Sales, Property Management and Disposal
Service, General Services Administration, Region 9, San
Francisco, California
National Fish and Wildlife Foundation, Washington, D.C.

2. Government of Guam Agencies

Governor of Guam, Agana, Guam
Director, Guam Bureau of Planning, Agana, Guam
Chief Planner, Guam Bureau of Planning, Agana, Guam
Planner, Territorial Planning Council, Agana, Guam
Director, Guam Department of Agriculture, Agana, Guam
Chief, Guam Department of Agriculture, Division of Aquatic and
Wildlife Resources, Agana, Guam
Assistant Chief, Guam Department of Agriculture, Division of
Aquatic and Wildlife Resources, Agana, Guam
Acting Director, Guam Department of Parks and Recreation, Agana,
Guam
Guam Department of Land Management, Agana, Guam
Administrator, Guam Environmental Protection Agency, Agana, Guam

Administrator, Guam Coastal Zone Management Program, Guam Bureau
 of Planning, Agana, Guam
 Public Information Officer, Guam Coastal Zone Management Program,
 Bureau of Planning, Agana, Guam
 Territorial Librarian, Guam Public Library/Museum, Agana, Guam
 Guam Department of Commerce, Agana, Guam
 President, University of Guam, Mangilao, Guam
 University of Guam Biology Department, Mangilao, Guam
 Chief Officer, Guam Public Utility Agency, Agana, Guam
 Director, Guam Economic Development Authority, Agana, Guam
 Director, Guam Visitors Bureau, Agana, Guam
 Speaker, Twenty-Second Guam Legislature, Agana, Guam
 Minority Leader, Twenty-First Guam Legislature, Agana, Guam
 Dr. Robert Underwood, Member of Congress, Congressional District
 Office, Agana, Guam
 Senator Dolores-Brooks, Twenty-First Guam Legislature, Agana, Guam

3. Individuals

Ms. Susan Ji, Tamuning, Guam
 Mr. Marvin Aguilar, Dededo, Guam
 Ms. Tina Campus, Yigo, Guam
 Ms. Do-Yon Ahn, Tamuning, Guam
 Ms. Tiffany Larscheid, Agana, Guam
 Ms. Mariebeth A. Unsay, Agana, Guam
 Mr. Zachary Concepcion, GMF, Guam
 Ms. Georgette B. Quitugua, GMF, Guam
 Ms. Gretchen R. Grimm, Agana, Guam
 Ms. Joy L. Yamamoto, Agana, Guam
 Mr. Wayne Kimbenberg, Agana, Guam
 Ms. Kristina Flores Wilson, Agana, Guam
 Mr. Andrew A. Torres, GMF, Guam
 Mr. Robert F. Myers, GMF, Guam
 Ms. Laura Glismann, Tumon Bay, Guam
 Mr. Pascual V. Artero Sablan, Agana, Guam
 Mr. Franklin P. Leon Guerrero, Piti, Guam
 Mr. Brendan Kelly, Agana, Guam
 Mr. Casey Cordes, ICF, Chicago, Illinois
 Mr. William E. Rainey, Ph.D., Berkeley, California
 Mr. Jesus (Jess) M. Artero, Agana, Guam
 Mr. Jan Sharkey, Tamuning, Guam
 Mr. Pascual V.A. Sabalan, Agana, Guam
 Ms. Catherine Castro, Yigo, Guam
 Mr. Tony Artero, Agana, Guam
 M. F.P. Pangelinan, Agana, Guam
 Mr. Victor R.H. Torres, Agana, Guam
 Mr. Frank L.G. Castro, Agana, Guam
 Mr. Fred M. Castro, Guam
 Ms. Mae C. Aguigui, Sinajana, Guam
 Mr. Depaul Guerrero, Agana, Guam
 Mr. Angel L.G. Santos, Barrigada, Guam
 Mr. Tony Sablan, Sinajana, Guam

Mr. Jesse P. Castro, Yigo, Guam
 Mr. Christian G. Spies, Ocean Beach, New York
 Mr. Antonio Artero Sablan, Jungle Beach Tours, Sinajana, Guam
 Mr. James D. Reichel, Montana Natural Heritage Program, Helena,
 Montana
 Ms. Eleanor Pangelinan, Tamuning, Guam
 Ms. Ellen K. Rice, Saipan
 Mr. R. Happy Rons, Esq., Agana, Guam
 Ms. Julie A. Savidge, Ph.D., University of Nebraska-Lincoln,
 Lincoln, Nebraska
 Ms. Cynthia M. Schubert, Tumon, Guam
 Mr. Derek W. Stinson and Ms. Colleen M. Stinson, Saipan
 Mr. Alfonso M. Pangelinan, Agana, Guam
 Mr. Gary J. Wiles, Guam
 Mr. Tony Rodrigues, Portland, Oregon
 Mr. Roy T. Tsuda, Duenas & Associates, Inc., Tamuning, Guam
 M. Sanchez, Sigma Trading, Tamuning, Guam
 Mr. Arne Liberg, Barrigada, Guam
 Ms. Grace G. Moore, Yigo, Guam
 Mr. Vincereo Garrido, Tamuning, Guam
 Mr. T. Kawasaki, President, Guam Urunao Resort Corporation, Tokyo,
 Japan
 Mr. Gerald F. Schiappa, Guam Urunao Resort Corporation, McLean,
 Virginia
 Mr. Rollin H. Baker, Eagle Lake, Texas
 Ms. Anne F. Maben, Project Coordinator, Young Scholars Ocean
 Science Institute, California State University, Long Beach
 California

4. Conservation Organizations

President, Marianas Audubon Society, Agana, Guam
 Executive Director, Bat Conservation International, Inc., Austin,
 Texas
 Vice-President for International Conservation, New York Zoological
 Society, The Wildlife Conservation Society, Bronx, New York
 Vice-President, National Audubon Society, Western Regional Office,
 Sacramento, California
 Director, National Audubon Society, Hawaii State Office, Honolulu,
 Hawaii
 Director, The Nature Conservancy of Hawaii, Honolulu, Hawaii
 Sierra Club Legal Defense Fund, Honolulu, Hawaii

5. Other Agencies

Chief, Division of Fish and Wildlife, Commonwealth of the Northern
 Mariana Islands, Saipan, Marianas
 Director, Bureau of Resources and Development, Republic of Palau,
 Koror, Palau
 Mayor, Municipality of Rota, Rota, Commonwealth of the Northern
 Mariana Islands
 Governor, Saipan, Commonwealth of the Northern Mariana Islands

Director of Natural Resources, Commonwealth of the Northern
Mariana Islands, Department of Natural Resources, Saipan
Publisher, Pacific Daily News, Agana, Guam
Publisher, The Guam Tribune, Agana, Guam
Publisher, Guam Business News, Agana, Guam
Vice President, K-57 & Z98 Radio, Agana, Guam
News Director, Guam Cable TV, Agana, Guam
News Director, KUAM, Agana, Guam
University of Hawaii Environmental Center, Honolulu, Hawaii

VIII. LIST OF PREPARERS

- Mr. John Ford, former Pacific Islands Land Protection Coordinator, Region 1,
Honolulu, Hawaii.
- Ms. Kimberly Forrest, Assistant Refuge Manager, Sacramento National Wildlife
Refuge Complex, Division of Refuges and Wildlife, Region 1, Willows,
California.
- Ms. Phyllis Ha, Ecologist, Office of the Pacific Islands Land Protection
Coordinator, Hawaiian and Pacific Islands National Wildlife Refuge
Complex, Region 1, Honolulu, Hawaii.
- Mr. Ray Rauch, Project Leader, Hawaiian and Pacific Islands National Wildlife
Refuge Complex, Region 1, Honolulu, Hawaii.
- Mr. Robert Smith, Field Supervisor, Pacific Islands Office, Division of
Ecological Services, Region 1, Honolulu, Hawaii.
- Mr. Andrew Yuen, Pacific Islands Land Protection Coordinator, Hawaiian and
Pacific Islands National Wildlife Refuge Complex, Region 1, Honolulu,
Hawaii.

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Table 1. Summary of land areas considered for inclusion in the proposed Refuge by Alternative. Most acreages were measured with a digital planimeter on a USGS 1:24,000 map and are estimated figures. Some acreages were provided by the Department of Defense. See text for detailed descriptions of Alternatives.

Site:	ALTERNATIVE:	Alt. 1 (acres)	Alt. 2 (acres)	Alt. 3 (acres)	Alt. 4 (acres)	Alt. 5 (acres)
<hr/>						
DOD LANDS:						
NCTAMS Finegayan North		2,249	1,932	1,932	0 ¹	0
Public Works Center, Guam		860	344	344	0 ¹	0
NAVMAG		8,287	8,287	8,287	0 ¹	0
Apra Harbor ²		8,959	1,692	1,692	0 ¹	0
Andersen Air Force Base		15,431	11,589	11,589	0 ¹	0
Ritidian Point		371	371	371	371	0
Total DOD acreage:		<hr/> 36,157	<hr/> 24,215	<hr/> 24,215	<hr/> 371	<hr/> 0
GOVERNMENT OF GUAM LANDS:						
Falcona Beach		97	97	0	0	0
Bolanos Conservation Area		2,830	2,830	0	0	0
Anao Conservation Area		695	695	0	0	0
Cotal Conservation Area		552	552	0	0	0
Total GovGuam acreage:		<hr/> 4,174	<hr/> 4,174	<hr/> 0	<hr/> 0	<hr/> 0
Alternative total:		<hr/> 40,331	<hr/> 28,389	<hr/> 24,215	<hr/> 371	<hr/> 0

¹ Under Alternative 4, DOD lands would not be included in the proposed Refuge, but natural resources on these areas would be managed through multi-agency cooperative agreements. A Refuge would be established only at Ritidian Point.

² Apra Harbor includes areas in Naval Station, Naval Supply Depot, Orote, and Public Works Center. See Figures for areas included.

Table 2. Summary Matrix -- Effects of Alternatives and Options.

Affected Resource or Activity:	Alt. 1	Alt. 2	Alt. 3	Alt 4	Alt. 5	Option 1	Option 2	Option 3	Option 4
PHYSICAL ENVIRONMENT									
Water resources	++	++	++	+	-	0	0	0	0
Soils	++	++	++	+	-	0	0	0	0
BIOLOGICAL ENVIRONMENT									
Natural Communities	++	++	++	+	--	+	+	+	-
Wildlife									
Endangered/threatened species	++	++	++	++	--	++	++	+	-
Avifauna	++	++	++	++	--	0	0	0	0
Fruit bats	++	++	++	++	--	0	0	0	0
Sea turtles/marine mammals	+	+	+	+	-	++	++	+	-
Plants	++	++	++	++	--	+	+	+	0
Migratory birds	++	++	++	++	-	++	++	+	-
Other native wildlife	++	++	++	++	-	++	++	+	-
Marine Resources	0	0	0	0	0	++	++	+	-
WILDLIFE AND HABITAT MANAGEMENT PROGRAMS									
Recovery of endangered/threatened species	++	++	++	++	--	++	++	++	--
Alien species control	++	++	++	+	--	0	0	0	0
Law enforcement	++	++	++	++	0	+	+	+	0
Cooperative management efforts	++	++	++	++	0	+	+	+	0
DOD natural resource management compliance	++	++	++	+	0	+	+	+	0
Guam DAWR natural resource management	++	++	++	++	0	+	+	+	0
SOCIAL AND CULTURAL ENVIRONMENT									
Archaeological/Historical resources	++	++	++	+	0	+	+	+	0
Public education/scientific research	++	++	++	+	0	+	+	+	0
Recreation									
Consumptive (e.g. hunting, fishing)	++	++	++	+	0	+	+	0	0
Non-consumptive (e.g. hiking, photography)	++	++	++	++	0	+	+	+	0
Traditional gathering	++	++	++	+	0	0	0	0	0
Public use of study area	+	+	+	+	0	0	0	0	0
Access to private lands	+	+	+	+	0	0	0	0	0
ECONOMIC ENVIRONMENT									
Direct tax revenue	+	+	+	+	0	0	0	0	0
Indirect tax revenue	+	+	+	+	0	0	0	0	0
Land values on study area	0	0	0	0	0	0	0	0	0
Land values on adjacent areas	+	+	+	+	0	0	0	0	0
Tourism	+	+	+	+	0	0	0	0	0
Employment	++	++	++	++	0	0	0	0	0
Fisheries	0	0	0	0	0	+	+	+	+
DOD training activities	0	0	0	0	0	0	0	0	0
Development on private lands	+	+	+	+	0	0	0	0	0
OTHER ISSUES									
Contaminants remediation	+	+	+	+	0	0	0	0	0

Key: Alt. = Alternative (see text).

Option = submerged lands option (see text).

++ = Strongly positive effect; + = moderately positive effect.

-- = Strongly negative effect; - = moderately negative effect.

0 = no change to resource or activity.

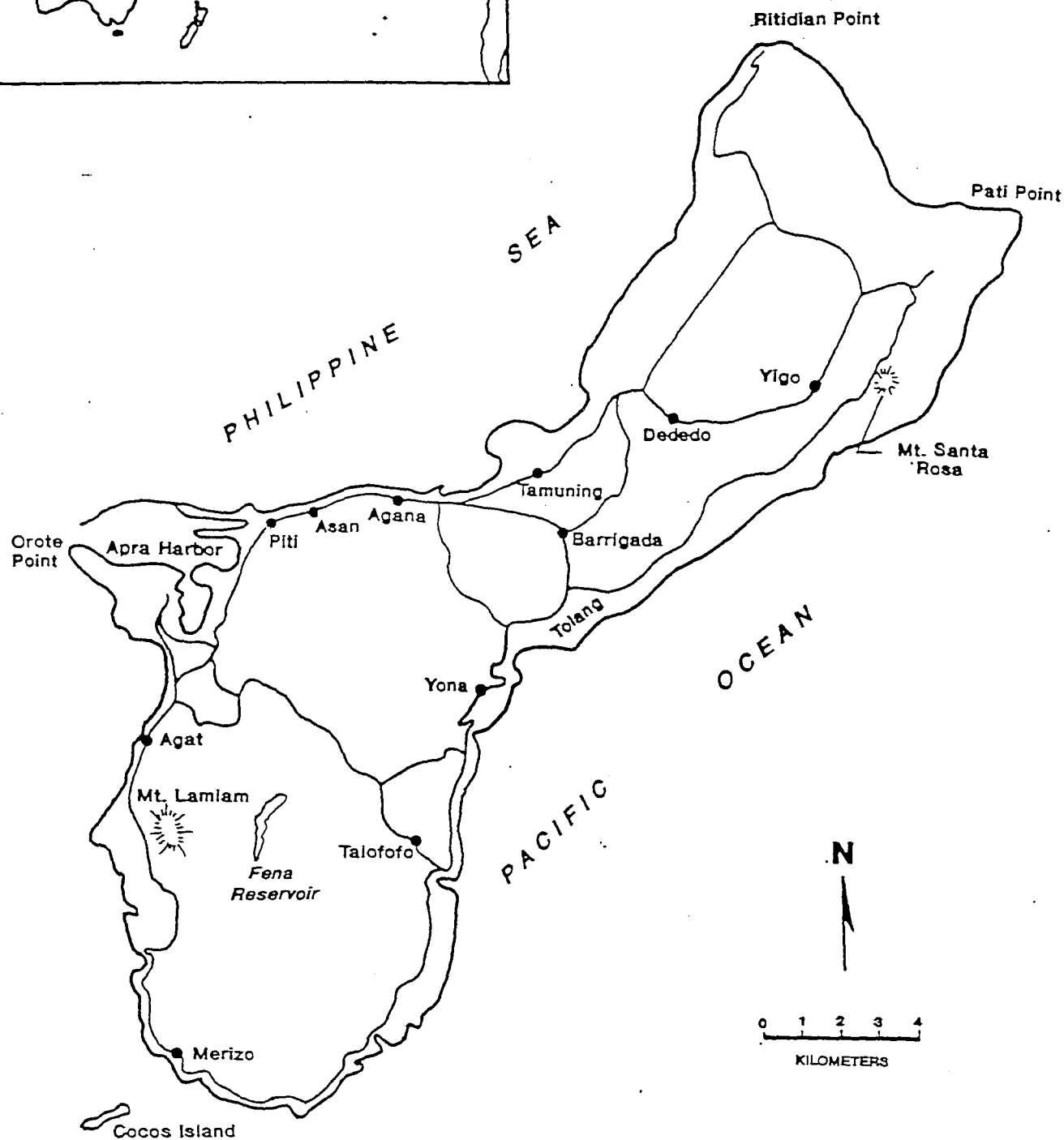
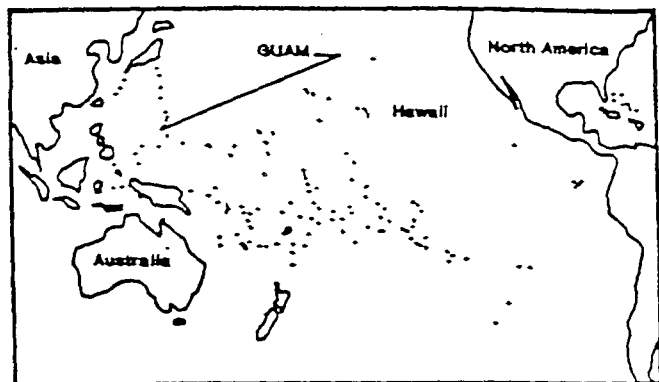


Figure 1. Island of Guam

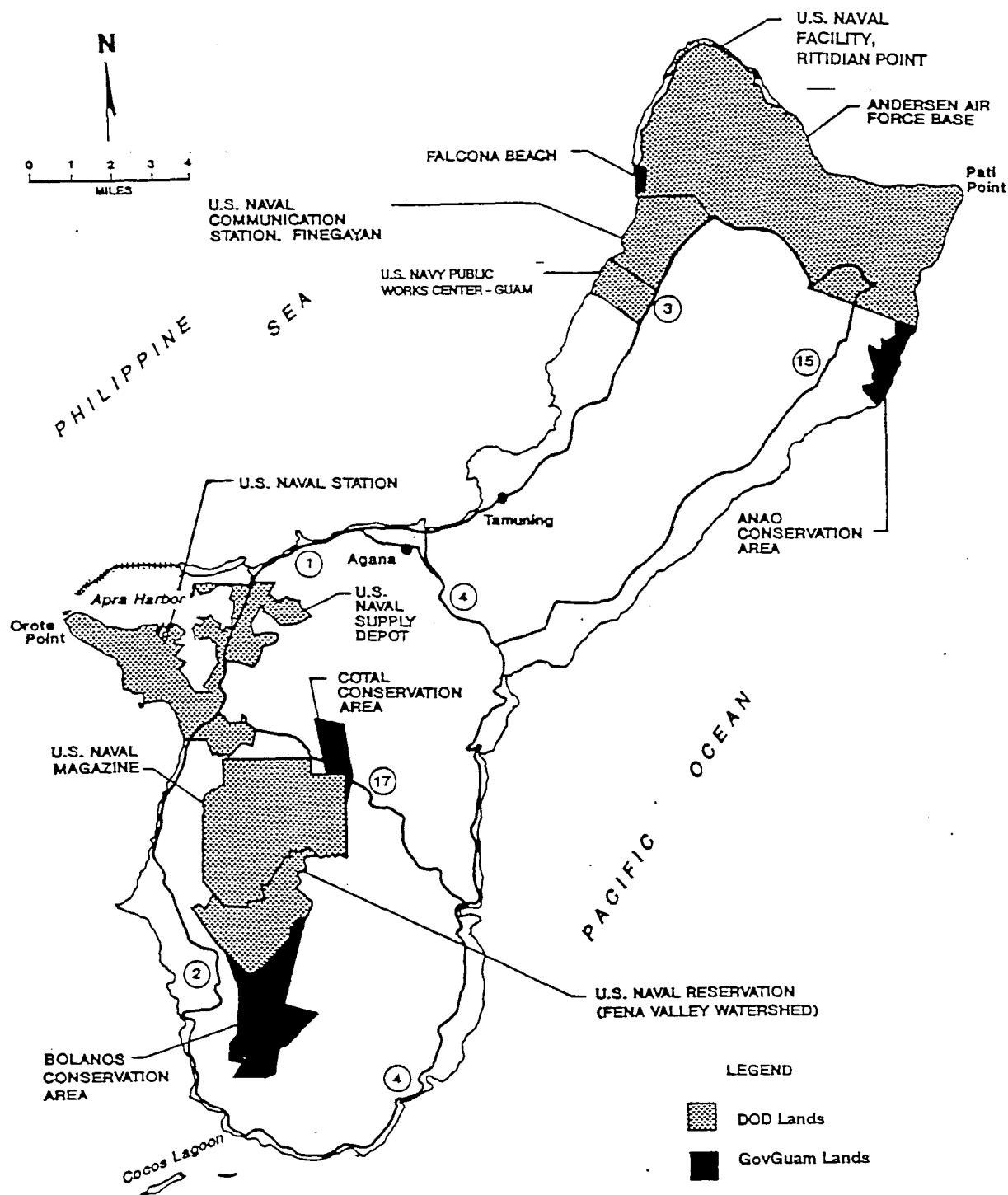


Figure 2. Alternative 1. Proposed Guam National Wildlife Refuge on certain DOD lands (including operational areas), including the former U.S. Naval Facility at Ritidian Point, and certain Government of Guam lands. Boundaries shown are approximations and include an estimated 16,322 hectares (40,331 acres). Final boundaries would be determined following negotiations with the landowners.

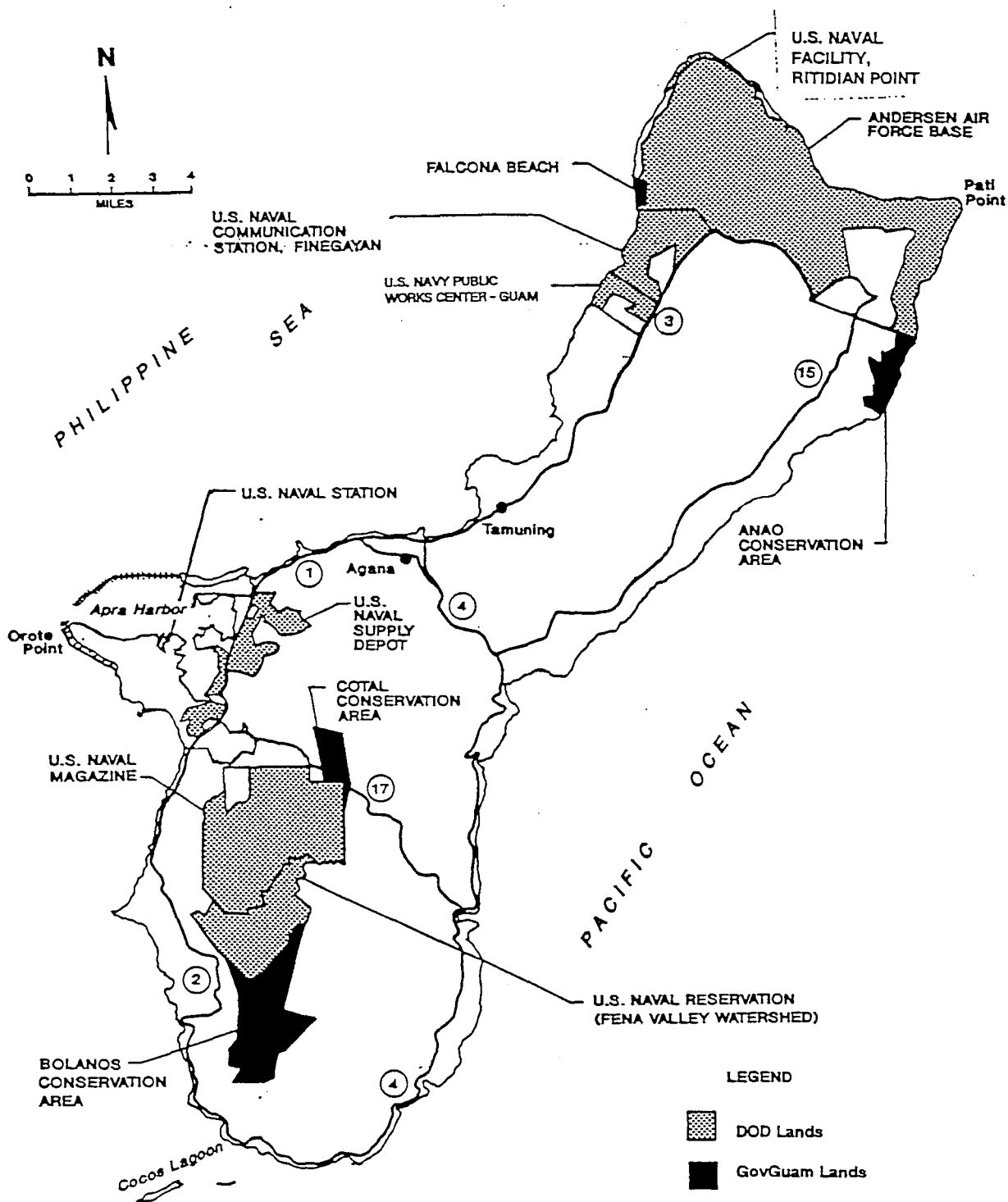


Figure 3. Alternative 2, the preferred Alternative. Proposed Guam National Wildlife Refuge on certain DOD lands (excluding operational areas), including the former U.S. Naval Facility at Ritidian Point, and certain Government of Guam lands. Boundaries shown are approximations and include an estimated 11,489 hectares (28,389 acres). Final boundaries would be determined following negotiations with the landowners.

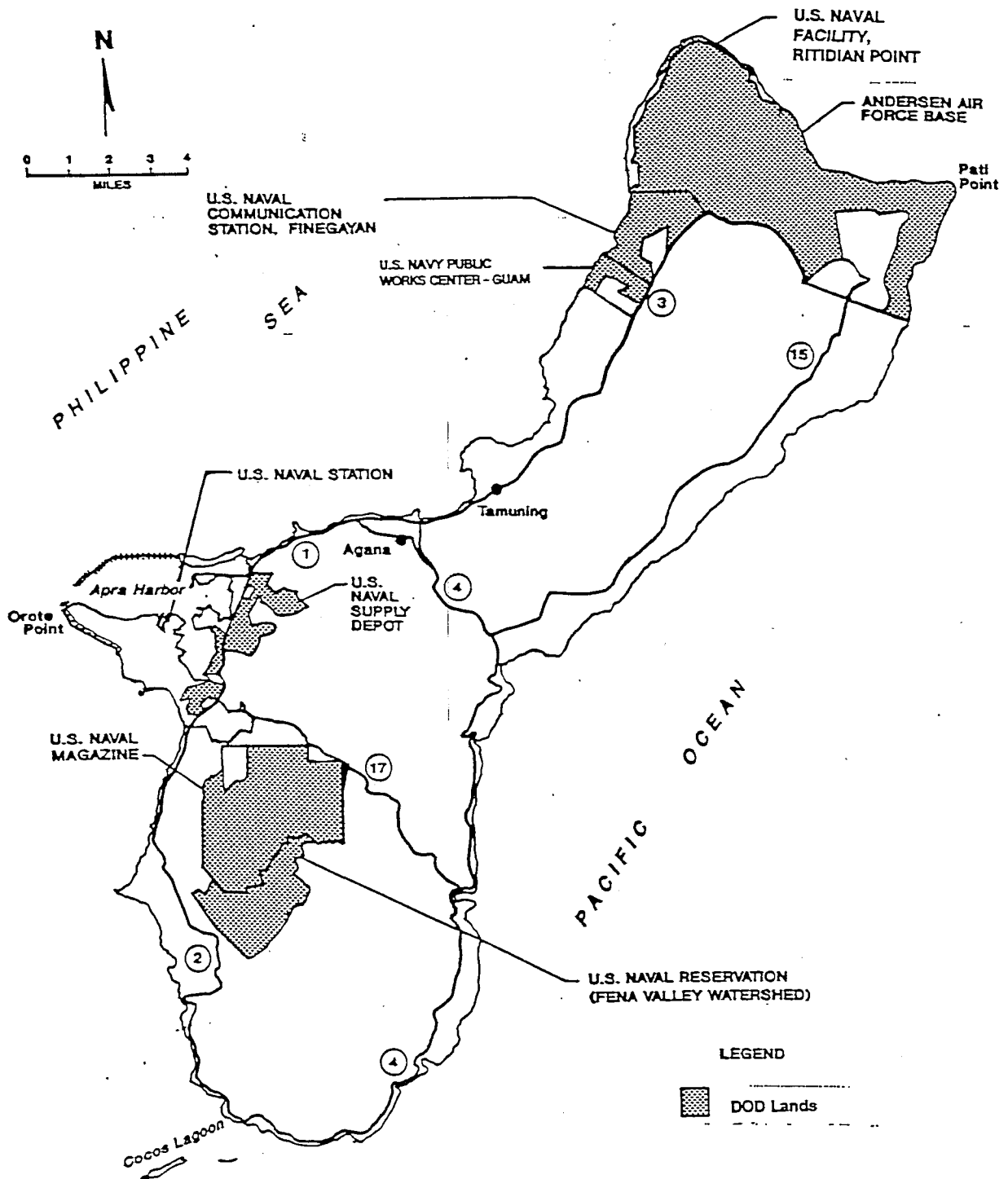


Figure 4. Alternative 3. Proposed Guam National Wildlife Refuge on certain DOD lands (excluding operational areas), including the former U.S. Naval Facility at Ritidian Point, but excluding Government of Guam lands. Boundaries shown are approximations and include an estimated 9,800 hectares (24,215 acres). Final boundaries would be determined following negotiations with the landowners.

