

**Environmental Assessment
NOAA's Pacific Islands Fisheries Science Center
Coral Reef Ecosystem Division
2005-2010 Activities**

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NOAA's Coral Reef Ecosystem Division
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EXECUTIVE SUMMARY

The purpose of this Environmental Assessment (EA) is to describe the potential environmental effects of activities conducted by the Coral Reef Ecosystem Division (CRED) of the National Oceanic and Atmospheric Administration's Pacific Islands Fisheries Science Center. The CRED conducts a range of activities to improve our understanding of coral reef ecosystems, as mandated by the Coral Reef Conservation Act of 2000 (Act, 16 U.S.C. 6401 et seq., P.L. 106-562, see Appendix B).

The Act is intended to support a wide range of coral reef conservation activities, from developing sound science to enhancing compliance with management programs and increasing public knowledge of coral reefs.

The stated purposes of the Act, which was enacted on December 14, 2000, are:

1. To preserve, sustain and restore the condition of coral reef ecosystems;
2. To promote the wise management and sustainable use of coral reef ecosystems to benefit local communities and the Nation;
3. To develop sound scientific information on the condition of coral reef ecosystems and the threats to such ecosystems;
4. To assist in the preservation of coral reefs by supporting conservation programs, including projects that involve affected local communities and non-governmental organizations;
5. To provide financial resources for those programs and projects; and
6. To establish a formal mechanism for the collecting and allocating of monetary donations from the private sector to be used for coral reef conservation projects.

Achieving purposes 1-4 is intended to provide positive long-term environmental, social and economic impacts to vulnerable coral reef environments and the users dependent on those ecosystems. Purposes 5-6 help provide the means for accomplishing those purposes.

Coral reefs are some of the most biologically rich and economically valuable ecosystems on Earth. They provide a wide variety of valuable products and services in the U.S. and in other countries, including:

- Economic stability and food security for millions of people;
- Chemicals and pharmaceuticals that contribute to improved human health;
- Environmental services such as shoreline protection;
- Areas of natural beauty and biodiversity; and
- Sources of revenue and employment through tourism and other industries.

Coral reef ecosystems are in serious jeopardy, primarily due to the impacts of a variety of human activities. Coral reefs are threatened by over-exploitation and destructive fishing practices; pollution and sedimentation associated with coastal development, deforestation, and agriculture; habitat loss from dredging and shoreline modification;

vessel groundings and other direct physical impacts; invasive species, disease outbreaks, and other impacts associated with climate variability such as coral bleaching, increased storm frequency and changing sea level. By some estimates, 27% of the world's reefs have effectively been lost, with 16% attributed to the massive climate-related coral bleaching event of 1998 and 11% lost due to human impacts¹. The rapid decline and loss of these valuable marine ecosystems have significant social, economic, and environmental consequences in the U.S. and around the world.

PURPOSE AND NEED

Action is needed with some urgency and on a wide variety of fronts to address the coral reef crisis, especially on issues of global proportions such as the impacts of rising temperatures, increasing coastal development, and persistent over-fishing of reef systems. Viable and healthy coral reefs are important to maintaining healthy fish stocks. Effective conservation, management and restoration projects for coral reefs would help rebuild fisheries stocks and recover certain threatened and endangered species. In addition, conservation of coral reefs is necessary to ensure that these valuable resources are available to future generations that are dependent on these resources for their livelihood and for cultural and social values.

PROPOSED ACTION AND ALTERNATIVES

The proposed action is to conduct research that provides scientific information and advice to ensure the long-term viability of coral reef ecosystems in the U.S. affiliated islands in the western Pacific, including the Northwestern Hawaiian Islands (NWHI). CRED's objective is to conduct an ecosystem-based research program that utilizes a comprehensive, multi-disciplinary approach to address coral reef assessment and monitoring, habitat mapping and characterization, and coral reef protection through marine debris mitigation.

The coral reef assessment and monitoring alternative includes conducting ecological assessments of reef fishes, corals, other invertebrates, and marine algae. An array of tools and method are used in coral reef ecological assessment and monitoring studies and in determining the oceanographic processes influencing coral reef ecosystems. These include the use of towboard and other diver surveys, instrumented oceanographic moorings and buoys, oceanographic research vessels, and satellite remote sensing technologies.

The habitat mapping and characterization alternative employs single and multi-beam acoustic technologies, towed camera systems, and towed-diver surveys.

The coral reef protection through marine debris mitigation alternative supports activities to assess, monitor and mitigate the adverse effects of derelict fishing gear that has become ensnared within the coral reef ecosystems of the NWHI, and to participate in the

development of innovative technologies to recover marine debris while still circulating at sea, before it can reach the reef and damage the coral reef ecosystem.

AFFECTED ENVIRONMENT

A primary objective of the CRED is to promote sound science to improve the understanding of coral reef ecosystems. The jurisdiction of the program covers all areas in the U.S. Pacific with coral reef ecosystems, which encompasses coral reefs and their associated habitats, as well as the benthic invertebrates, algae and fish species that utilize these habitats.

The EA describes the physical, biological and social environments of the Pacific U.S. with emphasis on coral reefs and associated habitats. The following resources are described: corals, coral reefs and coral reef ecosystems, water quality, living marine resources and essential fish habitat, and endangered species.

SUMMARY OF ENVIRONMENTAL IMPACTS

The positive environmental consequences of the implementation of the preferred alternative include increased understanding of the science of fragile coral reefs and their ecosystems that will aid in management. Negative consequences, if any, are expected to be minimal with temporary impacts associated with field research (e.g., sample collection) and monitoring programs (e.g., installation of long-term markers).

The cumulative negative impacts are expected to be minimal and not significant. In all cases, CRED activities are non-invasive, do not involve manipulations of the environment, and only have temporary minor impacts while conducting the work (e.g., diver presence temporarily affects behavior of fishes) which disappear once the divers leave the water.

The project is intended to conduct assessment and ecological research that will support management actions by others to protect sensitive coral reefs from damage. The data collected by CRED may be used by others to present conclusions and recommendations for management actions. CRED activities have, at most, minor, temporary negative effects to the environment.

1. INTRODUCTION

This document is an environmental assessment (EA) for the United States National Oceanic and Atmospheric Administration's (NOAA) Pacific Islands Fisheries Science Center, Coral Reef Ecosystem Division's (CRED) proposed activities from 2005-2010. It describes in general terms the planned actions of CRED and potential impacts resulting from those actions.

CRED must comply with the National Environmental Policy Act of 1969 (NEPA), the Council on Environmental Quality's (CEQ) regulations for implementing NEPA (Title 40 Code of Federal Regulations [CFR] parts 1500 through 1508), and NOAA Administrative Order (NAO) 216-6, which describes NOAA's policies, requirements, and procedures for complying with NEPA and the CEQ regulations. In accordance with these requirements, NOAA, as the lead federal agency, has prepared this EA in order to assess the potential environmental impacts of CRED activities.

Consequently, this EA will be used to streamline the overall NEPA review process, thus eliminating duplicative documentation. The EA will be reviewed every five years in order to ensure that its impact analyses remain current. Each newly proposed project will be reviewed in order to determine whether or not its potential environmental impacts have been adequately addressed in this EA. This review will be conducted by the completion of the NEPA Project Review Checklist contained in Attachment 1 of the FONSI. If this review determines that the proposed project type and its environmental impacts have been analyzed in the EA, no further NEPA documentation will be completed for that project and the completed Checklist will be included with the other records for that grant award. If the project type or impacts are not analyzed in this EA, the proposed project will be the subject of an individual NEPA review. Depending upon the degree of the project's potential impacts, this review could involve either the preparation of a categorical exclusion memorandum, an environmental assessment, or an environmental impact statement.

1.1 Background

Coral reef ecosystems are among the most diverse and biologically complex ecosystems on earth. They provide economic and environmental services to millions of people such as shoreline protection, areas of natural beauty and recreation, and sources of food, chemicals, pharmaceuticals, jobs, and revenues. Coral reef ecosystems are deteriorating worldwide at alarming rates due to multiple stressors including over-exploitation, pollution and marine debris, habitat destruction, diseases, invasive species, and bleaching and climate change.

In response to these concerns, the Coral Reef Protection Executive Order 13089 (see Appendix A) in June 1998 established the U.S. Coral Reef Task Force² (Task Force) and directed Federal agencies to improve their stewardship and conservation of the nation's coral reefs. In March 2000, the Task Force approved the first-ever *National Action Plan to Conserve Coral Reefs (Action Plan)*³, outlining a series of specific, priority actions to

ensure the long-term viability of coral reef ecosystems of the U.S. and around the globe. In May 2000, the Marine Protected Area (MPA) Executive Order 13158 (see Appendix D) was issued to establish and strengthen MPAs in U.S. waters. The Coral Reef Conservation Act of 2000 further increased national efforts to conserve and protect coral reef ecosystems. The NWHI Coral Reef Ecosystem Reserve Executive Orders in 2000/2001 (see Appendix C) established the nation's largest MPA and the second largest coral reef reserve in the world.

In response to the two fundamental themes of the *Action Plan* to 1) understand coral reef ecosystems, and 2) reduce adverse impacts of human activities, a small team of biologists and oceanographers at NOAA's Pacific Islands Fisheries Science Center (then known as the Honolulu Laboratory) initiated the development of a comprehensive multi-disciplinary, multi-agency, and multi-platform program to assess, monitor, restore, protect, and conduct applied research on the coral reef ecosystems of the U.S. Pacific Islands. The U.S. Pacific Islands include about a large percentage of the nation's coral reefs, and encompass the NWHI, the main Hawaiian Islands (MHI), and other U.S.-affiliated Pacific Islands, including the Territories of American Samoa and Guam, the Commonwealth of Northern Marianas Islands (CNMI), and the Pacific remote island areas (PRIAs) or unincorporated U.S. Pacific possessions of Wake Atoll, Johnston Atoll, Howland Island, Baker Island, Jarvis Island, Palmyra Atoll, and Kingman Atoll. After thorough program design and development with internal NOAA and other Federal, state, territorial, and NGO partners, the CRED was formally established in April 2001 to improve understanding and support for science-based management of coral reef ecosystems of the U.S. Pacific Islands.

