

## 9.0 TABLE OF PROJECTS

Table 3. List of projects to consider for implementation in the marine and terrestrial units of the OPERA (ranked by priority).

Priority	Project Name	Project Objective
<b>TERRESTRIAL</b>		
<b>Vegetation</b>		
1.1	Vegetation Survey	Carry out extensive vegetation surveys and botanical inventories of the OPERA on NBG. NOTE: This survey is currently being undertaken and is expected to be completed in 2010.
1.2	Detailed GIS resource mapping	Prioritize (e.g., high, medium, low) habitats and related natural resources for migratory bird and seabird, and native and federally/locally protected birds, fruit bats, snails, coconut crabs, and reptiles in the ERA. Maps should include the locations of cultural resources and features.
1.3	Monitoring <i>Heritiera longipetiolata</i>	Further understand the distribution, abundance, and life history of this rare and locally endangered tree in the ERA.
<b>Restoration</b>		
2.1	Native tree restoration	Promote growth of native and federally/locally protected flora in the ERA.
2.2	Restoration – Identification of suite of plants	Determine the best suite of native flora to plant in order to enhance the existing forest and provide suitable habitat for species of special interest such the butterfly, <i>Maytenus thompsonii</i>
2.3	Adaptive restoration management	Determine the best arrangement, composition, spacing and planting methods for planting. Once planting has occurred, adaptive management techniques should be adopted for post-planting maintenance.

Priority	Project Name	Project Objective
2.4	Biocontrol of cycad scale	Quantify impact of cycad scale on plants within the ERA. Investigate viable biocontrol agents such as invertebrates from neighboring areas to control scale and restore healthy populations of <i>Cycas micronesica</i> .
2.5	Erosion and sediment control through tree-planting	Study the effects of tree planting and erosion control methods in reducing pollution from adjacent land use areas.
<b><i>Herpetofauna</i></b>		
4.1	Herpetofauna surveys	Determine the presence and distribution of native reptiles in the terrestrial ERA and their association with specific habitat components.
<b><i>Invasive Species</i></b>		
5.1	Invasive plant species control plan	Eliminate invasive plant species (e.g., chain-of-love, tangantangan, mile-a-minute), which cause detrimental effects to native flora.
5.2	Control of brown treesnakes	Prevent additional immigration of BTSs to the ERA and control those snakes already present. Trapping, visual searches, and toxicants may be used.
5.3	Eradication of invasive invertebrates in the TU	Eliminate invasive invertebrates (e.g., <i>Erythrina</i> gall wasp, coconut rhinoceros beetle), which cause detrimental effects to native flora and fauna.
<b><i>Threatened/endangered/species of concern</i></b>		
6.1	Monitor and inventory tree snails	Determine distribution, abundance, and life history of tree snails - federal candidates for listing - Mariana Islands tree snail, Pacific tree snail, and Mariana Islands fragile tree snail that might exist in the ERA.

Priority	Project Name	Project Objective
<b>Other</b>		
7.1	Assessment of anthropomorphic impacts (visitor use survey)	Characterize the major threats to the ERA, conduct assessment of all recreational activities.
7.2	Seabird monitoring	Further understand the distribution, abundance, and life history of seabird species that utilize the ERA.
7.3	Migratory bird monitoring	Implement a monitoring program that will gain a better understanding of which avian species use the ERA for resting and/or foraging purposes during their migratory paths.
<b>MARINE</b>		
8.1	Sea turtle abundance, distribution and nest monitoring	Further understand the distribution, abundance, and life history of the federally and locally protected green sea and hawksbill turtles in the ERA.
8.2	Fish, coral, algae and marine invertebrate monitoring	Determine the condition of different functional groups (e.g., herbivores, detritivores) and whether changes in community structure has occurred over time.
8.3	Evaluate/improve ERA as management tool	Evaluate the effectiveness of the OPERA in terms of marine biodiversity and abundance and whether ERA can act as source populations for adjacent areas.
8.4	Assessment of anthropomorphic impacts (visitor use survey)	Characterize the major threats to the MU, conduct assessment of all marine recreational activities, determine the effects of boating, fishing, anchoring and diving on the MU coral reef ecosystem.
8.5	Adaptive management strategies for control of harmful species	Minimize harm caused by species such as Atlantic barnacle and outbreaks of crown of thorns, through the development of an adaptive management plan.

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<b>Priority</b>	<b>Project Name</b>	<b>Project Objective</b>
<b>SOCIAL AND EDUCATIONAL</b>		
9.1	Visitor Use Survey	Determine level of use and correlate to impact on OPERA MU
9.2	Fishing education program	Determine optimal method to implement and promulgate a ban on fishing in the ERA including public education and enforcement
9.3	Environmental education program	Promote environmental education among recreational users of the ERA by determining the effectiveness of different public awareness and outreach programs and materials.
9.5	Balance recreational use with resource management	Conduct a feasibility study on the viability of instituting a recreational user fee of permit system for management and security.

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## **11.0 APPENDICES**

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## **Appendix 1. Comprehensive List of Regulatory Drivers on Policies for the Management of the OPERA**

### **NATURAL RESOURCES**

#### **Federal Laws, Executive Orders, Directives, Regulations and Policies**

- Animal Damage Control Act; (7 USC 426-426b, 47 Stat. 1468)
- Clean Air Act, as amended
- Clean Water Act (CWA), Section 404; (33 USC 1311)
- Coastal Barrier Resources Act of 1982
- Coastal Zone Management Act (Public Law 92-583)
- Comprehensive Employment and Training Act Amendments of 1978; (Public Law 95-524)
- Comprehensive Environmental Response Compensation and Liability Act; (Superfund) of 1980, (26 USC 4611-4682, Public Law 96-510, 94 Stat. 2797)
- Conservation and Rehabilitation Program on Military and Public Lands, as amended; (Public Law 86-797)
- Coral Reef Conservation Act of 2000
- Executive Order 11514, Protection and Enhancement of Environmental Quality
- Executive Order 11644, Use of Off-Road Vehicles on the Public Lands
- Executive Order 11987, Exotic Organisms
- Executive Order 11988, Floodplain Management
- Executive Order 11990, Protection of Wetlands
- Executive Order 12962, Recreational Fisheries
- Executive Order 13089, Coral Reef Protection
- Executive Order 13112, Invasive Species
- Executive Order 13158, Marine Protected Areas
- Executive Order 13186, Responsibilities of Federal Agencies to Protect Migratory Birds
- Energy Efficiency and Water Conservation at Federal Facilities; (Executive Order No. 12902)
- Federal Agency Recycling and the Council on Federal Recycling and Procurement Policy; (Executive Order 12780)
- Federal Aid in Wildlife Restoration Act of 1937; (16 USC 669-6691; 50 Stat. 917). Also known as the Pittman-Roberts Act
- Federal Consistency with Approved Coastal Management Programs under CZMA (15

CFR 930)