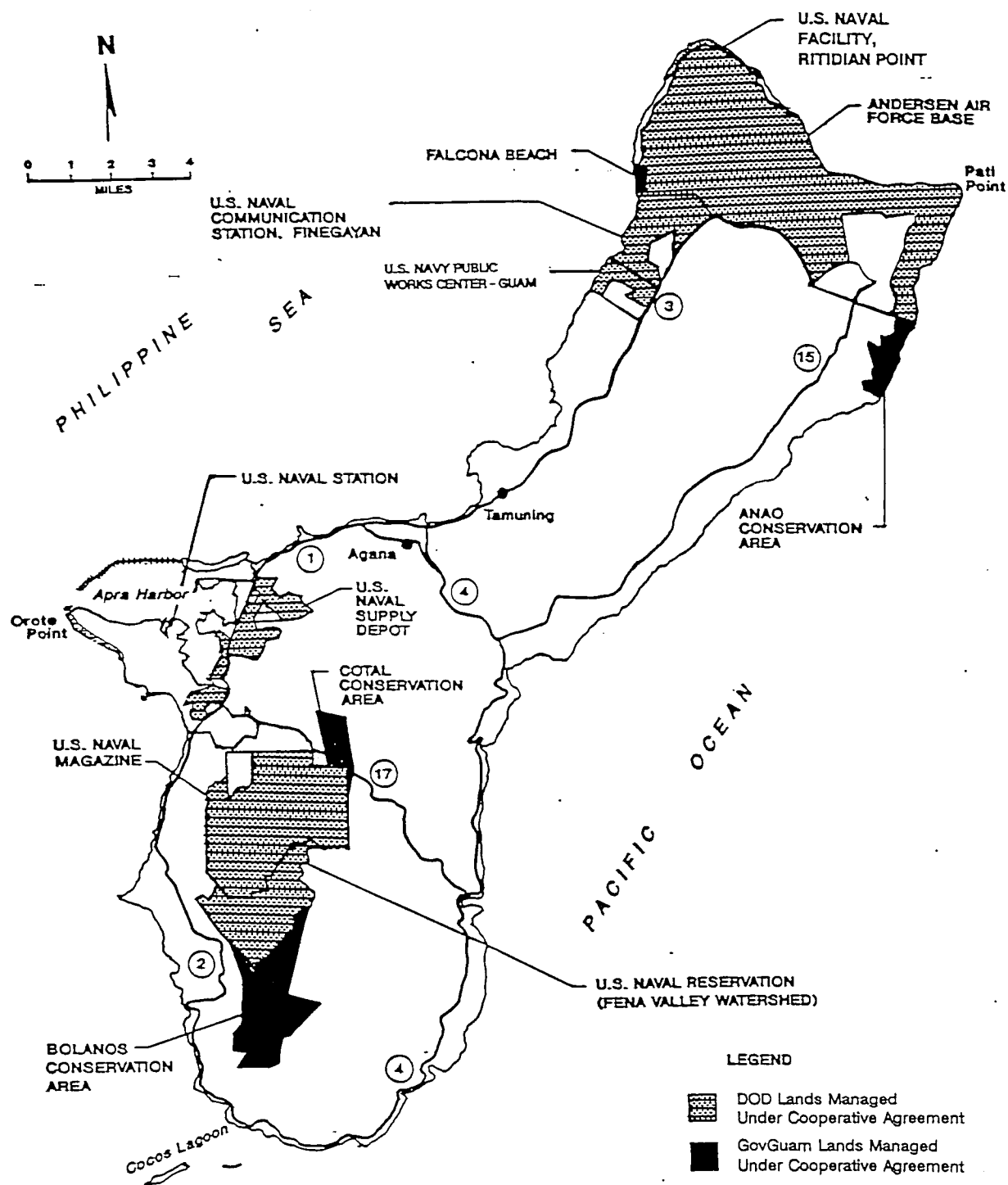


Figure 5. Alternative 4. Proposed Guam National Wildlife Refuge only at the former U.S. Naval Facility at Ritidian Point. Natural resources on certain DOD and Government of Guam lands would be managed through cooperative agreements. Boundaries shown are approximations and include an estimated 150 hectares (371 acres). Final boundaries would be based upon legal descriptions provided upon transfer of title.

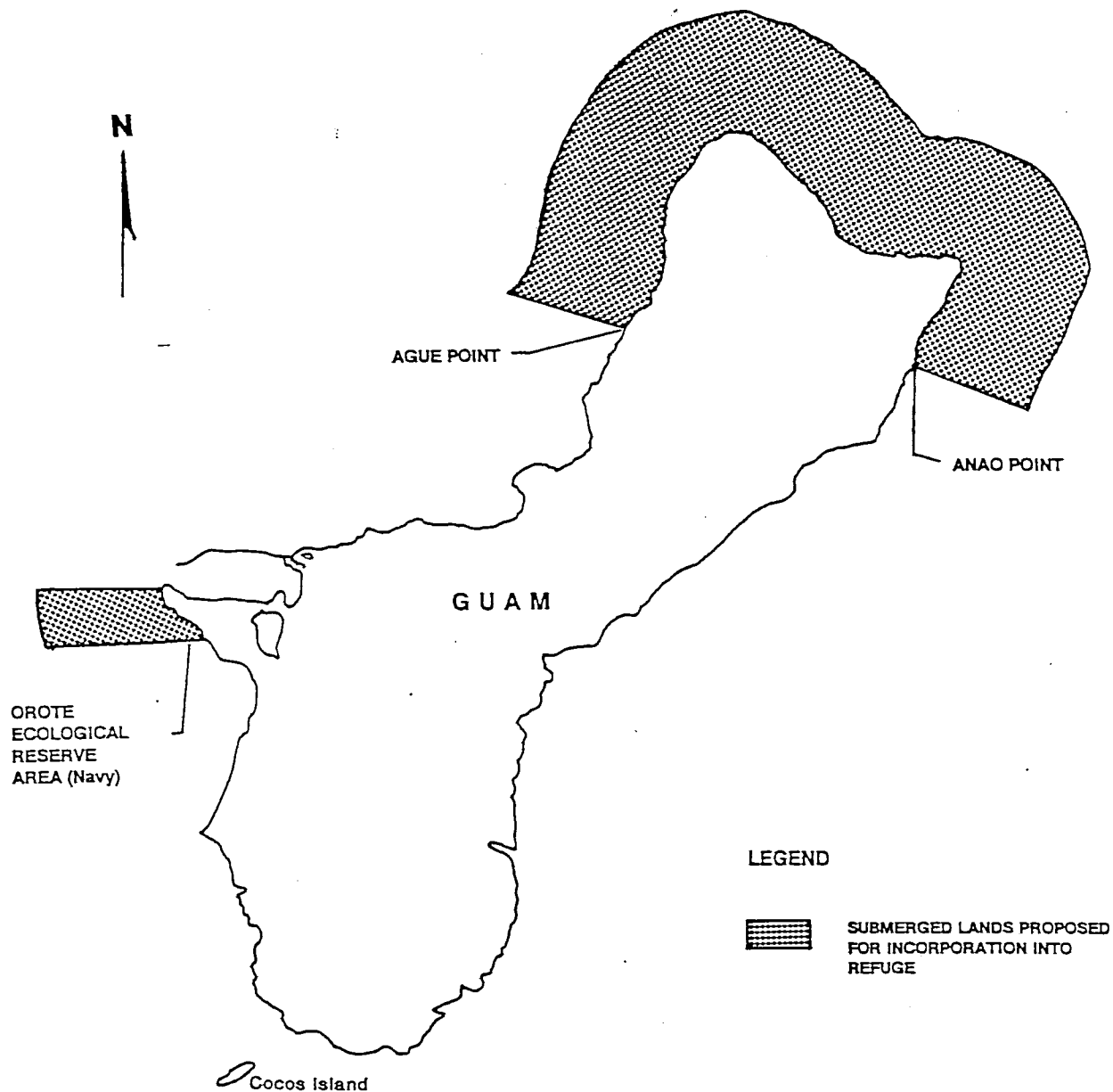


Figure 6. Submerged lands Option 1. Proposed Guam National Wildlife Refuge on submerged lands offshore from certain DOD lands to 4.8 kilometers (3 miles). Boundaries shown are approximations and include an estimated 25,195 hectares (62,255 acres) of submerged land. Final boundaries would be determined following negotiations with the landowners.

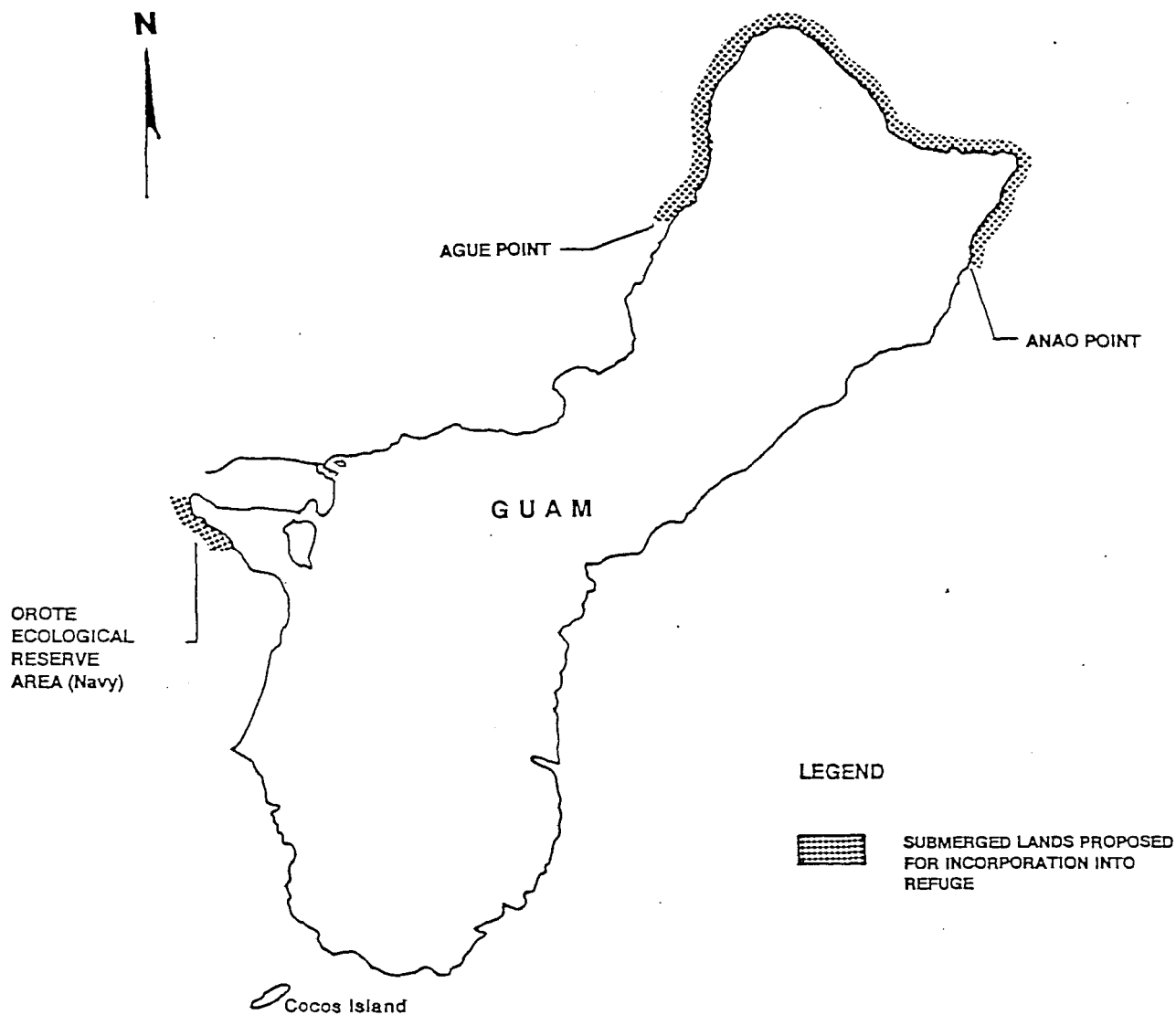


Figure 7. Submerged lands Option 2, the preferred Option. .Proposed Guam National Wildlife Refuge on submerged lands offshore from certain DOD lands to the 30-meter (100-foot) isobath. Boundaries shown are approximations and include an estimated 1,321 hectares (3,265 acres) of submerged land. Final boundaries would be determined following negotiations with the landowners.

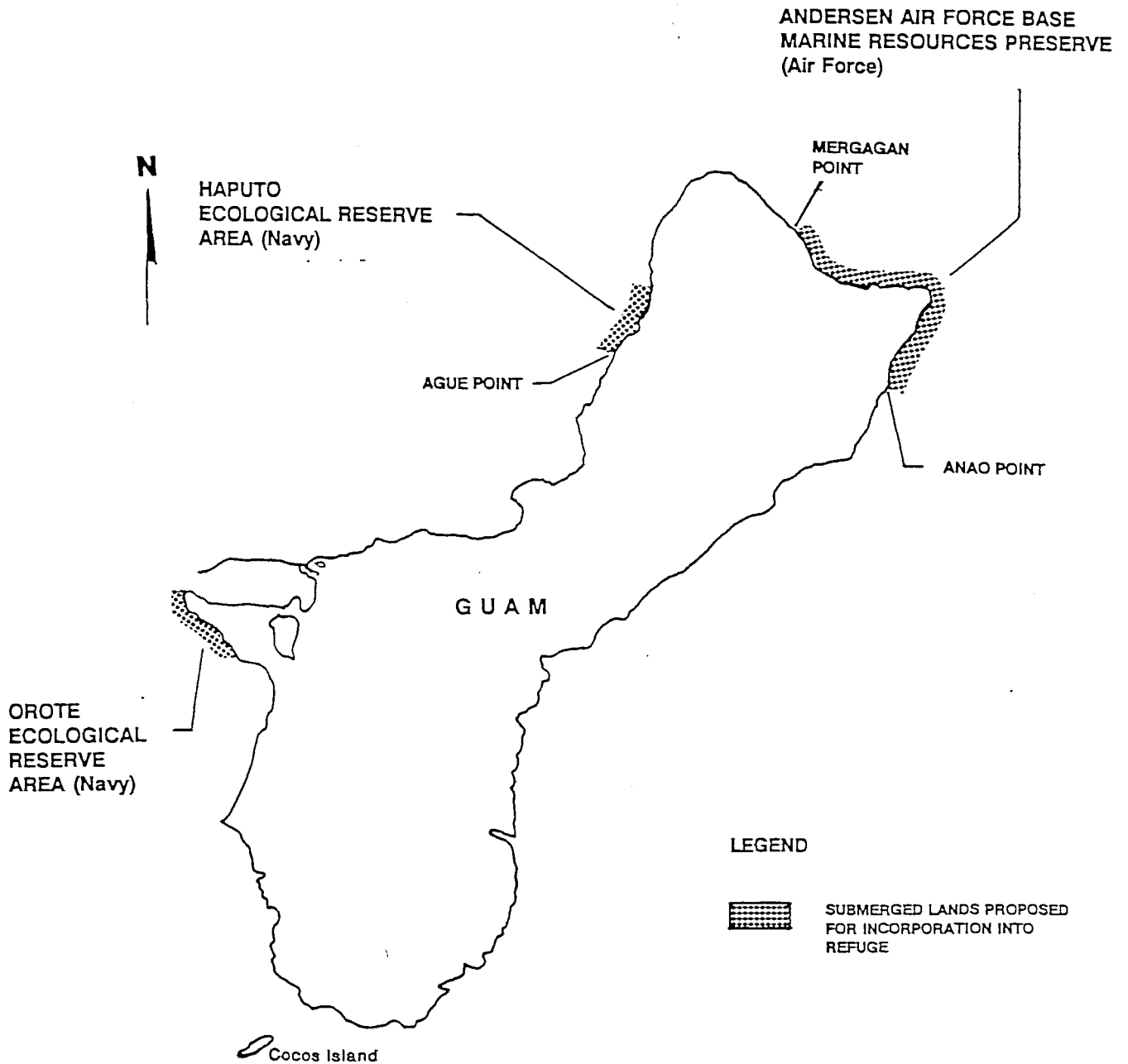


Figure 8. Submerged lands Option 3. Proposed Guam National Wildlife Refuge on submerged lands only within established DOD and Government of Guam marine conservation areas. Boundaries shown are approximations and include an estimated 566 hectares (1,399 acres) of submerged land. Final boundaries would be determined following negotiations with the landowners.

Endangered and threatened wildlife of Guam.

Common name:	Scientific name:	Official Federal status:	Official Guam status:	Comments on Guam population:
NATIVE FOREST BIRDS:				
Nightingale reed-warbler	<u>Acrocephalus l. luscini</u>	Endangered	Endangered	May be extinct.
Micronesian starling	<u>Aplonis opaca guami</u>	-	Endangered	Uncommon.
Mariana crow	<u>Corvus kubaryi</u>	Endangered	Endangered	Fewer than 100 on Guam.
White-throated ground dove	<u>Gallicolumba x. xanthonura</u>	-	Endangered	Very rare in 1979. May be extinct on Guam.
Guam Micronesian kingfisher	<u>Halcyon c. cinnamomina</u>	Endangered	Endangered	Extirpated from the wild. Exist only in captive breeding populations.
Micronesian megapode	<u>Megapodius l. laperouse</u>	Endangered	Endangered	May be extinct on Guam.
Guam broadbill (=flycatcher)	<u>Myiagra freycineti</u>	Endangered	Endangered	May be extinct. Not seen since 1984.
Micronesian honeyeater	<u>Myzomela rubrata</u>	-	Endangered	May be extinct on Guam.
Mariana fruit dove	<u>Ptilinopus roseicapilla</u>	-	Endangered	Very rare on Guam in limestone forests.
Guam rail	<u>Rallus owstoni</u>	Endangered	Endangered	Extirpated from the wild. Exist only in captive breeding populations.
Rufous-fronted fantail	<u>Rhipidura rufifrons</u>	-	Endangered	May be extinct on Guam. Not seen since 1984.
Guam bridled white-eye	<u>Zosterops c. conspicillatus</u>	Endangered	Endangered	May be extinct. Not seen since 1983.
NATIVE CAVE SWIFTLETS:				
Vanikoro swiftlet	<u>Aerodramus vanikorensis bartschi</u>	Endangered	Endangered	Rare. One colony left on southern Guam.
NATIVE WATERFOWL:				
Mariana mallard	<u>Anas platyrhynchos oustaleti</u>	Endangered	Endangered	May be extinct on Guam.
Mariana common moorhen	<u>Gallinula chloropus guami</u>	Endangered	Endangered	Rare. Approximately 150 remain on Guam.
NATIVE MAMMALS:				
Pacific sheath-tailed bat	<u>Emballonura semicaudata</u>	-	Endangered	May be extinct on Guam.
Mariana fruit bat	<u>Pteropus mariannus mariannus</u>	Endangered	Endangered	One colony left on northern Guam. Less than 400 individuals on Guam.
Little Mariana fruit bat	<u>Pteropus tokudae</u>	Endangered	Endangered	May be extinct.
SEA TURTLES:				
Loggerhead sea turtle	<u>Caretta caretta</u>	Threatened	Threatened	
Green sea turtle	<u>Chelonia mydas</u>	Threatened	Threatened	Nest on northern Guam.
Leatherback sea turtle	<u>Dermochelys coriacea</u>	Endangered	Endangered	Accidental visitor.
Hawksbill sea turtle	<u>Eretmochelys imbricata</u>	Endangered	Endangered	
Olive (Pacific) ridley sea turtle	<u>Lepidochelys olivacea</u>	Threatened	Threatened	
NATIVE PLANTS:				
Tsatsa	<u>Cyathea lunulata</u>	-	Endangered	Rare.
Ufa	<u>Heritiera longipetiolata</u>	-	Endangered	Rare. Found on northern Guam.
Hayan or Tronkon (Pea family)	<u>Serianthes nelsonii</u>	Endangered	Endangered	One adult, 11 seedlings left in the wild.

CHECK LIST OF TERRESTRIAL VETERBRATES AND SELECTED TERRESTRIAL INVERTEBRATES OF GUAM

Revised March 1992

Division of Aquatic & Wildlife Resources

Department of Agriculture

P.O. Box 2950, Agana, Guam 96910

Legend: EG = Endemic to Guam C = Common
 EM = Endemic to Marianas U = Uncommon
 N = Native resident R = Rare
 I = Introduced resident A = Accidental visitor
 M = Migratory E = Extinct on Guam
 SU = Status unknown
 H = Hypothetical

Listed as endangered (@) or threatened (‡) on the U.S. Endangered Species List
 Listed as endangered (*) or threatened (**) on the Guam Endangered Species List

<u>FAMILY AND SCIENTIFIC NAMES</u>	<u>ENGLISH NAME</u>	<u>CHAMORRO NAME</u>	<u>STATUS</u>
Tree Snails (selected species included)			
<i>Partula gibba</i>	Tree Snail	Akaleha'	N,R
<i>Partula salifana</i>	Tree Snail	Akaleha'	EG,E
<i>Partula radiolata</i>	Tree Snail	Akaleha'	EG,R
<i>Samoana fragillis</i>	Tree Snail	Akaleha'	N,R
Land Snails (selected species included)			
<i>Melampus flava</i>	Land Snail	Akaleha'	N,UC
<i>Pythia scarabaeus</i>	Land Snail	Akaleha'	N,R
<i>Succinea guamensis</i>	Land Snail	Akaleha'	N,E
<i>Himeroconcha lamlamensis</i>	Land Snail	Akaleha'	N,SU
<i>Himeroconcha rotula</i>	Land Snail	Akaleha'	N,SU
<i>Himeroconcha quadrasi</i>	Land Snail	Akaleha'	N,SU
<i>Himeroconcha fusca</i>	Land Snail	Akaleha'	N,SU
<i>Landronellum mariannarum</i>	Land Snail	Akaleha'	N,SU
<i>Semperdon heptapychius</i>	Land Snail	Akaleha'	N,SU
<i>Semperdon rotanus</i>	Land Snail	Akaleha'	N,SU
<i>Lampryocystis denticulata</i>	Land Snail	Akaleha'	N,SU
<i>Lampryocystis misella</i>	Land Snail	Akaleha'	N,SU
<i>Lampryocystis fastigata</i>	Land Snail	Akaleha'	N,SU
<i>Liardetia sculpia</i>	Land Snail	Akaleha'	N,SU
<i>Liardetia dollolum</i>	Land Snail	Akaleha'	N,SU
<i>Achatina fulica</i>	African Land Snail	Akaleha'	I,C
<i>Gonaxis kibweziensis</i>	Carnivore Snail	Akaleha'	I,E
<i>Gonaxis quadrilateralis</i>	Carnivore Snail	Akaleha'	I,E
<i>Euglandina rosea</i>	Carnivore Snail	Akaleha'	I,E
<i>Camaenid sp.</i>	Land Snail	Akaleha'	I,C
<i>Subulina octonia</i>	Land Snail	Akaleha'	I,SU

CRUSTACEANS

PAGURIDAE

<i>Coenobita spp.</i>	Hermit Crab	Duk'duk, Umag	N,C
<i>Birgus latro</i>	Coconut Crab	Ayuyu	N,U

XANTHIDAE

<i>Cardisoma carnifex</i>	Land Crab	Pang'lao	N,C
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AMPHIBIANS

BUFONIDAE (Toads)

<i>Bufo marinus</i>	Marine Toad	Kairo'	I,C
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HYLIDAE (Tree-Frogs)

<i>Litoria fallax</i>	Eastern Dwarf Tree Frog	Kairo'	I,C
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REPTILES

CHELONIDAE (Sea Turtles)

<i>Chelonia mydas</i>	Green Sea Turtle	Haggan	N,R†**
<i>Eretomochelys imbricata</i>	Hawksbill Sea Turtle	Haggan Karai	N,R@*

DERMOCHELYIDAE (Leatherback Sea Turtle)

<i>Dermochelys coriacea</i>	Leatherback Sea Turtle		A@
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GEKKONIDAE (Geckos)

<i>Gehyra oceanica</i>	Oceanic Gecko	Achiak	N,R
<i>Gehyra mutilata</i>	Mutilated Gecko	Guali'ek	N,C
<i>Nactus pelagicus</i>	Rock Gecko	Guali'ek	N,E
<i>Hemidactylus frenatus</i>	House Gecko	Guali'ek	I,C
<i>Lepidodactylus lugubris</i>	Mourning Gecko	Guali'ek	N,C
<i>Perochirus ateles</i>	Speckle-bellied Gecko	Guali'ek	N,R

IGUANIDAE (True Iguanas)

<i>Anolis carolinensis</i>	Green Anole	Guali'ek	I,U
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SCINCIDAE (Skinks)

<i>Carlia fusca</i>	Curious Skink	Guali'ek Halom Tano'	I,C
<i>Cryptoblepharus poecilopleurus</i>	Snake-eyed Skink	Guali'ek Halom Tano'	N,R
<i>Emoia slevini</i>	Slevin's Skink	Guali'ek Halom Tano'	EM,R
<i>Emoia caeruleocauda</i>	Blue-tailed Skink	Guali'ek Halom Tano'	N,C
<i>Emoia cyanura</i>	Azure-tailed Skink	Guali'ek Halom Tano'	N,R
<i>Emoia atrocostata</i>	Tide Pool Skink	Guali'ek Halom Tano'	N,R
<i>Lipinia noctua</i>	Moth Skink	Guali'ek Halom Tano'	N,R

VARANIDAE (Monitor Lizards)

<i>Varanus indicus</i>	Monitor Lizard	Hilitai	I,C
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TYPHLOPIDAE (Blind Snakes)

<i>Ramphotyphlops braminus</i>	Blind Snake	Ulo' Attilong	I,C
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COLUBRIDAE (Colubrid Snakes)

<i>Boiga irregularis</i>	Brown Tree Snake	Kolepbla	I,C
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BIRDS

DIOMEDEIDAE (Albatrosses)

<i>Diomedea nigripes</i>	Black-footed Albatross		H
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PROCELLARIIDAE (Shearwaters and Petrels)

<i>Pseudobulweria rostrata</i>	Tahiti Petrel		A
<i>Calonectris leucomelas</i>	Streaked Shearwater		A
<i>Puffinus pacificus</i>	Wedge-tailed Shearwater		U
<i>Puffinus tenuirostris</i>	Short-tailed Shearwater		M,C
<i>Puffinus newelli</i>	Newell's Shearwater		A
<i>Puffinus lherminieri</i>	Audubon's Shearwater		A

HYDROBATIDAE (Storm-Petrels)

<i>Oceanodroma leucorhoa</i>	Leach's Storm-Petrel		A
<i>Oceanodroma matsudaire</i>	Matsudaira's Storm-Petrel		U

PHAETHONTIDAE (Tropicbirds)

<i>Phaethon lepturus</i>	White-tailed Tropicbird	Fakpe, Utag	N,R
<i>Phaethon rubricauda</i>	Red-tailed Tropicbird	Fakpe, Utag	A

SULIDAE (Boobies and Gannets)

<i>Sula dactylatra</i>	Masked Booby	Lu'an	R
<i>Sula leucogaster</i>	Brown Booby	Lu'an	U
<i>Sula sula</i>	Red-footed Booby	Lu'an	U

PHALACROCORACIDAE (Cormorants)

<i>Phalacrocorax carbo</i>	Great Cormorant		H
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FREGATIDAE (Frigatebirds)

<i>Fregata minor</i>	Great Frigatebird	Payaaya, Gaga Moa	R
<i>Fregata ariel</i>	Lesser Frigatebird	Payaaya, Gaga Moa	H

ARDEIDAE (Egrets, Herons, and Bitterns)

<i>Ixobrychus sinensis</i>	Yellow Bittern	Kakkak	N,C
<i>Dupetor flavicollis</i>	Black Bittern		A
<i>Ardea cinerea</i>	Gray Heron		A
<i>Egretta sacra</i>	Pacific Reef-Heron	Chuchuko	N,C
<i>Egretta intermedia</i>	Intermediate Egret	Chuchuko	M,U
<i>Egretta garzetta</i>	Little Egret	Chuchuko	M,R
<i>Ardeola bacchus</i>	Chinese Pond-Heron		A
<i>Bubulcus ibis</i>	Cattle Egret	Chuchuko	M,U
<i>Butorides striatus</i>	Green-backed Heron		A
<i>Nycticorax nycticorax</i>	Black-crowned Night-Heron		A