1.2 Purpose and Need for Action

The U.S. Department of Commerce (DOC), NOAA is responsible for implementation of the Coral Reef Conservation Act of 2000 (Act, 16 U.S.C. 6401, 6403, P.L. 106-562 enacted December 14, 2000, Appendix B). The Act authorizes the creation of a national program to conserve coral reef ecosystems, consistent with the Act and other legislation, including the Endangered Species Act of 1973, the Magnuson-Stevens Fishery Conservation and Management Act, and the Marine Mammal Protection Act of 1972. Authorized activities within the Act include:

- mapping, monitoring, assessment, restoration, and scientific research that benefit the understanding, sustainable use, and long-term conservation of coral reefs and coral reef ecosystems;
- enhancing public awareness, education, understanding, and appreciation of coral reefs and coral reef ecosystems;
- providing assistance to States in removing abandoned fishing gear, marine debris, and abandoned vessels from coral reefs to conserve living marine resources; and
- cooperative conservation and management of coral reefs and coral reef ecosystems with local, regional, or international programs and partners.

DOC is also responsible for the implementation of several Executive Orders. Executive Order 13089 on Coral Reef Protection (see Appendix A) creates the U.S. Coral Reef Task Force (with the Secretary of Commerce through the Administrator of NOAA as co-chair) and directs it to conduct a program of coral reef mapping and monitoring; research; conservation, mitigation, and restoration; and international cooperation. Executive Orders 13178 and 13196 on the Northwestern Hawaiian Islands Coral Reef Ecosystem Reserve (see Appendix C) set forth management principles to “support, promote, and coordinate appropriate scientific research and assessment, and long-term monitoring of Reserve resources, and the impacts or threats thereto from human and other activities, to help better understand, protect, and conserve these resources and species for future generations.” They also call for the cleanup and prevention of marine debris in the Reserve Operations Plan.

For more than a decade, scientists, policy makers, and national leaders have been expressing a growing concern over the deterioration of coral reef ecosystems. The Act set in motion a program to help address the concerns expressed and widely recognized as real and serious in nature. Substantial funding has been annually appropriated to implement a program designed to improve scientific understanding and to take measures to afford greater protection to these fragile ecosystems.

From mapping and monitoring to managing reef resources and removing harmful debris, the NOAA Coral Reef Conservation Program (CRCP) addresses the priorities laid out in both the *Action Plan* and the *National Coral Reef Action Strategy*⁴. The CRCP supports effective management and sound science to preserve, sustain and restore valuable coral reef ecosystems to help fulfill NOAA's requirements under a number of mandates, including the Act. The CRCP also serves as the Secretariat for the Task Force, and the Department of Commerce/NOAA and the Department of the Interior serve as co-chairs.

The purpose of the proposed action is to conduct authorized scientific activities, including mapping, monitoring, assessment, restoration, and scientific research, that benefit the understanding, sustainable use, and long-term conservation and management of coral reefs and coral reef ecosystems. These activities are to provide scientific information that would support local and national resource management agencies, educational institutions, non-government organizations and community groups through which coral reef conservation actions are realized.

2. PROPOSED ACTIONS AND ALTERNATIVES

2.1 Proposed Action – Monitoring

Marine resource management is undergoing a fundamental transformation from the management of individual species to ecosystem-based management. This transition has challenged policy makers, resource managers, and scientists as they struggle to define and implement ecosystem-based management. This alternative supports collaboration with other Federal, state, and territory agencies, and NGOs to address these issues and

develop a long-term, comprehensive program to assess and monitor the coral reef ecosystems of the Pacific region.

Monitoring efforts would include conducting baseline assessments and multidisciplinary spatial and temporal monitoring of the major components of the coral reef ecosystems of the NWHI, the PRIAs, American Samoa, Guam, and CNMI.

Proposed activities would include examining the broader coral reef ecosystems in a comprehensive manner by simultaneously studying the corals, fish, algae, and other invertebrates, as well as the interactions between and among species and trophic levels and their relationships to the variable oceanographic and benthic habitats.

2.2 Proposed Action – Benthic Habitat Mapping and Characterization

This proposed action supports activities to locate, characterize, and map the benthic habitats of coral reef ecosystems in the Pacific Islands, including the NWHI, the MHI, PRIAs, American Samoa, Guam, and CNMI. It supports the mapping requirements established by the Task Force in the *Action Plan* and will help define Essential Fish Habitat (EFH) and Habitat Areas of Particular Concern (HAPC) as mandated by the Magnuson-Stevens Fishery Conservation and Management Act.

Knowledge of benthic habitat types and distributions is essential for effective management of marine ecosystems and the associated resources that could potentially be exploited. Due to the high diversity and complexity of coral reef ecosystems, accurate characterization and mapping of these areas are particularly important.

A comprehensive benthic habitat mapping and characterization program would utilize primarily acoustic and visual technologies to complement and support the satellite and airborne mapping activities of NOAA's National Ocean Service in the U.S. Pacific Islands coral reef areas. Tools and methods would include towed diver habitat/fish surveys, acoustic mapping and characterization, towed vehicle photography, and remote sensing.

2.3 Proposed Action – Marine Debris Removal

Marine debris threatens the near-pristine coral reef ecosystems of the NWHI, which are prone to accumulating floating debris because of their location in the current gyres of the North Pacific Ocean. Most of this debris consists of derelict fishing gear that entangles and kills endangered Hawaiian monk seals, threatened green sea turtles, coral and other wildlife. In the MHI, the locations of concentrations of marine debris are still unknown, but local level efforts indicate that certain areas are prone to large accumulations.

This proposed action supports continuing previous efforts at marine debris assessment and removal in the NWHI, and conducting initial assessments and removal (where necessary) in the MHI. Activities would include utilizing a highly-trained marine debris removal team, in partnership with other agencies, industry, academia and NGOs, with

vessel support to find and remove marine debris at high-priority coral reef ecosystem sites.

2.4. No Action Alternative

The no action alternative is possible, especially if there are no annual appropriations, but is not usually implemented or considered a wise course of action. Through a deliberative process, the CRCP has awarded funding to the CRED to implement its goals as defined in the Act, the Action Plan, and the National Strategy. The no action alternative would compromise NOAA's ability to fulfill its Congressional mandates and deny CRED the ability to provide the scientific support necessary to protect fragile coral reef ecosystems.

Impacts of the no action alternative would include:

1. Improved understanding of the problems and challenges facing the increasingly deteriorating ecosystems from natural and anthropomorphic impacts would be harder to obtain;
2. The application of improved management principles, coordination and communications, education and outreach would be curtailed, only leading to increased degradation;
3. NOAA, as well as other scientific and regulatory agencies at all levels of government, would be compromised in their decision-making by the lack of understanding of what is detrimentally impacting the marine ecosystems; and
4. The specially designated U.S. Coral Reef Task Force would find it difficult to achieve many of the objectives and actions identified in the *Action Plan* and *National Strategy* without the support of CRED activities.

The environmental consequences of no action would be more detrimental than taking the pursued course of action that has been designed through legislation and supported by Congressional appropriations.

2.4. All Action Alternative

The most effective course of action to fulfill NOAA's mandates under the Act would be to conduct all proposed actions for monitoring, benthic habitat mapping and characterization, and marine debris removal. See Section 4.2, 4.3, and 4.4 for more detailed descriptions of each component of the proposed actions.

3. AFFECTED ENVIRONMENT

3.1. General

A primary objective of the CRED is to promote sound science to improve the understanding of coral reef ecosystems. The jurisdiction of the program includes all areas with coral reef ecosystems within the Pacific U.S., U.S. territories, and Freely Associated States, and includes coral reefs, mangroves, seagrass beds and other

associated habitats, as well as the benthic invertebrates, algae and fishes that utilize these habitats. The United States has jurisdiction over an estimated 7,607 square miles of coral reefs, not including the Freely Associated States. Thus, the potentially affected environment associated with the proposed action is quite substantial, and includes all coastal habitats in state and territorial waters, offshore habitats within the U.S. exclusive economic zones (EEZ), as well as coastal areas that influence or affect coral reef ecosystems.

The following section describes the physical, biological and social environments of the U.S., with emphasis on coral reef ecosystems. Each section provides baseline information on the habitat types potentially affected by the proposed action and alternatives. The following resources also are generally described: essential fish habitat, endangered species, cultural and historic resources, and socioeconomics.

3.1.1 Corals, Coral Reefs, Coral Reef Ecosystems

Coral reefs consist of consolidated limestone or unconsolidated rubble constructed primarily from the skeletal remains of invertebrates and algae. Living corals and other benthic organisms form a thin veneer that overlies a limestone framework deposited over thousands of years by their ancestors, and solidified by the combined processes of cementing coralline algae, mechanical action of waves, bioerosion from boring sponges and other organisms, and the chemical action of rainwater. Reef building scleractinian corals are the dominant organisms responsible for most of the framework growth, followed by coralline algae on wave-exposed reef slopes, and green algae (e.g., *Halimeda*) in back reef and lagoonal depositional zones. Other important organisms contributing sediments to reef structure include mollusks, foraminiferans, and echinoderms.

Coral, as defined by the Act, refers to the species of the phylum Cnidaria, including-

1. All species of the Orders Antipatharia (black corals), Scleractinia (stony corals), Gorgonacea (horny corals), Stolonifera (organpipe corals and others), Alcyonacea (soft corals), and Coenothecalia (blue coral), of the class Anthozoa; and
2. All species of the order Hydrocorallina (fire corals and hydrocorals) of the class Hydrozoa.

The Cnidaria comprise over 6,000 known species providing diversity, awe, and beauty known the world over. The soft and stony corals are often single organisms but also form colonies capable of producing massive coral reefs (reefs or shoals composed primarily of corals) that provide numerous benefits. A coral reef ecosystem is defined as "coral and other species of reef organisms (including reef plants) associated with coral reefs, and the nonliving environmental factors that directly affect coral reefs, that together function as an ecological unit in nature." The complexity of such a system that is diverse, subject to adverse perturbations when components of the system are disturbed, and subject to potential rebound if perturbations are minimized becomes clear when it is examined.

Their importance of algae to the coral reef ecosystem is staggering: algae form the base of the food chain, occupy much of the available substrate, and help to oxygenate the water for animal life to thrive. Additionally, without microscopic symbiotic algae living in healthy coral tissue, most corals would be unable to survive – a scenario that is becoming all too real as coral bleaching events (processes where stressed corals expel their algal symbionts) become more common.

Although large, fleshy algal forms are the most recognizable floral components on reefs to most divers, tiny turf algae and crustose coralline red algae are also extremely prevalent and play significant roles in the ecosystem. Turf algae are the first to colonize vacant substrate and cover essentially every nonliving hard surface on the reef. Turf algae are also among the most important food source for herbivorous fish and invertebrates. Relatively fast growing crustose coralline red algae act as glue that cements together loose components of the reef system, and serve as a settling surface for larval invertebrates and other algae. Without crustose algae holding everything together, much of the reef would be washed into deep water or onto shore during heavy winter storms.