- Federal Environmental Pesticide Control Act of 1972; (Public Law 7 USC 2809)
- Federal Water Pollution Control Act, as Amended by the Clean Water Act of 1977; (Public Law 92-500)
- Fish and Wildlife Conservation Act; (16 USC 2901-2911; 94 Stat. 1322. Public Law 96-366)
- Fish and Wildlife Conservation and Natural Resources Management Programs on Military Reservations; (Public Law 96-561)
- Fish and Wildlife Coordination Act (16 USC 661 et seq.)
- Fish and Wildlife Improvement Act of 1978; (16 USC 7421; 92 Stat. 3110)
- Fishery Conservation and Management Act of 1976 as amended, (Public Law 94-265; 16 USC 1801-1 882; 90 Stat. 331)
- Forest Resources Conservation and Shortage Relief Act
- Lacey Act of 1900; (50 CFR 10-14)
- Sikes Act, as amended (16 USC 670a-670o; Public Law 92-583, 74 Stat. 1052)
- Section I of Public Law 90-465, the Sikes Act Amendment Act. (IG USC 670c)
- National Wildlife Refuge System Administration Act of 1996; (16 USC 668dd-668ee)
- Marine Mammal Protection Act of 1972 (Public Law 92-522)
- Marine Protection, and Sanctuaries Act of 1972, as amended (Public Law 92-532)
- Marine Protection, Research, and Sanctuaries Act of 1972 of 1972
- Military Construction Authorization Act; (10 USC 2667(d)), Leases: Non-excess property (Military Lands)
- Military Construction Authorization Act Military Reservation and Facilities: Hunting and Trapping; (10 USC 2671)
- Military Construction Authorization Act Sale of Certain Interests in Lands; Logs (10 USC 2665)
- Migratory Bird Conservation Act (16 USC 715 parts 25-28)
- Migratory Bird Treaty Act of 1918 (16 USC 703-7 1 1)
- National Environmental Policy Act (NEPA) of 1969 (Public Law 91-1 90)
- National Heritage Policy Act of 1979 (H.R. 6502)
- National Trails System Act of 1968 (16 USC 1271)
- Non-Indigenous Aquatic Nuisance Prevention Act of 1990 as amended; (25 USC 3001-13, 104 Stat. 3042, Public Law 101-646)
- Noxious Weed Act of 1974 (Public Law 90-583)

- Oil Pollution Act of 1990 (OPA 90)
- Presidents Directive on Environmentally and Economically Beneficial Practices on Federal Landscaped Grounds
- Public Law 108–136
- Rivers and Harbors Act of 1899 (33 USC 401)
- Sikes Act (Public Law 106–580)
- Soil and Water Conservation Act (16 USC 2001, Public Law 95-193)
- Soil Conservation Act (Public Law 74-461)

#### **Department of Defense Directives, Regulations and Policies**

- Accounting of Production and Sale of Lumber and Timber Products of 9 January 1979; (DOD Instruction 7310.51)
- DOD Plan; Recreational Fishery Resources Conservation Plan, Department of Defense Annex for Military Installations
- Environmental and Natural Resources Protection Manual; (OPNAVINST 5090.1C)
- Environmental Security - Fish & Wildlife Conservation and Management; (DOD Directive 4715.3)
- Legacy Resources Management Program; (Congressional/DoD Appropriations Act, Section 8120 of 1991)
- Use of Off-Road Vehicles on DoD Lands of 19 April 1979 as amended; (DOD Directive 6050.2)
- Management and Recreation of Natural and Cultural Resources on U.S. Naval Activities, Guam; (OPNAVINST 5090.6)
- Memorandum of Understanding DOD & 0011978
- MOU between the Department of the Interior and the Department of Defense for the Development of Public Outdoor Recreation Resources on Military Installations of April 7, 1978
- Memorandum of Agreement for Control and Eradication of the Brown Tree Snake; (12 August 1993)
- National Defense Authorization Act (2004)
- Natural Resources; (Secretary of Defense Natural Resources Conservation Award of 13 December 1976, (DOD Instruction 5000.13)
- Natural Resources Management and Conservation on Military Lands; (DOD Directive 6050.2)
- Navy Natural Resources Program Implementation; (SECNAVINST 6240.E)
- Navy Real Estate Operations and Natural Resources Management (NAVAC P-73); Volume I, Chapter 19 and VOL II

- Comprehensive Environmental Response, Compensation, and Liability Act; (CERCLA) as amended, (26 USC 4611-4682, Public Law 96-510,94 Stat. 884)

### **Navy Directives, Regulations and Policies**

- CINCPACFLTINST 5090.IB; Pacific Fleet Environmental Protection Program
- COMNAVMARIANAS Fire Prevention Program Instruction; (COMNAVMARIANAS Instruction 11320.1)
- Concurrent Jurisdiction Act, (48 USC 1704)
- Cooperative Agreement for the Establishment of the Guam Overlay National Wildlife Refuge Overlay Unit (10 December 1993)
- Cooperative Agreement for the Protection, Development and Management of Fish and Wildlife Resources at U.S. Naval Communication Area Master Station, WESTPAC (14 March 1988), 8 pp.
- Cooperative Agreement for the Protection, Development and Management of Fish and Wildlife Resources at U.S. Naval Magazine, Guam (7 March 1988). 6 pp.
- Cooperative Agreement for the Protection, Development and Management of Fish and Wildlife Resources at U.S. Naval Station, Guam (12 April 1988). 8 pp.
- Cooperative Agreement for the Protection, Development and Management of Fish and Wildlife Resources at U.S. Navy Public Works Center; (11 April 1988) Guam. 8 pp.
- Cooperative Agreement for the Protection, Development and Management of Fish and Wildlife Resources at U.S. Naval Supply Depot, Guam 29 February 1988), 8 pp.
- Criminal Procedure Code, 8 GCA 5.55
- Management and Recreation of Natural and Cultural Resources on U.S. Naval Activities, Guam; (OPNAVINST 5090.6)
- Memorandum of Agreement for Cooperative Law Enforcement between the U.S. Fish and Wildlife Service and Division of Aquatic and Wildlife Resources Department of Agriculture, Territory of Guam. 5 pp. (9 July 1990)
- Memorandum of Understanding among the Government of Guam and the U.S. Air Force and the U.S. Navy and the U.S. Fish and Wildlife Service; (14 December 1993), 6 pp. with 3 pp. of signatures
- Memorandum of Understanding to Foster the Ecosystem Approach; (15 December 1995)
- NCTAMS WESTPAC Guam Instruction 11011.IC; (currently undergoing revision as COMNAVMARIANAS instructions)

### **Government of Guam Laws, Regulations and Policies**

- Endangered Species Act of Guam: (5 GCA 63208, Public Law 6-85)
- Game, Forestry and Conservation; (5 GCA, Chapter 63, Public Law 6-85)
- Government Code of Guam (Section 47104)

- Government Code of Guam; (1 GCA 4002 (a) as amended by Public Law 20-185)
- Importation: Harboring; (5 GCA 63124)
- Organic Act of Guam of 1950, as amended; (48 USC 1421, et seq., 64 Stat. 384)
- Protection of Wild Animals; (5 GCA 63121)
- Protection of Wild Birds; (5 GCA 63120)

## **CULTURAL RESOURCES**

### **Laws, Executive Orders, Directives, Regulations and Policies**

- American Indian, Religious Freedom Act of 1978
- Antiquities Act of 1906; (Public Law 59-209, 16 USC 431 -433)
- Archaeological and Historic Preservation Act of 1974 (Moss-Bennet Act)
- Archaeological Resources Protection Act of 1979; (Public Law 96-95, 16 USC 470aa-47011)
- Executive Order 11593, Protection and Enhancement of the Cultural Environment
- Historic Resources Inventories and Protection on Federal Lands; (Executive Order 11593)
- Historic Sites Act of 1935; (Public Law 74-292, 16 USC 461-467)
- National Historic Preservation Act of 1966, as amended 1980; (Public Law 88-29)
- Native American Graves Protection and Repatriation Act of 1990; (Public Law 101-106; 104 Stat., 25 USC 101-601)

### **Department of Defense Directives, Regulations and Policies**

- Archaeological and Historical Resources on Military Lands; (DOD Directive 4710.1, Environmental Security)
- Memorandum of Agreement - Concurrent Jurisdiction (for law enforcement). 5 pp.; (1 September 1988)
- Memorandum of Understanding between the Department of Defense and the U.S. Fish and Wildlife Service for the Ecosystem-based Management of Fish, Wildlife and Plant Resources on Military Lands, 17 May 1999