ANATIDAE (Ducks, Geese, and Swans)

<i>Anas crecca</i>	Green-winged Teal	Nganga	A
<i>Anas platyrhynchos oustaleti</i>	Mariana Mallard	Nganga	EM,E@*
<i>Anas poecilorhyncha</i>	Spot-billed Duck	Nganga	A
<i>Anas acuta</i>	Northern Pintail	Nganga	M,U
<i>Anas querquedula</i>	Garganey	Nganga	M,R
<i>Anas clypeata</i>	Northern Shoveler	Nganga	M,U
<i>Anas penelope</i>	Eurasian Wigeon	Nganga	A
<i>Anas americana</i>	American Wigeon	Nganga	A
<i>Aythya ferina</i>	Common Pochard	Nganga	A
<i>Aythya fuligula</i>	Tufted Duck	Nganga	M,U

ACCIPITRIDAE (Hawks and Eagles)

<i>Pandion haliaetus</i>	Osprey		A
<i>Accipiter gularis</i>	Asiatic Sparrowhawk		A
<i>Accipiter soloensis</i>	Chinese Goshawk		H
<i>Buteo buteo</i>	Common Buzzard		H

FALCONIDAE (Falcons)

<i>Falco peregrinus</i>	Peregrine Falcon		A@
<i>Falco subbuteo</i>	Northern Hobby		H

MEGAPODIIDAE (Megapodes)

<i>Megapodius laperouse</i>	Micronesian Megapode	Sasngat	N,E@*
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PHASIANIDAE (Quails, Pheasants, and Allies)

<i>Francolinus francolinus</i>	Black Francolin		I,C
<i>Coturnix chinensis</i>	Blue-breasted Quail	Bengbeng	I,U

RALLIDAE (Rails, Gallinules, and Coots)

<i>Rallus owstoni</i>	Guam Rail	Koko	EG,E@*
<i>Porzana cinerea</i>	White-browed Crake	Bako	N,E
<i>Gallinula chloropus</i>	Common Moorhen	Pulattat	N,U@*
<i>Fulica atra</i>	Eurasian Coot		A

CHARADRIIDAE (Plovers)

<i>Pluvialis squatarola</i>	Black-bellied Plover	Dulili	M,U
<i>Pluvialis dominica</i>	Lesser Golden-Plover	Dulili	M,C
<i>Charadrius mongolus</i>	Mongolian Plover	Dulili	M,C
<i>Charadrius leschenaultii</i>	Greater Sand-Plover	Dulili	M,U
<i>Charadrius alexandrinus</i>	Snowy Plover	Dulili	A
<i>Charadrius hiaticula</i>	Common Ringed Plover	Dulili	M,R
<i>Charadrius dubius</i>	Little Ringed Plover	Dulili	A

HAEMATOPODIDAE (Oystercatchers)

<i>Haematopus ostralegus</i>	Eurasian Oystercatcher		A
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RECURVIROSTRIDAE (Avocets and Stilts)

<i>Himantopus himantopus</i>	Black-winged Stilt		A
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SCOLOPACIDAE (Sandpipers, Snipe, and other waders)

<i>Tringa nebularia</i>	Common Greenshank	Dulili	M,R
<i>Tringa guttifer</i>	Nordmann's Greenshank	Dulili	H@
<i>Tringa totanus</i>	Common Redshank	Dulili	A
<i>Tringa erythropus</i>	Spotted Redshank	Dulili	H
<i>Tringa stagnatilis</i>	Marsh Sandpiper	Dulili	M,R
<i>Tringa glareola</i>	Wood Sandpiper	Dulili	M,U
<i>Heteroscelus brevipes</i>	Gray-tailed Tattler	Dulili	M,C
<i>Heteroscelus incanus</i>	Wandering Tattler	Dulili	M,U
<i>Actitis hypoleucos</i>	Common Sandpiper	Dulili	M,U
<i>Xenus cinereus</i>	Terek Sandpiper	Dulili	A
<i>Numenius minutus</i>	Little Curlew	Kalalang	A
<i>Numenius phaeopus</i>	Whimbrel	Kalalang	M,C
<i>Numenius tahitiensis</i>	Bristle-thighed Curlew	Kalalang	A
<i>Numenius madagascariensis</i>	Far Eastern Curlew	Kalalang	A
<i>Numenius arquata</i>	Eurasian Curlew	Kalalang	A
<i>Limosa limosa</i>	Black-tailed Godwit	Kalalang	A
<i>Limosa lapponica</i>	Bar-tailed Godwit	Kalalang	M,R
<i>Arenaria interpres</i>	Ruddy Turnstone	Dulili	M,C
<i>Calidris tenuirostris</i>	Great Knot	Dulili	A
<i>Calidris alba</i>	Sanderling	Dulili	M,R
<i>Calidris ruficollis</i>	Rufous-necked Stint	Dulili	M,U
<i>Calidris subminuta</i>	Long-toed Stint	Dulili	A
<i>Calidris acuminata</i>	Sharp-tailed Sandpiper	Dulili	M,U
<i>Calidris melanotos</i>	Pectoral Sandpiper	Dulili	A
<i>Calidris alpina</i>	Dunlin	Dulili	A
<i>Calidris ferruginea</i>	Curlew Sandpiper	Dulili	A
<i>Philomachus pugnax</i>	Ruff	Dulili	A
<i>Gallinago megala</i>	Swinhoe's Snipe	Dulili	M,R
<i>Gallinago gallinago</i>	Common Snipe	Dulili	A

LARIDAE (Gulls and Terns)

<i>Larus ridibundus</i>	Common Black-headed Gull		A
<i>Larus schistisagus</i>	Slaty-backed Gull		A
<i>Sterna bergii</i>	Great-crested Tern		A
<i>Sterna hirundo</i>	Common Tern		M,R
<i>Sterna sumatrana</i>	Black-naped Tern		A
<i>Sterna albifrons</i>	Little Tern		M,R
<i>Sterna fuscata</i>	Sooty Tern		R
<i>Chlidonias hybridus</i>	Whiskered Tern		A
<i>Chlidonias leucopterus</i>	White-winged Tern		M,R
<i>Anous stolidus</i>	Brown Noddy	Fahang	N,C
<i>Anous minutus</i>	Black Noddy	Fahang	C
<i>Gygis alba</i>	White Tern	Chunge	N,C

COLUMBIDAE (Pigeons and Doves)

<i>Palinopus roseicapilla</i>	Mariana Fruit-Dove	Totot	EM,E*
<i>Gallicolumba xanthonura</i>	White-throated Ground-Dove	Paluman Apaka (male)	N,E*
<i>Streptopelia bitorquata</i>	Philippine Turtle-Dove	Paluman Fachi (female)	
<i>Columba livia</i>	Rock Dove	Paluman Senesa	I,C
		Paluman Mansu	I,C

STRIGIDAE (Owls)

<i>Asio flammeus</i>	Short-eared Owl	Mongmo	A
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APODIDAE (Swifts)

<i>Aerodramus vanikorensis</i>	Island Swiftlet	Yayaguak	N,R@*
<i>Apus pacificus</i>	Fork-tailed Swift		A

ALCEDINIDAE (Kingfishers)

<i>Halcyon cinnamomina</i>	Micronesian Kingfisher	Sihek	N,E@*
<i>Alcedo atthis</i>	Common Kingfisher		A

HIRUNDINIDAE (Swallows)

<i>Hirundo rustica</i>	Barn Swallow		M,R
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DICRURIDAE (Drongos)

<i>Dicrurus macrocercus</i>	Black Drongo	Sali Taiwan	I,U
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CORVIDAE (Crows and Jays)

<i>Corvus kubaryi</i>	Mariana Crow	Aga	EM,R@*
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MUSCICAPIDAE (Old World Flycatchers and Warblers)

<i>Acrocephalus luscini</i>	Nightingale Reed-warbler	Ga-kaliso, Ga-kirriso	EM,E@*
<i>Myiagra freycineti</i>	Guam Flycatcher	Chuguangguang	EG,E@*
<i>Rhipidura rufifrons</i>	Rufous Fantail	Chichirika	N,E*

MOTACILLIDAE (Wagtails and Pipits)

<i>Motacilla cinerea</i>	Gray Wagtail		A
<i>Motacilla alba</i>	White Wagtail		H

STURNIDAE (Starlings)

<i>Aplonis opaca</i>	Micronesian Starling	Sali	N,U*
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MELIPHAGIDAE (Honeyeaters)

<i>Myzomela rubrata</i>	Micronesian Honeyeater	Egigi	N,E*
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ZOSTEROPIDAE (White-eyes)

<i>Zosterops conspicillatus</i>	Bridled White-eye	Nossa'	N,E@*
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PASSERIDAE (Weavers)

<i>Passer montanus</i>	Eurasian Tree Sparrow		I,C
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ESTRILIDAE (Weaver Finches)

<i>Lonchura malacca</i>	Chestnut Mannikin	Rice Bird	I,R
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MAMMALS

SORICIDAE (Shrews)

<i>Suncus murinus</i>	Musk Shrew	Cha'ka	I,U
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PTEROPODIDAE (Fruit Bats)

<i>Pteropus mariannus</i>	Marianas Fruit Bat	Fanihi	N,R@*
<i>Pteropus tokudae</i>	Little Marianas Fruit Bat	Fanihi	EG,E@*

EMBALLONURIDAE (Sheath-tailed Bats)

<i>Emballonura semicaudata</i>	Pacific Sheath-tailed Bat	Payesyes	N,E*
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MURIDAE (Old World rats and Mice)

<i>Rattus exulans</i>	Polynesian Rat	Cha'ka	I,U
<i>Rattus rattus</i>	Roof Rat	Cha'ka	I,C
<i>Rattus norvegicus</i>	Norway Rat	Cha'ka	I,U
<i>Mus musculus</i>	House Mouse	Cha'kan Halom Guma	I,C

CANIDAE (Dogs, Foxes, and Wolves)

<i>Canis familiaris</i>	Feral Dog	Ga'lagu	I,C
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FELIDAE (Cats)

<i>Felis catus</i>	Feral Cat	Katu	I,C
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SUIDAE (Pigs)

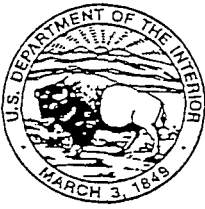
<i>Sus scrofa</i>	Feral Pig	Babui	I,C
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CERVIDAE (Deer)

<i>Cervus unicolor</i>	Philippine Deer	Benado	I,C
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BOVIDAE (Cattle, Sheep, Goats, and Antelope)

<i>Bubalus bubalis</i>	Feral Asiatic Water Buffalo	Carabao	I,U
<i>Capra hircus</i>	Feral Goat	Chiba	I,R



United States Department of the Interior

TAKE
PRIDE IN
AMERICA

FISH AND WILDLIFE SERVICE HAWAIIAN AND PACIFIC ISLANDS NATIONAL WILDLIFE REFUGE COMPLEX

Region 1 - Refuges and Wildlife

P.O. Box 50167

Honolulu, Hawaii 96850-4996

(808) 541-1201

FAX: (808) 541-1216

In Reply Refer To:
FWS/ARW/HPINWRComplex

SEP 18 1992

Dear Commenter:

Thank you for your interest and concern regarding the proposed establishment of the Guam National Wildlife Refuge (Refuge). The U.S. Fish and Wildlife Service (Service) has reviewed your comments and those from other respondents regarding the Draft Environmental Assessment (EA) for the proposed Refuge. The purpose of this letter is to inform you of the status of the project and provide a summary of the issues raised by the public.

During the public comment period, the Service received 44 letters. Eleven were from U.S. Government agencies including Department of Defense agencies, the Federal Aviation Administration, and the Soil Conservation Service. Eleven letters were received from Government of Guam agencies including the Congressional Delegate, legislators, Guam Division of Aquatic and Wildlife Resources, Guam Division of Parks and Recreation, Guam Bureau of Planning, the Committee on Self Determination, and the Office of the Governor. Other letters were from not-for-profit conservation organizations, a developer, and the Commonwealth of the Northern Mariana Islands' Department of Natural Resources. A total of 127 private individuals responded (114 by way of a petition) representing the concerns of former landowners, scientists, and other Guam residents. The Service also received oral and written comments at the June 22 public meeting held on Guam.

Based on these comments, it was apparent that most parties agree on the urgent need for wildlife and habitat protection and restoration on Guam. After careful consideration, the Service has decided to prepare a Revised Draft EA that will include additional alternatives and more fully evaluate issues related to the establishment of the proposed Refuge. We plan to release the Revised Draft EA for public review and comment this fall. After incorporating concerns received during the 30-day comment period following the release of the Revised Draft EA, the Service will prepare a Final EA that will be the foundation for its decision on the establishment of the proposed Refuge.

The following may provide clarification about Service programs in general:

1. Q: Why is the U.S. Fish and Wildlife Service (Service) considering establishing a Refuge on Guam?

A: The Service is mandated by law to protect and restore certain wildlife resources on lands under the jurisdiction of the United States. For example, the Endangered Species Act directs the Service to take action on behalf of endangered and threatened species, and to manage these species and their habitats to provide for recovery and eventual de-listing. The proposed Refuge would provide for the long-term survival and protection of Guam's unique and endangered wildlife and habitats.

2. Q: What is an "environmental assessment" and how is it used?

A: The Service is required to fulfill its mandates in a manner that is consistent with the provisions of the National Environmental Policy Act (NEPA). An environmental assessment (EA) is a document that is required under NEPA for any project proposed by a Federal agency that may have a significant impact on the quality of the environment. An EA should evaluate all reasonable alternatives that will meet stated objectives and address the possible environmental, social, and economic impacts. The Service uses EA's and other documents to inform and involve the public about its plans, and to make decisions about whether to proceed with various proposed projects, and if so, in what manner to proceed. Although the alternatives are analyzed in an unbiased manner, the preparing office may recommend a "preferred alternative" -- one that fulfills the Service's statutory mission and responsibilities and gives consideration to economic, environmental, and social concerns. Public involvement is crucial at all stages of development of the EA in order to assist the Service with developing its projects, evaluating the impacts, and selecting a preferred alternative.

3. Q: What is an "overlay refuge", how is it created, and how does it protect wildlife?

A: An overlay refuge, once established, becomes a unit of the National Wildlife Refuge System and is administered by the Service, but the Service does not have primary jurisdiction over the underlying land unit. An overlay refuge can be established through a variety of means such as Congressional legislation, issuance of an Executive Order by the President, or agreements between the Service and the primary landowner or agency. An overlay refuge allows the Service to manage habitats, wildlife, and public use on a parcel of land and water for stated purposes that are contained in the establishing document (legislation, Executive Order, or agreement). Midway Atoll National Wildlife Refuge and Johnston Atoll National Wildlife Refuge are examples of

overlay refuges in the Pacific. Midway Atoll is an example of the type of overlay refuge being proposed for Guam since the Department of Defense is the primary landowner there.

4. Q: What is "critical habitat" and how does it protect wildlife?

A: Critical habitat is a legal designation under the Endangered Species Act that identifies habitat essential to the conservation of a species listed as endangered or threatened, and alerts Federal agencies conducting projects in the area to the significance of the habitat. While critical habitat designation, per se, does not establish sanctuaries or provide for active management, all Federal actions and all projects on private lands designated as critical habitat which require Federal funds, actions, or authorizations to be carried out are subject to a mandatory "Section 7 consultation" to ensure the project does not adversely modify designated critical habitat. This process allows the Service to evaluate activities on Federal lands and private lands subject to a Federal nexus, and to provide technical advice and guidance to reduce or eliminate risks to endangered species.

5. Q: What are "excess lands"?

A: By law, when a Federal agency that owns property no longer needs the property to accomplish its mission, it is considered "Excess Property" and well-defined procedures are followed to transfer title (dispose of the property). In brief, General Services Administration (GSA), is the lead agency that coordinates property disposal. If another Federal agency needs a particular tract to accomplish its mission, that agency submits a request to GSA for the parcel. If no Federal agency need the parcel, it may be sold or transferred to a local government entity such as a State, Territory, County, City, etc. If no local government entity is interested, the parcel will usually be put up for sale to private individuals.

During the public comment period, certain topics of concern were brought up by several commenters and are addressed in a generic question and answer format as follows:

1. Q: What is the proposed size of the Refuge and what lands will be included?

A: A range of alternatives that examine the feasibility of a Refuge of various acreage (and ownerships) will be presented in the Revised Draft EA. In general, based on the comments received to date, it is expected that the Revised Draft EA will address additional alternatives that will probably be downsized from the alternatives presented in the previous Draft EA.

2. Q: Who will manage the proposed Refuge?

A: The Service will evaluate a number of different scenarios for managing the proposed Refuge including management by the Service, the Government of Guam, the military, or management through cooperative agreements among or between these agencies.

3. Q: What is the ability of Department of the Interior to manage a Refuge on Guam?

A: The Service has the proven ability to professionally and adequately manage refuges through its own on-site personnel, or through cooperative agreements with the Department of Defense agencies or State or local governmental agencies, or through a combination of these approaches.

4. Q: What is the availability of funding in these tight economic times?

A: Funding for the development and operation of the proposed Refuge is dependent upon being included in an approved budget or being specifically funded through other mechanisms. If the decision is to establish a refuge on Guam, the Service will request start-up and operational funds. Funds for the establishment and operation of a refuge come from a number of possible sources including Federal Land and Water Conservation Funds, Migratory Bird Funds, direct Congressional appropriation, private donation, and other sources.

5. Q: What is being proposed in terms of specific management plans on Guam?

A: Management plans will be developed for the proposed Refuge and will be guided by the purposes of the Refuge and any establishing documents/agreements. The purposes and principal agreement issues will be addressed in the Revised Draft EA. Management plans are usually developed after a refuge is established. The Service recognizes the need to secure and enhance habitat that is essential to the continued survival of endangered and threatened species and other wildlife, and continues to work cooperatively with local wildlife management agencies and other concerned parties to address these issues.

6. Q: How much public access to the Refuge will be available and what are the anticipated public uses of the Refuge?

A: The Service is unable to address public access and types of uses at this time due to the many different alternatives being considered. The Revised Draft EA will address these issues. However, controlled public use could be managed to insure compatibility with the proposed Refuge.

7. Q: What will the Service do about excess lands; particularly Ritidian Point?
- A: This will depend on the selected alternative. It is assumed that if a Service-managed Refuge is established, a parcel of land that the Service would have primary jurisdiction over (fee title) would be required on which to develop a headquarters and infrastructure. The Service continues to have dialog with parties that are interested in Ritidian Point in order to reach a consensus for appropriate uses of the area that are compatible with and will not decrease the habitat value of the area. Areas of significant value to wildlife that become excess to the needs of the military may be requested by the Service in the future.
8. Q: Why are submerged lands included in the proposal? How will this affect the public's ability to go fishing, boating, and swimming?
- A: There is some dispute about jurisdiction over the submerged lands. This is a legal matter that will be resolved by the interested parties separately from the establishment of a Refuge. The Service will consider including some submerged lands in the proposed Refuge in the Revised Draft EA. If submerged lands are included, the distances from shore may vary according to the need to protect turtle foraging habitat. In addition to providing protection for turtles, inclusion of some submerged lands could enhance enforcement in already-established marine preserves. Recreational and commercial use of marine areas will be regulated by the appropriate agency.
9. Q: How does the upcoming final decision on critical habitat relate to the proposed Refuge?
- A: On June 14, 1991, the Service proposed designating certain portions of Guam as critical habitat for six endangered forest species. The last public comment period closed on July 15, 1992. The final decision on whether to designate critical habitat may depend upon the outcome of the decision to establish a Refuge. A key portion of the final decision on critical habitat designation is whether the land area currently proposed for critical habitat is still in need of special management on behalf of endangered species should a Refuge be established.
10. Q: There are significant contaminants on military lands. How do these contaminants and a possible Superfund designation affect the ability of the Refuge to be established? Are contaminants a concern to a Refuge operation?
- A: Superfund designation would not prevent an overlay Refuge from being established at Andersen AFB. Existing legal documents assign liability to the Air Force and ensure that the Service would not assume any liability for contaminants found on Andersen AFB. The Air Force will conduct an investigation of the extent

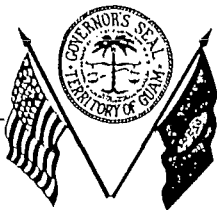
and nature of the contamination and will be responsible for cleanup and remediation of the sites. The Service will provide technical assistance and consultation throughout all phases of the investigation and cleanup to ensure compliance with the Endangered Species Act and NEPA. Because some of the sites are located in and near essential habitat for endangered species, the Service will not delete individual sites from the proposed Refuge.

When the Revised Draft EA is completed this fall, you will receive a copy of the document and additional copies will be made available on Guam and by contacting my office at the above letterhead address. The Service will continue to work closely with interested and affected agencies and other parties and will continue to seek public input on this project. Once again, thank you for your continued interest in this project.

Sincerely,

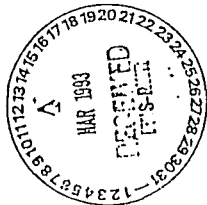
A handwritten signature in dark ink, appearing to read "Ray Rauch", written in a cursive style.

Ray Rauch
Project Leader



*Territory of Guam
Territorio de Guam*

OFFICE OF THE GOVERNOR
LUPANAN MAGA LAHI
AGANA, GUAM 96911 S.A.



MAR 05 1993

Mr. Ray Rauch
Refuge Complex Manager,
Hawaiian/Pacific Islands
National Wildlife Refuge Complex
U.S. Fish and Wildlife Service
P.O. Box 50157
Honolulu, Hawaii 96850

Hafa Adai Mr. Rauch:

On behalf of the people of the Territory of Guam, I am submitting my comments on the revised draft Environmental Assessment (EA) for the Proposed Guam National Wildlife Refuge. I commend you and your staff for your continued concern, interest and efforts for the protection and restoration of Guam's threatened and endangered species. I assure you that I, too, remain committed in my interest to protect and restore such species and continue to support a comprehensive approach to the resolution of problems that have resulted in the decline and possible extinction of many of these species and their habitats.

Therefore, we support the concept of a National Wildlife Refuge for Guam, as the refuge on Guam would be a proactive measure for the recovery and preservation of endangered species and other wildlife and their habitat. In addition, it would increase the opportunities for public recreational use of some areas that heretofore have been off-limits to civilians, provided that the recreational activities are compatible with the goals of the refuge.

We acknowledge that the review process currently underway is a decision-making process that will decide whether the U.S. Fish and Wildlife Service (FWS) will continue to pursue the development of a Guam National Wildlife Refuge, and that issuance of a Final Environmental Assessment that includes a positive recommendation for one of the alternatives will not, in itself, create the refuge. This will be an overlay refuge with the prospect of a successful collaboration between the Government of Guam and the federal government, but much has yet to be done in defining the implementing mechanisms for a jointly-managed overlay refuge. The Government of Guam must necessarily be party to all these implementing mechanisms

Mr. Ray Rauch
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by virtue of the fact that 1) there are existing "Cooperative Agreements for the Protection, Development and Management of Fish and Wildlife Resources" on each of the military installations on Guam, 2) Guam enjoys concurrent jurisdiction over all federal lands on Guam, and 3) the fish and wildlife on these federal lands are Guam's resources to be managed in accordance with Guam's laws and regulations.

I am pleased that the revised draft Environmental Assessment has deleted significant areas previously identified as excess to military needs, such as the Harmon Annex area, as these lands have little significant habitat value but hold great potential for Guam's future growth and development. However, upon review of the draft EA for the wildlife refuge proposal, I found that some of my concerns which were expressed in prior letters were still not adequately addressed in this draft EA. Therefore, I feel that I must be straightforward in re-expressing my concerns and have presented them in the following questions:

- Will access to private and public lands be restricted by the Wildlife Refuge proposal? The proposal states that access will be reviewed from the standpoint of its resulting impact on species and habitat. We believe that sufficient information is now available within FWS to provide us with an answer to this question before Wildlife Refuge is designated.
- Will development of private and public lands (the Artero property in particular) be prevented or required to be reviewed more rigorously than is currently required with the approval of the Wildlife Refuge proposal? Again, the proposal only states that development would be reviewed for compatibility with refuge objectives.
- Will the Guam Division of Aquatic and Wildlife Resources (DAWR) be a co-equal partner with the FWS in the management of the Wildlife Refuge? The proposal states that there will be increased cooperation among FWS, DAWR and the Department of Defense (DOD). Additionally, the proposal states that roles and responsibilities between FWS and DAWR within the proposed Refuge would be formalized through a separate inter-agency agreement.
- Will FWS support the land transfer of the U.S. Naval Facility property at Ritidian and any other federal property proposed for inclusion in the wildlife refuge that may be excessed in the future to the Government of Guam? The proposal states that FWS would seek the transfer of the NAVFAC property for its use.



J. Ada continued

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The proposal also states that essential habitats at South Finegayan and Harmon Annex for endangered forest birds and fruit bat were excluded from certain alternatives pending the outcome of the Guam Excess Lands Act (H.R. 4164).

- Will FWS commit to a certain level of appropriation requests to Congress? The proposal states that funding for the development and operation of the Refuge would be dependent upon being included in an approved budget or being specifically funded through other mechanisms and that such funds could come from various sources including direct congressional appropriations.
- Will the Navy be allowed to relocate its activities from Naval Air Station (NAS), Agana to Andersen Air Force Base? The proposal states that any uses of the Refuge would be subject to a Refuge compatibility determination and approved through issuance of Special Use Permits. Furthermore, the proposal states that FWS discussions with DOD planners regarding potential future uses of lands identified as having important habitats for endangered and threatened species indicate a low likelihood of significant development projects on lands targeted for inclusion in the proposed Refuge.
- Will Critical Habitat be dropped if Wildlife Refuge is designated? The proposal states that the final decision for critical habitat designation hinges upon whether there is a continuing need for special management on those lands identified in the proposed rule and, that a final decision on critical habitat designation will be made only after the decision is made on the refuge proposal. We believe that FWS has sufficient information available to answer this question.

I believe that if these questions are answered either in a separate letter to or in the final EA that is consistent with the Government of Guam's position on these issues, then we can wholeheartedly support the establishment of the refuge. However, to fully support the refuge proposal, as written, would be unwise.

Assuming that the above answers are favorable to the Government of Guam, we then would support a refuge of the size that would satisfy refuge objectives. I had previously stated that I would support the establishment of a refuge that contains approximately 17,500 acres, of which 5,000 are in southern Guam at the Naval Magazine and 12,500 are in northern Guam in the NCS Finegayan area, Northwest Field area, and Andersen Air Force Base area. As you may recall, this proposed acreage is predicated on the habitat requirements of the Marianas Crow, which the FWS has indicated requires the most habitat. Each individual crow, according to FWS, requires 25 acres of habitat. According to the Recovery Plan, 700 crows (200 in the south) is the objective to reach in order to downlist the species.

Mr. Ray Rauch
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I would support a small increase to the 17,500 acre refuge if DAWR and FWS can satisfactorily demonstrate the need for a slightly larger refuge from the species protection and restoration standpoint and not from a refuge management standpoint. Furthermore, I would support some expansion of the boundaries if the expansion allows for the creation of a buffer between private lands and refuge lands which I hope will allow FWS to legally exempt private developers from the Section 7 consultation process.

Regarding the alternatives specified in the draft, I tend to support Alternative 2 with the condition that the Guam Legislature, which is the entity responsible for the designation of public land use, approves of the inclusion of the 4,174 acres of GovGuam land as part of the refuge. Alternative 2 includes 24,146 acres of DOD land, consisting of 13,853 acres in the north and 10,293 acres in the south. In northern Guam, I recommend that FWS consider the exclusion of certain areas from the designation as follows:

- Exclude the area set aside for relocation of NAS to AAFB to accommodate naval activities at AAFB;
- Exclude the area bordered by Route 1 and Route 15 within AAFB as this area already contains AAFB housing and operational facilities; and
- Exclude the area that was proposed for exchange with the Guam Urunao Resort Corp. as this area does not now possess essential habitat.

Alternative 2 also includes twice as much land in the south than is actually needed. I therefore suggest that the Naval Supply Depot (Sasa Valley) and the area within Naval Station and Apra Harbor be deleted from the alternative. These areas are wetlands that are already managed under federal and local statutes. Finally, I recommend that FWS consider exclusion of a larger area within Naval Magazine to accommodate expansion of its operational areas.

With regards to submerged lands, it is the Government of Guam's belief that all submerged lands surrounding Guam belong to the Government of Guam by virtue of the Organic Act of 1950. As I had stated in our conditional concurrence with the Air Force's Marine Resources Preserve, we do not object to federal monies being expended in these areas, but they must be managed either by the Government of Guam agencies of responsibility, or through a joint/equal partner management regime with federal government level of participation based on their contribution. Because of this point, I suggest that submerged lands be deleted from consideration, at least until such time as a satisfactory management MOU is developed and approved.