Coral reefs are generally found between 30°N latitude and 30°S latitude across the globe in what has sometimes been referred to as the "fragile ring of life." While deep or cold water corals exist, the focus of the CRED has been on the coral reefs and associated life forms found in the "fragile ring."

Coral reef ecosystems subject to CRED activities are found in the Pacific Islands. Shallow-water reefs of the U.S. Pacific islands are extensive and include the Main and Northwestern Hawaiian Islands, the Territories of American Samoa and Guam, the Commonwealth of the Northern Mariana Islands, and seven remote, unincorporated Pacific island areas (Baker, Howland, Jarvis, Johnston, Kingman, Palmyra, and Wake). Also included are the Indo-Pacific reefs around the Freely Associated States (Federated States of Micronesia, Palau, and the Republic of the Marshall Islands)⁵.

3.1.2 Water Quality

Coral reefs thrive in oligotrophic waters that contain low levels of inorganic nutrients. Pollution enters reef ecosystems in many ways, ranging from such specific point-source discharges as sewage pipes and vessels to more diffuse sources such as runoff associated with agriculture, coastal development, road construction, and golf course irrigation. Though excess nutrients are generally a problem, a continuous supply of inorganic nutrients is essential for maintenance of metabolic processes, the proper functioning of reef ecosystems, and the persistence of coral and coralline algae-dominated communities. Many flourishing coral reefs occur in regions subjected to seasonal upwelling or other natural events such as volcanic eruptions that contribute temporary pulses of nutrients. Nutrient fluxes associated with upwelling events, currents, tides and other sources can play an important role in overall productivity of coral reefs. Furthermore, reefs will persist in areas affected by nutrient loading, provided that the herbivores are sufficiently abundant and diverse and are able to control proliferation of macroalgae.

In many locations terrestrial discharge of nutrients and other pollutants to coastal waters has increased considerably from pre-industrial levels, reflecting increases in human activities in the surrounding watershed. Pollution, including eutrophication and sedimentation associated with land based activities, has been associated with the degradation in water quality and coral reef health and diversity (LaPointe et al. 2000). Some of the sources of pollution include improper coastal development, dredging and beach renourishment, land clearing for agriculture, discharge of untreated sewage, industrial waste, agrochemicals, and pharmaceuticals, and chemical and oil spills.

3.1.3 Ecological Functions

Coral reefs and associated ecosystems perform important biological, ecological and physical functions. Two of the main outputs of reefs are organic and inorganic carbon production. Reef organisms fix carbon for the production of their skeletons. The resulting skeletal structure provides a substrate for the settlement and attachment of other sessile organisms, as well as topographical relief that serves as habitat for motile fishes and invertebrates. Coral and algal skeletal materials are also broken down into sediments that form beaches and soft bottom habitats, are incorporated into the reef structure, and form an important part of the inorganic carbon pathway. Primary production of organic carbon by symbiotic zooxanthellae, turf algae, macroalgae and coralline algae supports the diverse organisms and complex food webs found on coral reefs. Through grazing and dislodgement, turf algae and frondose algae are maintained in an early stage of ecological succession where rates of photosynthesis and growth are highest. Secondary consumers (predators of herbivorous fishes and invertebrates) further enhance reef productivity by maintaining their prey in high growth phases and by supplying concentrated nutrients to their prey.

Some of the functional roles of coral reefs and associated habitats include:

- Complex, high relief habitat that serve as refuge for motile fish and invertebrates and Microhabitats for cryptic fauna and flora;
- Breeding, feeding and nursery habitats a great variety of marine species;
- Hard substrate for settlement and growth of sessile organisms;
- Global biogeochemical cycles including a storehouse of carbon dioxide;
- High productivity based on sunlight and coral/zooxanthellae symbiosis supports a complex food web;
- Repository of marine biodiversity and potential source of bioactive substances;
- Protection for coastal areas from strong wave action and full impacts of storms; and
- Natural recorders of past climate and environmental variation.

3.1.4 Cultural and Historical Values

U.S. island and coastal communities are intricately connected with the coral reef ecosystems that surround them. Many of the myths, legends and customs of native islanders encompass the surrounding marine environment as crucial components of life. Local coral reef resources provide food for cultural activities, subsistence and revenue through artisanal, recreational, and commercial fisheries. Historically, the native people of the Pacific islands have a strong cultural and economic dependence to the marine environment that surrounds them. For example, traditional Hawaiian fishery management activities centered around strictly enforced social and cultural controls on fishing. These fishery management activities were based on time and area closures to keep fishers from disturbing natural processes (reproduction) and habitat of important food resources. Recently, the State of Hawaii has supported the development of community-based subsistence fisheries areas in a few communities. These communities have prepared fisheries management plans, which propose to integrate traditional observational methods and modern science techniques, use fishing to restore community values and stewardship, and revitalize a locally sanctioned code of fishing conduct.

3.1.5 Socioeconomic and Environmental Justice

Coral reefs provide economic and environmental services to millions of people through employment, recreation and tourism, shoreline protection, and sources of food, building materials, and pharmaceuticals. The estimated global economic value of coral reef ecosystems is about \$375 billion dollars per year (Costanza et al. 1997). In the year 2000, an estimated 10.5 million people resided in US coastal areas adjacent to shallow water corals reefs and another 45 million tourists visited these reefs (Turgeon et al. 2002). In addition, the annual ex-vessel value of commercial fisheries associated with U.S. coral reefs is estimated at over \$137.1 million (NMFS 2001). In southeast Florida, 18 million people participated in reef related activities during 2001, and these reefs are estimated to have an asset value of \$7.6 billion (Johns et al. 2001). In Broward County, Florida recreational fishers, divers and snorkelers that use the natural reef are prepared to pay \$83.6 million per year to maintain their natural reefs, \$55.9 million per year to maintain the existing artificial reefs, and \$15.7 million per year to add new artificial reefs (Johns et al. 2001).

3.1.6 Living Marine Resources and Essential Fish Habitat (EFH)

A primary mission of NOAA Fisheries (NMFS) is the stewardship of living marine resources through science-based conservation and management, and the promotion of healthy ecosystems. Living marine resources refer to the organisms that utilize, or otherwise rely upon, marine, estuarine, and riverine (tidal and non-tidal) resources during all or part of their life cycles. The passage of the Magnuson-Stevens Fishery Conservation and Management Act (MSFCMA) in 1976 and the Sustainable Fisheries Act of 1996 (SFA; reauthorization of the MSFCMA) authorized NMFS to manage fisheries within the 200-mile wide EEZ along the coasts of the U.S. and to address human

impacts on the marine environment and to prioritize identification and management of EFH.

Essential fish habitat is defined in the Magnuson-Stevens Fishery Conservation and Management Act (MSFCMA) as "those waters and substrate necessary to fish for spawning, breeding, feeding, or growth to maturity." Under the MSFCMA, EFH must be identified and conserved. Section 303(a)(7) of the MSFCMA requires the eight Regional Fishery Management Councils to identify and describe EFH for each life stage of the managed species within their jurisdiction. Under Section 305(b)(2) of the MSFCMA, Federal agencies are required to consult with the Secretary of Commerce on any action that may adversely affect EFH. If an activity falls beyond the scope of this EA and is thought to adverse impacts to EFH, consultation will occur with Office of Habitat Conservation, Habitat Protection division and the NOAA Fisheries Service Regional Officer at the Pacific Islands Regional Office.

CRED activities in the western Pacific in the MHI, the NWHI , American Samoa, the Territory of Guam, CNMI, and U.S. Pacific Island possessions may be located within areas identified as EFH for species managed by the Western Pacific Fisheries Management Council under the Western Pacific Fisheries Management Plan (FMP) for Bottomfish and Seamount Fisheries Groundfish. This Plan identifies EFH for seven species and life stages that may coincide with CRED activity areas: giant trevally, blacktip grouper, sea bass, ambon emperor, blueline snapper, thicklip trevally, and lunartail grouper. Projects in the western Pacific may also be located within other areas identified as EFH for: three species of black coral under the Precious Corals FMP, and two species and life stages of spiny lobster and kona crab under the Crustacean Fisheries FMP. There are 146 coral reef species listed in the Western Pacific Coral Reef FMP.

3.1.7 Endangered Species Act (ESA)

The ESA provides for the conservation of species that are in danger of extinction throughout all or a significant portion of their range, as well as designation of critical habitat for these species.

The EA lists and describes Pacific Ocean species of mammals and sea turtles that were listed or are proposed for listing as endangered or threatened as of the release of this report (Table 1).

Table 1: List of the Endangered or Threatened Species under the Endangered Species Act that are associated with coral reef ecosystems.

Status	Species Name
Mammals	
E	Hawaiian Monk Seal (<i>Monachus schauinslandi</i>)
Sea Turtles	
E, T	Green Turtle (<i>Chelonia mydas</i>)

E	Hawksbill Turtle (<i>Eretmochelys imbricata</i>)
E	Leatherback Sea Turtle (<i>Dermochelys coriacea</i>)

In addition to threatened and endangered species, NOAA Fisheries identifies and publishes a list of Species of Concern. Table 2 lists those species of concern that are associated with coral reef ecosystems. These include species potentially at risk and species with identified data deficiencies and uncertainties related to status and threats. This list increases public awareness about such species and stimulates cooperative research efforts to obtain the information necessary to evaluate species status and threats. It also fosters voluntary efforts to conserve the species before listing becomes warranted.

Table 2 – Species of Concern that are associated with coral reef ecosystems.

Common name	Scientific Name	Location
<i>Fish</i>		
humphead wrasse	<i>Cheilinus undulatus</i>	Indo-Pacific-Red Sea to the Tuamotus, north to the Ryukyus, east to Wake Islands, south to New Caledonia, throughout Micronesia; includes U.S. territories of Guam and American Samoa
bumphead parrotfish	<i>Bolbometopon muricatum</i>	Indo-Pacific-Red Sea and East Africa to the Line Islands and Samoa; north to Yaeyama, south to the Great Barrier Reef and New Caledonia; Palau, Caroline, Mariana in Micronesia; in U.S. it occurs in Guam, American Samoa, CNMI and the Pacific Remote Island Areas (Wake Islands).
<i>Brachiopods</i>		
Inarticulate brachiopod	<i>Lingula reevii</i>	Pacific-Hawaii, only Kaneohe Bay
<i>Anthozoans (corals)</i>		
Hawaiian reef coral	<i>Montipora dilitata</i>	Pacific-Hawaii (Kaneohe Bay, Midway atoll, and Maro Reef).