### **Navy Directives, Regulations and Policies**

- Management and Recreation of Natural and Cultural Resources on U.S. Naval Activities, Guam; (OPNAVI NST 5090.6)

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## Appendix 2: Legal Description of Orote Peninsula Ecological Reserve Area

The legal description of the Orote Peninsula Ecological Reserve Area is as follows:

All that tract or parcel of land comprising of both land (cliff line) and the submerged land (including the body of water above it) lying on the southwest side of the Orote Peninsula, Island of Guam, Mariana Islands and marked by five (5) geographical position points as shown on PACNAVFACENCOM Real Estate Drawing No. RE-83-21 (Revised), the Cliff Line area being a portion of the Apra Harbor Naval Reservation, on which land the United States of America has title in fee simple absolute (Civil 5-49) and the adjoining submerged land area located within the three (3) geographical miles of Guam Territorial waters placed under the jurisdiction of the Department of the Navy as defined under the provisions of the Public Law 93-435 of October 5, 1974, 88 Stat. 1210 (H.R. 11559, 93rd Congress), and said parcel of land is more particularly described as follows:

Beginning at the NE corner of this parcel of land, a point on top of the cliff line at the tip of Orote Point, marked as "OP:ERA-1," said point of beginning having its assigned geographical position based on the National Oceanic and Atmospheric Administration (NOAA) National Ocean Survey Chart No. 81054 (formerly C&GS 4197) Apra Harbor, Guam, and described as follows:

1. OP:ERA-1 Lat. 13° 26' 41.25" N  
Long. 144° 37' 00.05" E

Follows along top of cliff line on a southeasterly direction

2. OP:ERA-2 Lat. 13° 25' 41.00" N  
Long. 144° 38' 10.80" E

From top of cliff to bottom of cliff at water edge, to water depth of 20 fathoms (120 feet) on a line with a bearing of S 52° 30' 00" W;

3. OP:ERA-3 Lat. 13° 25' 36.80" N  
Long. 144° 38' 05" E

Follows along contour of 20 fathoms (120 feet) on a northwesterly direction to a point on Alpha Hotel South approach line;

4. OP:ERA-4 Lat. 13° 26' 42.50" N  
Long. 144° 36' 53.00" E

Follows Alpha Hotel south approach line to the bottom of cliff line at water edge;

5. OP:ERA-5 Lat. 13° 26' 42.35" N  
Long. 144° 37' 00.00" E

From bottom of cliff line to top of cliff line on the point of beginning, containing a total area of approximately 163 acres, more or less with the following breakdown:

a. Cliff line area: 1,306,800 SQFT

= 30 acres  
= 121,406 SQ METERS

b. Submerged land: 5,793,480 SQFT

= 133 acres  
= 538,234 SQ METERS

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### Appendix 3: Cooperative Agreement between the U.S. Fish and Wildlife Service and U.S. Air Force, Dated March 10, 1994

COOPERATIVE AGREEMENT

between the

U.S. AIR FORCE

and the

U.S. FISH AND WILDLIFE SERVICE

for the

ESTABLISHMENT AND MANAGEMENT OF THE  
GUAM NATIONAL WILDLIFE REFUGE,  
GUAM

I. Introduction

The U.S. Air Force (Air Force), the U.S. Navy (Navy), the Government of Guam, and the U.S. Fish and Wildlife Service (Service) 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 the native biological diversity of Guam. These shared goals are expressed in the 1993 Memorandum of Understanding among the Government of Guam, the Navy, the Air Force, and the Service (Attachment 1).

To address the complex ecological and endangered species issues facing the island of Guam, the Government of Guam, the Navy, the Air Force, and the Service have mutually agreed to establish the Guam National Wildlife Refuge on certain lands owned and administered by the Navy, the Air Force, the Government of Guam, and the Service as described in the Final Environmental Assessment for the Guam National Wildlife Refuge. Within certain lands administered by the Air Force, the Guam National Wildlife Refuge encompasses lands identified in recovery plans as essential habitat for the recovery of the endangered Mariana common moorhen, the Mariana crow, the Guam rail, the Guam broadbill, the Guam bridled white-eye, the Guam Micronesian kingfisher, the Mariana fruit bat, the little Mariana fruit bat, and the Vanikoro swiftlet. The Guam National Wildlife Refuge also includes certain beaches and reefs used for nesting and foraging by endangered and threatened sea turtles.

The establishment and management of the Guam National Wildlife Refuge on Air Force lands provides a commitment by the Air Force and the Service for a coordinated program centered on the protection of endangered and threatened species and other native flora and fauna, maintenance of native ecosystems, and the conservation of native biological diversity in cooperation with the Guam Department of Agriculture-Division of Aquatic and Wildlife Resources, consistent with the national defense mission of the Air Force. The Air Force has provided \$105,000 for a Natural Resource Management Plan and \$120,000 for botanical surveys of endangered plants for Andersen Air Force Base to the Service and continues to contribute staff, resources, and in-kind services for the recovery of endangered and threatened species on Guam.

Cooperative Agreement Guam National Wildlife Refuge  
U.S. Air Force and U.S. Fish and Wildlife Service

II. Authorities

This Cooperative Agreement is hereby made and entered into by and between the Air Force and the Service under the authority of the Endangered Species Act of 1973 (16 U.S.C. 1531-1543), as amended; the Fish and Wildlife Coordination Act (16 U.S.C. 661-667e), as amended; the Fish and Wildlife Act of 1956 (16 U.S.C. 742(a)-754), as amended; the Refuge Recreation Act (16 U.S.C. 460k-460k-4), as amended; the Economy Act of 1932 (31 U.S.C. 1535); the Sikes Act of 1960 (16 U.S.C. 670a-670o), as amended; and other laws, as applicable.

III. Purposes of the Cooperative Agreement

- A. This Cooperative Agreement establishes overlay units of the Guam National Wildlife Refuge on certain lands containing important biological values under Federal ownership and administered by the Air Force on Guam.
- B. This Cooperative Agreement also defines the management and administrative roles and responsibilities of the Air Force and the Service for the Guam National Wildlife Refuge.

IV. Establishment of the Guam National Wildlife Refuge

- A. The Service recognizes that the primary purpose of the Air Force lands within the Guam National Wildlife Refuge is to support the national defense mission of the Air Force. The Air Force recognizes that their lands included within the Guam National Wildlife Refuge provide habitats essential to the survival and recovery of endangered and threatened species.
- B. The boundaries of the Guam National Wildlife Refuge on Air Force lands may include lands identified in the July 1993 Final Environmental Assessment for the Guam National Wildlife Refuge and shall be based on mutual consultations between the Air Force and the Service. Those lands mutually approved by the Air Force and the Service shall be included within the Guam National Wildlife Refuge as overlay units and are identified on the attached map (Attachment 2). These lands shall be made available by the Air Force for the establishment of the Guam National Wildlife Refuge in conjunction with lands owned by the Government of Guam, the Navy, and the Service.
- C. The boundaries of Air Force lands included within the Guam National Wildlife Refuge may be amended by the following:



Cooperative Agreement Guam National Wildlife Refuge  
U.S. Air Force and U.S. Fish and Wildlife Service

VI. Purposes of the Guam National Wildlife Refuge

The purposes of the Guam National Wildlife Refuge are as follows:

- A. ". . . to conserve (A) fish or wildlife which are listed as endangered species or threatened species . . . or (B) plants . . . (C) the ecosystems upon which endangered species and threatened species depend . . ." (Endangered Species Act of 1973, 16 U.S.C. 1534);
- B. ". . . shall be administered by him [Secretary of the Interior] directly or in accordance with cooperative agreements . . . and in accordance with such rules and regulations for the conservation, maintenance, and management of wildlife, resources thereof, and its habitat thereon . . ." (Fish and Wildlife Coordination Act, 16 U.S.C. 664);
- C. ". . . for the development, advancement, management, conservation, and protection of fish and wildlife resources" (Fish and Wildlife Act of 1956, 16 U.S.C. 742f(a)(4));
- D. ". . . for the benefit of the United States Fish and Wildlife Service, in performing its activities and services. Such acceptance may be subject to the terms of any restrictive or affirmative covenant, or condition of servitude, if such terms are deemed by the Secretary to be in accordance with law and compatible with the purposes for which acceptance is sought." (Fish and Wildlife Act of 1956, 16 U.S.C. 742f(b)(1));
- E. ". . . (1) incidental fish and wildlife-oriented recreational development, (2) the protection of natural resources, (3) the conservation of endangered species and threatened species (Refuge Recreation Act, 16 U.S.C. 460k-1);
- F. ". . . the Secretary . . . may accept and use . . . donations of . . . real . . . property. Such acceptance may be accomplished under the terms and conditions of restrictive covenants imposed by the donors . . ." (Refuge Recreation Act, 16 U.S.C. 460k-2); and
- G. To ensure that Air Force lands within the Guam National Wildlife Refuge remain available for the use of the Air Force to carry out its responsibilities to organize, supply, equip, train, service, mobilize, demobilize, administer, and maintain forces (10 U.S.C. 8013).

Cooperative Agreement  
U.S. Air Force and U.S. Fish and Wildlife Service

Guam National Wildlife Refuge

VII. Goals of the Guam National Wildlife Refuge

The Air Force and the Service mutually agree that the Air Force lands included within the Guam National Wildlife Refuge shall be managed and administered for the following goals, consistent with the accomplishment of the national defense mission of the Air Force:

- A. To develop and implement a long-term, comprehensive program to conserve and recover endangered and threatened species, candidate and proposed species, migratory birds, and other native flora and fauna. This conservation program includes, but is not limited to, brown tree snake control and eradication, wildlife habitat and ecosystem protection, endangered and threatened species recovery and reintroduction, research, environmental education, compatible public use, and law enforcement;
- B. To complement the ongoing efforts of the Air Force, the Government of Guam, the Navy, the Service, and other agencies in natural resources and wildlife management and conservation, protection of historic and cultural resources, law enforcement, research, and environmental education;
- C. To exchange technical information and expertise to implement appropriate wildlife conservation and environmental protection mandates;
- D. To provide increased coordination on applicable law enforcement issues in accordance with the 1990 Memorandum of Agreement for Cooperative Law Enforcement between the Service and the Department of Agriculture-Division of Aquatic and Wildlife Resources and the Cooperative Agreements between the Air Force, the Navy, the Service, and the Government of Guam under the Sikes Act;
- E. To develop research and environmental education programs and to consider public use and public access compatible with the Guam National Wildlife Refuge and consistent with the national defense mission;
- F. To ensure that Federal actions, including management plans, within the Guam National Wildlife Refuge comply with the National Environmental Policy Act of 1969; Endangered Species Act of 1973, as amended; the Migratory Bird Treaty Act of 1918; Coastal Zone Management Act of 1972; Federal Water Pollution Control Act, as amended; Rivers and Harbors Act of 1938; National Historic Preservation Act of 1966; and other laws, as applicable;

Cooperative Agreement Guam National Wildlife Refuge  
U.S. Air Force and U.S. Fish and Wildlife Service

- G. To provide for consultation with the Service for actions which are funded, authorized, or carried out by the Federal Government within the Guam National Wildlife Refuge that may impact habitat of endangered or threatened species even if those species are extirpated from the affected area, but are not extinct, and for contemplated projects that affect nesting beaches of endangered and threatened sea turtles;
- H. To develop and implement a Refuge Management Plan for the Guam National Wildlife Refuge and to provide periodic updates of the Refuge Management Plan;
  - 1. The Refuge Management Plan for the Guam National Wildlife Refuge shall be developed by the Service in consultation with and with the concurrence of the landowners;
  - 2. The Refuge Management Plan shall incorporate the relevant sections of each landowner's natural resources management plans.
- I. To consider wildlife and fishery concerns in the development of other management plans such as law enforcement, prescribed burning, public use, public hunting, public fishing, and integrated pest management; and
- J. To develop and implement an Annual Work Plan and an Annual Accountability Report for the Guam National Wildlife Refuge.
- K. To administer and manage the Guam National Wildlife Refuge consistent with the national defense mission.

VIII. Specific Obligations of the Parties

A. The U.S. Fish and Wildlife Service's Obligations

The Service shall:

- 1. Recommend the specific Air Force lands to be included within the boundaries of the Guam National Wildlife Refuge based on consultations with the Air Force. Provide information on habitat quality and sensitivity for listed species for the development of management plans and zoning maps for Air Force lands within the Guam National Wildlife Refuge;

Cooperative Agreement Guam National Wildlife Refuge  
U.S. Air Force and U.S. Fish and Wildlife Service

2. Locate and post the boundaries of Air Force lands included within the Guam National Wildlife Refuge with National Wildlife Refuge and Air Force signs. The wording, format, and placement of signs shall be coordinated with the Air Force;
3. Request annual funding for the management and administration of the Guam National Wildlife Refuge;
4. Undertake the staffing of the Guam National Wildlife Refuge, subject to adequate funding for a Refuge Manager, Biologist, and administrative, maintenance, and program support staff.
5. Participate directly in the development of the Annual Work Plan and shall:
  - a. Coordinate the input of the Navy, the Government of Guam, and the Air Force in the development of the Annual Work Plan;
  - b. Finalize the Annual Work Plan including mutually agreed-upon Annual Work Plan Tasks;
  - c. Administer and track the Service's budget for the Guam National Wildlife Refuge;
  - d. Distribute the Annual Work Plan to the Navy, the Government of Guam, the Air Force, and other participating agencies;
  - e. Implement the Service's Annual Work Plan Tasks as identified in the Annual Work Plan within the limits of funds and personnel;
  - f. Monitor the implementation and completion of the Annual Work Plan Tasks agreed upon by the Navy, the Government of Guam, and the Air Force;
  - g. Provide a written report of Service accomplishments of the Annual Work Plan Tasks in the Annual Accountability Report; and
  - h. Participate in the evaluation of the Annual Accountability Reports from the Government of Guam, the Navy, the Air Force, and other participating agencies.

Cooperative Agreement  
U.S. Air Force and U.S. Fish and Wildlife Service

Guam National Wildlife Refuge

6. Provide law enforcement support as specified in Section IX of this Cooperative Agreement;
7. Conduct, assist, and/or support surveys, censuses, and population monitoring of endangered and threatened species, proposed and candidate species, and other rare native species in coordination with the Air Force and the Guam Division of Aquatic and Wildlife Resources;
8. Conduct, assist, and/or support surveys and censuses of the distribution and condition of the habitats for endangered and threatened species, proposed and candidate species, and other rare native species in coordination with the Air Force and the Guam Division of Aquatic and Wildlife Resources;
9. Conduct, assist, and/or support research on the natural history and limiting factors of endangered and threatened species, proposed and candidate species, and other rare native species in coordination with the Air Force and the Guam Division of Aquatic and Wildlife Resources;
10. Conduct, assist, and/or support control and research programs in understanding the natural history of the alien brown tree snake in coordination with the Air Force and the Guam Division of Aquatic and Wildlife Resources;
11. Participate in recovery plan actions as outlined in the implementation schedules for the various recovery plans (Guam Mariana Fruit Bat and Little Mariana Fruit Bat Recovery Plan. 1990. U.S. Fish and Wildlife Service. 63 pp.); (Native Forest Birds of Guam and Rota of the Commonwealth of the Northern Mariana Islands Recovery Plan. 1990. U.S. Fish and Wildlife Service. 86 pp.); (Recovery Plan for the Mariana Islands Population of the Vanikoro Swiftlet, *Aerodramus vanikorensis bartschi*. 1991. U.S. Fish and Wildlife Service. 49 pp.); (Recovery Plan for the Mariana Common Moorhen (= Gallinule), *Gallinula chloropus guami*. 1991. U.S. Fish and Wildlife Service. 55 pp.); and (Draft Recovery Plan for *Serianthes nelsonii*. 1993. U.S. Fish and Wildlife Service. 47 pp.);
12. Provide opportunities for public environmental education within the Guam National Wildlife Refuge;
13. Participate fully in the Endangered Species Act consultation process, including early advice on projects and ways to minimize the impacts of Federal actions to endangered species and their habitats;