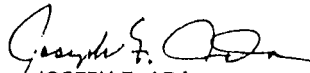
J. Ada continued

Mr. Ray Rauch
Page 5

To reiterate, my full support of the proposed wildlife refuge is hinged on favorable answers to the questions that have been raised.

Si Yu'os Ma'ase' for the opportunity to provide comments. Should you have any questions or need further elaboration on the concerns raised, I would be glad to accommodate your request.

Sincerely,



JOSEPH F. ADA
Governor of Guam



Department of Agriculture
Division of Aquatic and Wildlife Resources
P.O. Box 2950
Agana, Guam 96910
Telephone Numbers (671)734-3483/3944/3945/5283
Fax Number (671)734-6570
E-mail: SUNIPORTALICUP.PORTAL.COMIGUAM-DAWR



March 5, 1993

Ray Rauch
Project Leader
Hawaiian and Pacific Island
National Wildlife Refuge Complex
U.S. Fish and Wildlife Service
P.O. Box 50167
Honolulu, Hawaii 96850

Dear Mr. Rauch:

The Division of Aquatic and Wildlife Resources has reviewed the January, 1993 revision of the Draft Environmental Assessment (DEA) for the Proposed Guam National Wildlife Refuge. We strongly support the concept of a National Wildlife Refuge for Guam, as establishing a refuge on Guam would be a proactive measure for the recovery and preservation of endangered species and other wildlife and their habitat. In addition, it would increase the opportunities for public recreational use of some areas that heretofore have been off-limits to civilians, provided that the recreational activities are compatible with the goals of the refuge.

The comments that follow are limited to the various alternatives proposed for the refuge in the order of preference. I am enclosing a copy of the Draft Environmental Assessment that includes marginal comments and technical corrections for your use in preparing the Final Environmental Assessment.

A. Refuge alternatives.

Alternative 2. This is our preferred alternative. The basic difference between this alternative and Alternative 1 is that the operational areas of the DOD lands are deleted. Protection and management of important resources that might occasionally be found in deleted operational areas could be addressed by existing agreements and under existing Federal and local laws. Alternative 2 includes most land recognized in the Fish and Wildlife Service Recovery Plans as essential for the recovery of the native forest birds and fruit bats. This alternative includes existing Government of Guam lands that are currently designated as conservation areas. These lands would still remain under Government of Guam ownership and control but would have the added advantage of additional protection and more active management for conservation. We anticipate that inclusion of these Government of Guam lands in the overlay National Wildlife Refuge will help to ensure that there is a unified management direction for all conservation lands, whether administered locally or federally. We further anticipate that the refuge management expertise and resources of the Fish and Wildlife Service, including

their Education, Publication, Interpretation and Cultural Resources (EPIC) Division, would be available to the Government of Guam for application to our lands included under the refuge umbrella.

This alternative would best recognize the fact that all parties hold common goals, objectives and responsibilities for the protection and conservation of natural resources and would exemplify the spirit of partnership that has resulted in the development of the Guam National Wildlife Refuge proposal.

Alternative 1. We do not oppose this alternative, which would establish the refuge as an overlay over certain DOD lands, including operational areas, the former U.S. Naval Facility at Ritidian Point, and certain Government of Guam lands already designated as conservation areas. Although this alternative includes some operational areas that may not have significant habitat value to wildlife, this should not cause serious impediment to military operations as the lesser degree of protection necessary for these areas could be adequately detailed in the refuge management plan.

Alternative 3. This option would also be acceptable to us because it would include most federal land considered essential for the recovery of Guam's native forest bird and fruit bats in the Fish and Wildlife Service Recovery Plans. Although this alternative excludes Government of Guam land, those Government of Guam lands currently designated as conservation areas would continue to be managed for conservation in a way compatible with the objectives of the refuge. Presumably, the option of eventually including these Government of Guam lands under the refuge umbrella through development of the appropriate cooperative agreements would remain open.

Alternative 4. This alternative is less acceptable than Alternatives 1, 2, or 3 but would be a "fall back" option that would at least preserve the important Ritidian Point habitat and establish a permanent USFWS presence on Guam. We are concerned that this alternative would not adequately provide for the recovery of Guam's endangered species. However, it would presumably allow for the future development of cooperative agreements between the Fish and Wildlife Service, the Government of Guam, and the various Federal Government entities and even with private land owners in the area who have jurisdiction over habitat essential for the recovery of native forest birds and fruit bats. This would assure a more coordinated effort between all parties to conserve endangered species and their habitat in the area.

Alternative 5. This "no action" alternative is considered to be unacceptable as it would provide no additional actions for the conservation and protection of endangered species and their habitat.

Submerged land options.

Option 2. We prefer this option as the 100 foot isobath limit more closely reflects the reef areas important to sea turtles and other near-shore marine resources. These areas are adjacent to terrestrial areas that would be included under the refuge umbrella.

Option 1. While we are not necessarily opposed to this option, we see no reason to include submerged land out to three miles. We believe that the refuge should only



The Sport Fish and Wildlife Restoration and Endangered Species Conservation Programs under the Department of Agriculture, Division of Aquatic and Wildlife Resources are funded in their entirety with federal money under the Sport Fish Restoration Act of 1950, as amended, the Wildlife Restoration Act of 1972, as amended, and the Endangered Species Act of 1973, as amended.

R. Anderson continued

include important land habitat and adjacent reef areas. The maximum we advocate would be to protect reef habitat out to the limits of the photic zone, approximately the 100 fathom isobath. This would be the limit of the active reef.

Option 3. This option, while not as all encompassing as the above two, would also be acceptable as most government land important for endangered species recovery and protection would be included. Other local and federal laws would be used to protect reef areas adjacent to lands excluded by this option.

Option 4. This "no action" option would be the least preferred as it would provide no additional opportunities for conservation and protection of endangered species and their habitat.

In summary, we strongly support the refuge concept. We believe that several of the options could lead to increased conservation and protection for Guam's critically endangered species and their habitat, but feel that Alternative 2 in the case of both the terrestrial and submerged lands is the best alternative to pursue. In any case, no matter which of the "action" alternatives the USFWS chooses to work toward, the final outcome will be dependent on the cooperative agreements drawn up between the military, the Government of Guam and the FWS to actually implement our shared goals.

We would like to acknowledge the FWS efforts to move forward with this important proposal, and look forward to continued cooperation with the Service in protecting Guam's important natural heritage.

Sincerely,



ROBERT D. ANDERSON
Acting Chief
Division of Aquatic and Wildlife Resources



Office of the Speaker

TWENTY-SECOND GUAM LEGISLATURE

155 Heiler St.

Agaña, Guam U.S.A. 96910

Tel: (671) 477-8527/9120 • Fax: (671) 477-5570

SENATOR JOE T. SAN AGUSTIN (D)
SPEAKER



February 25, 1993

MR. RAY RAUCH
PROJECT LEADER
HAWAIIAN AND PACIFIC ISLANDS
NATIONAL WILDLIFE REFUGE COMPLEX
P.O. BOX 50167
HOLOLULU, HAWAII 96850-4996

Dear Mr. Rauch:

Having reviewed the revised draft Environmental Assessment (EA) for the proposed establishment of a National Wildlife Refuge on Guam, I must say that I stand on my previous comments and opposition on the original draft Environmental Assessment. The revised draft merely overstated what the original draft intended to do and that is for the Federal Government to have a reason, not necessary legitimate one, to be able to keep federal lands that are declared excess and also lands which are in the verge of being declared excess, rather than to give them back to the people of Guam. Of the first four alternatives listed in the revised draft, it is very clear that the Federal Government intended to keep the former U.S. Naval Facility at Retidian Point after being declared excess to the mission of the U.S. Navy. It is also very obvious that the Federal Government upon realizing that a large areas of land now maintained by AAFB specifically Tarague, Northwest Field and the former bomb storage areas would eventually be considered excess because of the reduction of the defense posture, are including them in the proposed National Wildlife Refuge.

The only difference between the original and revised draft (EA) that I can see would be the three parcels of land which are identified in the pending Guam Excess Lands Act; Harmon Annex, South Finegayan, and South Anderson which were not included in the proposed National Wildlife Refuge. These parcels of land are considered a very small portion of an exchange for the larger, far more valuable prime parcels which the Federal Government intends to keep (Tarague, Northwest Field, former bomb storage site adjacent to NW Field, Naval Communication Station and former U.S. Naval Facility, Retidian Point). What I am merely saying here is it appears that the Federal Government in the revised draft is now willing to give back those three parcels of land

mentioned earlier in an attempt to pacified the people of Guam while at the same time using the National Wildlife Refuge proposal as justification to keep the larger, more valuable parcels of land which would eventually be considered excess.

There is also a contradiction between the revised draft environmental assessment and the latest action taken by the United States Air Force, specifically, Colonel Steve McClain, 633rd Air Base Wing Commander, when he designated all the offshore areas from Tarague to Pati Point as federal marine resources preserve, as cited in the Pacific Daily News, page 3, dated February 6, 1993. My understanding from the revised draft environmental assessment that these offshore areas are also included in the proposed National Wildlife Refuge to be considered after all comments and recommendations are received by the U.S. Fish and Wildlife Service, Department of Interior. This type of action substantiated my position that the Federal Government have no intention of returning the lands identified in the proposed National Wildlife Refuge back to the people of Guam.

I am not against the preservation of Guam's natural resources nor the protection of endangered species and/or wildlife. However, I firmly oppose the Federal Government using this as an excuse to preclude the release of excess land back to the people of Guam. By allowing this type of action would establish a precedence that any future declaration of excess land by the Federal Government would be considered as critical habitat for endangered species. I further believe that the designation, the administration and the management of these resources should be the prerogative of the people of Guam.

Attachments

Sincerely yours,

JOE T. SAN AGUSTIN

CHRONOLOGY OF EVENTS ON CRITICAL HABITAT DESIGNATION AND LEADING TO PROPOSED GUAM NATIONAL WILDLIFE REFUGE AS PROVIDED BY THE DIVISION OF AQUATIC AND WILDLIFE RESOURCES, DEPARTMENT OF AGRICULTURE.

- 69
- 8-28-78 Letter from Governor Bordallo to Secretary of Interior Cecil Andrus requesting to list six (6) species on Guam under the Endangered Species Act (ESA).
 - 1-5-79 Ltr. from Acting Governor J.F. Ada to Secretary Andrus renewing request to list six (6) species on Guam under the ESA.
 - 5-29-79 Memo from Director U.S. Fish and Wildlife Service (FWS) to Regional Director, Region 1, FWS requesting comments to list 12 species on Guam Under ESA.
 - 12-24-80 Ltr. from Harold J. O'Connor, Deputy Associate Director Department of Interior to John Bushman, U.S. ACOE informing ACOE that FWS considering designation of Critical Habitat (CH) and requesting for information of future construction projects on Guam.
 - 12-29-80 Ltr. from Mr. Richard Parsons, Director FWS to Guam State Clearinghouse requesting for information on activities on proposed CH.
 - 8-27-84 FWS issued Final Ruling in Federal Register that designation of CH not prudent.
 - 8-17-87 Ltr. from Governor Ada to Frank Dunkle, Dir. FWS requesting designation of CH.
 - 9-23-87 Ltr. from FWS Dir. Dunkle to Governor Ada responding to 8-17-87, FWS will conduct review and take appropriate action.
 - 12-31-87 Sierra Club Legal Defense Fund, Inc. to Secretary of Interior Donald Hodel informing Secretary Hodel that the National Audubon Society and Marianas Audubon Society are petitioning for emergency rule making to designate CH under ESA.
 - 3-16-88 Ltr. from Governor Ada to Secretary Hodel, provided copy of 8-17-87 Ltr. to FWS Dir. Dunkle. Advised that no action to date as per FWS Dir. Dunkle response in 9-23-87 letter. Proposed Relocatable Over the Horizon Radar proceeding; recommend take action to protect habitat.
 - 5-19-88 19th Guam Legislature Resolution No. 339 requesting Secretary of Interior to issue emergency rule to designate CH for endangered forest birds and bats.
 - 7-5-88 Ltr. from Dir. Dunkle to Gov. Ada responding to 3-16-88 letter to Secretary Hodel; USN declared moratorium on ROTH; FWS will continue to gather information to decide on CH request.
 - 8-5-88 SCLDF Inc. to Secretary Hodel threatened to file suit under ESA.
 - 9-21-88 Ltr. from Department of Interior to SCLDF, Inc. responding to 8-5-88 letter and denying violations of ESA.
 - 2-7-89 Director of Agriculture - position paper on need for CH and impact of ROTH.
 - 2-8-89 Memo from AG to Governor; Subject: Legal Analysis of Federal Environmental Laws and the proposed ROTH Project.
 - 2-8-89 Memo from AG to Governor - recommending that Government of Guam obtain TRO to stop proposed radar project to prevent habitat destruction.
 - 2-27-89 Ltr. from FWS Director Dunkle to Governor Ada responding to petition to designate CH. Agrees with merits of petition. Instructed Regional Director (RD), Region 1 to take necessary steps and ESA.
 - 3-9-89 Ltr. from Governor Ada to Secretary of Interior M. Lujan, Jr. following up on 3-16-88 request to designate CH.
 - 4-7-89 Department of Agriculture Briefing Paper on CH and ROTH - prepared for Governor Ada's meeting with Admiral Johnson.
 - 5-12-89 Ltr. from E. Kosaka, FWS to R. Anderson, Acting Chief, DAWR furnishing description and map of proposed areas for CH
 - 5-18-89 Ltr. from A. Marmelstein, PIA, FWS to Governor Ada informing of favorable response to designate CH and recommending meeting with Government of Guam, Federal and Non-government Organization (NGO) representatives.
 - 5-19-89 Secretary Lujan to Governor Ada- responding to 3-9-89 letter. FWS agrees that CH beneficial.

J.T. San Agustin continued

6-6-89 Ltr. from Marmelstein to Director A. Quitugua -
informing of meeting with Government of Guam,
Federal, NGO and individuals - open briefing.

6-16-89 Memo from Director of Agriculture to Governor -
advising that Government of Guam may have acted
hastily on petition to designate CH.

7-12-90 Memo from Director of Agriculture to Director
Bureau of Planning (BOP), reviewed proposed CH,
has merit but does not address problem of
endangered species. Department of Agriculture
supports recently proposed NWR "overlay".

7-27-90 Memo from Chief, DAWR to Director, BOP comments on
proposed MOA as an alternative to CH.

9-30-91 Ltr. from J. Ford, FWS to R. Lujan, Chief, DAWR
providing draft copy of Preliminary Project
Proposal (PPP) for Guam NWR (GNWR).

11-27-91 Ltr. from Sanford Wilbin, DOI, to Governor Ada
informing of PPP for GNWR.

1-27-92 Ltr. from Governor Ada to Sanford Wilbin
responding to 11-27-92 letter. GNWR alternative
to CH which can best respond to Guam's endangered
species problems.

3-13-92 Statement by Congressman B. Blaz before
subcommittee on Fisheries and Wildlife
Conservation and Environment supporting proposed
GNWR and funding for \$500,000.00

6-5-92 Ltr. from M. Plenert, RD, Regional 1 to Governor
Ada providing copy of draft EA for proposed GNWR
and requesting comments by 7-15-92.

7-15-92 Governor Ada to R. Rauch, FWS expressing concerns
with draft EA on proposed GNWR but supporting.

11-12-92 Ltr. from Governor Ada to Congressman Blaz
requesting that Congressman Blaz take necessary
action to transfer NAVFAC to the people and
Government of Guam.

11-27-92 Memo from Chief, A&WR to Director BOP comments on
revised draft EA.

12-1-92 Ltr. from Governor Ada to R. Rauch, FWS-reiterated
concerns of 7-15-92; active participation by
Government of Guam in the management of GNWR.

TERRITORIAL PLANNING COUNCIL

GUAM COMPREHENSIVE
DEVELOPMENT PLAN

Land Use Plan
Community Design Plan
Transportation Plan
Legislative Plan
Public Facilities Plan
Public Lands Plan
Public Buildings Plan
Housing Plan
Development Plan
Conservation Plan
Recreation Plan
Safety Plan
Tourism Plan
Economic Policy Plan
Social Improvements Plan
Policy Statements Plan
Other Elements

March 5, 1993

U.S. Fish & Wildlife Service
Department of the Interior
Pacific Island Office
Honolulu, HI

Via Fax - (808) 541-1216

Dear Sir:

Please accept these comments regarding the Draft Environmental Assessment (EA) for the Proposed Guam National Wildlife Refuge (January, 1993).

We believe that it is necessary to establish a wildlife refuge on Guam for the purposes proposed in the EA. Joint efforts by the U.S. Fish & Wildlife Service, Department of Defense and other federal agencies with Government of Guam agencies are necessary to protect remaining natural resources and allow recovery of endangered and threatened species on Guam.

Analysis of long-range impacts of the alternatives suggested in the EA is quite difficult, especially because of lack of predictability on the future of snake populations on Guam and their impacts on wildlife. Also, Federal and Government of Guam financial and manpower resources needed to operate and maintain any refuge in the future are not predictable or cannot be guaranteed at this time.

Rather than choosing a final permanent designation of refuge boundaries at this time, it may be preferable to establish a refuge of an initial size that may be expanded in the future, as progress on refuge management programs is made.

The best alternative to take may be an intermediate level of action between Alternatives 3 and 4. Cooperative agreements would be necessary to avoid appearances of Federal extension of control over non-Federal lands and waters. Because of legal questions on jurisdiction over submerged lands, I suggest that submerged lands not be included in the initial refuge boundaries. Endangered sea turtles can be protected without requiring submerged refuge areas. Government of Guam can separately manage submerged lands while the Fish & Wildlife Service need not have jurisdiction there.



U.S. Fish & Wildlife Service
March 5, 1993
Page 2

Consideration should be given to the long-range planning requirements of re-establishing Northwest Field at Andersen Air Force Base as an active air field to replace the Naval Air Station as the site for international civilian air services. Continued use of NAS as Guam's main airport is not appropriate because of impacts and restrictions on land use in the center of the most intensely developed areas of the island. Northwest Field affords the safety of plane approaches and departures being directed over undevelopable areas. Although parts of Northwest Field have some of the limestone forest regrowing and can serve as forage areas for endangered fruit bats and forest birds and re-establishment sites for endangered flora such as *Soricanthus nelsoni*, other undeveloped government lands should also serve these purposes.

At the present time, large inaccessible areas for foraging of fruit bats appear to be needed within the security and isolation of Northwest Field and other parts of AAFB for the next decade.

If endangered species recovery plans on Guam make progress, the major threats of predation by snakes and poaching by humans will be overcome. This would allow fruit bats and forest birds to safely increase in numbers and extend their ranges throughout the island. Once the poaching is permanently controlled through enforcement and education, fruit bats will be able to forage in non-refuge areas and extensive refuges would not be needed. Therefore, permanent refuge status for Northwest Field is not supported.

Long-range planning is necessary for wildlife preservation. However, long-range planning must allow for flexibility, with review and revision in the future, as is being proposed with the Government of Guam Land Use Plan, I-Tano'ta.

By establishing even a small refuge area on Guam and building on its successful programs with future expansion, when justified, the people and the wildlife of Guam may obtain best benefits.

Sincerely,

TERRITORIAL PLANNING COUNCIL

Mike Gavel
Mike Gavel

TERRITORIAL PLANNING COUNCIL
Suite 1103 - Reflection Center
222 Chalan Santa Rosa
Agaña, Guam 96910
Telephone (871) 472-8770
Fax (871) 472-8772



SETBISION MAMPLANEHA
Bureau of Planning
GOVERNMENT OF GUAM
AGANA GUAM 96910

JUN 11 1993

Mr. Ray Rauch
U.S. Fish and Wildlife Service
P.O. Box 50167
Honolulu, Hawaii 96850

Hafa Adai Mr. Rauch:

The Guam Coastal Management Program of the Bureau of Planning has completed its review of the Federal Consistency Assessment of the proposed Guam National Wildlife Refuge (Alternative 2 - terrestrial portion) and (Option 2 - submerged lands).

The Bureau's position on the proposed wildlife refuge remains the same as expressed in Governor Joseph F. Ada's letters of March 5, 1993, and October 15 and July 15, 1992 (see enclosures). The issues and concerns raised in the letters are of great concern to the Government of Guam, and we believe they should be seriously addressed. They do not, however, warrant a finding of non-consistency, therefore the Bureau of Planning will not deny consistency for alternative two, as presented, but must emphasize that this finding of consistency is for the federally owned lands only.

As of this date, the federal government does not have, in writing, permission by the Government of Guam to include Guam public lands in the Refuge, therefore, no right exists for their inclusion. The Guam Coastal Management Program believes that permission is possible, and will take the form of a joint management agreement. When such agreement is signed, the GCMP will issue a consistency determination on that addition to the Refuge.

Option two, inclusion of submerged lands in the Refuge is a similar problem.

The Federal Government has no authority for including the submerged lands within the Refuge, as the Government of Guam, as the owners of that property, have not given their permission. Government of Guam obtained ownership as a result of the failure of the United States to retain those lands, as was required by United States law, in 1950. More specifically:

1. 1950: Organic Act for Guam required the U.S. Government to list all real properties on Guam they wished to retain, with all unlisted, U.S. owned properties then being transferred to the civilian Government of Guam. Submerged lands were not listed or mentioned in any of the retention documents therefore, GovGuam received

ownership to submerged lands on October 30, 1950. Submerged lands and their resources were identified as real property belonging to the United States in a Supreme Court case in 1948, therefore prior knowledge of their ownership as unique and distinct real property existed prior to the retention efforts of 1950.

2. 1961: In a District Court case, (Crim. No. 1-61), U.S. District Court ruled; "...[after citing the Organic Act as above]... Nevertheless, the waters immediately adjoining the Naval Communication Station below the low water mark were, in effect, expressly excluded from the Executive Order No. 10178 reservation of jurisdiction", and followed by "In the light of the above, the waters immediately adjacent to the Naval Communication Station, and below the low water mark, like the remainder of the Guam territorial waters, must be held to be outside the exclusive jurisdiction of the United States and a proper subject of legislation by the Guam Legislature."

Because federal consistency determinations should not be granted for activities on properties which the applicant has no rights over, the Guam Coastal Management Program has determined that Option 2 must be excluded from the proposal until such time as the permission of the rightful owner, (Government of Guam) has been obtained. It is highly probable that the owner would grant permission if asked, and after an agreement in principle over management of that area has been reached. Until such time, the Guam Coastal Management Program advises that language referring to "enforcement of trespass" in the submerged areas be deleted, as those making the statements are outside the boundaries of their jurisdiction (cite: District Court Case noted above).

In summary, the GCMP finds the actions suggested for Federal properties included in Alternative 2 to be consistent with the policies of the GCMP and therefore has no objections based on the limitation of the federal consistency process. We do, however, find Option 2 to be improper and we cannot review this option as the requester does not have legal grounds for the request.

Si Yu'os Ma'ase',

Michael G. Cruz
MICHAEL G. CRUZ
Acting Director

Enclosures



DEPARTMENT OF THE NAVY

OFFICE OF THE ASSISTANT SECRETARY
INSTALLATIONS AND ENVIRONMENT
WASHINGTON, D.C. 20330-5000

5 March 1993

Mr. Ray Rauch
Region 1 - Refuge and Wildlife
U.S. Fish and Wildlife Service
P.O. Box 50167
Honolulu, Hawaii 96850-4996

Dear Mr. Rauch:

This in response to your letter dated 29 January 1992, which forwarded the revised draft Environmental Assessment (EA) for the proposed Guam National Wildlife Refuge (Refuge). The revised EA presents a range of alternatives and options and states that the U.S. Fish and Wildlife Service (Service) will prepare a final EA which will include a recommended alternative.

The Department of Navy (DON) supports establishing a Refuge on Guam and agrees that such a refuge would increase the survival potential and genetic diversity of endangered and threatened species. Using the terminology of the revised EA, the DON endorses alternative 2 for upland areas, and option 2 for submerged lands subject to the following:

o affected agencies are afforded the opportunity to comment on the final EA before a decision on the recommended alternative is made;

o the final EA recognizes the primary defense-related purpose and mission of DOD installations on Guam and states that future uses of the property within the Refuge by the DOD in furtherance of that mission is not precluded;

o the final EA recognizes that certain areas within the Refuge will be closed to public access for the protection of endangered species and archeological resources, or for reasons of military security; scientific access to such restricted areas will be coordinated with and be performed under the permission of the appropriate authorities, as identified in future cooperative agreements; and

o controlling predation by the brown tree snake is a significant component of cooperative agreements that are established between the DOD and the Service.

Thank you for the chance to comment on the EA and we look forward to reviewing the final EA.

LEHIS R. SHOTTON
Director, Environmental Planning
and Natural Resources Policy

Copy to:
Mr. Marvin Plenert, Regional Director
Region 1 Headquarters



DEPARTMENT OF THE NAVY

U.S. NAVAL COMPUTER AND TELECOMMUNICATIONS
AREA HANNAH STATION WASHINGTON
DC 20340 BOX 101
PRO AP 1113-1100

IN REPLY REFER TO:
1650
Ser 01ER/0460
10 MAR 91

From: Commanding Officer, U.S. Naval Computer and
Telecommunications Area Master Station WESTPAC
To: Commander in Chief, U.S. Pacific Fleet

Subj: PROPOSED GUAM NATIONAL WILDLIFE REFUGE

Ref: (A) Draft Environmental Assessment for the Proposed Guam
National Wildlife Refuge

1. Review of reference (a), has identified alternative (2) and option (1) as the commands recommendation for the proposed Guam National Wildlife Refuge.

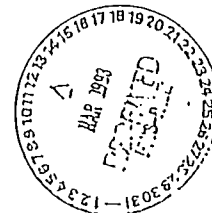
2. Alternative 2, of reference (A) will permit NCTAHS WESTPAC to administer the undeveloped and developed areas surrounding the existing NCTAHS facilities and family housing areas more effectively than if the entire facility was included within the Wildlife Refuge.

3. Option (1) of reference (a) provides a greater area of protection for the endangered species of sea turtles identified in Appendix A of reference (a). The creation of a larger offshore protected area would also enhance the foraging habitats of the endangered sea turtles. Additionally, option (1) would provide a greater level of protection for the reefs found within this protected area and the inhabitants of those reefs.

4. A telephone conversation between this command and Lt. J. Provatt, Regional Environmental Coordinators Staff, COMNAVMAINTAS, indicated that our comments should be forwarded for your review on this proposal. My point of contact is Mr. Russell R. D'Onofe, the command's Environmental Protection Specialist. He can be reached at (DSH) 355-5617.

Copy to:
COMNAVHARMARIAS
COMNAVCOMTELCOM
U.S. Fish & Wildlife Service

C. L. Moody





DEPARTMENT OF THE NAVY
U.S. NAVAL SUPPLY DEPOT
FSC 455, BOX 190
FPO AP 96340-1300

IN REPLY REFER TO
5090
Ser 04/0377
24 Mar 93

United States Department of the Interior
Fish and Wildlife Service
Hawaiian and Pacific Islands
National Wildlife Refuge Complex
Attn: Mr Ray Rauch
Region 1 - Refuges and Wildlife
P.O. Box 50167
Honolulu, Hawaii 96850-4996

Gentlemen:

The U. S. Fleet and Industrial Supply Center (FISC), Guam
Environmental staff has completed a review of the Draft
Environmental Assessment (EA) for the Proposed Guam National
Wildlife Refuge of January, 1993.

FISC Guam ardently supports the concept of protecting the flora
and fauna of Guam. Land targeted for use as a refuge owned by
FISC Guam includes savannah areas, wetlands, and other important
natural habitats. As our Natural Resources Management Plan of
July 1990 indicates, one rare plant species (Dodonaea viscosa) is
found in the high savannah, and FISC's wetlands may also serve as
habitat for the endangered Common Marianas Moorhen. However,
FISC Guam cannot support establishing a refuge overlay on lands
that would include current or future operational areas. The
mission of FISC Guam's Fuel Department is to provide fuel and
fuel-related support to Navy and other Department of Defense
(DoD) activities on Guam. Since Alternative 1 will potentially
constrict our ability to accomplish that mission, FISC Guam
recommends rejecting that option.

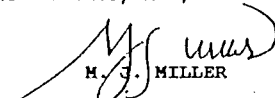
Alternatives 2 or 3 may also negatively affect FISC Guam's
operations. It is unclear what is meant on page 34 of the EA by
the statement, "Operational areas excluded from the refuge would
be managed through technical assistance agreements between the
Service and the DoD on a case-by-case basis". What "activities,"
as described throughout this section, would be no longer be
allowed? How would Alternatives 2 or 3 affect future operational
changes? An unfavorable interpretation could significantly
hamper future fuel operational capability.

Alternative 4 appears to offer resource protection and does not
conflict with FISC Guam's military mission.