4. ENVIRONMENTAL CONSEQUENCES

This section of the EA presents an evaluation of the anticipated environmental impacts that would result from implementation of each of the program types (alternatives) described in section 2. Due to the variety of activities carried out under each of the programs, general types of activities, methodology and general characteristic impacts are described for each project type. The potential impacts would be applicable to the affected environment described in section 3. A qualitative assessment of the level of significance of potential impacts is included, in terms of minor or moderate positive and/or negative short-term and long term impacts. Direct, indirect, and cumulative impacts are defined as follows:

Direct impacts are those caused by the proposed action or no action alternative that occur at the same time and place.

Indirect impacts are those caused or induced by the proposed action or no action alternative that occur later in time or are removed in distance from the time and location of the proposed action.

Cumulative impacts are the impacts on the environment that result from the incremental effect of the proposed action, added to other past, present, or reasonably foreseeable future actions.

4.1 General Impacts of Activities Supported

The three categories of the CRED activities are monitoring, benthic habitat mapping and characterization, and marine debris removal. The purpose of the research and monitoring component is to increase scientific understanding of fragile coral reef ecosystems so that others may better identify, recommend, and implement management actions that will effectively protect and enhance coral reef ecosystems. The marine debris removal component will directly protect sensitive coral reefs by removing nets and other marine debris that can and are damaging the reefs. All research, monitoring, and debris removal actions are non-invasive, do not involve manipulations of the environment, and only have temporary minor impacts while conducting the work (e.g., diver presence temporarily affects behavior of fishes) which disappear once the divers leave the water. In other cases, multiple projects will be carried out within one area, but the activities do not involve the same organisms (e.g., one group may monitor coral and another monitors fish and benthic communities). Marine debris removal will remove damaging nets and other debris using methods that do not further damage the coral reefs during removal. No cumulative impacts over the life of the CRED will occur for these reasons.

The following sections include 1) discussion of the objectives and impacts of activities funded under each of the three alternatives; and 2) description of the major project areas and types of activities, along with an indication of the nature of impacts that would be associated with monitoring, benthic habitat mapping and characterization, and marine debris removal.

4.2. Monitoring

Long-term monitoring is key to understanding how coral reef ecosystems function and how they change over time in response to natural or anthropogenic forces. Monitoring provides an essential context for designing field research experiments and understanding their results. Monitoring can also play a vital role in guiding and supporting the establishment of complex or potentially controversial management strategies such as no-take ecological reserves, fishing gear restrictions, or habitat restoration, and determining their effectiveness. Monitoring programs assist resource management agencies by tracking trends in coral reef ecosystem health and identifying patterns in their condition - before irreparable harm occurs.

Monitoring efforts would include conducting:

- detailed assessments of the corals, other invertebrates, fish, and algae using multiple methods;
- spatial towed-diver surveys of benthic composition and the abundance and distribution of ecologically/economically important fish and macro-invertebrate taxa; and
- bioacoustic surveys of water column biomass; and
- multi-platform oceanographic monitoring.

Integration of concurrent observations of the marine resources and their benthic and oceanographic habitats allows improved understanding of the spatial and temporal variability and complex biophysical linkages controlling these ecosystems. Long-term multidisciplinary monitoring across the major functional components of these ecosystems provides resource managers critical information needed to implement ecosystem-based management.

CRED has conducted biennial multidisciplinary monitoring of reefs on 54 islands, atolls, and reefs in the tropical Pacific. Spatial and temporal monitoring of biological populations and oceanographic processes allow an unprecedented integrated baseline ecosystem understanding of healthy reef environments. Continued monitoring will enable reef managers to detect and act on significant natural or anthropogenic changes to these ecosystems.

In addition, CRED deploys *in-situ* instrumentation at long-term observing system sites in the NWHI, American Samoa, the U.S. Line and Phoenix Islands, Guam, CNMI, and other atolls and islands of the Pacific to provide time-series datasets which are utilized by NOAA's Coral Reef Watch program for the near real-time monitoring, modeling and reporting of physical environmental conditions (such as wind speed, air temperature, atmospheric pressure, solar radiation, water temperatures, current velocities, and water quality parameters) which may adversely affect coral reef ecosystems.

CRED also recognizes the need for more information on planktonic dispersal and connectivity among reef fish metapopulations. This information is crucial for identifying

the stocks necessary for developing scientifically based management strategies and for the siting of no-take MPAs within regions based on recognition of Habitat Areas of Particular Concern (HAPC) and other EFHs as well as the probability of organisms dispersing among sited MPAs.

CRED's proposed action includes:

- 1) testing the model that the planktonic environment influencing the developmental histories of reef fish larvae differ between the NWHI and the MHI and that this results in corresponding differences in elemental chemistry or growth rate history encoded in the otoliths of reef fishes;
- 2) examining benthic recruitment using arrays of settlements plates spaced along the extent of the NWHI; and
- 3) examining upper ocean circulation, larval dispersal and recruitment, and archipelago connectivities through hydrodynamic modeling.

Finally, CRED is in the process of developing state-of-the-art, autonomous deep-water (500m) camera bait stations to be used as a cost-effective, non-extractive method to assess and monitor exploited bottomfish populations that are ecologically linked to the coral reef ecosystems in the Pacific, as well as other important deep water species. CRED's proposed action is to deploy these camera bait stations within and outside of MPAs and other fishing exclusion zones as a means to evaluate their effectiveness throughout the U.S. Pacific Islands.

4.2.1 Monitoring Techniques

Monitoring of fish, invertebrates and algae includes rapid ecological assessments developed by the CRED. Monitoring may be conducted by divers towed behind a research vessel, towed or tethered recording equipment (e.g., video cameras, ROVs, still cameras) operated from the vessel, or SCUBA divers and snorkelers. In-water techniques (e.g., diver and snorkeler surveys) for motile organisms can include stationary point counts, roving surveys and belt transect surveys. For the first two approaches, the diver hovers above the reef or swims along a predefined path and records the selected species on underwater data sheets; there is no contact made with the reef, benthic substrates or coral reef organisms. The third approach involves the deployment of nylon transect tapes either prior to conducting the survey, or while swimming along the selected path, with the tape used solely as a guide to determine the area of examination. The tape causes minimal impacts (e.g., corals will retract their tentacles) and will not injure animals because it is neutrally buoyant.

Monitoring of benthic communities can also be conducted using transect tapes, as well as quadrats. In general, these surveys involve deployment of the transect in a line parallel to or perpendicular to depth gradients, and the organisms of interest are examined in a belt (a predetermined width on either side of the line) directly under the tape, or at certain points along the tape. Quadrats (PVC or hollow aluminum squares of various sizes that

may be subdivided into smaller areas by a grid) are laid gently on the substrate in a random or systematic pattern along a marked transect, and the organisms are assessed within the quadrat in a non-invasive manner.

Monitoring efforts can include random surveys, or repeat examination of the same area. For repeat surveys, researchers sometimes mark the bottom with stainless steel stakes or permanently affix quadrats to the reef. The rebar and quadrats are typically attached in hard ground, rubble or sediment areas in locations where they will not injure or damage benthic invertebrates, including coral. Monitoring involves visual assessments as well as photographic and video documentation.

Benthic habitat and reef fish monitoring activities are and will be conducted using non-destructive visual and photographic census techniques. All concurrent water quality measurements will be collected using passive gear and equipment (e.g., CTD meters). Minor short term impacts may be associated with in-water surveying and monitoring techniques (physical presence of divers and establishing transects), but when scientific methodologies and protocols are followed, those impacts are temporary. To date, no environmental impacts that would trigger the need for additional environmental assessment have been documented for surveying and monitoring activities.

Limited sampling of stony corals, algae, and other benthic invertebrates may be undertaken for laboratory analysis and to evaluate historical physical and environmental parameters. This includes removal of cores from large massive corals, removal of individual branches, removal of selected portions of a colony, such as an area affected by disease, or the collection of an entire colony or organism.

Cylindrical cores, typically 10-15 cm in diameter and 0.5-5 meters in length, are removed from large massive colonies and also from reef environments to assess rates and patterns of reef accretion, the composition or nature of fossil assemblages, coral growth for species with annual banding patterns, and a long term record correlating environmental change with fossil records. Coring requires use of an underwater hydraulic drill, pumps and coring equipment. CRED's standard practice to minimize potential environmental impacts (and to reduce the potential for colony mortality) involves the filling of holes left by coring with Portland cement or clay. CRED has modified the design of the underwater hydraulic drill so that pressured seawater is used to power the drill instead of hydraulic oil, thereby eliminating the possibility of a hydraulic oil leak.

Branches or portions of colonies (e.g., fragments, small cores) are collected for disease and health research (e.g., genetic studies, physiology and growth studies, infection experiments, histology). For laboratory studies, it has been determined that small cores do not need to be more than 3 cm in diameter (and less, depending on the experiment), with up to 10 cores removed from individual colonies (e.g., 5 from the diseased location and 5 from a remote location) and portions of branches representing only insignificant portions of the colony need to be collected. Previous studies have shown that corals are able to recover from this level of collection.

Activities involving the collection of whole organisms or parts of colonial organisms would occur only when the numbers of individuals are 1) reasonable and low enough such that they will have no significant impacts on the population of that species; 2) are taken using non-destructive techniques without damaging the environment or causing mortality to non-target species; and 3) do not include species that have undergone a substantial population decline and additional take will negatively affect the persistence of that population. There is no collection of species protected through other environmental mandates (e.g., threatened or endangered species). Furthermore, no collection would be allowed unless CRED has obtained all appropriate permits from the resource management agency responsible for managing that resource (e.g., Federal agency, state or territorial government, NOAA's National Marine Sanctuary Program, etc.).

Prior to approving a monitoring project, activities will be reviewed to ensure that they use approaches that are generally accepted by the coral reef community, that they are conducted such that the potential impacts are minimized, and only involve use of materials (e.g., transects that are small and light) that will not damage the coral or other organisms or substrate.

See Section 4.6 for details on mitigation measures that are required for monitoring.

4.2.2 Monitoring Impacts

Proposed activities may involve collection of corals, algae, invertebrates, and minor manipulations of the environment. These activities generally involve a relatively small number of individuals and minor short term impacts to the environment. These activities are only carried out if they will not: impact endangered species or have a significant impact on the habitat, ecosystem inhabitants, or social, cultural and environmental aspects of coral reef ecosystems using the criteria described above. These research activities contribute to an improved understanding of ecosystem function and health, and may identify possible actions and initiatives that could be undertaken to improve the condition of the ecosystem. However, they only result in a series of recommendations, and the implementation of the recommended actions and initiatives would be undertaken by the appropriate resource management agency, if they deem it worthwhile, and, if Federal agencies would take the action, this may result in a separate NEPA evaluation by that agency. No adverse impacts are foreseen using the protocols and criteria described in Section 4.2.1.