Cooperative Agreement  
U.S. Air Force and U.S. Fish and Wildlife Service

Guam National Wildlife Refuge

14. Coordinate and consult with all parties and with the concurrence of the appropriate landowner to identify opportunities for compatible public access and recreation on Federal and Government of Guam lands included within the Guam National Wildlife Refuge;
15. Obtain appropriate primary landowner approval prior to issuance of any permit, easement, license, grant, right-of-way, or concession contract affecting Air Force lands or the national defense mission; and,
16. Coordinate and consult with the Government of Guam and the Air Force in establishing compatible recreational access and uses at the Ritidian Point Unit of the Guam National Wildlife Refuge. The Service shall be responsible for issuing a Special Use Permit to the Government of Guam for the operation and management of the compatible recreational uses on certain lands at the Ritidian Point Unit upon compliance with the National Environmental Policy Act of 1969; the Endangered Species Act of 1973, as amended; the Coastal Zone Management Act of 1972; the National Historic Preservation Act of 1966; the National Wildlife Refuge System Administration Act of 1966; other applicable Federal laws and Executive Orders and to be compatible with the purposes for which the Guam National Wildlife Refuge was established.

B. U.S. Air Force's Obligations

The Air Force shall:

1. Consult with the Service and determine the specific areas to be included within the boundaries of the Guam National Wildlife Refuge;
2. Identify existing uses on Air Force lands within the boundaries of the Guam National Wildlife Refuge;
3. Request additional funding and in-kind services as justified and negotiated for the establishment and management of the Guam National Wildlife Refuge on Air Force lands and subject to the availability of funding and in-kind services;
4. The Service and the Air Force shall enter into inter-agency agreements for the transfer of funds related to the administration and management of the Guam National Wildlife Refuge in accordance with the Economy Act, 31 U.S.C. 1535 as implemented by the Federal Acquisition Regulations Section 17.501 and DFARS Section 217.502;

Cooperative Agreement Guam National Wildlife Refuge  
U.S. Air Force and U.S. Fish and Wildlife Service

5. Participate directly in the development of the Annual Work Plan as specified in Section X of this Cooperative Agreement;
6. Provide law enforcement support as specified in Section IX of this Cooperative Agreement;
7. Provide access to the employees of the Service and the Guam Division of Aquatic and Wildlife Resources who require access to Air Force lands on a regular basis for purposes related to this Cooperative Agreement. The Air Force may temporarily suspend access to certain areas for emergency or national defense purposes or for situations/purposes declared essential by the Wing Commander, 633rd Air Base Wing, Andersen Air Force Base;
8. Provide access to realty maps and survey information to Service personnel participating in the boundary surveys;
9. Provide access to the Service for the posting of the Guam National Wildlife Refuge boundaries;
10. Participate fully in the Endangered Species Act consultation process as required by statute;
11. Coordinate and consult with the Service and the Government of Guam in establishing compatible recreational access and uses at the Ritidian Point Unit of the Guam National Wildlife Refuge. The Air Force shall assist the Service in developing the Special Use Permit for public access at the Ritidian Point Unit in compliance with the National Environmental Policy Act of 1969; the Endangered Species Act of 1973, as amended; the Coastal Zone Management Act of 1972; the National Historic Preservation Act of 1966; the National Wildlife Refuge System Administration Act of 1966; other applicable Federal laws and Executive Orders and to be compatible with the purposes for which the Guam National Wildlife Refuge was established; and
12. Coordinate and consult with the Service to identify opportunities for compatible public access and recreation on Air Force lands included within the Guam National Wildlife Refuge.

Cooperative Agreement Guam National Wildlife Refuge  
U.S. Air Force and U.S. Fish and Wildlife Service

IX. Law Enforcement

- A. The Air Force and the Service shall coordinate on relevant law enforcement issues on Air Force lands included within the Guam National Wildlife Refuge;
- B. This Cooperative Agreement does not nullify or supersede the exercise of concurrent jurisdiction by the Government of Guam in accordance with 48 U.S.C. 1704 and the 1988 Memorandum of Agreement between the Government of Guam, the Commander, U.S. Naval Forces Marianas, and the Commander, 43D Combat Support Group, Andersen Air Force Base, Guam and the 1990 Memorandum of Agreement for Cooperative Law Enforcement between the U.S. Fish and Wildlife Service and the Division of Aquatic and Wildlife Resources, Department of Agriculture, Territory of Guam; and
- C. The Air Force and the Service shall provide support for the Guam National Wildlife Refuge for prevention, apprehension, investigation, and prosecution of violators and cases as provided for in the Annual Work Plan and guided by an approved Law Enforcement Management Plan for the Guam National Wildlife Refuge.

X. Coordination and Consultation Between the Air Force and the Service

- A. The official representatives of the Service and the Air Force shall coordinate and consult with the official representatives of the Navy and the Government of Guam in developing and implementing the Annual Work Plan for the Guam National Wildlife Refuge. This coordination will include the identification of Annual Work Plan Tasks, negotiation and agreement of identified Annual Work Plan Tasks, implementation and support of the approved Annual Work Plan Tasks, and development of a written Annual Accountability Report of the Annual Work Plan Tasks. The Project Officers identified in Section XI of this Cooperative Agreement shall have the authority to finalize the Annual Work Plan.
- B. The Air Force and the Service shall attend Annual Work Plan coordination meetings at least twice a year. One meeting will be devoted to developing the Annual Work Plan and the other meeting will be devoted to reviewing the Annual Accountability Report.
  - 1. The Annual Work Plan coordination meetings shall include the Government of Guam, the Air Force, the Navy, the Service, and other agencies as mutually determined by all parties; and

Cooperative Agreement Guam National Wildlife Refuge  
U.S. Air Force and U.S. Fish and Wildlife Service