FISC Guam recommends against adopting Alternative 5, which calls
for "No Action." As illustrated in the EA, natural resource
management programs are necessary for the continuation of certain
plant and animal species and their habitats on this island.

We are highly supportive of managing wildlife resources on FISC
Guam land through cooperative agreement with the U. S. Fish and
Wildlife Service and the Government of Guam.

My point of contact is LT G. A. Frantz, Director, Department of
Facilities and Environment, or Ms. Terrell Kelley, Environmental
Protection Specialist at 339-7255/2124, or FAX 339-7152.


H. J. MILLER

Copy to:
COMNAVMARIANAS (N4)



COMMANDER IN CHIEF, U.S. PACIFIC COMMAND
(USCINCPAC)
CAMP H.M. SMITH, HAWAII 96861-5025

March 16, 1993

Dear Mr. Rauch,

This acknowledges receipt of your 29 January 1992 letter which forwarded the revised draft Environmental Assessment (EA) for the proposed Guam National Wildlife Refuge (Refuge).

The revised EA presented a range of alternatives and stated that the U.S. Fish and Wildlife Service will prepare a final EA that would include a recommended alternative for decision making. The Department of Defense (DOD) supports establishing a Wildlife Refuge on Guam and agrees that such a refuge would increase the survival potential and genetic diversity of endangered and threatened species. Therefore, within the context of the following comments, we endorse Alternative 2 for upland areas, and Option 2 for submerged lands, as listed in the EA:

1. It will be necessary that affected agencies be given an opportunity to comment on the final EA before a decision on the recommended alternative is finalized.
2. The final EA must continue to recognize the primary defense-related purpose and mission of each DOD installation and that future uses of the property for the DOD mission would not be precluded by the Refuge itself.
3. Certain areas within the Refuge must be closed to public access for the protection of endangered species and archeological resources and for reasons of military security. This will, of necessity, limit the scope of "ecotourism" possibilities. Scientific access to such restricted areas will be coordinated with and be performed under the permission of the appropriate authorities, as identified in future cooperative agreements.
4. Establishment of a refuge will not halt the inexorable spiral toward extinction of Guam's native bird and fruitbat species unless significant attention is given to controlling predation by the brown tree snake. Cooperative agreements must be established to emphasize that control.

Additional specific comments on the draft EA are enclosed. Thank you for the chance to comment. We look forward to reviewing the final EA.

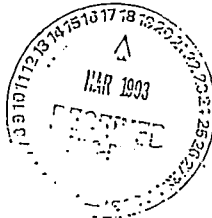
Sincerely,

J. R. RYAN
Rear Admiral, U.S. Navy
Director, Logistics-
Security Assistance

Mr. Ray Rauch
Project Leader
Hawaiian and Pacific Islands National
Wildlife Refuge Complex
P.O. Box 50167
Honolulu, Hawaii 96850

Enclosure

Copy to:
CINCPACFLT
PACAF/CC
USCINCPACREP GUAM
NAVFACENGCOM
PACNAVFACENGCOM



COMMENTS ON THE DRAFT ENVIRONMENTAL ASSESSMENT

a. Page 3, sec 3; and page 4, para 2, line 1: delete "other" before "Federal." GovGuam is not a Federal agency. If it makes more sense, change to read: "Complement other Federal agencies, and Government of Guam's ongoing programs..."

b. Page 11 (top paragraph) states that excess lands identified under the Guam Excess Lands Act legislation (H.R. 4164) have been excluded from the proposed refuge. If that is the plan, what will happen to Northwest Field once it becomes excess? Northwest Field is presently included in the proposed refuge. Northwest Field is part of Andersen for National Priorities List purposes and can't be excessed under current law. However, eventually it may be excessed after clean up.

c. Page 11 (top paragraph) references the Harmon Annex acreage under H.R. 4164 as being 1,819 acres; however, the actual acreage of Harmon Annex under H.R. 4164 is as follows:

Harmon Annex	1,520 AC
Harmon POL	14
Harmon VOR	82
Total	1,616 AC

d. Page 15, sec. E1, para 2, line 7: change "a commitment of funds" to "a commitment to seek funds." The Anti-Deficiency Act subjects AF personnel to criminal liability for committing funds for a use other than that for which the funds were appropriated. It necessarily follows that, if no funds have been appropriated, an individual cannot commit an expenditure. Under the law we must make every reasonable and responsible effort to secure funding; our "elected" representatives ultimately determine the extent to which we obtain any or all.

e. Page 36, section B. Cite and provide status of Andersen AFB Marine Resources Preserve (MRP) to include proposed seaward coordinates with approximate mile equivalents. The MRP contains elements of submerged lands options 1, 2 and 3. The MRP may additionally be referenced in sections A and B under Environmental Consequences of Alternatives.

f. Page 40, section V.C. Provide a statement regarding the USFWS role in game law enforcement on DOD and DAWR lands. Prior reference to law enforcement activities (Page 14, II.D.) is additionally vague.

g. Page 41, section D, first para, first sentence; and Page 42, last para, third sentence: Implies the Refuge status will lead to increased public access. The extent of public access is directly related to the degree to which mission requirements

allow. Accordingly, we recommend that the word "could" be substituted for the word "would" in the first sentence; add a sentence: "Access to DOD installations, would, of course, remain subject to other security-related considerations."

h. Page 42, second full para, line 1: change "is" to "becomes." The Service is not yet a landowner.

i. Page 42, last paragraph. Referenced benefits of "ecotourism" have not taken into account the potential environmental impacts of increased access to the refuge and or proposed critical habitat. Such access that causes environmental degradation should be included in the Section V.A, V.B, and V.C.

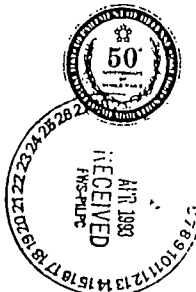
j. Page 44, third full para: This entire paragraph should be deleted because it implies DOD intends to commercialize existing DOD lands. DOD will continue to responsibly manage non-operational tracts so that there is refuge for species.



OFFICE OF THE ASSISTANT SECRETARY

DEPARTMENT OF THE AIR FORCE
WASHINGTON DC

MAR 29 1993

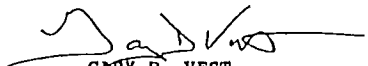


Mr. Ray Rauch, Project Leader
U.S. Fish and Wildlife Service
USFWS/ARW/HPINWR Complex
P.O. Box 50167
Honolulu, HI 96850-4996

Dear Mr. Rauch:

My office is responsible for policy regarding installations and real property in the Air Force. The enclosed comments (Atch 1) are provided in response to the reissued draft Environmental Assessment (EA) for the proposed Guam National Wildlife Refuge. In addition to these comments, we request that you: (1) submit a formal proposal for the refuge overlay to my office for review and concurrence before any decision is made to create a refuge on Andersen AFB; and (2) provide the Air Force with information on the legal basis for an overlay refuge. Furthermore, the Air Force expects to retain management responsibility for all lands at the base.

Our point of contact for these comments is Maj Tom Lillie, HQ USAF/CEVP, (703) 697-8937 or Mr. Brian Kang, HQ PACAF/CEVP, (808) 448-0474.


GARY D. VEST
Deputy Assistant Secretary of the Air Force
(Environment, Safety and Occupational Health)

1 Attachment
Comments

cc: HQ PACAF/CEVP
HQ USAF/CEVP

HQ USAF COMMENTS
DRAFT ENVIRONMENTAL ASSESSMENT
PROPOSED GUAM NATIONAL WILDLIFE REFUGE
(January 1993)

1. Page 3, B (3) and Page 4, paragraph 2, line 1: Delete "other" before "Federal". The Government of Guam is not a federal agency.
2. Page 11, paragraph 1: Total acreage for Harmon Annex is 1616 acres, not 1819 acres as cited in text.
3. Page 14, II. paragraph 3: Fully detail the proposed U.S. Fish and Wildlife Service (USFWS) role in enforcement of game laws on DoD and DAWR lands.
4. Page 15, E (1) paragraph 2: Change "commitment of funds" to "commitment to seek funds".
5. Page 36, B: Cite and detail status of the Andersen Air Force Base Marine Resources Preserve (MRP); include seaward coordinates with approximate mile equivalents. Andersen MRP contains elements of the submerged lands included under options 1, 2, and 3 of this section.
6. Page 36, B: Andersen MRP should also be referenced in sections A and B under Environmental Consequences of Alternatives.
7. Page 40, V. D: Define proposed USFWS role in enforcement of game laws on DoD and DAWR lands.
8. Page 41, D paragraph 1, first sentence and para 2, third sentence: Add text: "Certain areas within the Refuge may be closed to public access for the protection of endangered species or for reasons of military security. Scientific access to such restricted areas must be coordinated with and be performed under the permission of the appropriate authorities (military installation, Guam DAWR, USFWS, etc)". Comment: As written, text implies Refuge status would necessarily entail greater public access to refuge lands.
9. General comments on public access issues:
 - a. Public access may conflict with military mission activities on certain DoD lands. Public access criteria must recognize safety and security restrictions on lands under military jurisdiction; whether or not such lands are included within the proposed overlay refuge is wholly immaterial.
 - b. Unrestricted public access may be highly undesirable for both scientific and conservation purposes in areas which provide

G.D. Vest continued



DEPARTMENT OF THE AIR FORCE
PACIFIC AIR FORCES



habitat for endangered plants or foraging/nesting/roosting sites for endangered bird and bat species. EA should address whether increased public access to closed areas on DoD lands could significantly increase potential for the unauthorized take of endangered species due to harassment (both intentional and unintentional) and/or poaching.

10. Page 42, Paragraph 3 line 1: Change "where the Service is the landowner" to "becomes". (Service is not yet a landowner here).

11. Page 42, third paragraph: Delete entire paragraph. Comment: This passage can be read to imply that DoD intends the commercialization of existing DoD lands. This and other such gratuitous and largely irrelevant references to the potential for "ecotourism" development on military lands within the Refuge complex should be eliminated from the text.

12. Page 42, last paragraph: Add text here and in Sections V. A, V. B, and V. C. regarding potential adverse impacts of unrestricted public access. Comment: The potential for adverse environmental impacts of increased public access to lands currently off-limits for such activities needs to be addressed. Proposed benefits of "ecotourism" in connection with the proposed Refuge here and elsewhere in text do not adequately take into account the potential detrimental impacts of public access to key endangered species habitat areas (foraging/nesting/roosting sites) located within the proposed refuge.

13. Thank you for giving us an opportunity to comment on the document.

633 ABW/GC
Unit 14003
APO AP 96543-4003

Mr Ray Rauch
Project Leader
US Fish & Wildlife Service
Region 1 - Refuges and Wildlife
P.O. Box 50167
Honolulu, HI 96850-4996

Dear Mr Rauch

I have reviewed the 1 Feb 93 revised draft Environmental Assessment (EA) for the proposed Guam National Wildlife Refuge. Thank you for incorporating our technical comments to the 14 Nov 92 draft EA. We find no further comments or issues to be included in this EA.

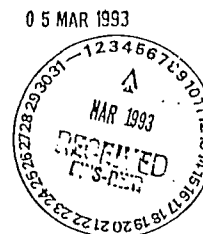
Of the five land area alternatives and four submerged land options under consideration for refuge, we prefer alternative two and option three, respectively. We feel that the establishment of refuge on certain DoD lands, (excluding the operational areas), the former U.S. Naval Facility at Ritidian and GovGuam conservation areas, will be the most successful choice in meeting the refuge objectives. Inclusion of submerged lands only within established DoD and GovGuam conservation areas, (Haputo Ecological Reserve, Orote Point Ecological Reserve, and Andersen AFB Marine Resources Preserve, dedicated 5 Feb 93) would provide added protection for these important marine habitats.

I am pleased that you were able to detail Mr Dave Potter to Guam, to answer the concerns and questions of the public. We look forward to working with you in this continuing effort to address the complex environmental and land issues on Guam.

Sincerely

STEPHEN M. MCCLAIN, Colonel, USAF
Commander, 633d Air Base Wing

cc: HQPACAF/DEVP
Guam DAKR





DEPARTMENT OF THE ARMY
U.S. ARMY ENGINEER DISTRICT, HONOLULU
FORT SHAFTER, HAWAII 96858-5440



REPLY TO
ATTENTION OF

March 4, 1993

Planning Division

Mr. Ray Rauch, Project Leader
U.S. Department of the Interior
Fish and Wildlife Service
Hawaiian and Pacific Islands
P.O. Box 50167
Honolulu, Hawaii 96850-4996

Dear Mr Rauch:

Thank you for the opportunity to review and comment on the Draft Environmental Assessment (EA) for the Proposed Guam National Wildlife Refuge. The following comments are provided pursuant to Corps of Engineers authorities to disseminate flood hazard information under the Flood Control Act of 1960 and to issue Department of the Army (DA) permits under the Clean Water Act; the Rivers and Harbors Act of 1899; and the Marine Protection, Research and Sanctuaries Act.

a. Mr. Frank Dayton of our Guam Operations Office is reviewing the permit requirements for this project. He will be sending your office the required information under separate cover.

b. Since the location of the lands has not yet been determined, we are unable to provide a flood hazard evaluation. The Federal Emergency Management Agency published Flood Insurance Rate Maps for the Territory of Guam in 1985 which show some areas of the project site containing flood hazard areas. We will provide the required information once the refuge sites have been determined.

Sincerely,

Kisuk Cheung, P.E.
Director of Engineering

Hawaiian & Pacific Island
National Wildlife Refuge Complex
P.O. Box 50167
Honolulu, HI 96850

Atten: Ray Rauch
Project Leader

Dear Mr. Rauch,

I would like my comments to be submitted in favor of Option 2 for 28,320 acres of Guam's land to be proposed as a Wildlife Refuge. I would also like to see submerged lands to 3 miles included in the protection plan for Guam.

Employed in the tourist industry, I am especially in favor of setting up a wildlife refuge as yet another means of protecting Guam's habitat for enjoyment for the residents and tourists alike. I have visited many wildlife refuges in the western United States and found them to be important "green space" areas that add favorably to the atmosphere of the regions. Bosque Del Apache in New Mexico is a favorite Tourist destination for watching Sand Hill and Whooping Cranes; as well as an important habitat refuge for the endangered Whooping Crane.

Guam's noticeable lack of bird life is a detriment to tourism. The pleasing tropical sound of birds when you get off the airplane on Guam is not heard. This lack of birdlife is noticed and commented on by tourists. We do not have the restful tropical lifestyle found on Saipan, Rota or Tinian or the accessible parks for relaxation as found in Hawaii. This is an atmosphere that must be preserved. A wildlife refuge is needed to save land for native species, especially if the brown tree snake is ever gotten under control here on Guam. But beside the birdlife, the trees and grassland areas need to be protected from future development. This area is also precious to maintaining a "resort" atmosphere in Guam. I can also comment further on how exciting it is for tourist to see the green sea turtles swimming around the reefs and how important it is to protect their breeding grounds and the reefs.

The advantages of this wildlife refuge and submerged land protection are numerous. Once again, I would like to urge the acceptance of Option #2 to cover 28,320 acres of Guam under wildlife refuge protection and Option 1 to protect submerged lands to 3 miles. Thank you.

Sincerely,

Jan Sharkey
Jan Sharkey



United States
Department of
Agriculture

Soil
Conservation
Service

Pacific Basin Area
GCIC Building, Suite 602
414 West Soledad Avenue
Agaña, Guam 96910

February 26, 1993

Ray Rauch
Project Leader
Hawaiian and Pacific Island NWRC
P O Box 50167
Honolulu, HI 96850

Dear Mr. Rauch,

The Soil Conservation Service suggests that alternative 2 in combination with the 30 meter submerged lands option shown in figure 7 be selected for the proposed National Wildlife Refuge. This should be a significant choice in protecting the natural resources of Guam.

Thank you for the opportunity to comment.

Joan B. Perry
Joan B. Perry
Director, Pacific Basin Area



The Soil Conservation Service
is an agency of the
Department of Agriculture

Marianas Audubon Society

P.O. Box 4425, Agana, Guam 96910

Ray Rauch
Refuge Complex Manager, Hawaiian/Pacific Islands
National Wildlife Refuge Complex
U.S. Fish and Wildlife Service
P.O. Box 50167
Honolulu, Hawaii 96850



Dear Mr. Rauch:

The Marianas Audubon Society (MAS) is a chartered chapter of the National Audubon Society and was organized in 1983. It has 120 members who are interested in preserving wildlife, plants, and culture unique to this part of the world. Concern for and a desire to do something about the tragic decline of the native wildlife of Guam was the major reason for the formation of our organization.

Since the Marianas Audubon Society was founded nearly a decade ago, we have witnessed the rapid loss of Guam's indigenous wildlife. Three of Guam's species listed as endangered by the federal government in 1984 are now believed extinct: the Guam broadbill (*Myiagra freycineti*), the Guam bridled white-eye (*Zosterops conspicillatus conspicillatus*) and the little Mariana fruit bat (*Pteropus pteropus tokudae*). The Guam Micronesian kingfisher (*Halcyon cinnamomina cinnamomina*) is extinct in the wild and small populations are maintained at several zoos. Only the Mariana crow (*Corvus kubaryi*) and the Mariana fruit bat (*Pteropus mariannus*) maintain populations in the wild. There are 100 of these crows left on Guam and 400 of the fruit bats.

Because these animals are on the brink of extinction, we need a national wildlife refuge on Guam of 28,320 acres to actively manage these endangered animals, such that these animals can once again obtain viable populations. Such a wildlife refuge on Guam will insure the preservation of Guam's unique and endangered natural heritage. It would contain much of Guam's best remaining native forest, which is the preferred habitat for most of our endangered animals. Such a refuge would include 97% of the forested area required to maintain a minimum viable population of Mariana Crows, the species with the largest requirements for its breeding

territories. It will preserve some of the last remaining Green sea turtle nesting beaches. Most importantly, the establishment of the refuge would represent a commitment by the federal government to the goals of preserving Guam's endangered species and controlling the brown tree snake population.

The people of Guam would benefit from such a refuge. Millions of federal dollars that will be spent in employing people to operate the refuge. The refuge will serve a role in educating our children about Guam's natural heritage and the significance of Guam's wildlife within the Chamorro culture. Many archaeological sites will be preserved. The refuge will preserve areas used by Guamanians for such outdoor activities as hiking, deer hunting, crab hunting, and the traditional gathering of various plant items such as betel nut, fadang, and lumot.

Many other benefits will result from the designation of a national wildlife refuge. These include protection for non-endangered wildlife such as deer and coconut crabs; protection of the forest and many kinds of native plants. The refuge will include large watersheds that help recharge the island's reservoirs and freshwater lens.

We support Alternative 2 creating a Guam National Wildlife Refuge of 28,320 acres. However, the Marianas Audubon Society wants to make it clear that we see the creation of a national wildlife refuge on Guam as a necessary step for the recovery of Guam's endangered species. We do not view the refuge as a substitute for a critical habitat designation under the Endangered Species Act. The private lands presently being considered for critical habitat designation are, indeed, critical for the survival of Guam's endangered species, and any comprehensive plan for the recovery of these species must recognize the significance of these private lands. We support the creation of a National Wildlife Refuge on Guam and the designation of critical habitat.

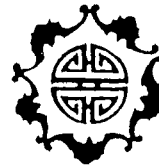
The refuge should include submerged lands sufficient to protect the coral reef environment. In our opinion, the refuge should include submerged lands to at least 600 feet in depth. Such a refuge would thereby offer protection to sealife living in the photic zone, or zone where coral can survive. Including this area within the refuge would offer protection to the habitat used by the sea turtles and would offer protection to Guam's marine resources. Presently, the government of Guam has failed to set aside any

K. Orcutt continued

portion of Guam as a marine preserve. It has also failed to set catch limits for reef fish. As a result, Guam's reefs are over fished. Many of the over harvested fish species, as juveniles, live in the shallow reef areas, but, as adults, live in deeper water in the photic zone. Designating submerged lands to only 100 feet, as proposed in option 2, would be inadequate to manage these resources. It makes no sense to offer protection of the fish when they are juveniles, but continue to allow over harvesting of the fish when, as adults, they move to deeper water. On the other hand, Including submerged lands to three miles offshore as proposed in option 1 seems unnecessarily large. Most of the marine resources to be managed in the three mile area are migratory pelagic fish such as tuna, marlin and mahi mahi. It appears to us that a Guam National Wildlife Refuge would have little impact on the management of these resources. We support the inclusion of submerged lands to at least 600 feet in depth.

Enclosed are some additional newspaper articles in support of the refuge proposal, which recently appeared in the Sunday forum section of the Pacific Daily News.

Ken Orcutt, president



Bat Conservation International, Inc.

Post Office Box 162603 • Austin, Texas 78716 • 512/327-9724 FAX 327-9724

Founder and Executive Director
Dr. Merlin D. Tuttle

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Mr. Ray Rauch
Refuge Complex Manager
Hawaiian and Pacific Island NWR Complex
P.O. Box 50167
Honolulu, Hawaii 96850

Re: Revised USFWS Draft EA for the Proposed Guam National Wildlife Refuge

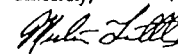
Dear Mr. Rauch:

I would like to again express my support for the proposed creation of the Guam National Wildlife Refuge. Throughout the past three decades, the population of the Marianas fruit bats (*Pteropus mariannus*) on Guam has dropped from an estimated 3000 individuals to less than 500, due in large part to commercial hunting. Although hunting of these endangered bats is no longer legal on Guam, poaching remains a threat. In addition, the introduction of the brown tree snake, which preys heavily on young bats, is having severe deleterious effects on the populations. The only remaining colony of the Marianas fruit bats roosts within the boundary of the proposed refuge, and clearly needs additional support if this island population is to recover. The establishment of this refuge would provide such support through protection and management.

The latest revised draft Environmental Assessment for the proposed refuge considers five alternatives ranging in size from over 40,000 acres to 0 acres. I am concerned that the refuge be large enough for both bat foraging and for the establishment of a second roost site. The larger alternative containing 40,262 acres, includes operational areas such as buildings and runways not considered critical habitat under the proposed plan, while the alternatives containing less than 24,146 acres would make recovery difficult. Therefore, I support either the 28,320 acre or the 24,146 acre alternatives, which include enough critical habitat to manage the existing population and accommodate recovery. As this area comprises much of the best remaining indigenous forest on Guam, the entire ecosystem would benefit by the creation of this refuge.

In summary, I urge you to adopt a plan for the establishment of the Guam National Wildlife Refuge that contains no fewer than 24,000 acres. A refuge of this size would provide an opportunity for the recovery of the Marianas fruit bat, as well as supply vital habitat for many other endemic species.

Sincerely,


Merlin D. Tuttle
Executive Director



2 March 1993

NYZS The WILDLIFE CONSERVATION SOCIETY

THE INTERNATIONAL WILDLIFE CONSERVATION PARK • ARONIX, NY 10460-1099 USA • (212) 230-5133 • Fax (212) 344-4373

Thursday, February 25, 1993

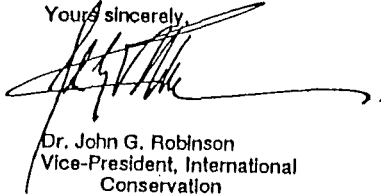


Ray Rauch
Refuge Complex Manager
Hawaiian and Pacific Islands National Wildlife Refuge Complex
P.O. Box 50167
Honolulu
Hawaii 96850

Dear Mr. Rauch,

I would like to support the creation of the Guam National Wildlife Refuge. While I cannot speak to the different alternatives that have been suggested, I can speak to the continued need to protect the unique biodiversity of Guam. Guam represents one of the most interesting insular radiations in the Pacific, and it truly represents a biological tragedy that so many of the mammal and terrestrial nesting birds are in danger of extinction. NYZS The Wildlife Conservation Society has been involved in supporting captive breeding of many of these species and in providing support to local research efforts on the island. We believe that every effort must be made to stop the continued declines of many species. The creation of the Guam National Wildlife Refuge would be an important step to realize that goal.

Yours sincerely,


Dr. John G. Robinson
Vice-President, International
Conservation



University of
Nebraska
Lincoln

Institute of Agriculture and Natural Resources

Department of Forestry, Fisheries and Wildlife
202 Natural Resources Hall
East Campus
Lincoln, NE 68583-0819
(402) 472-2186



March 1, 1993



Mr. Ray Rauch
Project Leader
Hawaiian and Pacific Islands National Wildlife Refuge Complex
P.O. Box 50167
Honolulu, Hawaii 96850

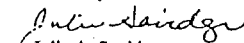
Dear Mr. Rauch:

I reviewed the draft Environmental Assessment for the proposed Guam National Wildlife Refuge. I support creating a refuge of 28,320 acres on federal and government of Guam lands. Before accepting a position at the University of Nebraska, I was on Guam for 5 years conducting my doctorate research on the reasons for the decline of Guam's avifauna. Because of my familiarity with Guam and its problems, I believe I am qualified to comment on this important issue.

My research found predation by the introduced brown tree snake responsible for the declines and extinction of much of Guam's terrestrial avifauna. Many of the species are now extinct in the wild on Guam but still occur on other islands or are being raised in captivity. Of course, the ultimate goal of the captive efforts with the kingfisher and rail is to eventually release the birds back to Guam. Without appropriate habitat, efforts will be futile. When I was on Guam, one of the few places one could find any of the birds and bats was in the remaining forest habitat. Forests are still important for the Mariana Crow (a unique species found only on Rota and Guam) and Mariana Fruit-bat. Both are also federally and locally listed as endangered. I watched the gradual conversion of Guam's forests to golf courses and hotels. Apparently, there has been tremendous growth since I left Guam. The remaining forests need to be protected, not only for the remaining endangered species and hopefully future reintroductions but also for the other organisms and plants that occur in these areas. Additionally, much of the culture and stories of the Chamorro people concerned the trees and forests; it would be a crime not to preserve these areas for future generations.

As a member of the scientific community, I urge the U.S. Fish and Wildlife Service to create a 28,320 acre refuge. If I can be of any help or answer any questions, please do not hesitate to call (404-472-2043).

Sincerely,


Julie A. Savidge
Assistant Professor

University of Nebraska-Lincoln

University of Nebraska at Omaha

University of Nebraska Medical Center



University of Hawaii at Manoa

Environmental Center
A Unit of Water Resources Research Center
Crawford 317 • 2550 Campus Road • Honolulu, Hawaii 96822
Telephone: (808) 956-7381

March 5, 1993
EA:00018

Mr. Ray Rauch, Project Leader
Hawaiian and Pacific Islands
National Wildlife Refuge Complex
P.O. Box 50167
Honolulu, Hawaii 96850

Dear Mr. Rauch:

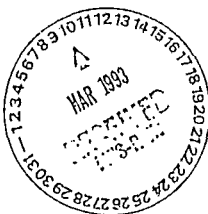
Draft Environmental Assessment
Guam National Wildlife Refuge
Guam

The referenced project proposes to establish a national wildlife refuge on certain lands and waters on Guam to be managed in coordination with the Government of Guam and the Department of Defense (DOD). The refuge would be established to (1) protect and recover endangered and threatened species; (2) protect and restore essential habitats for listed species and implement recovery actions; (3) protect and manage migratory birds and other native wildlife and their habitats in order to conserve Guam's biological diversity; (4) control predation upon native wildlife by harmful alien species and protect wildlife from poaching; (5) complement ongoing Government of Guam and Federal programs in natural resources management, conservation, law enforcement, research, and education; (6) provide opportunities for public education, enjoyment of wildlife, cultural uses of resources, and scientific research; and (7) maintain the scenic values of the protected areas.

Our review of the Draft Environmental Assessment (EA) was prepared with the assistance of David Hopper, Zoology; Clifford Smith, Botany; and Elizabeth Gordon, Environmental Center.

Compliance with EA/EIS Regulations

Actions of Guam Government agencies that involve even minimally U.S. Federal funds, U.S. Federal lands, or U.S. Federal permits come under the aegis of NEPA and relevant U.S. Agency Regulations (EPA Report 8548). Procedures for drafting Environmental Impact Assessments to conform with the Council on Environmental Quality (CEQ)/NEPA regulations are outlined in



Mr. Ray Rauch
March 5, 1993
Page 2

A Guide to Environmental Assessments and Environmental Impact Statements (1980) prepared by the Guam EPA. The Draft EA for the proposed wildlife refuge does not adequately address the purpose of an EA, which is to examine the potential impacts of a project and to determine if an Environmental Impact Statement (EIS) should be required (40 CFR 1501.43FR 55990). This Draft EA omits mention of the EIS process altogether and states that a Final EA will be developed for the Fish and Wildlife Service to make an informed decision on the benefits and costs of establishing a refuge (p. 46). What is the rationale used to arrive at the decision to forego the preparation of an EIS, if indeed, that decision has been made already? Will supplemental EAs or EISs be required for subsequent management plans for the refuge? Clarification of the EA/EIS decision process for this project is needed.