4.3 Mapping

Knowledge of benthic habitat types and distributions is essential for effective management of marine ecosystems and the associated resources that could potentially be exploited. Due to the high diversity and complexity of coral reef ecosystems, accurate characterization and mapping of these areas are particularly important. For this reason, the CRED has designed and initiated a comprehensive benthic habitat mapping and characterization program utilizing primarily acoustic and visual technologies to complement and support the satellite and airborne mapping activities of NOAA's National Ocean Service (NOS) in the U.S. Pacific Islands coral reef areas.

The goals of the benthic habitat mapping and characterization program of CRED are to:

- Develop effective tools to rapidly characterize and map benthic habitats of coral reef areas;
- Determine the spatial distributions, composition, extent and health of the benthic substrates;
- Determine and define the EFH and HAPC for the coral reef areas;
- Associate identified habitats with distributions of the biological components of the ecosystem, including fish, invertebrates, and algae.
- Determine depth or habitat-based boundaries to support MPAs and the Western Pacific Regional Fisheries Management Council Coral Reef Ecosystem Fisheries Management Plan;
- Provide high-resolution *in-situ* data to assist NOS in ground-truthing remote sensing-based mapping data of shallow water areas; and
- Examine changes over time of the distribution and health of selected habitats, particularly corals, algae, and sand.

4.3.1 Mapping Techniques

Until very recently, maps of coral reef areas of the U.S. Pacific Islands were generally poor and little data existed to accurately describe the location, extent, and health of these coral reef ecosystems. On-going NOAA collaborative efforts led by NOS have recently begun collecting aerial hyperspectral imagery and satellite-based multi-spectral imagery of clear shallow-water reef areas (0- <30 meters in depth) of the U.S. Pacific Islands. While these products are critical to developing quality maps, high-resolution *in-situ* observations are needed to validate or ground-truth this imagery. Moreover, many essential coral reef habitat areas are too deep (>30 meters in depth) to be observed by these remote sensing technologies.

Deeper reef environments are characterized and mapped using a multibeam bathymetry and backscatter system and/or towed side-scan sonar. Multibeam and side-scan sonar are attached to the research vessel and do not contact the benthos or any of the attached organisms. Ship-based multibeam echosounders collect bathymetry and acoustic imagery in depths of 0 meters to 3000 meters. The echosounder creates a very high frequency, low power signal with a small duty cycle, in that each ping is very short and individual pings are widely separated. This results in a sum total of a very low amount of energy at a very high pitch, which has been determined to be above the hearing frequency of marine mammals and thus will have no impact on protected species.

CRED scientists are leading the efforts in the U.S. Pacific Islands to provide the *in-situ*

observations and high-resolution acoustic mapping products necessary to complete the habitat mapping and characterization over the full range of depths necessary to effectively manage coral reef ecosystems. Tools and methods currently in use by CRED scientists include towed diver habitat/fish surveys, acoustic mapping and characterization, towed vehicle photography, and remote sensing.

See Section 4.6 for details on mitigation measures that are required during mapping activities.

4.3.2 Mapping Impacts

Based on this information, a determination has been made by NOAA Fisheries Office of Protected Resources that signals produced by the echosounders are above the hearing frequency of marine mammals and sea turtles, and thus have no impact on marine mammals or other protected species.

This activity does not involve any diving or direct contact with the marine environment, and will have no short term or cumulative impact on the marine environment.

4.4 Marine Debris Removal

Surveys of the NWHI from 1979 to 1983 reported relatively pristine reefs, but by 1996 the reefs were suffering from substantial human-caused damage, primarily due to the effects of derelict fishing gear, such as "ghost nets" which have broken away and float freely in the ocean. While land-based sources may be responsible for the majority of marine debris in the world's oceans, debris of a maritime origin may pose the greatest threat to ecosystem health in the NWHI because the North Pacific Subtropical Convergence Zone provides a mechanism for debris accumulation in this region. Much of this accumulated debris is ultimately deposited on the coral reefs and beaches of the NWHI.

The movement of derelict fishing gear across shallow atolls threatens the ecological balance of the reef community. Once derelict fishing gear snags on the NWHI coral reefs, it begins a cycle of destructive activity. Derelict fishing gear modifies the reef structure by damaging the coral substrate that comprises the physical habitat for reef biota. After debris snags on coral reefs, wave action acting on the debris breaks the coral heads on which debris is fixed, liberating the debris to subsequently snag and similarly damage additional coral. This action continues until the nets are removed, or become adequately weighted with abraded coral to sink. The damage caused by such nets can be substantial and continual.

Derelict fishing nets also pose a serious and lethal threat to fish, marine mammals, sea turtles, crustaceans such as crabs, and diving sea birds by entangling, catching and subsequently drowning them. The reef communities of the NWHI support abundant populations of species protected under the Endangered Species Act, Marine Mammal Protection Act, and the Migratory Bird Treaty Act.. All marine turtles that occur in Hawaiian waters have documented entanglement records including the endangered hawksbill, olive ridley, and leatherback sea turtles, as well as threatened green sea turtles. Entanglement in derelict fishing gear is also a known cause of mortality to the critically endangered Hawaiian monk seal. All six extant breeding subpopulations of this seal are located in the NWHI, and this species suffers the greatest entanglement rates (averaging 15 seals per year) of any pinniped (seal or sea lion) reported to date.

4.4.1 Marine Debris Removal Techniques

Since 2001, specially-trained teams of coral reef/marine debris specialist divers began systematically surveying the reefs of the NWHI using towed snorkelers behind small boats to locate derelict fishing gear. Once a net is located, its location is marked using GPS coordinates and measurements and other descriptive information regarding the net and the classification and condition of the adjacent habitat in which it was found are noted. The debris is then carefully removed by hand to avoid any further damage to the reef during the removal process.

In addition to debris removal, a subsample of the debris is collected and additional information on the debris type, size, and other physical characteristics are documented in order to assist in the identification of the likely fishery from which the debris originated. Debris samples are being archived for future reference.

CRED is also assisting in the development of innovative technologies to proactively mitigate the problem by identifying and removing debris from the open ocean before it has an opportunity to reach a reef and become ensnared. For example, CRED scientists are developing satellite imagery data products that monitor the location of wind-driven oceanic convergence zones and frontal features, which are known to accumulate marine debris. This information, in collaboration with NOAA's National Environmental Satellite Data Information Service analyses of satellite synthetic aperture radar data, can then be used to direct airborne surveys to attempt to locate and remove individual pieces of marine debris before they can cause damage to coral reefs and entangle more marine life.

See Section 4.6 for more details on mitigation measures required during removal actions.

4.4.2 Marine Debris Impacts

No adverse impacts would be caused by carefully removing derelict nets from coral reefs and from removing non-entangled nets from the open ocean. For safety reasons, the NOAA vessel or NOAA-chartered transport vessel conducting field operations for marine debris removal must anchor before launching small boats for day-to-day operations. Anchoring impacts are minimal; anchoring sites are chosen in low coral cover areas to minimize impact at each site, and sites are also used repeatedly on an annual basis (when possible) to minimize cumulative impacts.

4.5 Cumulative Impacts

The CEQ defines cumulative effects as, "the impact on the environment which results from the incremental impact of the action when added to other past, present, and reasonably foreseeable future actions regardless of what agency (Federal or non-Federal) or person undertakes such other actions," (CEQ, 1997a). As monitoring, mapping, and removing marine debris would not cause any adverse impacts individually or if conducted many times as evaluated in sections 4.2.2, 4.3.2, and 4.4.2, there is no potential for cumulative adverse impacts associated with the proposed actions as described, with the mitigation measures identified in section 4.6, now or in the future, wherever the actions would be taken.

4.6 Mitigation Measures

CRED activities are carefully reviewed to ensure that appropriate emphasis has been placed on efforts to mitigate impacts. Some examples of the type of mitigation that CRED would require are illustrated below:

- Activities involving the sampling of portions of colonies through the removal of one or more cores will only be approved if the researcher has made provisions to fill the core hole with clay or epoxy. In addition, CRED has modified the design of the underwater hydraulic drill so that pressured seawater is used to power the drill instead of hydraulic oil, thereby eliminating the possibility of a hydraulic oil leak.
- SCUBA divers that will be involved in in-water research and monitoring have proper training in diving, and are capable of exhibiting responsible dive practices (e.g., proper buoyancy) such that they do not injure organisms or cause unnecessary habitat impacts.
- Any activities involving the possibility of inadvertently spreading invasive species utilize sufficient precautionary measures; for example, for diving activities, all diving gear is rinsed in a bleach solution at the end of each day in the field, and vessels and all gear are sanitized before each departure from port.
- Activities involving the limited collection of species during monitoring efforts must include measures to ensure that equipment is not placed or used in locations where it will damage habitats.

5. Compliance with Other Environmental and Administrative Review Requirements

CRED activities are subject to authorities such as the National Environmental Policy Act, the Endangered Species Act, and the Magnuson-Stevens Fisheries Conservation and Management Act. NOAA is responsible for ensuring that projects comply with these and other relevant authorities.

5.1 Environmental Laws

5.1.1 Coastal Barriers Resource Act (CoBRA)

In order to receive federal funds, all proposed projects located on undeveloped coastal barrier islands designated in the CoBRA system must be consistent with the purposes of minimizing: the loss of human life; wasteful federal expenditures; and damage to fish, wildlife, and other natural resources. No adverse impacts as a result of implementation of the CRED activities are anticipated or expected to undeveloped barrier islands.

5.1.2 Endangered Species Act (ESA)

No activities implemented by the CRED will adversely impact any endangered or threatened species listed under the ESA, and would actually benefit many species that depend upon coral reefs for some of their life cycle. Also, removing marine debris that can entangle protected species is also a beneficial action. The entire purpose of the CRED is to conduct research and monitoring, and to find solutions to problems plaguing the coral reef environments such as invasive species and diseases, to improve FMPs, and to improve scientific knowledge and understanding of coral reef ecosystems.