2. The Service shall coordinate the development of the meeting agendas, prepare and distribute background information and minutes, schedule meetings, and hold meetings on Guam or other locations.
- C. The Air Force and the Service may meet jointly as needed for any Federal action that may affect endangered and threatened species, proposed and candidate species, habitats for endangered and threatened species, and habitats for proposed and candidate species within Air Force lands included within the Guam National Wildlife Refuge;
1. These meetings may include the Guam Division of Aquatic and Wildlife Resources and other agencies as mutually agreed to by the Service and the Air Force; and,
  2. These meetings may constitute informal consultations between the Service and the Air Force. The Air Force and the Service shall work together to identify, propose, and implement project modifications consistent with the purposes of this Cooperative Agreement that minimize or mitigate adverse effects to endangered and threatened species, proposed and candidate species, habitats for endangered and threatened species, and habitats for proposed and candidate species within Air Force lands included within the Guam National Wildlife Refuge.
- D. The Air Force shall consult with the Service on any action authorized, funded, or carried out, in whole or in part, by the Air Force that may affect endangered and threatened species, as provided for in 50 C.F.R. 402, Interagency Cooperation under the Endangered Species Act of 1973, as amended. Since the Service is also a cooperator for land management actions on Air Force lands, the Service may initiate intra-Service Section 7 consultation under appropriate circumstances;
- E. Similarly, the Air Force shall coordinate with the Service for any Federal action that may affect Air Force lands included within the Guam National Wildlife Refuge and identified as providing essential habitat for the endangered Mariana fruit bat (Guam Mariana Fruit Bat and Little Mariana Fruit Bat Recovery Plan. 1990. U.S. Fish and Wildlife Service. 63 pp.); the endangered Guam rail, the Guam Micronesian kingfisher, and the Mariana crow (Native Forest Birds of Guam and Rota of the Commonwealth of the Northern Mariana Islands Recovery Plan. 1990. U.S. Fish and Wildlife Service. 86 pp.); habitats for the endangered Vanikoro swiftlet (Recovery Plan for the Mariana Islands Population of the

Cooperative Agreement Guam National Wildlife Refuge  
U.S. Air Force and U.S. Fish and Wildlife Service

Vanikoro Swiftlet, *Aerodramus vanikorensis bartschi*. 1991. U.S. Fish and Wildlife Service. 49 pp.); habitats for the endangered Mariana common moorhen (Recovery Plan for the Mariana Common Moorhen (= Gallinule), *Gallinula chloropus guami*. 1991. U.S. Fish and Wildlife Service. 55 pp.); habitats for the endangered hayun lagu tree (Draft Recovery Plan for *Serianthes nelsonii*. 1993. U.S. Fish and Wildlife Service. 47 pp.); habitats identified in other recovery plans; or beaches and reefs used for nesting and foraging by endangered and threatened sea turtle species;

- F. The Service shall provide the draft biological opinion for review and comment to the Air Force. The Air Force may provide the draft biological opinion to the Guam Division of Aquatic and Wildlife Resources. The Service shall fully consider the views of the Air Force and the Guam Division of Aquatic and Wildlife Resources, as appropriate, in carrying out the consultation process under Section 7 of the Endangered Species Act;
- G. The Service shall be the final authority on scientific matters relating to whether a Federal action may affect endangered and threatened species and proposed and candidate species on Air Force lands included within the Guam National Wildlife Refuge and shall provide recommendations on minimizing or mitigating any adverse impacts.
- H. Either party may elevate legal disputes to the Department of Justice for resolution in accordance with Executive Order 12146, Sections 1-4.
- I. Nothing in this Cooperative Agreement shall be interpreted to diminish the responsibilities of the Air Force or the Service to comply with 50 C.F.R. 402, Interagency Cooperation under the Endangered Species Act of 1973, as amended.

XI. Project Officers

- A. Project Officer for the Service shall be:
  - 1. Project Leader  
Hawaiian and Pacific Islands National Wildlife Refuge  
Complex  
300 Ala Moana Boulevard, Room 5302  
Honolulu, Hawaii 96850  
Telephone: (808) 541-1201  
Fax: (808) 541-1216

Cooperative Agreement Guam National Wildlife Refuge  
U.S. Air Force and U.S. Fish and Wildlife Service

2. The Project Leader shall be recognized as the official representative of the Service.
  3. The Guam National Wildlife Refuge Manager shall be recognized as the on-island point-of-contact for routine affairs related to the management of the Guam National Wildlife Refuge. Telephone: (671) 355-5096.  
Fax: (671) 355-5098.
- B. Project Officer for the Air Force shall be:
1. Commander  
633rd Civil Engineering Squadron  
Andersen Air Force Base, Guam  
APO, AP 96543-4007  
Telephone: (671) 366-7101 or 366-6205  
Fax: (671) 366-8010
  2. The Commander shall be recognized as the official representative of the Air Force.
  3. The point-of-contact for routine affairs shall be the Natural Resource Planner, 633 CES/CEV, APO AP 96543-4007.  
Telephone: (671) 366-2549 or 366-2101.

XIII. Special Provisions

- A. This Cooperative Agreement does not nullify or supersede any existing Cooperative Agreements or Memorandum of Agreements including the following:
1. 1993 Memorandum of Understanding between the Government of Guam, the U.S. Navy, the U.S. Air Force, and the U.S. Fish and Wildlife Service for the Establishment and Management of the Guam National Wildlife Refuge, Island of Guam;
  2. 1990 Memorandum of Agreement for Cooperative Law Enforcement between the U.S. Fish and Wildlife Service and the Department of Agriculture-Division of Aquatic and Wildlife Resources;
  3. 1988 Memorandum of Agreement Related to Concurrent Jurisdiction between the Government of Guam, the Commander, U.S. Naval Forces Marianas, and the Commander, 43D Combat Support Group, Andersen Air Force Base, Guam;

Cooperative Agreement Guam National Wildlife Refuge  
U.S. Air Force and U.S. Fish and Wildlife Service

4. 1988 Cooperative Agreement for the Protection, Development and Management of Fish and Wildlife Resources at U.S. Naval Communication Area Master Station, WESTPAC between the Navy, the Service, and the Government of Guam;
  5. 1988 Cooperative Agreement for the Protection, Development and Management of Fish and Wildlife Resources at U.S. Naval Supply Depot, Guam between the Navy, the Service, and the Government of Guam;
  6. 1988 Cooperative Agreement for the Protection, Development and Management of Fish and Wildlife Resources at U.S. Naval Magazine, Guam between the Navy, the Service, and the Government of Guam;
  7. 1988 Cooperative Agreement for the Protection, Development and Management of Fish and Wildlife Resources at U.S. Navy Public Works Center, Guam between the Navy, the Service, and the Government of Guam;
  8. 1988 Cooperative Agreement for the Protection, Development and Management of Fish and Wildlife Resources at U.S. Naval Station, Guam between the Navy, the Service, and the Government of Guam; and
  9. 1986 Cooperative Agreement for the Protection, Development, and Management of Fish and Wildlife Resources at Andersen Air Force Base, Territory of Guam, between the Air Force, the Service, and the Government of Guam.
- B. The Air Force lands identified in this Cooperative Agreement will be included within the Guam National Wildlife Refuge as an overlay national wildlife refuge. The primary administration of those lands will be retained by the Air Force and the Guam National Wildlife Refuge will be superimposed as a secondary interest in the property.
- C. The Government of Guam, the Navy, the Air Force, and the Service shall mutually reconsider the goals of the Guam National Wildlife Refuge upon the decision by the Secretary of the Interior, based upon the best available scientific and commercial data, that all endangered and threatened species found within the Guam National Wildlife Refuge have become extinct, or have recovered to the point where protection under the Endangered Species Act is no longer required, or the scientific data for the classification of the endangered or threatened species were in error.

Cooperative Agreement Guam National Wildlife Refuge  
U.S. Air Force and U.S. Fish and Wildlife Service

- D. Nothing in this Cooperative Agreement shall relieve, and no action may be taken under this Cooperative Agreement to relieve the Secretary of the Air Force or any responsible party from any obligation or other liability on Air Force lands under the Comprehensive Environmental Response, Compensation and Liability Act (26 U.S.C. 4611-4682; 94 Stat. 2797; P.L. 96-510, December 11, 1980; as amended); Toxic Substances Control Act (15 U.S.C. 2601-2671; 90 Stat. 2003; P.L. 94-469; as amended); Resource Conservation and Recovery Act (42 U.S.C. 6901-6992; 90 Stat. 2795; P.L. 94-580, October 21, 1976; as amended); Clean Air Act (42 U.S.C. 7401-7642; as amended) and the Clean Air Amendments (P.L. 95-95; 91 Stat. 685; as amended); National Emission Standards for Hazardous Air Pollutants (40 C.F.R. Part 61, Subpart M); and other laws and regulations, as applicable.
- E. Nothing in this Cooperative Agreement shall be construed to affect the degree of cleanup at any Air Force lands required to be carried out under the Comprehensive Environmental Response, Compensation and Liability Act, Toxic Substances Control Act, Resource Conservation and Recovery Act, Clean Air Act, Clean Air Amendments, the National Emission Standards for Hazardous Air Pollutants, and other laws and regulations, as applicable.
- F. If critical habitat is designated on any Air Force lands on Guam, the Air Force shall have the right to unilaterally declare this Cooperative Agreement null and void, and may, at its discretion, reinstate consultations and negotiations with the Service.