Previous Review

The Environmental Center coordinated a review of this project August 7, 1992. Our reviewers of the present document continue to have the same reservations concerning the feasibility of the proposal. The mere act of setting aside proposed lands will not accomplish the purposes for which those lands have been designated, without concurrent commitments of resources (i.e., people and funds) to develop, implement, and enforce specific resource management plans. The wildlife population on Guam has already been severely decimated by poaching and from the introduction of alien species, most notably the Brown Tree Snake. Refuges must be properly designed and managed if they are to successfully eliminate or significantly reduce these hazards.

Existing Conservation Areas

The Draft EA does not take into consideration other conservation areas already established on Guam (e.g., by the National Park Service). Since Guam is a relatively small land mass, the location and a brief description of the physical characteristics of these existing conservation areas should be included in the Draft EA.

Conclusion

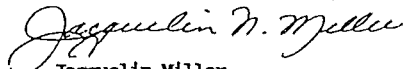
The establishment of the proposed wildlife refuge should provide a firm foundation on which both educational and technical management plans can be formulated. The Draft EA should recognize the need to include a commitment to the timely development of management plans once the proposed refuge is established.

J. Miller continued

Mr. Ray Rauch
March 5, 1993
Page 3

Thank you for the opportunity to review this Draft EA. We hope that our comments are helpful.

Sincerely,


Jacquelin Miller
Associate Environmental Coordinator

cc: Roger Furjoka
David Hopper
Clifford Smith
Elizabeth Gordon

Mr. Ray Rauch
Project Leader
Hawaiian and Pacific Islands
National Wildlife Refuge Complex
P.O. Box 50167
Honolulu, Hawaii 96850



Dear Mr. Rauch:

This is in reference to FWS/ARW/HPINWR Complex. I am submitting my written comments in opposition to the proposed Guam National Wildlife Refuge. I am especially opposed to any move which restricts, limits or inhibits local landowners from fully accessing and freely developing their own private properties.

I strongly urge the FWS to let the preferences of the people of Guam prevail over FWS experts and scientists concerning the magnitude, areas, and mechanics of the proposed refuge. Nothing in the Federal's final conclusion should deter or reduce the full opportunity for the private owners and the Chamorros from developing and freely enjoying the fruits and benefits of their homeland. This is Guam, and those who toil, labor and make it their home and for their heirs should have the first right to any determination concerning their island. The Chamorros are as indigenous as the the plants, tree and wildlife of Guam.

It appears to me that findings and public comments were merely being used as lip service to the people of Guam. For example, in your response to the testimonies given in the 1991 public hearing held in Guam, you stated that the majority of those presenters were in favor of establishing a wildlife refuge in Guam; however, you failed to acknowledge that the general consensus was against the establishment of the refuge as conceived by FWS.

Are you so determined to push forward the refuge that you are drawing comments out of context? I have reviewed all the testimonies of 1991, and with the exception of those from DOD and US Government officials I did not discover any local agency or private owner who specifically said that they are in favor of your plan in whole. In fact, the majority are urging that:

(1) the private land owners be given the opportunity to develop their lands without undue restrictions; and

(2) some of the excess land be returned to the people of Guam and to the local government.

We, as did our ancestors, love and protect our wildlife counterparts. We the people of Guam intelligent and sensitive. Our elected lawmakers have been responding to the local community needs and desires. Laws are put into effect concerning wildlife and the environment. The local EPA, University of Guam and the Agriculture Department are vigilantly operating in the protection of air, water, and wildlife; these agencies have been constantly discovering and openly revealing wrongdoings even in DOD and Federal premises. Given the opportunity and the seed monies, the people of Guam themselves can expand and improve activities commensurate with the intent of the U.S. laws relative to the environment and wildlife. In essence, things shove down our throats in guise of health, safety and welfare, are subject to suspicion if we have no handle on such actions.

Using the aforementioned statements as my guideline, please allow me to comment on the revised draft Environmental Assessment (EA):

1. You said that there would be more federal assistance to Guam in protecting the environment once the Refuge is established. My response:

I have not seen more than a million dollars of federal assistance in eradicating totally from the face of this island the brown tree snake. IF the federal government is sincere in its environmental policies, why not first get rid of the snakes by pumping millions of federal dollars into the program; then allow time to see where the endangered species will propagate best, and from there study where the refuge should concentrate.

2. Please include as part of my comment herewith all the testimonies which I have previously submitted on the same topic of critical habitat and wildlife refuge. You do have them in file.

3. Your plan to incorporate Ritidian area in the Refuge is objectionable in that it will infringe and restrict commercial and public access to two prime private properties. You should once and for all present no direct and indirect control over the adjoining private properties. Do not perpetuate the interest of DOD over this

P.A. Sablan continued

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P.004

area under the name of wildlife protection. Your present plan covers too much land of whatever little is left for the indigenous people of Guam. It is best for you to move the boundary of the proposed refuge beginning Tarague Beach towards the northern cliffs and around to Anao; I am almost sure that you would encounter very minimal resistance from the people of Guam if this alternative is selected.

The main issue here is that the local government wants some of the federal excess land returned to the Territory, and the private land owners want to exercise full right of entry and use of their properties.

4. Last but not least, the review and request for comments on the revised draft EA should have a public hearing in Guam so that the total community be given the opportunity to again provide their input. If you were sincere and honest concerning the refuge issue, its intent and benefits to the people of Guam, are they expected to take the offer blindly. Isn't the good business motto "the customer is always right" applicable to the Federal Government?

In closing, there is something awfully suspicious about this whole thing. The push from the federal side for critical habitat came at a time when both private and local government are actively seeking for excess land and access to most of Guam's beach properties. The Federal and DOD entities appear to always work against local interest; as there was a time when USFWS and USEPA declared that there was no danger to establishing a large military radar system over the same areas they now claim any private or public development would be detrimental to the environment. And there is the nuclear issue in Palau where the US Government will not financially assist this little island paradise full of nature's most precious and pristine waters unless the people give in to a highly and potentially dangerous element to man and nature. Why is the USFWS not objecting to the hazards of military ships intruding the very critical habitat of Palau? I will agree to a Wildlife Refuge in Guam if (1) the size is reduced and restricted only to those areas from Tarague to Anao inclusively in the hands of the Air Force now, and those at Naval Station and Naval Magazine; (2) the Federal Government will immediately put more monies into the snake eradication program and rid the whole island of them firstly; and provide seed money to the Guam Legislature to initiate a locally designed wildlife refuge... let the

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people who live here have the final say so as to the areas and size of the proposed refuge.

I thank you for this small opportunity of freely speaking out, and hope that you will listen and pay heed to our lawful rights over our homeland.

Sincerely,

/s/

MR. PASCUAL ARTERO SABLAN

TRANSMITTAL

ATTENTION: Ray Rauch, Project Leader

SUBJECT: FWS/ARW/HPINWR COMPLEX

FROM: PASCUAL A. SABLAN (GUAM)

PLEASE ACCEPT MY COMMENTS BY FAX. PACKAGE OF ORIGINAL AND ENCLOSURES IN THE MAIL TODAY.

P.O. Box 828
Agana, Guam 96910

June 22, 1992

Mr. Ray Rauch
U.S. Fish & Wildlife Service
P.O. Box 50167
Honolulu, Hawaii 96850

Mr. Rauch:

I am writing with regard to the proposal to designate 45,156 acres of Guam land as a National Wildlife Refuge. I am adamantly opposed to this proposal for a number of reasons, but most particularly because it is clearly a transparent attempt by the federal government to perpetually withhold one-third of Guam's land from its rightful owners, the Chamorro people.

It is clear that the Draft Environmental Assessment on the proposal is an insincere attempt to merely comply with the letter of the law, and that it is intended to once more deceive the people of Guam into accepting an unjust, unilateral action by the U.S. against them. The five-minute limit on presentations in the hearing on the Draft underscores the lack of interest on the part of the U.S. Fish & Wildlife Service in giving serious consideration to affected landowners in Guam, and my impression that the hearing is simply a hollow gesture, as opposed to the intent of the law requiring it. The continuation of this type of practice is the main reason that most people in Guam no longer trust the federal government in general, and the Departments of Defense and the Interior in particular.

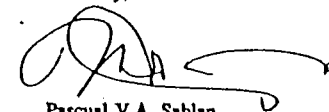
I am resigned to the fact that there is nothing that I personally (nor anyone else in Guam who I know of) will be able to influence your decisions in this action, since we have no effective political representation in the affairs of the national government. We will certainly not be able to sway your decisions in the way that the logging industry affected decisions regarding the habitat of the Spotted Owl. However, you should know that there is little you (or anyone else) can do to make me believe that the intent of the Refuge designation is to protect the endangered species remaining in Guam; if that were the intent, the Service would first make some sort of active effort to eradicate the brown tree snake from my island.

In the absence of any effort (or even any plan of which I am aware) to rid the island of the snake, the designation of a Wildlife Refuge will do nothing to protect the birds and the bats. It only results in a new land-grabbing scheme by the federal government here. This land has already been withheld from the local civilian community for far too long, and is becoming an ever-greater constraint on the economic opportunities of my people. I can only conclude that this is the intent of the Department of Interior, which is supported by several decades of parallel evidence from other actions in the past. Your President does not favor "biodiversity," yet this is the underlying premise of your proposal. Your Senate will revisit the Endangered Species Act this year, and intends to inject some rational consideration for human economic interests in the

regulatory process. Perhaps this is why the Wildlife Refuge is intended to be designated so suddenly; perhaps the Service is aware that more rational rules would prohibit this unconscionable stripping away of valuable resources from yet one more defenseless indigenous people.

I am attaching my written statement for the record, along with a letter to my sister written by Senator Robert Packwood. Although I know that I am still exhibiting the faith of an idealist, I hope that what I say and write will help you to come to the correct decision, and that you will abandon this ill-conceived plan to continue colonialist oppression in my homeland. Perhaps, some day, I can be convinced that the United States government is not the petty, mean and vicious tyrant that I perceive today; however, it will take a lot of positive actions (like eradicating the snake, so that no "refuge" for wildlife will be necessary in Guam), starting with the return of lands not in use by the Department of Defense to the people of Guam, rather than to another intrusive federal agency.

Sincerely,



Pascual V.A. Sablan

Attachments

cc: Senator Packwood
Congressman Blaz
Governor Ada



Ray Rauch
Project Leader
Hawaiian and Pacific Islands National Wildlife Refuge Complex
P.O. Box 50176
Honolulu, Hawaii 96850

Reference: Proposed Guam National Wildlife Refuge (Draft Environmental Assessment, revised January 1993)

Dear Sir,

I wish to present my views on the above referenced topic. At the outset I voice my opinion that I am not satisfied with any of the options presented in the assessment. But, having to choose among those alternatives presented, I choose Alternative 5 (no action); Option 3 (submerged lands). As stated in the assessment, protection exists today for native wildlife as per Section 9 of the Endangered Species Act (page 43, last para).

It is my opinion that the assessment is fundamentally flawed and contradictory in nature:

1) On one hand the assessment states that the purpose for the preserve is to, "halt and reverse the decline of Guam's endangered and threatened species, migratory birds, and other native wildlife." (page 3, para B). Yet the assessment clearly states in multiple places that even if a preserve is implemented, the purpose of the preserve will be, "secondary to DOD's mission, however, there remains the potential that the DOD may propose large development projects within the boundaries (including submerged land) of the proposed refuge." [emphasis added] (page 37, para A and page 38, 3rd para from top of page). As stated in the assessment, types of DOD activities which may be allowed on preserve land include, "training exercises, explosive ordnance detonation and operations." [emphasis added] (page 30, para #5).

In my opinion the stated purpose of the preserve (protect native wildlife) and the possible usages by DOD at any time in the future should they so decide to do so (blow up native wildlife) are contradictory.

2) On one hand the assessment states that, "The Service is no longer proposing to include certain lands identified in the pending Guam Excess Lands Act..." (page 11, 1st para). Yet the former US Naval Facility (NAVFAC) at Ritidian Point which is considered excess to the mission of the US Navy (page 13, para #3.2) is now included in all the preserve alternatives except #5 which is the "no action" alternative.

PAGE 2

Reference: Proposed Guam National Wildlife Refuge (Draft Environmental Assessment, revised January 1993)

The Castro family was formally notified by the US Navy that because of technological advances and peace breaking out in the world, NAVFAC was no longer needed; and that the land would be declared excess and would be eventually returned to the families of the original heirs. It seems that when the Navy still had use for NAVFAC there was never any consideration given to NAVFAC as being a preserve site. Only now that the Navy has no longer any need of the NAVFAC location is it okay to consider it as a site for a wildlife preserve.

3) On one hand, the assessment states that one of the specific objectives of the preserve is to, "effect a long-term, comprehensive program to conserve and recover endangered and threatened species, migratory birds and other native flora and fauna on Guam" (page 3, para B.1). Yet the assessment goes on to say that even though there are shoals in Apra Harbor which provide important foraging habitat for the green sea turtles and the endangered hawksbill sea turtles, "The Service has decided to exclude submerged lands within Apra Harbor from the proposed Refuge because of the potential conflict with commercial and DOD operations." [emphasis added] (page 12, para 2.2).

It is my opinion that because it appears to cause an inconvenience to DOD, the Service has decided to sacrifice this important endangered species foraging habitat. A reasonable person could conclude that the assessment is advocating a Refuge/Preserve as long as it does not present any kind of an inconvenience nor restriction to DOD/military activities.

4) In addition, as stated above in 3); On one hand the assessment states that one of the specific objectives of the preserve is to, "effect a long-term, comprehensive program to conserve and recover endangered and threatened species, migratory birds and other native flora and fauna on Guam" (page 3, para B.1). Yet the assessment readily admits that while some of these proposed preserve lands were in the possession of DOD, significant contaminants and hazardous waste sites have been identified in areas containing significant wildlife habitat values (page 15, para E.1).

In my opinion, this assessment is asking us to trust the Fish & Wildlife Service (which is a branch of the US Federal Government just as DOD is) in that they will be better

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PAGE 3

Reference: Proposed Guam National Wildlife Refuge (Draft Environmental Assessment, revised January 1993)

caretakers of the land; but at the same time the Service will not be held responsible for any of the hazardous waste/contaminated sites. The implication is that we should be at ease because the Service will badger a fellow Government agency to clean up the mess. It appears by this assessment that the US Government did more than their fair share of damage to Guam's native flora & fauna. I for one am not calmed nor reassured that the Service will do any better than DOD.

5) On one hand the assessment requests cooperation between all parties concerned to make the proposed preserve/refuge a success. Yet the assessment also states that there still remains the possibility of a critical habitat designation being imposed on Guam (page 16, 1st para).

In my opinion, the Service is attempting to blackmail the people of Guam by stating that if you do not approve what ever is finally proposed for the preserve/refuge, the US Government will impose a much harsher critical habitat designation.

In summary, I believe a 6th alternative should have been explored. The land was condemned from the Guamanian people for the defense of the US (under questionable fairness/authority). Simply stated, DOD no longer has needs for the unused portion of the condemned lands. Large tracts of these condemned lands remain excess or idle today.

I propose that the excess/idle condemned lands be returned to the heirs. I propose that the heirs or representatives of the heirs be trained in preserving/maintaining/propagating native flora and fauna. I submit that the Chamorro heirs of the properties would be much better caretakers than the US Federal Government has been as documented in the assessment. Take for instance the Castro's private property in Jinapsan sandwiched between condemned DOD lands. This assessment makes note of the contaminated sites/hazardous waste dumps on all the surrounding DOD lands, yet no such contamination/hazardous waste sites exist on the Castro's property. In fact the assessment acknowledges that the private lands surrounded by DOD lands contain in fact many of the flora/fauna this refuge is designed to protect. It is an implied admission of the assessment that the private land owners have been much better caretakers of the land as compared to DOD.

In this age of dwindling federal budgets, an unpaid army of heirs could be trained and put into motion; thus being a thousand times more effective than any limited staffing Fish & Wildlife may propose due to budget constraints.

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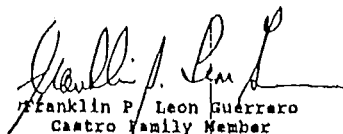
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PAGE 4

Reference: Proposed Guam National Wildlife Refuge (Draft Environmental Assessment, revised January 1993)

I am appreciative of this opportunity to voice my opinions and concerns pertaining to the proposed Guam national wildlife refuge. I am available at any time to further expand or clarify any of the points I have presented.


Franklin P. Leon Guerrero
Castro Family Member

cc: Governor
Lt Governor
Speaker

My work phone number and mailing address follows:

(671) 477-5931/2/3/4 ext. 313

1026 Cabras Highway
Suite 201
Piti, Guam 96925

RAY RAUCH
PROJECT LEADER
HAWAII/PACIFIC
ISLAND NATIONAL
WILD REFUGE COMPLEX U.S.
FISH/WILD LIFE SERVICE

P.O. Box
50167
HON, HAWAII
96850

Again, The federal government chooses to take a different approach in continuing to hold stolen Chamorro lands by shifting jurisdiction from the military to another department, the U.S. Fish and Wildlife. The so-called proposal to designate a wildlife preserve at Ritidian is another poor diplomatic move, in a time when land disputes between original landowners and the military is on the rise. It will not be long when the relationship between civilian and military will decrease. The Feds are forgetting that the growing younger generation of landless Chamorros whose parents lands were condemned by

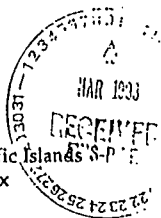
the Feds hold a different view to what the Federal Government, like to University students throughout Japan, Korea, Philippines, COMINT, Palau, American Samoa, FSM, and Hawaii. U.S. Military arrogance and encroachment continue to be the top of the Feds' agenda. Poor diplomacy seems to be the trend, as a result, it only breeds resentment and animosity from surrounding Nations towards the United States.

I hope that the decision made is a wise one. "Return lands to original landowners. Indigenous peoples are near extinct species. Give back their habitat. Indigenous Chamorros have lived in harmony with

Mother Earth for over 4,000 years. There's no doubt that we are the ideal caretakers of our homeland.

Paul Sen Chamorro

Ray Rauch
Project Leader, Hawaiian and Pacific Islands
National Wildlife Refuge Complex
U.S. Fish and Wildlife Service
P.O. Box 50167
Honolulu, Hawaii 96850



March 2, 1993

Dear Mr. Rauch:

I am writing to urge you to establish a wildlife refuge on Guam. I am concerned that in the past decade Guam has lost the Guam broadbill, the Guam bridled white-eye, and the rufous fantail. The Guam rail and the Micronesian kingfisher only survive in captivity. Guam's Vanikoro swiftlet, Mariana fruitbat, Mariana common moorhen, Micronesia starling, Mariana crow, and sea turtles need protection immediately!

Wildlife protection is long overdue on our island. The catastrophic decline of our island's wildlife can no longer be ignored by local or federal governments. The USFWS should establish a refuge so that Guam can receive badly needed funds to enforce conservation regulations and establish neglected environmental education for our children.

The urgency of the situation is clear. Biologists estimate that fewer than 70 Mariana crows persist on Guam. The Micronesia starling, the Mariana moorhen and the Mariana fruitbat all survive in decreasing numbers each year.

As a resident of Guam, I support the designation of an overlay wildlife refuge. I urge you to select Alternative 2 for the protection of Guam's endangered birds and mammals.

Sincerely,

Andrew A. Jones

Ray Rauch
Project Leader, Hawaiian and Pacific Islands
National Wildlife Refuge Complex
U.S. Fish and Wildlife Service
P.O. Box 50167
Honolulu, Hawaii 96850



March 1, 1993

Dear Mr. Rauch:

I support the establishment of an overlay refuge on Guam's remaining forest habitat. I support alternative 2 of the draft Environmental Assessment which includes Ritidian Point. I urge the USFWS to establish a refuge and work cooperatively with DOD and government of Guam officials to establish a meaningful refuge on Guam.

Land ownership on Guam is an especially controversial issue. However, the land ownership debates should not undermine our concern for the native wildlife on Guam. I, for one, am concerned that in the recent decades at least three birds and one fruitbat species have gone extinct on Guam. Protection of our wildlife may be too late, but it does not have to be too little!

I urge you to establish an overlay refuge to protect the remaining Vanikoro swiftlet, Mariana fruitbat, Mariana common moorhen, Mariana crow, and sea turtles. There is no time to wait as these species persist only at very small numbers.

The Government of Guam is interested in the conservation of our native wildlife. However, resources have not been prioritized to maximize protection of our endangered species. The USFWS is an essential source of funding for enforcement and implementation of conservation regulations, establishment of education programs to teach our children about the uniqueness of Guam's wildlife and the creation of hiking trails for recreation and hunting.

The people of Guam need the resources of the USFWS to protect our native wildlife. Alternative 2 is reasonable approach to meeting the biological needs of our imperiled birds and the financial and professional needs of our local government conservation efforts.

I look forward to learning of your refuge designation decision.

Sincerely,

Robert F. Myers



Ray Rauch
Project Leader, Hawaiian Pacific Islands
National Wildlife Refuge Complex
U.S. Fish and Wildlife Service
P.O. Box 50167
Honolulu, HI 96850

135 Martyr St.
Agana, Guam 96910
February 25, 1993

Dear Mr. Rauch,

My name is Joy Yamamoto and I am a senior at St. John's High School. I have recently finished reading the Environmental Assessment draft for the proposed Guam National Wildlife Refuge for my Environmental Science class. Having been raised on Guam for the seventeen years of my life, I believe that Guam could benefit from having a wildlife refuge.

Guam's natural wildlife has truly been degraded by the brown tree snakes, human development, and human exploitation. This should have been prevented many, many years ago. However, I believe that it is not too late to begin and this proposed plan could help restore Guam's habitat and protect its endangered species. The Marianas fruit bat, sea turtles, and Mariana crow are only a few of the many species that are endangered here on Guam. These species should be protected and recovered because it is important to provide a relationship between humans and the environment. By recovering Guam's habitat and endangered species, Guam's ecosystem will be healthy. Most of Guam's wildlife are not being cared for and as a result, Guam is losing something valuable if it is not already lost. I agree that "both the government of Guam and the Federal government have obligations to their citizens to provide opportunities to better understand and appreciate wildlife." This could enable the people living on Guam the opportunity to see Guam as an "Island" and not only as a developing center. Instead of rarely seeing birds flying around Guam, people would actually get to see many birds flying around if this Refuge is established.

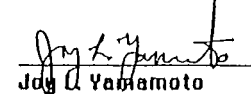
A National Wildlife Refuge should be established on Guam's lands and waters. I support Alternative 2. Alternative 2 states: Establish a Refuge on certain DOD lands (excluding operational areas),

Including the former U.S. Naval Facility at Ritidian Point, and certain Government of Guam lands.

Since the former U.S. Naval Facility at Ritidian Point already contains significant habitats for endangered species and other wildlife as designated in the recovery plans, this area would be the ideal place to establish a Refuge. Also, Department of Defense (DOD) and Government of Guam lands should be used since the Refuge is for the sake of recovering Guam's native wildlife. According to the Assessment Draft, DOD lands are found to have "some of the best remaining habitats for endangered and threatened species" and Government of Guam lands are found to have natural areas that "contain the essential habitat" for endangered species like, the Mariana fruit bat and the Mariana common Moore's.

If both the Government of Guam and the Federal government have the same interests for the recovery of Guam's wildlife, then the National Wildlife Refuge should be established. It would not only benefit the endangered species, but the island residents as well.

Sincerely,


Joy U. Yamamoto

Kristina Flores Wilson
P. O. Box 3427
Agana, Guam 96910



March 1, 1993

Ray Rauch
Project Leader, Hawaiian and Pacific Islands
National Wildlife Refuge Complex
U.S. Fish and Wildlife Service
P.O. Box 50167
Honolulu, Hawaii 96850

Dear Sir or Madam,

I have lived here on Guam for seventeen years. In this short time frame, I have been able to observe the decline of Guam's wildlife, with specific references to many bird species. I feel that a wildlife refuge is long overdue for the island of Guam since the observed drastic decline of genetic and biodiversity among the island's wildlife since the end of the World War II.

Being a native high school student on the island, studying Environmental Science at St. John's School, I have grown increasingly concerned with Guam's ecological and biological status. After having read the Draft Environmental Assessment for the Proposed Guam National Wildlife Refuge, I feel that the implementation of Alternative 2 and Option 2 would bring about numerous positive changes for many aspects of life on Guam.

Choosing Alternative 2 and Option 2, for submerged lands, would create sufficient areas to support the threatened and endangered species on the island such as the Mariana fruit

bat, Mariana crow, Micronesian kingfisher, and green sea turtle. Creating a refuge in areas such as Anderson Air Force Base, Ritidian Point, U.S. Naval Magazine, and Bolanos Conservation Area is essential to the success in preserving Guam's remaining native terrestrial mammals, birds, and reptiles. This alternative includes the protection of wetlands, nesting beaches, a 30 meter contour around many beaches, and the only known nesting cave of the Vanikoro swiftlet.

I feel that the creation of a refuge under the guidelines of alternative 2 would be ideal. Alternative 1 includes too much land, which infringes upon the local people's right to property. Yet alternatives 3, 4, and 5 lack in volume to produce the objected recovery goals for the many threatened and endangered species on Guam.

The creation of a refuge would benefit the wildlife of Guam as well as the human inhabitants of the island. In my whole life, I have never been privileged to see the Mariana crow, the green sea turtle, or a colony of Marianas fruit bats. I think it is a shame that this is so and hope that I will eventually get to see these species that were once a prevalent sight to my ancestors. I would think that many other natives as well as residents and tourists of Guam would appreciate the preservation of Guam's wildlife populations.

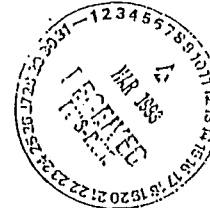
I think that there is a responsibility of our species

K.F. Wilson, continued

to help preserve and protect other species' genetic diversity, especially since we have been the main cause of their drastic decline in population. I hope that the plans for this wildlife refuge succeeds in getting established and fulfills the duties of preserving and protecting the unique and fragile native wildlife Guam posses.

Sincerely,

Kristina Flores Wilson
Kristina Flores Wilson



2 March 1993

Dear Mr. Rauch:

I would like to comment on the draft EA for an overlay refuge on Guam. I am concerned that many of the island's birds are going extinct without any substantial plans for conservation. The dire situation on Guam is clear by the loss of the Guam broadbill, the Guam bridled white-eye, and the rufous fantail. I support the establishment of a refuge on Guam and I recommend that Alternative 2 be implemented as soon as it is possible.

The protection of Guam's endangered wildlife is very controversial because much of the military land was taken wrongfully from some Chamorro families. However, the extinction of Guam's unique birds and mammals is important to the people of Guam, too. I want to see protection for the Chamorros who live today as well as the surviving animals that are native to Guam.

These two goals should not be exclusive. Without a refuge the birds of Guam are sure to go extinct. Please do not let the controversy over land on Guam overshadow the dire need to protect the remaining wildlife on Guam. The Guam rail, kingfisher, starling, crow and moorhen need our help today.

I look forward to your speedy action on this issue.

Thank you,

Wayne Kimberberg

Marlebeth A. Unsay
P.O.Box 4397
Agana, Guam 96910



2 March 1993

Ray Rauch
Project Leader, Hawaiian and Pacific Islands
National Wildlife Refuge Complex
U.S. Fish and Wildlife Service
P.O. Box 50167
Honolulu, Hawaii 96850

Dear Sir,

I have recieved a copy of the Draft Environmental Assessment for the Proposed Guam National Wildlife Refuge, and given the fact I am a resident of Guam, I support this project. We should bring the Refuge into effect in order to preserve the Fish and Wildlife on Guam. I support Alternative 2, which states "Establish a Refuge on certain DOD lands (excluding operational areas), including the former U.S. Naval Facility at Ritidian Point, and certain Government of Guam lands."

The primary purpose of this Refuge project is to halt and reverse the decline of Guam's endangered and threatened species, migratory birds, and other native wildlife. I, therefore, believe that Alternative 2 would provide long-term benefits, such as conserving and protecting the endangered and threatened species, and providing for the development of research and environmental education programs, compatible public use, and public access to enhance the public's enjoyment and appreciation of Guam's unique natural resources.

The importance of Alternative 2 is that it provides the use of the former U.S. Naval Facility at Ritidian Point, which contains significant habitats for endangered forest birds, endangered fruit bats, threatened green sea turtles, and a number of migratory seabirds and shorebirds. This area would not only benefit the endangered and threatened species, but would also provide the residents of Guam and the visitors an opportunity to enjoy the wildlife scenic values of the area.

Such species that would benefit from this Alternative are the Mariana crow, Guam Micronesian kingfisher, Guam broadbill, Guam bridled white-eye, the Mariana fruit bat, Vanikoro swiftlet, Mariana common moorhen, and the green sea turtle.