5.1.3 Magnuson-Stevens Fisheries Conservation and Management Act (MSFCMA)

The MSFCMA requires that Federal agencies consult with NMFS regarding any action authorized, funded, or undertaken that may adversely affect EFH for Federally managed fish. The CRED has positive impacts on EFH through conducting studies to improve science needed to better understand the important role of EFH. Should any form of manipulative research be undertaken in EFH that has the potential to cause temporary adverse impacts within EFH, appropriate consultations between the granting agency and NMFS Office of Habitat Conservation will be undertaken to avoid, minimize or offset any adverse impacts associated with the research or monitoring ensuring no long-term or cumulative impacts result from the research. Any consultation procedures will follow the procedures outlined at 50 CFR 600.920.

5.1.4 National Historic Preservation Act (NHPA)

Under the provisions of Section 106 of the National Historic Preservation Act of 1966, the Secretary of the Interior has compiled a national register of sites and buildings of significant importance to America's history. The CRED will not cause any negative impacts to registered sites or buildings on shore or any such submerged site, such as shipwrecks.

5.1.5 Marine Mammal Protection Act

The Marine Mammal Protection Act authorizes the NMFS to take measures to protect marine mammals that may involve setting aside habitat required by various life stages, although the chief provision is the prohibition on "taking" marine mammals directly or indirectly. The only type of activity that may affect marine mammals are marine debris removal efforts that reduce the amount of derelict fishing gear in the ocean, helping to prevent potential marine mammal entanglements, thereby providing direct short and long term environmental benefits.

5.2 Social, Economic, and Administrative Laws and Executive Orders

5.2.1 Environmental Justice

Consistent with the President's Executive Order on Environmental Justice (Feb. 11, 1994) and the Department of Commerce's Environmental Justice Strategy, CRED projects will not have any disproportionately high and adverse human health or environmental effects on minority or low income populations.

5.2.2 Executive Order 12866

Implementation of the CRED activities does not constitute a "significant regulatory action" as defined by Executive Order 12866 because: (1) it will not have an annual effect on the economy of \$100 million or more, or adversely affect in a material way the economy, a sector of the economy, productivity, competition, jobs, the environment, public health or safety, or State, local or tribal governments or communities; (2) it will not create a serious inconsistency or otherwise interfere with an action taken or planned by another agency; (3) it will not materially alter the budgetary impact of entitlements, grants, user fees, or loan programs or the rights and obligations

of recipients thereof; and (4) it will not raise novel legal or policy issues arising out of legal mandates, the President's priorities, or the principles set forth in the Executive Order.

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Presidential Documents

Executive Order 13196 of January 18, 2001

Final Northwestern Hawaiian Islands Coral Reef Ecosystem Reserve

By the authority vested in me as President by the Constitution and the laws of the United States of America, including the National Marine Sanctuaries Act, (16 U.S.C. 1431 *et seq.*), and the National Marine Sanctuaries Amendments Act of 2000, Public Law 106–513, and in furtherance of the purposes of the Magnuson-Stevens Fishery Conservation and Management Act (16 U.S.C. 1801 *et seq.*), Marine Protection, Research, and Sanctuaries Act (33 U.S.C. 1401 *et seq.*), Coastal Zone Management Act (16 U.S.C. 1451 *et seq.*), Endangered Species Act (16 U.S.C. 1531 *et seq.*), Marine Mammal Protection Act (16 U.S.C. 1362 *et seq.*), Clean Water Act (33 U.S.C. 1251 *et seq.*), National Historic Preservation Act (16 U.S.C. 470 *et seq.*), National Wildlife Refuge System Administration Act (16 U.S.C. 668dd–e.e.), and other pertinent statutes, it is ordered as follows:

Sec. 1. Preamble. On December 4, 2000, I issued Executive Order 13178 establishing the Northwestern Hawaiian Islands Coral Reef Ecosystem Reserve (Reserve) pursuant to my authority under the National Marine Sanctuaries Act, as amended by the National Marine Sanctuary Amendments Act of 2000 (Act). In establishing the Reserve, I set forth a number of conservation measures and created specific Reserve Preservation Areas to protect the coral reef ecosystem and related marine resources and species (resources) of the Reserve. The Act provides that no closure areas can become permanent without adequate notice and comment. Accordingly, I proposed to make permanent the Reserve Preservation Areas and initiated a 30-day comment period on this proposal. I also sought comment on the conservation measures for the Reserve. On my behalf, the Secretary of Commerce received the public comments and held seven public hearings, including six throughout Hawaii. After considering the comments expressed at the hearings and received in writing, I have determined to make permanent the Reserve Preservation Areas with certain modifications set forth below. Further, I have modified certain conservation measures to address concerns raised, particularly regarding commercial and recreational fishing within the Reserve. With this action, the establishment of the Reserve under the Act, including the conservation measures and permanent Reserve Preservation Areas, is complete. The Secretary of Commerce will manage the Reserve pursuant to Executive Order 13178, as modified by this order, under the Act. The Secretary shall also initiate the process to designate the Reserve as a National Marine Sanctuary, as required by the Act.

Sec. 2. Purpose. The purpose of this order is to amend Executive Order 13178, and to make permanent Reserve Preservation Areas, as modified below, to ensure the comprehensive, strong, and lasting protection of the resources of the Northwestern Hawaiian Islands.

Sec. 3. Amendments to Sections 7 of Executive Order 13178.

1. Section 7(a)(1) of Executive Order 13178 is hereby amended by revising the first sentence to read as follows:

“Commercial Fishing. All currently existing commercial Federal fishing permits and current levels of fishing effort and take, which also includes the non-permitted level of trolling for pelagic species by currently permitted bottom fishers, as determined by the Secretary and pursuant to regulations in effect on December 4, 2000, shall be capped as follows:”

2. Section 7(a)(1)(C) of Executive Order 13178 is hereby revised to read as follows:

“(C) The annual level of aggregate take under all permits of any particular type of fishing may not exceed the aggregate level of take under all permits of that type of fishing as follows:

(1) Bottomfishing—the annual aggregate level for each permitted bottomfisher shall be that permittee’s individual average taken over the 5 years preceding December 4, 2000, as determined by the Secretary, provided that the Secretary, in furtherance of the principles of the reserve, may make a one-time reasonable increase to the total aggregate to allow for the use of two Native Hawaiian bottomfishing permits;

(2) All other commercial fishing—the annual aggregate level shall be the permittee’s individual take in the year preceding December 4, 2000, as determined by the Secretary.”

3. A new section 7(a)(1)(F) is hereby added to Executive Order 13178 and reads as follows:

“(F) Trolling for pelagic species shall be capped based on reported landings for the year preceding December 4, 2000.”

4. Section 7(b)(4) is revised to read as follows:

“(4) Discharging or depositing any material or other matter into the Reserve, or discharging or depositing any material or other matter outside the Reserve that subsequently enters the Reserve and injures any resource of the Reserve, except:

(A) fish parts (i.e., chumming materia or bait) used in and during fishing operations authorized under this order;

(B) biodegradable effluent incident to vessel use and generated by a marine sanitation device in accordance with section 312 of the Federal Water Pollution Control Act, as amended;

(C) water generated by routine vessel operations (e.g., deck wash down and graywater as defined in section 312 of the Federal Water Pollution Control Act), excluding oily wastes from bilge pumping; or

(D) cooling water from vessels or engine exhaust; and”.

Sec. 4. Amendments to Sections 8 of Executive Order 13178.

1. Section 8 of Executive Order 13178 is modified by substituting “provided that commercial bottomfishing and commercial and recreational trolling for pelagic species in accordance with the requirements of sections 7(a)(1) and 7(a)(2) of this order, respectively,” for “provided that bottomfishing in accordance with the requirements of section 7(a)(1)” everywhere the latter phrase appears in section 8.

2. Section 8(a)(1)(A) is modified by substituting “a mean depth of 25 fm” for “a mean depth of 10fm.”

3. Section 8(a)(1)(B) is modified by substituting “a mean depth of 25 fm” for “a mean depth of 20fm.”

4. Section 8(a)(1)(D) is modified by substituting “a mean depth of 25 fm” for “a mean depth of 10fm.”

5. Section 8(a)(1)(E) is modified by substituting “a mean depth of 25 fm” for “a mean depth of 20fm.”

6. Section 8(a)(1)(G) is modified by substituting “a mean depth of 25 fm” for “a mean depth of 50fm.”

7. Section 8(a)(1)(I) is revised to read “Kure Atoll.”

8. Sections 8(a)(2)(D) and (E) are hereby deleted and a new section 8(a)(3) is hereby substituted as follows:

“(3) Twelve nautical miles around the approximate geographical centers of

(A) The first bank west of St. Rogation Bank, east of Gardner Pinnacles, provided that commercial bottomfishing and commercial and recreational trolling for pelagic species in accordance with the requirements of sections 7(a)(1) and 7(a)(2) of this order, shall be allowed to continue for a period of 5 years from the date of this order; and

(B) Raita Bank, provided that commercial bottomfishing and commercial and recreational trolling for pelagic species in accordance with the requirements of sections 7(a)(1) and 7(a)(2) of this order, shall be allowed to continue for a period of 5 years from the date of this order; and

(C) Provided that both banks described above in (3)(A) and (3)(B) shall only continue to allow commercial bottomfishing and commercial and recreational trolling for pelagic species after the 5-year time period if it is determined that continuation of such activities will have no adverse impact on the resources of these banks.”

Sec. 5. Reserve Preservation Areas. The Reserve Preservation Areas, as modified in sections 3 and 4 of this order, are hereby made permanent in accordance with the Act.

Sec. 6. Judicial Review. This order does not create any right or benefit, substantive or procedural, enforceable in law or equity by a party against the United States, its agencies, its officers, or any person.



THE WHITE HOUSE,
January 18, 2001.

Presidential Documents

Title 3—**Executive Order 13089 of June 11, 1998****The President****Coral Reef Protection**

By the authority vested in me as President by the Constitution and the laws of the United States of America and in furtherance of the purposes of the Clean Water Act of 1977, as amended (33 U.S.C. 1251, *et seq.*), Coastal Zone Management Act (16 U.S.C. 1451, *et seq.*), Magnuson-Stevens Fishery Conservation and Management Act (16 U.S.C. 1801, *et seq.*), National Environmental Policy Act of 1969, as amended (42 U.S.C. 4321, *et seq.*), National Marine Sanctuaries Act, (16 U.S.C. 1431, *et seq.*), National Park Service Organic Act (16 U.S.C. 1, *et seq.*), National Wildlife Refuge System Administration Act (16 U.S.C. 668dd-ee), and other pertinent statutes, to preserve and protect the biodiversity, health, heritage, and social and economic value of U.S. coral reef ecosystems and the marine environment, it is hereby ordered as follows:

Section 1. Definitions. (a) “U.S. coral reef ecosystems” means those species, habitats, and other natural resources associated with coral reefs in all maritime areas and zones subject to the jurisdiction or control of the United States (e.g., Federal, State, territorial, or commonwealth waters), including reef systems in the south Atlantic, Caribbean, Gulf of Mexico, and Pacific Ocean. (b) “U.S. Coral Reef Initiative” is an existing partnership between Federal agencies and State, territorial, commonwealth, and local governments, nongovernmental organizations, and commercial interests to design and implement additional management, education, monitoring, research, and restoration efforts to conserve coral reef ecosystems for the use and enjoyment of future generations. The existing U.S. Islands Coral Reef Initiative strategy covers approximately 95 percent of U.S. coral reef ecosystems and is a key element of the overall U.S. Coral Reef Initiative. (c) “International Coral Reef Initiative” is an existing partnership, founded by the United States in 1994, of governments, intergovernmental organizations, multilateral development banks, nongovernmental organizations, scientists, and the private sector whose purpose is to mobilize governments and other interested parties whose coordinated, vigorous, and effective actions are required to address the threats to the world’s coral reefs.