Cooperative Agreement Guam National Wildlife Refuge  
U.S. Air Force and U.S. Fish and Wildlife Service

XIII. IN WITNESS WHEREOF, each party hereto has caused this Cooperative Agreement to be executed by an authorized official on the day and year set forth opposite their signature. This Cooperative Agreement shall become effective upon the date of the final signature.

U.S. Air Force

By:  Date: 10 Mar 94  
Dennis R. Larsen, Colonel, USAF  
U.S. Air Force  
Commander, 633rd Air Base Wing

U.S. Fish and Wildlife Service

By: \_\_\_\_\_ Date: \_\_\_\_\_  
Marvin Plenert  
Regional Director, Region 1  
U.S. Fish and Wildlife Service

Cooperative Agreement Guam National Wildlife Refuge  
U.S. Air Force and U.S. Fish and Wildlife Service

XIII. IN WITNESS WHEREOF, each party hereto has caused this Cooperative Agreement to be executed by an authorized official on the day and year set forth opposite their signature. This Cooperative Agreement shall become effective upon the date of the final signature.

U.S. Air Force

By: \_\_\_\_\_ Date: \_\_\_\_\_  
Dennis R. Larsen, Colonel, USAF  
U.S. Air Force  
Commander, 633rd Air Base Wing

U.S. Fish and Wildlife Service

By: Marvin Plenert \_\_\_\_\_ Date: 3-4-84  
Marvin Plenert  
Regional Director, Region 1  
U.S. Fish and Wildlife Service

#### Appendix 4: Federally Listed, Proposed or Candidate Species, Species of Concern Found on Guam

As designated under the U.S. Endangered Species Act (updated 29 August 2005). Species status: E = endangered; T = threatened; C = candidate for listing; SOC = species of concern; \* = possibly extinct; <sup>1</sup>Occurs only in captivity; <sup>2</sup>Occurs on Andersen Air Force Base (AAFB) overlay refuge; <sup>3</sup>Occurs on Navy overlay refuge; <sup>4</sup>Occurs in Orote Peninsula ERA. Extracted from <http://www.fws.gov/pacificislands/wesa/pacificislandslisting.pdf>

Scientific Name	Common/Chamorro Name	Status
<b>Plants</b>		
<i>Coelogyne guamensis</i>	No common name	SOC
<i>Lycopodium phlegmaria</i> var.	No common name/Disciplina	SOC
<i>Nervilia jacksoniae</i>	No common name	SOC
<i>Serianthes nelsoni</i> <sup>2</sup>	Fire tree/Hayun Lagu	E
<i>Tabernaemontana rotensis</i>	No common name	SOC
<i>Thelypteris warburgii</i>	No common name	SOC
<i>Tinosperma homosepela</i>	No common name	SOC
<b>Bats</b>		
<i>Emballonura semicaudata</i>	Sheath-tailed bat/Payesyeyes	C*
<i>Pteropus tokudae</i>	Little Mariana fruit bat/Fanihi	E*
<i>Pteropus mariannus mariannus</i> <sup>2,3</sup>	Mariana fruit bat/Fanihi	T
<b>Birds</b>		
<i>Acrocephalus luscini</i> a	Nightingale reed-warbler/Ga'ga Karisu	E*
<i>Aerodramus bartschi</i> <sup>3</sup>	Mariana swiftlet/Yayaguak	E
<i>Corvus kubaryi</i> <sup>2</sup>	Mariana crow/Aga	E
<i>Gallinula chloropus guami</i> <sup>3</sup>	Mariana moorhen/Pulattat	E
<i>Halcyon cinnamomina cinnamomina</i> <sup>1</sup>	Micronesian kingfisher/Sihék	E
<i>Megapodius laperouse</i>	Micronesian megapode/Sasangat	E*
<i>Rallus owstoni</i> <sup>1</sup>	Guam rail/Koko	E

<i>Zosterops conspicillatus</i>	Bridled white-eye/Nosa	E*
<b>Reptiles</b>		
<i>Chelonia mydas</i> <sup>4</sup>	Green sea turtle/Haggan Bed'di	T
<i>Eretmochelys imbricata</i> <sup>4</sup>	Hawksbill turtle/Haggan Karai	E
<b>Snails</b>		
<i>Partula gibba</i> <sup>2,4</sup>	Mariana Islands tree snail/Akaleha	C
<i>Partula radiolata</i> <sup>2,3,4</sup>	Pacific tree snail/Akaleha	C
<i>Partula salifana</i>	Guam tree snail/Akaleha	SOC*
<i>Samoana fragilis</i> <sup>2,4</sup>	Mariana Islands fragile tree snail/Akaleha	C
<i>Succinea guamensis</i>	No common name	SOC*
<i>Succinea piratarum</i>	No common name	SOC
<i>Succinea quadrasi</i>	No common name	SOC
<b>Invertebrates</b>		
<i>Catacanthus</i> sp. nov.	Guam bronze boony bug	SOC
<i>Hypolymnus octicula</i>	Marianas eight spot butterfly	C
<i>Vagrans egestina</i>	Marianas wandering butterfly	C

**Appendix 5. Endangered and Threatened Species List for Guam.**

Source: (GDAWR 2006)

<b>Scientific Name</b>	<b>English Name</b>	<b>Chamorro Name</b>
<b>Birds</b>		
<i>Aerodramus vanikorensis bartschi</i>	Island swiftlet	Yayaguak
<i>Aplonis opaca guami</i>	Micronesian starling	Sali
<i>Corvus kubaryi</i>	Mariana crow	Aga
<i>Gallicolumba x. xanthonura</i>	White-throated ground dove	Puluman Apaka/Fache
<i>Gallinula chloropus guami</i>	Mariana common moorhen	Pulattat
<i>Gallirallus owstoni</i>	Guam rail	Koko
<i>Halcyon c. cinnamomina</i>	Micronesian kingfisher	Sihek
<i>Myiagra freycineti</i>	Guam flycatcher	Chuguanguang
<i>Myzomela rubratra saffordi</i>	Micronesian honeyeater	Egigi
<i>Ptilinopus roseicapilla</i>	Mariana fruit-dove	Totot
<i>Rhipidura rufifrons uraniae</i>	Rufous fantail	Chichirika
<i>Zosterops c. conspicillata</i>	Bridled white-eye	Nossa
<b>Mammals</b>		
<i>Emballonura semicaudata</i>	Pacific sheath-tailed bat	Payesyeyes
<i>Pteropus m. mariannus</i>	Marianas fruit bat	Fanihi
<i>Pteropus tokudae</i>	Little Marianas fruit bat	Fanihi
<b>Reptiles</b>		
<i>Chelonia mydas</i>	Green sea turtle	Haggan Betde
<i>Eretmochelys imbricata</i>	Hawksbill sea turtle	Haggan Karai
<i>Cryptoblepharus poecilopleurus</i>	Snake-eyed skink	Guali'ek Halom Tano'
<i>Emoia atrocostata</i>	Tide-pool skink	Guali'ek Kantun Tasi
<i>Emoia cyanura</i>	Azure-tailed skink	Guali'ek Halom Tano'
<i>Emoia slevini</i>	Slevin's skink	Guali'ek Halom Tano'
<i>Lipinia noctua</i>	Moth skink	Guali'ek Halom Tano'
<i>Gehyra oceanica</i>	Oceanic gecko	Achiak