Alternative 2 focuses on certain DOD lands. This would provide a beneficial way of protecting the endangered and threatened species since there is no general public access to lands on DOD bases. Thus, meaning that public hunting is reduced and is allowed only at certain times. This Alternative, if proposed, would also provide great means to control the brown tree snakes, provide research, and to assist in recovering the endangered species in a vast area of approximately 11,461 ha (28,320 acres).

In addition, I understand the fact that the selection of an Alternative is important since it will be a long-term impact for the residents of Guam. Again, I believe that Alternative 2 would be beneficial because as stated in the draft, "It would help maintain groundwater quantity and quality underlying northern Guam by protecting large tracts of forested habitat from alteration. The protection of large acreages of forest would allow the continued percolation of rainfall into the northern lens and would maintain the recharge capacity of this important aquifer." The northern aquifer is important because it is Guam's primary source of water.

Overall, in the case of establishing this Refuge with the proposal of Alternative 2, it would create benefits for Guam's Fish and Wildlife as means of habitats and no harm for Guam's primary source of water. The residents would be provided the opportunity to enjoy the natural and cultural resource. It would be available for recreational enjoyment, research, and education. In the case of maintaining service, this would also provide job opportunities.

I am a resident who is concerned for such matters as this project. I hope that Alternative 2 would appeal to you as it does appeal to me. In any case, I hope that my response to this Refuge would help in considering your decision to do what is best for the endangered and threatened species on Guam.

Sincerely,

Marlebeth A. Unsay
Marlebeth A. Unsay

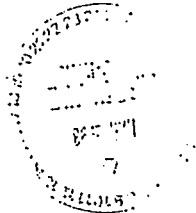
March 5, 1993

Ray Rauch
Project Leader, Hawaiian and Pacific Islands
National Wildlife Refuge Complex
U.S. Fish and Wildlife Service
P.O. Box 50167
Honolulu, Hawaii 96850

Dear Mr. Rauch:

I would like to comment briefly on the proposed overlay refuge considered for Guam. I have read the draft EA and am very concerned that the considered alternatives do not consider the inclusion of any private land. I think this is especially problematic because the private land adjacent to the proposed refuge lands is slated (albeit unofficially) for resort development. Given the imperiled status of the Mariana crow, Mariana fruitbat, Mariana common moorhen, the Guam rail and the Micronesian kingfisher, the draft EA should have considered the biological importance of including the private land of the Artero and Castro families. Even if the current political climate deem the inclusion of these properties infeasible, the biological importance of protecting that land should have been demonstrated by including it as an alternative. The biological implications of various refuge alternatives, not the political feasibility, should be the top priority of the USFWS for Guam.

I am also critical of the failure to assess the impact of probable development on lands adjacent to the refuge. An analysis (or even acknowledgement) of proposed development plans would be an important opportunity to educate local government officials and land owners about the adverse effects of commercial development of Guam's remaining forests. This kind of education is especially important because the refuge will be managed by cooperative agreements between Gov. Guam, DOD and the USFWS. I am confident that many government of Guam officials are uneducated about our island's endangered species crisis. These same officials are saying that they support species protection and also support all local land owners desires to get their piece of the tourism pie via development. The disregard for environmental impact of development projects is already painfully documented on island.



I want to urge you not to let the controversy over landownership deter you from your agency's mandate. It is true that the DOD land on Guam was taken wrongfully from many Chamorro families. All my life I have wanted the military bases to leave this colony and restore rightful ownership to the Chamorros. However, I also understand the tragedy that most people on Guam have not been educated about the native wildlife and its importance to the Chamorro culture. The reason few Chamorros are up in arms to save the imperiled birds and mammals is because there has been almost no environmental education!! As a result, the whole debate about establishing a refuge on Guam is overpowered by the concerns about land ownership.

I support the refuge and also the eventual return of Chamorro land to Chamorro people (I am a caucasian who grew up on Guam.) The remaining birds and mammals cannot wait for the arduous political process of restitution for the Chamorro people. My hope is that the establishment of a refuge will afford new opportunities for education so that more islanders understand that species protection and Chamorro rights are not exclusive goals but in fact interrelated ones.

Finally, the draft EA summarizes your legal obligation to designate a refuge on Guam. "All of Guam's native terrestrial mammals and birds are in danger of extinction in the immediate future."

Thank you for your consideration of my comments.

Sincerely,

Tiffany Larscheid
Tiffany Larscheid

P.O. Box 2692
Agaña, Guam 96911

March 5, 1993

Ray Rauch
Project Leader
Hawaiian and Pacific Islands National Wildlife
Refuge Complex
P.O. Box 50167
Honolulu, HI 96850

Re: FWS/ARW/HPINWRCComplex

Dear Mr. Rauch:

I know that this comment to the revised draft EA for the proposed Guam National Wildlife Refuge will not meet your deadline however I hope that you consider my input nonetheless.

I believe in the intent of the proposed refuge. However I do have reservations about what type of public uses will be allowed once the refuge becomes a reality. Will there be attempts by overzealous or extreme conservationists to ban all humans from the area except for scientific researchers and refuge staff? That such a refuge will in fact become the personal playground and laboratory of the Service, DAWR, DPR and other privileged agencies is a scary thought. This has already occurred at the Tarague to Pati area with the designation of that area as a natural area and Marine Preserve.

I frequently fished, mainly spearfish, for basically subsistence and occasionally for some money in the proposed submerged offshore areas, including Tarague to Pati. Now I am told that cannot fish from this area. I can agree with that for now but I would like to observe the results of such protection. In other words I would like the freedom to swim or dive to witness if such a designation works.

I also collect other types of marine and terrestrial resources such as crabs, coconuts, etc. I do not hunt wild game on land and probably never will but I do believe that people who do hunt for subsistence should be allowed to do so and that a managed hunting program is the best approach to protect those resources from over exploitation. Probably the same could be said for fishing activities.

However, as I have recently found out I cannot even traverse the designated protected shoreline and boonie areas at Tarague to Pati unless I have a boonie permit. And I cannot get that permit unless I fall into one of four categories. And all I wanted to collect were some coconut webbing. No, not I was not going hunting or fishing.

So you see, it, restriction to most but a select few, has already occurred in this area with it's designation as a preserve. Can the Service guarantee this will not occur with the most of the areas proposed in the refuge? Give us a better picture of how you propose to manage the refuge such as more specifically delineating areas and the specific management plans proposed for specific areas, eg. public recreation, critical habitat, resource site, etc. Then, perhaps more of the local opposition to the refuge would give way to acceptance. Would you want to eat something if you did not know what ingredients were put into it? Sometimes, I do that but I don't always do so comfortably or without reservations. Additionally I suggest that public input regarding the management plans and the specific areas delineated by those plans should allowed and provided for.

I would also like to comment that, No.6 and No. 3 (for submerged lands) the specific objectives outlined in B. Purpose of Action, regarding development of research and environmental education programs, compatible public use, public access to enhance the public's enjoyment and appreciation of Guam's unique natural resources, should be given as much priority as some of the other objectives. This could give more support for the refuge.

So taking into account all the above comments my choices for the refuge alternatives is Alternative 2 with Option 3 for Submerged Lands.

Thank you for the opportunity to comment.

Sincerely,
Victor R.H. Torres
Victor R.H. Torres



Fish And Wildlife Service
Hawaiian and Pacific Islands
Nat'l Wildlife Refuge Complex
P.O. Box 50167
Honolulu, Hawaii 96850-4996
Attn: FWS/ARW/HPINWRComplex
Mr. Ray Rauch, Project Leader



March 1, 1993

Dear Mr. Rauch,

I agree that the proposal for a Fish and Wildlife Refuge is needed on Guam. Endangered species, both flora and fauna need an area adequate enough to sustain a healthy environment for growth.

Please allow me to share a little bit of my history with you. I grew up in Northern Guam, on forty acres of my father's property. My father was an original land owner of Ritidian Point. Growing up I saw a number of wild birds. I used to be able to hear and see them fifty feet in front of me whenever we drove around on those forty acres. I also saw fruit bats fly in the night during the full moon. I recall my father telling me of the flight pattern of these fruit bats. Another fond memory is seeing a herd of deer (about 9 or so) about once a week on our property.

Then the birds started to disappear to the point where I could not even spot one Fantail bird for days. I think they are extinct on the Island of Guam now. I could no longer see the fruit bats during a full moon, or spot a deer for weeks.

I was at the property (Chamorros call this a "ranch") seven days a week, at least seven hours of the day. Here is where we would farm, and raise livestock and hunt for our daily consumption.

A year ago an assessment of Ritidian point was conducted which concluded that very few deer, wild pigs or birds visited this area regularly. There are plants and historical replicas that could be studied though, such as Latta Stones, and some ancient pottery. Why did Fish and Wildlife choose this particular piece of property?

In the 1950's, a portion of Ritidian Point was utilized by the U.S. Military for a radar center. The property was leveled, roads were paved, running water and electricity were also installed. Since the military relinquished this property (from its original land owners) building a housing and research center with little or no environmental damage by the Fish & Wildlife Refuge is possible. But the question is, why is all of Ritidian Point needed for this purpose when one or two hectares would be adequate? The rest of Ritidian Point should be considered excess land.

There are four parcels of land in the Northern part of Guam that Fish & Wildlife has proposed to set aside for their Refuge project. The proposed use for Ritidian Point is for use as a central point for the project's research and where the human researchers would live and work.

Ritidian is in the middle of two privately owned landlocked properties. The left side is (Arunao) owned by the Artero family and the right side is (Jinapsan) owned by the Castro family (cousins to my father's family). Recently, evidence was found of humans camping on a secured area of Ritidian Point. Motor vehicle tracks were also discovered by the beach. When these private owners develop their properties in one form or another, people will eventually travel to Ritidian Point - U.S. Security or no U.S. Security. If the U.S. Security cannot protect the wildlife at Ritidian, then it is only logical to return this property to the people of Guam.

A grave injustice was done to my father's family when they were told after World War II to leave their property (their home), and to find themselves somewhere else to live so that the U.S. Military could do their job in protecting them and the rest of the Islanders from aggressors. The U.S. Military would rent the property of ten acres for \$1.00 a year from my family until they saw otherwise. This offer was a "take it or leave it" offer.

In 1963 my father's family and other landowners of Ritidian Point were dictated to sell their properties under a fee simple agreement for the value that the U.S. Military determined. Prior to this dictation, the original landowners were denied any access to their home, their history and their heritage for 10 years. At this present time people other than original landowners have been allowed access to these properties without any security clearance.

The Fish & Wildlife movement is commended in their actions to save the endangered species of Guam, but the two hectares that has already been utilized by the U.S. Government should be more than sufficient to meet the needs of a refuge and central information center. If Ritidian is to be made into a Wildlife Refuge, the fate of the endangered species because of the close proximity of the privately owned properties is not guaranteed for survival. Adequate control of people entering into a secured area cannot be maintained because as I pointed out earlier evidence of trespassers has been found and no one has been arrested nor charged with criminal trespassing.

Why am I, a descendant of an original land owner, denied access to the place where my father grew up, learned how to fish, learned the lumber trade from his father, and where he wanted his children and their children after them to experience the land that meant so much to him and his family.

My father mentioned to me many times that he was under the assumption that when the U.S. Government was finished with the property that they were using for "security reasons only" that the original landowners would have the chance to obtain their birthright back.

Indeed a grave injustice was done by the U.S. Military when they denied the original landowners any access to their properties, dictating a lease agreement to their own benefit, and leading these property owners to sell their rights to their property while knowing that the U.S. government would create a law that would deny them the right to purchase back their property.

Any U.S. Agency in the mainland has the first opportunity to obtain any or all of these properties before any original landowner could purchase it back. These were steps of

J.P. Castro continued

dictatorship. Not justice, or fairness to the people of Guam who were comrades in arms during World War II. The people of this island shed their blood in the name of the United States of America - is this the type of treatment that we deserve? No, it is not.

As a descendent of an original landowner, I would like to be given back the right to purchase the land that is a birthright to me and my brothers and our children. It is only right.

Thank you,

Jesse P. Castro

Jesse P. Castro
Son of Jesus B. Castro, original landowner, Ritidian Point, Guam
535 Pale Ramon Haya
Suite #118, Box #86
Yigo, Guam 96929

cc: President Bill Clinton, USA
cc: Congressman Robert Underwood, Guam
cc: Governor Joseph Ada, Guam
cc: Jinapson, Guam Landowners
cc: Arunao, Guam Landowners



March 3, 1993

Ray Rauch
Refuge Complex Manager
Hawaiian and Pacific Islands National Wildlife Complex
PO Box 50167
Honolulu, HI 96850

Dear Mr. Rauch:

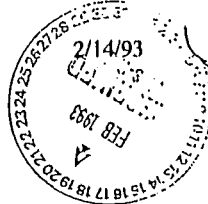
I have reviewed the Draft Environmental Assessment for a proposed Guam National Wildlife refuge. I support the establishment of such a refuge and believe the 28,320 acre alternative is best. This size refuge will provide for the protection and recovery of a variety of T&E species on Guam and will provide a focal point for brown tree snake research and control/eradication. Too many species have already been extirpated on Guam and throughout the Pacific Islands. The time to act is now (actually it was 20 years ago).

Sincerely,

James D. Reichel

James D. Reichel
Zoologist

Ray Rauch
Refuge Complex Manager, Hawaiian/Pacific Islands
National Wildlife Refuge Complex
U.S. Fish and Wildlife Service
P.O. Box 50167
Honolulu, Hawaii 96850



Dear Mr. Rauch:

In recent years, we have witnessed the rapid loss of Guam's indigenous wildlife. All of Guam's native mammal and forest bird populations are in danger of extinction. Three of ten species of Guam's birds listed as endangered by the United States Fish and Wildlife Service in 1984 are now believed extinct. Only the Mariana crow and the Mariana fruit bat maintain populations in the wild.

Because these animals are on the brink of extinction, we need a national wildlife refuge on Guam to actively manage these endangered animals, such that these animals can once again obtain viable populations. A national wildlife refuge on Guam will insure the preservation of Guam's unique and endangered natural heritage. It will contain much of Guam's best remaining native forest, which is the preferred habitat for most of our endangered animals. The refuge will include a forested area believed large enough to maintain a minimum viable population of Mariana Crows, the species with the largest requirements for its breeding territories. It will preserve some of the last remaining Green sea turtle nesting beaches. Most importantly, the establishment of the refuge would represent a commitment by the federal government to the goals of preserving Guam's endangered species and controlling the brown tree snake population.

The people of Guam will benefit from such a refuge. Millions of federal dollars that will be spent in employing people to operate the refuge. The refuge will serve a role in educating our children about Guam's natural heritage and the significance that Guam's wildlife has in the Chamorro culture. Many archaeological sites will be preserved. The refuge will preserve areas used by Guamanians for such outdoor activities as hiking, camping, deer hunting, crab hunting, and the traditional gathering of various plant items such as betel nut, fadang, and lumot.

I support your proposal to create a Guam National Wildlife Refuge. I believe it should include 28,320 acres.

Sincerely yours,

Happy Rons
Happy Rons

Gary Wiles
P.O. Box 24471 MPO
Guam, GU 96921

28 February 1993

Mr. Ray Rauch
Project Leader
Hawaiian and Pacific Islands National Wildlife Refuge Complex
PO Box 50167
Honolulu, HI 96850

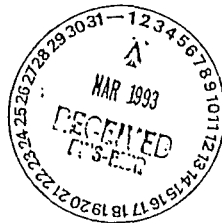
Dear Mr. Rauch:

I am writing to give my support to the establishment of a national wildlife refuge on Guam. Rapid development and population growth on the island dictates that a refuge to protect wildlife and a variety of other natural resources be set aside soon before the opportunity is lost altogether.

I believe that Option 2, which would encompass 28,000 acres of land as described in the environmental assessment for the proposed refuge, is the best choice for the size of the refuge. It is in the best interests of the island's natural resources that both federal and Government of Guam lands be included in the refuge. Despite what some officials in the Government of Guam say, wildlife management on GovGuam lands is poor overall, especially on property in northern Guam. These lands would benefit greatly by being included in the refuge. Regarding the inclusion of submerged lands, Options 1 or 2 should be accepted, based on whatever is judged most beneficial to sea turtles.

Sincerely,

Gary J Wiles



Marvin Q. Aguilar
218 Y-Seng Song Rd.
Dededo, Guam 96912

Ray Rauch
Project Leader, Hawaiian and Pacific Islands
National Wildlife Refuge Complex
US Fish & Wildlife Resources
PO Box 50167
Honolulu, Hawaii 96850

Dear Mr. Rauch:

Being born and raised on Guam, I have been afforded the unfortunate opportunity to watch the population of our native bird species dwindle. In the past two decades, the survival of these species have been threatened by our inability to contain the Brown Tree Snake (BTS). The BTS problem has been coupled by receding habitat resources due to development and illegal hunting.

Arguments highlighted by our local media brought concerns regarding the "best use" of properties that have been proposed for a wildlife refuge. Some argued that because of rising cost of developable land, it would be more appropriate to dedicate these areas to the people of Guam for home use. However, these are hard times that must be met with hard decisions. We as caretakers of the island are presented with an opportunity that would provide areas devoted to the enhancement, protection and preservation of our native wildlife population. What better way is there to link my people with their heritage, but to preserve our island natural beauty and integrity!

Presently, existing indigenous species are on the endangered list. This includes the Vanikoro Swiftlet, Marianas Fruitbat, Marianas crow, and certain Sea turtles. Their survival have been miraculous as they are either sporadically located in areas untouched by man or areas which restrict human access and intervention.

A wildlife refuge will: increase local and federal enforcement agencies monitoring abilities of these species; provide an area secured for the resurrection of species population; and provide an area for the people of Guam to experience her natural beauty.

In reviewing the submitted draft, I recommend that the US Fish and Wildlife Service select Alternative 2 of the draft Environmental Assessment as the best alternative towards the Wildlife Refuge goal.

Thank you for this opportunity to comment.

Sincerely,

Marvin Q. Aguilar

Tina Campus
#13 W. Endon Ct. Perez Acres
Yigo, Guam 96929



March 3, 1993
Ray Rauch
Project leader, Hawaiian and Pacific Islands
National Wildlife Service
PO Box 50187
Honolulu, Hawaii 96850

Dear Mr. Ray Rauch,

I am a student in high school and am very concerned about the current issue of Guam's proposed Wildlife Refuge. After studying the details of establishing a refuge, I have formed an opinion on which alternative should be used for the island of Guam.

Many youths and adults alike are not aware of the precious nature present on the island. Their lives consist of time spent in traffic, office buildings, and the other "benefits" of industrialization with maybe a couple of outings to the beach. As tourism grows and the economy blossoms, animal and plant life deteriorates, causing an ignorance in some of the public about the many species that are important to our island.

Being an environmental science student and becoming more concerned and aware of my surroundings, I have experienced the characteristic of paradise that Guam exhibits. On a field trip to Audobon bay, I was able to experience a rare sight. I actually saw flocks of various types of birds! I viewed the lesser golden plover, whimbrels, reef herons, and ruddy turnstones. This experience amazed me and caused me to realize that if birds are capable intended to inhabit Guam, and we have a complete responsibility to revive their population. Hikes to various sites and trips to the mudflats and mangroves has also sparked my awareness in the necessity to conserve animal and plant life. These areas were thriving with life that is not usually witnessed. This life, whether it be a tree or a bird, plays an important part in its

ecosystem, no matter how large or small these parts are.

I find it completely necessary to conserve and revive all plant and animal life possible and believe that a refuge to accomplish this is completely necessary. Alternative 1 proposed in the Draft Environmental Assessment for a Guam refuge appears to be the most ideal plan to bring the nature back to Guam. Alternative 1 provides the wildlife a chance to thrive again as well as benefits for humans. It is necessary to choose the largest conservation plan to maintain Guam's biodiversity. Without the presence of nature, man cannot survive and live a content life. Not only will Alternative 1 protect species diversity, it will also protect fresh water supplies and quality as well as the thin layer of precious topsoil. The refuge would be beneficial not only for the species, but for the public as well. With increased recreation, education, research, and enjoyment, the public can experience nature for spiritual enhancement. The proposed Alternative 1 will also create jobs for Guam to help improve the economy and focus attention on the local culture. It may help to increase tourism while at the same time, offer a different aspect of Guam which tourists normally do not have the opportunity to experience.

Thank You,

Tina Campus
Tina Campus



March 1993

Hawaiian and Pacific Islands
National Wildlife Refuge Complex
U.S. Fish and Wildlife Service
P.O. Box 50167
Honolulu, HI 96850

Dear Ray Rauch,

I am a high-school student on Guam. Having grown up on the island, I have experienced first-hand the rapid decline of Guam's natural wildlife brought upon by the recent surge of tourism and development. I have recently learned about the behavior and biology of some of Guam's native flora and fauna in my Environmental Science class, such as the hayun (*Serianthes nelsonii*), tsatsa (*Cyathea lunulata*), and the ufa (*Heritiera longipetiolata*) plants and the Mariana fruit bat, the Mariana crow, the Mariana common moorhen, the Guam broadbill, the Guam bridled white-eye, and the rufous-fronted fantail animals, but could not make use of my newly acquired knowledge due to the unsuccessful findings of these species on our frequent excursions to their habitats.

The means for securing the welfare of Guam's endangered wildlife depends on the safe-guarding and preservation of their habitat. Through propositions such as the National Wildlife Refuge, the future protection of the welfare of these organisms seems imminent. The Refuge would be beneficial for Guam, for it would offer much scientific knowledge to its people and a chance for the wildlife to thrive once again. The Refuge would increase Guam's economy by further enhancing Guam's unique and natural beauty, the factor that makes for Guam a favorite tourist spot.

Among the five alternatives under consideration, the fifth and most inactive alternative must never be initiated, for it is only a matter of time before all of Guam's native and natural wildlife disappears. Such nonaction will only encourage the present disturbance and degradation of not only the wild animals, but the environment as well. Without the natural beauty, Guam's present economic boom will falter, thus in the long run, this alternative will not be worth the (non)effort. Without proper regulation, industries would take advantage of the wildlife by developing and holding human activities in areas not their own.

Alternative five should not also be passed because the people of Guam will only do as they were taught to do: the American way of industrialization and development. Through education, this initial wall of ignorance, for the people of Guam must be taught to be more in sync with nature as were their predecessors, will then come crashing down.

Alternative four should be the future alternative plan for Guam's endangered and threatened wildlife. This is because it provides optimum land usage (at 16,294 ha or 40,262 acres), for all the space is needed for wildlife to thrive without the stress and competition in overcrowding. Much security will also be offered under the coordination and cooperation of influential and competent groups, such as the Service, Guam DAWR, and DOD, in dealing with the wildlife recovery plans. Measures, such as research, the coordination of biological monitorings, and the control of brown tree snakes, to regenerate the wildlife population of Guam's flora and fauna would be set through this alternative plan.

Since the welfare of the wildlife is a fact of Guam life, it is a duty for all the citizens to therefore save a piece of its natural heritage before that identity is lost. We owe it to nature to reimburse what it has given us to utilize for our enjoyment and benefit, for if we further exploit Guam's flora and fauna, we endanger the sustenance of Guam's anthropological animals, ourselves. Thank You.

Sincerely,

Susan Ji

March 1, 1993

Ray Rauch
Project Leader, Hawaiian and Pacific Islands
National Wildlife Refuge Complex
POB 50167
Honolulu, Hawaii 96850

Re: Guam National Wildlife Refuge

Dear Mr. Rauch,

I am writing to you to express my opinions on the formation of a Guam National Wildlife Refuge. I have been a resident of Guam for 3 years now and from the very beginning of my stay here I was struck by the total lack of birds and bird song. There are virtually no feathered bodies flitting around, no bird feeders, and sadly, no songs to wake you in the morning, or sing you to sleep. There are birds here that are barely noticeable, little brown junk birds, we call them. They are introduced European sparrows and they offer neither song nor solace for the bird lover. They have somehow survived the Brown Tree Snake and survive in the concrete jungle because they are junk birds. I am currently taking a correspondence course in Bald Eagles from the University of Alaska and the assignment to do 15 hours of bird watching and observations is impossible to complete. The only native birds one is likely to see are shore birds, and those are visible to the casual observer on the once a year Audubon Bird Watch when as a group we travel to the most isolated parts of Guam and 'hunt them' out so to speak. Finding birds here is hard work.

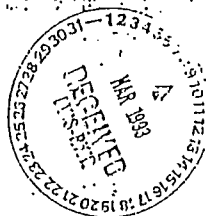
The absence of this wildlife as well as mammals makes Guam strange and empty. There are no ducks on the golf courses, no birds flying over head, no songs in the air. Fruit rots on the plant for want of the Marianas Fruit Bats, and well as for fruit eating birds, and what we have left here is concrete and traffic noise.

The near extinction of the bats on Guam has led to serious problems. Without the pollinating fruit eaters the fruits do rot and give rise to hordes of fruit flies which become pests to agriculture, which for us into the destructive cycle of pesticides. All because the bats are gone.

Development here is rampant. Given permission the local powers that be would put high rise hotels on all the beaches, effectively wiping out the sea turtles that nest on Guam, as well as doom the remaining endemic mammals and birds. It is sad to think that Guam may be another place we deny them their nests, nurseries, and homes.

Plant life here is abundant where there is no concrete or where poachers who start fires have been controlled. These 3 problems take a toll on native forests. Three tree species are on Guam's endangered species list and I am not sure as to why they are not on the Federal list. One of these trees has only one adult left. All three of these trees are found in only one area of Northern Guam, where there are as yet, no hotels.

I know you have the Environmental Assessment before you and you do not want to read it again here in my letter, but I would like to quote:



"Over the past 30 to 40 years, Guam's native wildlife has undergone a catastrophic decline from a variety of causes including predation by the introduced brown tree snake, loss and degradation of habitats from development, and human exploitation. All of Guam's native terrestrial mammals and birds are in danger of extinction in the immediate future."

It is an all too common scenario, being played out here on Guam with frightening speed. What should we do? What is most important to us, how do we find a way to please the ever growing population of humans, and save what's left of the wildlife?

Save what is left, save what is left. It has a scary ring to it. Save what is left. Just that phrase should make us spring into action. How can we let yet another Guamanian inhabitant march down the one-way road to extinction. Who are we humans, if in full knowledge, we allow it to happen...one...more...time???

It is this alarming state of affairs which has brought Guam to it's current choice: set up a refuge, a proper refuge with the right allotment of land, money, and manpower to prevent one more species from going down the deep six.

This is where Guamanians find themselves...to save the land for wildlife, or to keep it for humans, and write off the wildlife.

Fortunately, Federal Law gives us some guidelines. It is Law to protect Endangered Species. Recovery Plans for all species have been written. The mammals and birds that have already gone the way of extinction should be our blueprint for what to avoid. Although there is always hope that one of these will be accidentally located again, like the Black-Footed Ferret of Wyoming, or that a captive breeding program may establish a few of these some where other than Guam, the lesson should already be learned. The Nightingale reed-warbler, the White Throated ground dove, Micronesian Kingfisher (Guam), Micronesian megapod, Guam broadbill, Micronesian honeyeater, Mariana fruit dove, Guam rail, Rufous fronted fantail, Guam bridled white eye, Mariana mallard, Pacific sheath-tailed bat and the Little Mariana fruit bat are all, effectively, gone. Guam's ecosystems no longer support these animals nor do we reap the benefit of their ecosystem services. We lose out by simply living in a world without them. Days without birdsong, lakes without ducks, night skies without the flutter of bats, this is a fraction of what we lose.

What about the health of the rest of Guam's endemic organisms. As the report says. "All endemic mammals and birds are in danger of extinction in the immediate future."

Five other birds are all endangered. Five species of sea turtle are endangered or threatened. Even 2 species of native geckos are rare, 4 skinks, the Fruit bat, the starling, crow, swiftlet, moorhen, all, are having a very hard time and are either rare or endangered.

Have you seen an area so beleaguered? As an Island Guam has no where to go. Wildlife can not easily move when habitats are destroyed. Human beings are increasing their presence at an alarming rate. We need a refuge!

The EA presents us with 5 choices. For the greatest security the plan alternative #1 is the best. It has the greatest amount of land and would ensure the best possible chance for saving species and recovery. The land near Apra Harbor accommodates shore birds and other animals by being

L. Glismann continued

an area other than the north of Guam. If we do not put enough land in the refuge at first, it will be impossible to get it later.

The alternative #2 is the one that the local Fish and Wildlife Authorities support. It reduces the acreage perhaps to gain approval from local authorities although no private lands are included in any of the plans. GovGuam may prefer to have this land turned over to them instead of to a Wildlife Refuge and I think it is important to prevent the future spoiling of land that is truly in limited supply when the endemic species are in such danger.

Alternative #3, #4, and #5 are all completely unacceptable. Alternative #3 leaves the Bolanos and Cotal Conservation Areas vulnerable. These must be included in the refuge as they are included in #2 and #1. Alternative #4, like #3, falls way short of the minimum needed land area for the recovery of the endangered species. Alternative #5 would at the very least be biologically stupid and at the very worst, illegal.