Sec. 2. Policy. (a) All Federal agencies whose actions may affect U.S. coral reef ecosystems shall: (a) identify their actions that may affect U.S. coral reef ecosystems; (b) utilize their programs and authorities to protect and enhance the conditions of such ecosystems; and (c) to the extent permitted by law, ensure that any actions they authorize, fund, or carry out will not degrade the conditions of such ecosystems.

(b) Exceptions to this section may be allowed under terms prescribed by the heads of Federal agencies:

- (1) during time of war or national emergency;
- (2) when necessary for reasons of national security, as determined by the President;
- (3) during emergencies posing an unacceptable threat to human health or safety or to the marine environment and admitting of no other feasible solution; or
- (4) in any case that constitutes a danger to human life or a real threat to vessels, aircraft, platforms, or other man-made structures at sea, such as cases of *force majeure* caused by stress of weather or other act of God.

Sec. 3. *Federal Agency Responsibilities.* In furtherance of section 2 of this order, Federal agencies whose actions affect U.S. coral reef ecosystems, shall, subject to the availability of appropriations, provide for implementation of measures needed to research, monitor, manage, and restore affected ecosystems, including, but not limited to, measures reducing impacts from pollution, sedimentation, and fishing. To the extent not inconsistent with statutory responsibilities and procedures, these measures shall be developed in cooperation with the U.S. Coral Reef Task Force and fishery management councils and in consultation with affected States, territorial, commonwealth, tribal, and local government agencies, nongovernmental organizations, the scientific community, and commercial interests.

Sec. 4. *U.S. Coral Reef Task Force.* The Secretary of the Interior and the Secretary of Commerce, through the Administrator of the National Oceanic and Atmospheric Administration, shall co-chair a U.S. Coral Reef Task Force ("Task Force"), whose members shall include, but not be limited to, the Administrator of the Environmental Protection Agency, the Attorney General, the Secretary of the Interior, the Secretary of Agriculture, the Secretary of Commerce, the Secretary of Defense, the Secretary of State, the Secretary of Transportation, the Director of the National Science Foundation, the Administrator of the Agency for International Development, and the Administrator of the National Aeronautics and Space Administration. The Task Force shall oversee implementation of the policy and Federal agency responsibilities set forth in this order, and shall guide and support activities under the U.S. Coral Reef Initiative ("CRI"). All Federal agencies whose actions may affect U.S. coral reef ecosystems shall review their participation in the CRI and the strategies developed under it, including strategies and plans of State, territorial, commonwealth, and local governments, and, to the extent feasible, shall enhance Federal participation and support of such strategies and plans. The Task Force shall work in cooperation with State, territorial, commonwealth, and local government agencies, nongovernmental organizations, the scientific community, and commercial interests.

Sec. 5. *Duties of the U.S. Coral Reef Task Force.* (a) *Coral Reef Mapping and Monitoring.* The Task Force, in cooperation with State, territory, commonwealth, and local government partners, shall coordinate a comprehensive program to map and monitor U.S. coral reefs. Such programs shall include, but not be limited to, territories and commonwealths, special marine protected areas such as National Marine Sanctuaries, National Estuarine Research Reserves, National Parks, National Wildlife Refuges, and other entities having significant coral reef resources. To the extent feasible, remote sensing capabilities shall be developed and applied to this program and local communities should be engaged in the design and conduct of programs.

(b) *Research.* The Task Force shall develop and implement, with the scientific community, research aimed at identifying the major causes and consequences of degradation of coral reef ecosystems. This research shall include fundamental scientific research to provide a sound framework for the restoration and conservation of coral reef ecosystems worldwide. To the extent feasible, existing and planned environmental monitoring and mapping programs should be linked with scientific research activities. This Executive order shall not interfere with the normal conduct of scientific studies on coral reef ecosystems.

(c) *Conservation, Mitigation, and Restoration.* The Task Force, in cooperation with State, territorial, commonwealth, and local government agencies, nongovernmental organizations, the scientific community and commercial interests, shall develop, recommend, and seek or secure implementation of measures necessary to reduce and mitigate coral reef ecosystem degradation and to restore damaged coral reefs. These measures shall include solutions to problems such as land-based sources of water pollution, sedimentation, detrimental alteration of salinity or temperature, over-fishing, over-use, collection of coral reef species, and direct destruction caused by activities such as recreational and commercial vessel traffic and treasure salvage. In developing these measures, the Task Force shall review existing legislation

to determine whether additional legislation is necessary to complement the policy objectives of this order and shall recommend such legislation if appropriate. The Task Force shall further evaluate existing navigational aids, including charts, maps, day markers, and beacons to determine if the designation of the location of specific coral reefs should be enhanced through the use, revision, or improvement of such aids.

(d) *International Cooperation.* The Secretary of State and the Administrator of the Agency for International Development, in cooperation with other members of the Coral Reef Task Force and drawing upon their expertise, shall assess the U.S. role in international trade and protection of coral reef species and implement appropriate strategies and actions to promote conservation and sustainable use of coral reef resources worldwide. Such actions shall include expanded collaboration with other International Coral Reef Initiative ("ICRI") partners, especially governments, to implement the ICRI through its Framework for Action and the Global Coral Reef Monitoring Network at regional, national, and local levels.

Sec. 6. This order does not create any right or benefit, substantive or procedural, enforceable in law or equity by a party against the United States, its agencies, its officers, or any person.



THE WHITE HOUSE,
June 11, 1998.

APPENDIX A

CORAL REEF CONSERVATION ACT OF 2000 [P.L. 106-562; 16 U.S.C. 6401 et seq; December 23, 2000]

TITLE II--CORAL REEF CONSERVATION

SEC. 201. SHORT TITLE.

This title may be cited as the 'Coral Reef Conservation Act of 2000'.

SEC. 202. PURPOSES.

The purposes of this title are--

- (1) to preserve, sustain, and restore the condition of coral reef ecosystems;
- (2) to promote the wise management and sustainable use of coral reef ecosystems to benefit local communities and the Nation;
- (3) to develop sound scientific information on the condition of coral reef ecosystems and the threats to such ecosystems;
- (4) to assist in the preservation of coral reefs by supporting conservation programs, including projects that involve affected local communities and nongovernmental organizations;
- (5) to provide financial resources for those programs and projects; and
- (6) to establish a formal mechanism for collecting and allocating monetary donations from the private sector to be used for coral reef conservation projects.

SEC. 203. NATIONAL CORAL REEF ACTION STRATEGY.

(a) **IN GENERAL-** Not later than 180 days after the date of the enactment of this Act, the Administrator shall submit to the Committee on Commerce, Science, and Transportation of the Senate and to the Committee on Resources of the House of Representatives and publish in the Federal Register a national coral reef action strategy, consistent with the purposes of this title. The Administrator shall periodically review and revise the strategy as necessary. In

developing this national strategy, the Secretary may consult with the Coral Reef Task Force established under Executive Order 13089 (June 11, 1998).

(b) GOALS AND OBJECTIVES- The action strategy shall include a statement of goals and objectives as well as an implementation plan, including a description of the funds obligated each fiscal year to advance coral reef conservation. The action strategy and implementation plan shall include discussion of-

- (1) coastal uses and management;
- (2) water and air quality;
- (3) mapping and information management;
- (4) research, monitoring, and assessment;
- (5) international and regional issues;
- (6) outreach and education;
- (7) local strategies developed by the States or Federal agencies, including regional fishery management councils; and
- (8) conservation, including how the use of marine protected areas to serve as replenishment zones will be developed consistent with local practices and traditions.

SEC. 204. CORAL REEF CONSERVATION PROGRAM.

(a) GRANTS- The Secretary, through the Administrator and subject to the availability of funds, shall provide grants of financial assistance for projects for the conservation of coral reefs (hereafter in this title referred to as 'coral conservation projects'), for proposals approved by the Administrator in accordance with this section.

(b) MATCHING REQUIREMENTS-

(1) Fifty percent- Except as provided in paragraph (2), Federal funds for any coral conservation project under this section may not exceed 50 percent of the total cost of such project. For purposes of this paragraph, the non-Federal share of project costs may be provided by in-kind contributions and other noncash support.

(2) WAIVER- The Administrator may waive all or part of the matching requirement under paragraph (1) if the Administrator determines that no reasonable means are available through which applicants can meet the matching requirement and the probable benefit of such project outweighs the public interest in such matching requirement.

(c) **ELIGIBILITY-** Any natural resource management authority of a State or other government authority with jurisdiction over coral reefs or whose activities directly or indirectly affect coral reefs, or coral reef ecosystems, or educational or nongovernmental institutions with demonstrated expertise in the conservation of coral reefs, may submit to the Administrator a coral conservation proposal under subsection (e).

(d) **GEOGRAPHIC AND BIOLOGICAL DIVERSITY-** The Administrator shall ensure that funding for grants awarded under subsection (b) during a fiscal year are distributed in the following manner:

(1) No less than 40 percent of funds available shall be awarded for coral conservation projects in the Pacific Ocean within the maritime areas and zones subject to the jurisdiction or control of the U.S..

(2) No less than 40 percent of the funds available shall be awarded for coral conservation projects in the Atlantic Ocean, the Gulf of Mexico, and the Caribbean Sea within the maritime areas and zones subject to the jurisdiction or control of the U.S..

(3) Remaining funds shall be awarded for projects that address emerging priorities or threats, including international priorities or threats, identified by the Administrator. When identifying emerging threats or priorities, the Administrator may consult with the Coral Reef Task Force.

(e) **PROJECT PROPOSALS-** Each proposal for a grant under this section shall include the following:

(1) The name of the individual or entity responsible for conducting the project.