*Nactus pelagicus* Pacific Slender-toed gecko Guali'ek

*Perochirus ateles* Micronesian gecko Guali'ek

**Molluscs**

*Partula salifana* Guam tree snail Akaleha'

*Partula gibba* Mariana Islands tree snail Akaleha'

*Partula radiolata* Pacific tree snail Akaleha'

*Samoana fragilis* Mariana Islands fragile tree snail Akaleha'

**Plants**

*Cyathea lunulata* Tree fern Tsatsa

*Heritiera longipetiolata* Fire tree Ufa-halomtano

*Serianthes nelsonii* Hayun-lago

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## **Appendix 6. Policy for Research and Scientific Studies**

Scientific studies involving defined objectives and scopes of study are permitted within the OPERA. Approval for the use of OPERA for scientific study purposes is required prior to the onset of any study. The FWS, NMFS and DAWR are required to submit relevant requisite information to NBG to conduct work within the ERA. These agencies will also submit a schedule of proposed ERA visits to NAVFACMAR - Environmental Natural Resources (EV) for the purposes of attaining proper base security access and necessary identification badges. Agencies wishing to conduct scientific study should submit a schedule of activities to the JRM or NAVFACMAR EV depending on the project and source of funding. The J4 JRM has final approval authority for all studies involving the ERA.

### **1. Study Approval Procedure**

- a. The following procedure will be followed in order to obtain approval to conduct scientific studies or research within the OPERA.
  - 1) Each researcher will submit three copies of the proposed study to JRM or NAVFACMAR EV at least 45 days prior to the study start date.
  - 2) NAVFACMAR EV will provide a technical review of each project and will request comments from USFWS, NOAA and GOVGUAM personnel where appropriate.
  - 3) NAVFACMAR EV will then forward recommendations to JRM and Installation Command Officer for final review and approval.
  - 4) When approved by Installation Command Officer, a Letter of Approval (LOA) will be sent to the principal investigator with appropriate conditions. Copies of each LOA will be provided to JRM and NAVFACMAR EV.
- b. When submitting a proposal for scientific use of the ERA, the following information must be included in the application to begin the LOA process.
  - 1) Name, address and telephone number for Principal Investigator (PI) and all assistants.
  - 2) Curriculum vitae (PI only)
  - 3) Sponsoring Agency or Institution
  - 4) Detailed description of research to include:
    - a) Objective
    - b) Methods and equipment
    - c) Expected results and benefit to the ERA
    - d) Duration
    - e) Anticipated schedule on-the-ground use of the ERA

- f) Collection needs (No. of species, amount and collection location for each species, disposition of species)
  - g) Permits required and attached
  - h) Any other information the PI may deem pertinent to the review of his/her application.
- c. All proposals or requests for information should be directed to NAVFACMAR EV or JRM where appropriate.
- d. In addition to the above requirements, applications for archaeological research must be in accordance with 36 CFR Part 229 and other Federal and Guam historic preservation statutes and regulations.
- e. In addition to the above requirements, scientific research involving any Guam endangered or threatened species shall require a permit from the DAWR, Department of Agriculture.
- f. In addition to the above requirements, scientific research involving any Federal endangered or threatened species shall require a permit from the FWS, Department of Interior and/or NMFS NOAA Fisheries.

## **2. Study Approval Policy**

- a. Only written applications for scientific use of the ERA shall be considered.
- b. A LOA may not be amended or otherwise altered without the written approval of the CO NBG. A copy of any LOA amendments or changes shall be forwarded to Joint Region Marianas, NAVFACPAC and NAVFACMAR EV along with a copy of the original LOA.
- c. The Principal Investigator must obtain a license agreement from the Navy prior to use of the ERA. This license will require the user to obtain adequate insurance coverage. Application for this license should be made to CO NBG at the time the request for approval for scientific study is made.
- d. No study shall interfere with the normal cycles and fluctuations of native plant and animal populations.
- e. Collecting of specimens for scientific purposes will be kept to a minimum. Any collections made within the ERA shall be deposited in a public institution approved in advance by CO NBG.
- f. Once a LOA is approved, the PI or his assistant must check in with NBG security personnel at each visit to the ERA for security purposes.
- g. The following prohibited activities may be authorized in connection with a scientific study in the ERA:
  - 1) Possession and use of a firearm (specimen collecting).
  - 2) Use of mist nets to capture birds; copies of appropriate credentials for use of mist nets

must accompany application including Federal permit and amount of experience of user(s).

- 3) Use of road for transport of equipment into and out of ERA.
- 4) Overnight camping in other than designated areas, if requested and required by study.

### **3. Scientific Collecting**

- a. Collecting of plant, fish and wildlife may be permitted within the ERA providing that it is determined that such proposed collection will not adversely affect the continued existence or maintenance of that species in the ERA.
- b. Approval for collecting specimens will be considered only when required Federal or Territory of Guam permits have been obtained by the principal investigator prior to the collecting request.

### **4. Reports**

- a. An annual report on the progress of the research must be provided to CO NBG and NAFACMAR EV (3 copies each) no later than 60 days following each 12 month increment or less of research. A final report will also be submitted to CO NBG and NAFACMAR EV (3 copies each) within 60 days of the end of the study. NAVFACMAR EV will provide copies of all reports to the DAWR, FWS and the NMFS.
- b. Copies of any other reports written or published as a result of studies carried out on the ERA shall be provided in triplicate to NAVFACMAR EV within one month of completion.
- c. Upon request, the PI shall provide NAVFACMAR EV with copies of unpublished data or photographs (2 copies) at no cost to the Navy. It is understood that any such data provided by the PI will be for Navy use only and not for public use or publication by the Navy unless authorized by the PI. Photographs used by the Navy for official purposes will be credited to the photographer.

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## Appendix 7: Checklist of Procedures Following a Tsunami

Tsunami warning from Pacific Tsunami Warning Center (PTWC). Coordination of Guam Emergency Response Plan is through Guam Homeland Security, Office of Civil Defense (Source: [http://guamhs.org/main/?pg=guam\\_emergency\\_response](http://guamhs.org/main/?pg=guam_emergency_response)).

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Guam Emergency Response Plan

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HAZARD-SPECIFIC ANNEX C — TAB A  
TSUNAMIS CHECKLIST

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A. Preparedness Measures

- The OCD will activate the Emergency Alert System (EAS) to alert the general public.

*Tsunami Evacuation Staging Areas will be identified, general public "what to do" messages will be made and the Village Mayors notified. See appendix.*

- Primary response agencies begin agency specific pre-event preparations
- EOC prepares for activation
- All emergency communication equipment (hand-held radios and cellular phones) tested and ready for emergency use
- Identify/Pre-stage equipment
- Information & Planning section will prepare to develop situation status reports and remain in communication with the JTWC in Hawaii and the NWS on Guam.
- Contact DHS/FEMA
- Initiate contact with all media sources

B. Response Efforts

- Unified Command structure will coordinate all response activities from the EOC
- Implementation of the **City Watch** notification system.
- Emergency Alert Systems activated
- Emergency Vehicles having loud speaker capability will provide on site notification to effected areas
- Emergency shelters opened
- Emergency vehicles (buses & vans) deployed to pre-designated locations to assist in evacuation.
- Response materials, supplies, manpower and equipment identified