For the terrestrial ecosystem I vote for #1, the biggest land area. We need to show the world that we can share this earth we live on.

As for the marine environment, I must insist on Option #1. The proposal of #2, which is only 100 feet from shore, is woefully inadequate to serve as any proper buffer for the land and for the marine species that need a healthy shoreline and continental shelf.

To conclude, I want to see Alternative #1 adopted for both the terrestrial and the marine environment. Other people will push for less than is adequate, but I think the evidence for a strong refuge is overwhelming and must not be ignored. You have a tough job in front of you and we on Guam wish you the best in this difficult task.

Thank you for your attention to this matter.

Sincerely,


Laura Glismann

March 5, 1993

Ray Rauch
Project Leader, Hawaiian and Pacific Islands
National Wildlife Refuge Complex
U.S. Fish and Wildlife Service
P.O. Box 50167
Honolulu, HI 96850

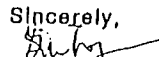
I am writing in support of a wildlife refuge to protect Guam's last remaining native birds and fruitbats. I am in support of Alternative 1 of the draft Environmental Assessment. This alternative would establish a refuge on certain DOD lands (including operational areas), including the former U.S. Naval Facility at Rikidan Point and certain Government of Guam lands.

As a local resident, I feel that such a project is long overdue. I would like my children to be able to see animals such as the Mariana fruitbat and the Micronesian kingfisher in the wild. The only way this will be possible is if this refuge is made a reality.

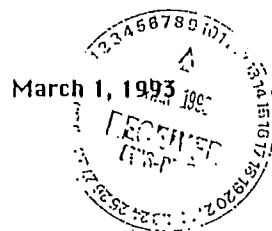
One item I am concerned with is the ambiguity concerning public access. Does public access entail military personnel as well as local residents or does it entail access only for military personnel? I feel that this issue should be addressed, especially with the present access problems through military land that local residents are experiencing. I feel that all residents should be given the privilege to access the refuge.

Thank you for this opportunity to comment on the USFWS policy in Guam.

Sincerely,


Georgette B. Quitugua

P.O. Box 25017
GMF, Guam 96921



Ray Rauch
Project Leader
Hawaiian and Pacific Islands
National Wildlife Refuge Complex
U.S. Fish and Wildlife Service
P.O. Box 50167
Honolulu, Hawaii 96850

Dear Mr. Rauch,

As a resident of Guam, I support wildlife protection and the establishment of a wildlife refuge. I support Alternative 2 as the best alternative for wildlife protection.

It is time that Guam receive funding and professional support from the US Fish and Wildlife Service to enforce conservation regulations. Also, Guam needs more research on the invasion of the brown tree snake which continues to decimate local bird populations.

Please act quickly on this very pressing matter. I look forward to the designation of a refuge on Guam.

Thank you,

Zachary Concepcion
Zachary Concepcion

2556 Hilgard Ave.
Berkeley, CA 94709-1105

Fax (510)-843-5501 Tel (510)-845-5313

February 23, 1993

Ray Rauch
Refuge Complex Manager
Hawaiian and Pacific Islands National Wildlife Refuge Complex
P.O. Box 50167
Honolulu, Hawaii 96850

Dear Mr. Rauch:

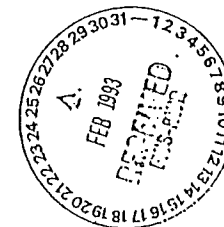
I am writing you to strongly support the 28,320 acre alternative for the Guam National Wildlife Refuge proposed by the Service. As a wildlife biologist with some professional experience in the Pacific I am keenly aware that the status of much of Guam's native wildlife could be realistically described as desperate. The combination of overexploitation, habitat alteration and particularly introduced predators has lead to several extinctions, with more in prospect.

The establishment of this refuge on military and government of Guam lands would formally protect habitat critical to the long term survival of native animal species and constructively coordinate its management. Further institutional commitment by the Service to addressing the brown tree snake issue should ultimately reduce the risk that this devastating introduction will be dispersed to other island ecosystems. The 28,320 acre alternative provides an effective nucleus protecting much of the best forest habitat remaining on Guam.

Sincerely

William E. Rainey

William E. Rainey, Ph.D.



Ray Rauch
 Refuge Complex Manager, Hawaiian/Pacific Islands
 National Wildlife Refuge Complex
 U.S. Fish and Wildlife Service
 P.O. Box 50167
 Honolulu, Hawaii 96850

2/28/93

Dear Mr. Rauch:

Attached is a petition signed by various people in support of a 28,000 acre refuge.

Sincerely yours,

Happy Rows
 Happy Rows



We, the undersigned support the United States Fish and Wildlife Service's proposal to create an overlay refuge on government land on Guam. We believe such a refuge is necessary in order for the brown tree snake to be controlled and for the preservation of Guam's wildlife heritage. Of the proposals being considered by the service, we support Alternative 2, which would create a refuge of approximately 28,000 acres.

Print Name Signature Village

MARGARET PINNEY	<i>Margaret Pinney</i>	Macao
Pat Rankin	<i>Pat Rankin</i>	Macao
Michael McElligott	<i>Michael McElligott</i>	Tumon
Jama Cronan	<i>Jama Cronan</i>	Tumon
John Sanchez	<i>John Sanchez</i>	Vigo
Chuck Kinnaman	<i>Chuck Kinnaman</i>	Piti
Jill Mudd	<i>Jill Mudd</i>	Tumon
Robert Barr	<i>Robert Barr</i>	Yona
Todd Mares	<i>Todd Mares</i>	Mangilao
LYNN RAULERSON	<i>Lynn Raulerson</i>	Chalan Pago
Robert D. Anderson	<i>Robert D. Anderson</i>	Bumbyda
Julie Mone	<i>Julie Mone</i>	Mangilao
James A. Marsh	<i>James A. Marsh</i>	Mangilao
Tom Sherry	<i>Tom Sherry</i>	Tumon
Gary Wiles	<i>Gary Wiles</i>	Toto
ROBERT A PERCY	<i>Robert A Percy</i>	Tumon
Stephen Kinn	<i>Stephen Kinn</i>	Asan
Mara Burke	<i>Mara Burke</i>	Asan
Amy Wilson	<i>Amy Wilson</i>	Tumon

WAYNE KRUCKENBERG	<i>Wayne Kruckenberg</i>	TOTO
R. L. Hunter-Anderson	<i>R. L. Hunter-Anderson</i>	Toto
Pat Nichols	<i>Pat Nichols</i>	Vigo
Usha K. Prasad	<i>Usha K. Prasad</i>	Mangilao
David Lu	<i>David Lu</i>	Tumon
LISA ZHANG	<i>Lisa Zhang</i>	Tumon
Tim Hester	<i>Tim Hester</i>	TOTO
MARIAN MONTIV	<i>Marian Montiv</i>	TOTO
Gretchen Grinn	<i>Gretchen Grinn</i>	mc-gilao
ROBERT FONO	<i>Robert Fono</i>	MANGILAO
Tiffany Lorscheid	<i>Tiffany Lorscheid</i>	Mangilao
Ken Orcutt	<i>Ken Orcutt</i>	Yona
R. HAPPY ROWS	<i>R. Happy Rows</i>	Chalan
J. Patrick MASON	<i>J. Patrick Mason</i>	Chalan Pago
Al Baker	<i>Al Baker</i>	Si-dah
D. L. Hogan	<i>D. L. Hogan</i>	Vigo
D. C. Sullivan	<i>D. C. Sullivan</i>	Mangilao
Andrew Anderson	<i>Andrew Anderson</i>	Vigo
Maria A. Fitzpatrick	<i>Maria A. Fitzpatrick</i>	IPAN
Yona A. Bui	<i>Yona A. Bui</i>	Yona

Brendan Kelly
PO Box 269D
Agaña, GUAM 96910



Ray Rauch
Project Leader, Hawaiian + Pacific Islands
National Wildlife Refuge Complex
US Fish + Wildlife
PO Box 50167,
Honolulu, Hawaii 96850

Dear Mr. Rauch,

I am writing you with a sense of urgency about the proposed wildlife refuge on Guam. As someone who has just moved to the island from the mainland, a large portion of my time has been spent hiking, camping in the natural areas, as well as learning about the feebly mammals and birds that inhabit this place. And from these experiences and education comes a desire to convey to you how precious little habitat remains.

Looking at the Environmental Assessment (EA) put out by USFWS concerning the proposed refuge, there is one particularly graphic statement that best sums up my feelings - "All of Guam's native terrestrial animals and birds are in danger of extinction in the immediate future" (emphasis added). The rapidly expanding "development" I have seen from the ridgetops of peaks I have hiked to around the island, from reading bookst reports about the survival of past species + the habitat needs of those that still remain in the wild, indicates that there is not a moment to waste in designating the refuge. In addition to the widely known plight of the Guam rail, the Micronesian Kingfisher also only survives in captivity + the Guam broadbilled bridled white eye, as well as the rufous-fronted fantail, are already extinct. Also, the Mariana crow, Mariana common moorhen + Mariana fruitbat have all dropped to population levels that

also raise very serious questions about their survival in the wild.

As a result, I strongly urge you to selective Alternative 2 outlined in the EA, which would establish an overlay refuge: certain Department of Defense lands including the former U.S. Naval Facility at Ritidian Point as well as certain Government of Guam lands.

And, I urge USFWS to act with the utmost of urgency in this selection, as I recognize, as does the EA of the refuge proposal, that mass extinction may be a possibility on Guam in the immediate future.

Thank you. I look forward to a response from the agency.

Brendan Kelly

March 2, 1993

Ray Rauch
Project Leader, Hawaiian and Pacific Islands
National Wildlife Refuge Complex
U.S. Fish and Wildlife Service
P.O. Box 50167
Honolulu, Hawaii 96850

Dear Mr. Ray Rauch:

I have been a resident of Guam for nearly 17 years now (I am still only 17 years old), and I have never been fully aware of the extent and severity of effects that modernization and industrialization have had on our island's natural beauty. I did not realize how little I actually knew about Guam's habitats and wildlife until I began taking an Environmental Science class during my senior year in high school.

I am well aware of environmental problems that people face globally, such as global warming, air pollution, destruction of habitats, and depletion of the earth's natural resources.

Thus, I try to do my share here on Guam by recycling, conserving, and using environmentally-friendly products. However, my Environmental Science class has brought these global problems to a more realistic and personal perspective by showing me how they are occurring right "in my back yard."

After numerous field trips to endemic habitats such as the mangrove swamps to take water samples, conduct plant studies, and observe the factors that constitute an ecosystem, I have gained a deeper understanding and appreciation for Guam's

wildlife and vegetation. However, as I have seen in my short life time, Guam's native animals and unique ecosystems are disappearing as the price we must pay for modernization and technology.

The effort and serious consideration that has been given to the establishment of a proposed refuge is exciting and encouraging. I have read the 1993 revised Draft Environmental Assessment and have carefully considered the five Alternatives presented. I feel that as the most reasonable and practical option, Alternative 2 would best fulfill the purposes of a refuge on Guam.

Alternative 2 provides nearly the same protection of essential habitats for the Mariana crow, the Guam Micronesian kingfisher, the Guam broadbill, the Guam bridled white-eye, the Mariana fruit bat, Mariana common moorhen, and the Vanikoro swiftlet, but merely does not cover as much acreage as

Alternative 1. In addition, Alternative 2 adequately protects the green sea turtles, the vital northern aquifer and the quality of surface waters in streams, for which Alternatives 3 and 4 either do not or insufficiently provide protection.

Thus, I believe that Alternative 2 encompasses the most feasible and effective plans for a successful wildlife refuge on Guam.

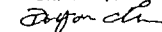
Despite the misconceptions of limitless outdoor activities and scenic parks that one might have of Guam as an island, they are highly false in my opinion. There are many outdoor sports such as jet skiing, windsurfing, and parasailing, but they are

not very accessible to the locals. One must either own personal equipment or pay a hefty tourist price for a 10 minute ride. Also, I have been a long-time resident of Guam and cannot name one safe, clean, and scenic park with benches and facilities for a picnic.

Because almost every form of entertainment and leisure is centered around tourists, the establishment of a refuge would be a healthy and long-delayed gift for the people of Guam. Not only would a refuge preserve our island's natural heritage and genetic biodiversity, but it would also provide increased opportunities for the enjoyment, education, and appreciation of Guam's natural resources.

As long as a refuge is ultimately established to protect and preserve Guam's natural environment from man's destructive "nature" (it is ironic how we must construct barriers to protect nature from ourselves), I will continue to be hopeful and optimistic that Guam will not follow in the footsteps of its industrial models.

Sincerely,



Do-Yon Ahn

Mr. Ted Gorn
 Merigo Blom. School
 P.O. Box 8146
 Merigo, Guam
 96916

2/18/93

Ray Rauch
 Project Leader
 Hawaiian & Pac. Is. NWRC
 Honolulu, HI 96850



Dear Mr. Rauch,

My students and I are very concerned about Guam's future. We agree that something must be done to save Guam's endangered species. Opinions differ as to which of the alternatives proposed by your agency is best.

I am in favor of the plan entailing 40,000 acres being set aside for Guam's wildlife. With approximately 135,000 acres in Guam, this means designating less than one-third of the island for wildlife habitat.

So many animals have died in just the last few decades. We need a big change in attitude and action, in order to reverse this process. Everyone knows that "extinct means forever" — but perhaps they need to be reminded, nevertheless. Animals and plants have a right to live, too. And regardless of this right, we cannot survive without them.

Thank you.

Sincerely,

Theodore Gorn
 Theodore Gorn

5 March-93
 Dear Mr. Rauch,
 This letter is written in support of critical habitat on Guam, and in particular, the allocation of 20,000 acres in northern Guam better known as option 2.

I have resided on Guam since 1978 and over the years have witnessed the destruction of pristine native forests for various purposes. Also I witnessed the decline and extinction of most of Guam's native avian fauna. Probably I saw the very last cardinal honeyeater.

Habitat destruction cannot be reversed but preservation of habitat can afford opportunities for reintroduction of species and recreational activities.

I strongly urge the U.S. Fish & Wildlife Service to coordinate with Guam government and residents to establish and protect these 20,000 acres of land for present and future enjoyment by Guam's people and to help perpetuate the island's natural biodiversity. —



Thank you for the opportunity to comment on this project.

most sincerely

Gretchen P. Grimm

(Gretchen P. Grimm)

Chris Spencer
February 24, 1993
P.O. Box 8088
Merizo Elementary
School

Dear Rary Rauch

I think you could set aside 90,000
acres for plants, animals etc.

I could go camping and be a lot
happier. I love animals. Plants are
needed for breathing and they
are pretty. I wish pop would give
more land to land preserves for
animals and plants
think about it

thank you

Chris

Dear Rary Rauch
Project Leader Hawaiian and
Pacific Islands Nation Wildlife
Refuge Complex, P.O. Box 50167,
Honolulu, Hawaii, 96850.

I think you should only allow some types of
recreation. I'd like to see animal watching, boating, hiking,
and swimming allowed, because all of these don't hurt
the animals or the environment. I hope you can help
Guam animals because most of them are endangered
and in the future there might be few animals left.
I wish we could give more land to animals all
over the world because many are becoming
extinct. If animals are crowded into a little spot hunters
can easily kill them. I am writing this letter to help
the environment, Earth, Guam, and animals all over the
world.

Sincerely,

CHRISTOPHER ANDERSON

Christopher Anderson
Merizo Elementary School
P.O. Box 16006
Merizo, Guam
96916
2/24/93

Monica Lizama Castro
Merizo Elementary School
P.O. Box 8146
Merizo, Guam, 96916

Project Leaders, Hawaiian
Pacific Islands National Wildlife
Refuge Complex, P.O. Box 50167, Honolulu, Hawaii 96850

Dear Ray Rauch,

I think you should allow camping at our future refuge. We can experience a clean land, smell the fresh cool air, cook food with firewood from the forest, and drink the fresh water. And in the deep forest, you can see animals. Ray, Guam has 212 square miles, or 135,000 acres. Of Guam's five proposals, I picked number 1, because it sets aside 40,000 acres, more land than the other ones.

Sincerely
Monica

Joanie Barcinas
Merizo Elementary
School
P.O. Box 8146
Merizo Guam.
96916
2/24/93

Ray Rauch
Project Leader, Hawaiian and
Pacific Islands National Wildlife
Refuge complex P.O. Box 50167
Honolulu, Hawaii, 96850

Dear Ray Rauch,

My name is Joanie Barcinas. I am ten years old. I am writing this letter because I'm concerned about our island's wildlife. Our class was talking about how much land they should be putting aside for a refuge. We'll appreciate it if you pick the proposal that sets aside 40,000 acres, animals can get some exercise. And if you do this, please! don't put highways or buildings there, or there will be lots of people around them and they could get sick. That they could become extinct.

Casey Rendall
P.O. Box 5146
Meriga Elm.
Meriga Guam
2/24/93

Ray Rauch
Project Leader
P.O. Box 50167
Honolulu, Hawaii
96850

Dear Ray Rauch,
My name is Casey Rendall. I think you should set aside 40,000 acres for a wildlife refuge. 36,088 acres of land is just sitting there and not in use. The animals need at least 40,000 acres. 95,000 acres is enough for people. That's what I think.

Sincerely,
Casey Rendall

Brian Topasna
Meriza Elementary
School
P.O. box 6058
96716

February 24, 1993

Ray Rauch
Project Leader, Hawaiian and
Pacific Island National Wildlife
Pacific Complex P.O. box
50167, Honolulu, Hawaii 96850

I feel that the refuge should be 40,000 acres in size so that there could more endangered animals living there, and that people could have 15,000 acres of land.

The northern part where Anderson Air Force Base is and the southern are both are thinly populated areas, and both would be great for refugees. In addition, Guam should create an under water sanctuary to protect coral fish and other sea creatures. It would be perfect for snorkeling.

Sincerely,
Brian Topasna

Travis
Merizo Memorial School
P.O. Box 8146
Merizo Guam
96916

2/24/93

Dear Ray Rauch,
project leader

I'd like (40,000 acres (36,000 DOD land: 4,000
GoG land) to be set aside, leaving 95,000
acres for people, because people need land
for farming, and animals need land for
homes and for food.

We should allow recreational use
for fishing, swimming, jogging, and
camping. People need rest areas because
when they jog and they get tired,
they can rest in the rest areas. And
some people like hiking so they can see
views. Also people need to go camping, to
see how the wind feels. People should
go jogging, so they get stronger and more
healthy. People need to go swimming.
And people like to go fishing and
barbecue their fish.

Project Leader, Hawaiian
Pacific Island National
Wildlife Refuge Complex,
P.O. Box 50167, Honolulu,
Hawaii, 96850

Dear Ray Rauch,

Ray
Rauch Project
Leader

I like proposal #7,
using 40,000 acres of Guam for
a wildlife refuge, because its fair to
me. I like animal watching, hiking, swimming,
camping, jogging, and playing. the against
hunting, gathering, and cutting trees on a refuge.
I want the environment to be clean. When I
grow up, I might work in a wildlife refuge.
I want to feel and learn what its like. I
have six friends. I will ask them if they
want to be a wildlife refuge worker. So you
feel fine as a project leader? I hope you
write back.

Jonathan
Merizo Elem. School
P.O. Box 6017
Merizo Guam
96916 2/23/93

Sincerely,

Jonathan Reyes

Analynn L. Williams
Merizo Montessori Memorial
Elementary School

P. O. Box 8146
Merizo, Guam
96916

Project Leader, Hawaiian Pacific Islands
National Wildlife Refuge Complex
P.O. Box 50167 Honolulu, Hawaii 96850

Dear Mr. Rauch

My class and I read about the refuge proposals we would like to help the animals too we've written to other people who can help the animals and people of Guam. We would like to help the endangered species of birds and mammals. My class and I really care and want to help. I pick proposal number 1 (40,000 acres) because the animals need a big place to breed and raise their young. I pick proposal number 1 because people are not endangered and animals are.

Sincerely
Analynn
L. Williams

Ray Rauch
Project Leader
P.O. Box 50167
Honolulu, Hawaii 96850

Dear Mr. Rauch,

My name is Bryan Reyes. I think you should start the refuge plan right now before the G.O.G and D.O.D change their minds.

I think there should be 40,000 acres of land for the animals and 95,000 acres for the people of Guam. I also think there should be hiking, camping and sight-seeing allowed in the refuges. There should be no hunting allowed in the refuges.

One thing that I think is good about the refuges is that they allow for recreational activities. I hope the refuges are established soon.

Sincerely,
Bryan
Reyes

Bryan Reyes
Merizo Elementary
P.O. Box 8146
Merizo, Guam
96916
2/24/93

Tania Auinata
 Merizo Elementary School
 P.O. Box 8146
 Merizo Guam
 96916
 2/24/93

Ray Rouch,
 Project Leader, Hawaiian and
 Pacific Islands National Wildlife
 Refuge Complex, P.O. Box 50167,
 Honolulu, Hawaii, 96855

Dear Ray Rouch,

My name is Tania Auinata. I
 am 10 years old. I am in the fifth grade.
 My class and I were talking about setting aside
 some land for the animals of Guam, so that
 the animals do not become extinct. Our
 Guam animals were like family, but now
 they are all being hunted down. They are all
 being killed by hunters. So if you can help stop
 people from killing animals in Guam, I would
 be happy.

The forests in Guam should have some
 rules like no hunting, no camping, and no

cutting trees for fire wood. But we
 should allow recreational activities
 that are fun but don't hurt the animals
 of Guam. We could have activities
 like animals watching, hiking, swimming,
 and jogging. We could also build rest areas.
 These are things that won't hurt the
 animals. If you could try to help the animals
 of Guam, I would like that. And I
 would like to thank you and the people
 who help you try to save Guam animals
 and forests in Guam. Thanks a lot
 for helping. Thank you for reading
 my letter.

Your friend
 Tania Auinata.

Gwen Espinoza
Merizo Elementary
P.O. Box 8079
Merizo, Guam
96916

2/24/93,

Ray Rauch
Project Leader
Hawaiian and
Pacific Islands
National Wildlife
Refuge Complex,
P.O. Box 50167
Honolulu, Hawaii, 96850

149

Dear Mr. Ray Rauch,

In our class, we were voting about which of the five proposals we would like. I chose number one which is to set aside 40,000 acres, because the animals all over Guam are endangered and the people aren't. We were also talking about recreational uses and our class thought that they should have animal-watching, swimming, hiking, camping, and jogging allowed in the forest. I hope this letter helps.

Thank you,

Gwen Espinoza

Abby B. Crain
Merizo Elem. School
P.O. Box 8146
Merizo, Guam
96916

2/24/93

Ray Rauch

Project Leader, Hawaiian and Pacific
Islands National Wildlife Refuge complex
P.O. Box 50167 Honolulu, Hawaii 96850

Dear Ray Rauch,

Hi! My name is Abby B. Crain. I go to Merizo Elementary School. I'm writing because I like the idea of a wildlife refuge. I think the wildlife refuge would be good, because it would protect the animals, keep the land clean, allow for recreation, protect plants, keep water clean, increase the population of animals & plants, provides jobs for scientists & other people. The scientist could study plants that contain medicine. It would also preserve the culture.

I agree with proposal number two, because I think setting aside 28,000 acres is just right amount for the animals. And there'd still be a lot of acre left for people. It would protect allow all of the above, these are some recreational use. I recommend: fishing, animal-watching, hiking, exploring, swimming, jogging, herb-gathering, nature-study, & non-motorized boating. I think these are all good because people can enjoy the refuge if these recreational facilities are used.

sincerely,

Abby B. Crain

Ray Rauch
Project Leader
P.O. BOX 506167
Honolulu, Hawaii 96850

Joshua G.A. Tyquiangco
Merizo Elementary
P.O. BOX 8146
Merizo, Guam 96916
2/24/93

Dear Mr. Rauch,

My name is Joshua G.A. Tyquiangco.
I'm in the fifth grade attending Merizo
Martyrs Memorial School. I'm 11 years old.

I think you should start the refuge using
40,000 acres of land for the animals and
plants. They are endangered and my future
generation won't see them again if there isn't
any land set aside.

I'm going to give you reasons why
the refuge is necessary for the animals and
plants.

1. It helps keep the land clean
2. It protects the animals
3. It keeps the water clean
4. It keeps the air clean
5. It increases the population of animals
6. It preserves our Chamorro culture and
7. It provides jobs for scientists.

Please help the animals and plants by
starting the refuge now. If you do, the
animals and plants will live through the
next century, so our descendants can
be free to see what our world looks
like in the future.

Sincerely,
Joshua
G. A.
Tyquiangco

Merizo Elm.
Merizo Guam
96916

Ray Rauch
project leader
Hawaiian and
Pacific Islands
National Wildlife
Refuge complex
P.O. Box 50167
Honolulu, 96850

Melanie Ahlf
Merizo Elm.
P.O. Box 8146
Merizo Guam
212493

Dear Ray Rauch

I think you have an important
job. I wrote this letter to tell you I
like proposal number 1. Proposal number 1
is a good idea because it will keep
Guam clean.

Sorry so short

Ray Rauch
Project Leader
P.O. Box 50167
Honolulu, Hawaii
96850

Dear Mr. Rauch,

My name is Melanie Ahlf. I live
on Guam. This letter is concerning the wild
life refuge. I like proposal #2 about giving
28,000 acres to the refuge. I think you
should allow the following: non-motorized
boats, hiking, hunting, (parts of the year) herb
collecting, playing, and maybe swimming.
Most of the land belongs to the military,
so it won't be very difficult to turn into
a wild life refuge. Please consider my
ideas. Thank you

Sincerely
Melanie Ahlf

Lisa Naputi
Meiza Elementary
P.O. Box 8146
Meiza Guam. 96916
2/24/93.

Ray Rauch,
Project Leader
P.O. Box 506167
Honolulu, Hawaii 96860

Dear Mr. Rauch,

My name is Lisa Naputi. I live on the island of Guam. I'm ten years old. I'm in the fifth grade and my teacher's name is Mr. Brown. The letter is about wildlife refuge. I think proposal number two is good for 28,000 acres to be set aside for the refuge. I think the wildlife refuge is a good idea, because the advantages of a refuge is that it protects animals, keeps the clean, protects the plants, provides recreation, and saves animals for future generations. If you decide to have a wildlife refuge, I think you should allow the following: animal watching, camping, rest areas, only non-motorized boats, jogging, hiking, and swimming. I think we should have a wildlife refuge on Guam.

Sincerely, Lisa Naputi

Charles Guzman
Meiza Elementary School
P.O. Box 8143
96916
2/24/93

Ray Rauch
Hawaii, Honolulu
P.O. Box 50617
96860

Dear Ray Rauch,

Hi & Hello. How are you doing? I am fine. I am writing this letter to you because I want to talk about the wildlife refuge you guys are planning to set up. I like proposal number one because you are going to set aside 10,000 acres for the animals. I think that is a good idea because the animals here on Guam are endangered. I hope you would do what I am asking you to do. If I was a wildlife refuge official, I would not allow certain things. I would not allow hunting for the sake of animals, nor cutting trees for firewood, and no motorized-boating. I would not allow fishing if the fish(es) are endangered. I would allow hiking, camping, animal-watching, swimming, jogging, herb gathering, playing, a rest area, and non-motorized boating. Please take my advice because if you don't our future generation will not have as nice a world. I got to go. Goodbye, it was nice writing to you.

Sincerely Yours,
Charles Guzman

2/24/75

Heidi Ewing
Merizo Elm.
P.O. Box 8146
Merizo Guam
96996

Ray Ranch
Project Leader,
Micronesian and
Pacific Islands
National Wildlife
Refuge Complex,
P.O. Box 50167,
Honolulu, 66850

Dear Mr. Patch,
This letter is concerning
the wildlife refuge. I think
that you should set aside
28,000 acres of land, because
I feel that the animals
losing their homes. It
would keep the land clean.
We should allow recreation,
I think like fishing,
bird watching, hiking,
swimming, camping, jogging,
and non-motorized boating.

And we should build restrooms.

Sincerely, Yours

Heidi Ewing

Lucia Cruz
Merizo Elementary
School
P.O. Box 6075
Merizo Guam
96916
2-24-93

Ray Ranch
Project Leader
P.O. Box 50167
Honolulu, Hawaii, 96850

Dear Mr. Patch,

In my opinion, the population will increase in the coming years on Guam. If our leaders do not consider the welfare of our people, Guam could someday be like that of other countries, where there are many homeless and starving people.

Sure, it is a good idea to create a home for many of our endangered species. If I were in power, I would give only a portion of land for saving these animals. I am in favor for land for the people.

Should such proposals become true, all laws such as seasonal hunting should be enforced. There should be designated areas for all types of activities. Only certain sizes and kinds of species should be caught.

Our present leaders should not abuse their power in changing the purpose of the land. Like commercializing an agricultural area. They must act for the benefit and at no cost to the people of Guam.

We must educate each other in preserving Mother Nature without having to deprive our people of a comfortable living.

Sincerely,

Lucia Cruz