(2) A description of the qualifications of the individuals who will conduct the project.

(3) A succinct statement of the purposes of the project.

(4) An estimate of the funds and time required to complete the project.

(5) Evidence of support for the project by appropriate representatives of States or other government jurisdictions in which the project will be conducted.

(6) Information regarding the source and amount of matching funding available to the applicant.

(7) A description of how the project meets one or more of the criteria in subsection (g).

(8) Any other information the Administrator considers to be necessary for evaluating the eligibility of the project for funding under this title.

(f) **PROJECT REVIEW AND APPROVAL-**

(1) IN GENERAL- The Administrator shall review each coral conservation project proposal to determine if it meets the criteria set forth in subsection (g).

(2) REVIEW; APPROVAL OR DISAPPROVAL- Not later than 6 months after receiving a project proposal under this section, the Administrator shall--

(A) request and consider written comments on the proposal from each Federal agency, State government, or other government jurisdiction, including the relevant regional fishery management councils established under the Magnuson-Stevens Fishery Conservation and Management Act (16 U.S.C. 1801 et seq.), or any National Marine Sanctuary, with jurisdiction or management authority over coral reef ecosystems in the area where the project is to be conducted, including the extent to which the project is consistent with locally-established priorities;

(B) provide for the merit-based peer review of the proposal and require standardized documentation of that peer review;

(C) after considering any written comments and recommendations based on the reviews under subparagraphs (A) and (B), approve or disapprove the proposal; and

(D) provide written notification of that approval or disapproval to the person who submitted the proposal, and each of those States and other government jurisdictions that provided comments under subparagraph (A).

(g) CRITERIA FOR APPROVAL- The Administrator may not approve a project proposal under this section unless the project is consistent with the coral reef action strategy under section 203 and will enhance the conservation of coral reefs by--

(1) implementing coral conservation programs which promote sustainable development and ensure effective, long-term conservation of coral reefs;

(2) addressing the conflicts arising from the use of environments near coral reefs or from the use of corals, species associated with coral reefs, and coral products;

(3) enhancing compliance with laws that prohibit or regulate the taking of coral products or species associated with coral reefs or regulate the use and management of coral reef ecosystems;

(4) developing sound scientific information on the condition of coral reef ecosystems or the threats to such ecosystems, including factors that cause coral disease;

(5) promoting and assisting to implement cooperative coral reef conservation projects that involve affected local communities, nongovernmental organizations, or others in the private sector;

(6) increasing public knowledge and awareness of coral reef ecosystems and issues regarding their long term conservation;

(7) mapping the location and distribution of coral reefs;

(8) developing and implementing techniques to monitor and assess the status and condition of coral reefs;

(9) developing and implementing cost-effective methods to restore degraded coral reef ecosystems; or

(10) promoting ecologically sound navigation and anchorages near coral reefs.

(h) **PROJECT REPORTING-** Each grantee under this section shall provide periodic reports as required by the Administrator. Each report shall include all information required by the Administrator for evaluating the progress and success of the project.

(i) **CORAL REEF TASK FORCE-** The Administrator may consult with the Coral Reef Task Force to obtain guidance in establishing coral conservation project priorities under this section.

(j) **IMPLEMENTATION GUIDELINES-** Within 180 days after the date of the enactment of this Act, the Administrator shall promulgate necessary guidelines for implementing this section. In developing those guidelines, the Administrator shall consult with State, regional, and local entities involved in setting priorities for conservation of coral reefs and provide for appropriate public notice and opportunity for comment.

SEC. 205. CORAL REEF CONSERVATION FUND.

(a) **FUND-** The Administrator may enter into an agreement with a nonprofit organization that promotes coral reef conservation authorizing such organization to receive, hold, and administer funds received pursuant to this section. The organization shall invest, reinvest, and otherwise administer the funds and maintain such funds and any interest or revenues earned in a separate interest bearing account, hereafter referred to as the Fund, established by such organization solely to support partnerships between the public and private sectors that further the purposes of this Act and are consistent with the national coral reef action strategy under section 203.

(b) **AUTHORIZATION TO SOLICIT DONATIONS-** Pursuant to an agreement entered into under subsection (a) of this section, an organization may accept, receive, solicit, hold, administer, and use any gift to further the purposes of this title. Any moneys received as a gift shall be deposited and maintained in the Fund established by the organization under subsection (a).

(c) **REVIEW OF PERFORMANCE-** The Administrator shall conduct a continuing review of the grant program administered by an organization under this section. Each review shall

include a written assessment concerning the extent to which that organization has implemented the goals and requirements of this section and the national coral reef action strategy under section 203.

(d) ADMINISTRATION- Under an agreement entered into pursuant to subsection (a), the Administrator may transfer funds appropriated to carry out this title to an organization. Amounts received by an organization under this subsection may be used for matching, in whole or in part, contributions (whether in money, services, or property) made to the organization by private persons and State and local government agencies.

SEC. 206. EMERGENCY ASSISTANCE.

The Administrator may make grants to any State, local, or territorial government agency with jurisdiction over coral reefs for emergencies to address unforeseen or disaster-related circumstance pertaining to coral reefs or coral reef ecosystems.

SEC. 207. NATIONAL PROGRAM.

(a) IN GENERAL- Subject to the availability of appropriations, the Secretary may conduct activities to conserve coral reefs and coral reef ecosystems, that are consistent with this title, the National Marine Sanctuaries Act, the Coastal Zone Management Act of 1972, the Magnuson-Stevens Fishery Conservation and Management Act, the Endangered Species Act of 1973, and the Marine Mammal Protection Act of 1972.

(b) AUTHORIZED ACTIVITIES- Activities authorized under subsection (a) include--

- (1) mapping, monitoring, assessment, restoration, and scientific research that benefit the understanding, sustainable use, and long-term conservation of coral reefs and coral reef ecosystems;
- (2) enhancing public awareness, education, understanding, and appreciation of coral reefs and coral reef ecosystems;
- (3) providing assistance to States in removing abandoned fishing gear, marine debris, and abandoned vessels from coral reefs to conserve living marine resources; and
- (4) cooperative conservation and management of coral reefs and coral reef ecosystems with local, regional, or international programs and partners.

SEC. 208. EFFECTIVENESS REPORTS.

(a) GRANT PROGRAM- Not later than 3 years after the date of the enactment of this Act, the Administrator shall submit to the Committee on Commerce, Science, and Transportation of the Senate and the Committee on Resources of the House of Representatives a report that documents the effectiveness of the grant program under section 204 in meeting the purposes of this title. The report shall include a State-by-State summary of Federal and non-Federal

contributions toward the costs of each project.

(b) NATIONAL PROGRAM- Not later than 2 years after the date on which the Administrator publishes the national coral reef strategy under section 203 and every 2 years thereafter, the Administrator shall submit to the Committee on Commerce, Science, and Transportation of the Senate and the Committee on Resources of the House of Representatives a report describing all activities undertaken to implement that strategy, under section 203, including a description of the funds obligated each fiscal year to advance coral reef conservation.

SEC. 209. AUTHORIZATION OF APPROPRIATIONS.

(a) IN GENERAL- There are authorized to be appropriated to the Secretary to carry out this title \$16,000,000 for each of fiscal years 2001, 2002, 2003, and 2004, which may remain available until expended.

(b) ADMINISTRATION- Of the amounts appropriated under subsection (a), not more than the lesser of \$1,000,000 or 10 percent of the amounts appropriated, may be used for program administration or for overhead costs incurred by the National Oceanic and Atmospheric Administration or the Department of Commerce and assessed as an administrative charge.

(c) CORAL REEF CONSERVATION PROGRAM- From the amounts appropriated under subsection (a), there shall be made available to the Secretary \$8,000,000 for each of fiscal years 2001, 2002, 2003, and 2004 for coral reef conservation activities under section 204.

(d) NATIONAL CORAL REEF ACTIVITIES- From the amounts appropriated under subsection (a), there shall be made available to the Secretary \$8,000,000 for each of fiscal years 2001, 2002, 2003, and 2004 for activities under section 207.

SEC. 210. DEFINITIONS.

In this title:

(1) ADMINISTRATOR- The term 'Administrator' means the Administrator of the National Oceanic and Atmospheric Administration.

(2) CONSERVATION- The term 'conservation' means the use of methods and procedures necessary to preserve or sustain corals and associated species as diverse, viable, and self-perpetuating coral reef ecosystems, including all activities associated with resource management, such as assessment, conservation, protection, restoration, sustainable use, and management of habitat; mapping; habitat monitoring; assistance in the development of management strategies for marine protected areas and marine resources consistent with the National Marine Sanctuaries Act (16 U.S.C. 1431 et seq.) and the Magnuson-Stevens Fishery Conservation and Management Act (16 U.S.C. 1801 et seq.); law enforcement; conflict resolution initiatives; community outreach and education; and that promote safe and ecologically sound navigation.

(3) CORAL- The term `coral' means species of the phylum Cnidaria, including--

(A) all species of the orders Antipatharia (black corals), Scleractinia (stony corals), Gorgonacea (horny corals), Stolonifera (organpipe corals and others), Alcyonacea (soft corals), and Coenothecalia (blue coral), of the class Anthozoa; and

(B) all species of the order Hydrocorallina (fire corals and hydrocorals) of the class Hydrozoa.

(4) CORAL REEF- The term `coral reef' means any reefs or shoals composed primarily of corals.

(5) CORAL REEF ECOSYSTEM- The term `coral reef ecosystem' means coral and other species of reef organisms (including reef plants) associated with coral reefs, and the nonliving environmental factors that directly affect coral reefs, that together function as an ecological unit in nature.

(6) CORAL PRODUCTS- The term `coral products' means any living or dead specimens, parts, or derivatives, or any product containing specimens, parts, or derivatives, of any species referred to in paragraph (3).

(7) SECRETARY- The term `Secretary' means the Secretary of Commerce.

(8) STATE- The term `State' means any State of the U.S. that contains a coral reef ecosystem within its seaward boundaries, American Samoa, Guam, the Northern Mariana Islands, Puerto Rico, and the Virgin Islands, and any other territory or possession of the U.S., or separate sovereign in free association with the U.S., that contains a coral reef ecosystem within its seaward boundaries.

Presidential Documents

Executive Order 13158 of May 26, 2000

Marine Protected Areas

By the authority vested in me as President by the Constitution and the laws of the United States of America and in furtherance of the purposes of the National Marine Sanctuaries Act (16 U.S.C. 1431 *et seq.*), National Wildlife Refuge System Administration Act of 1966 (16 U.S.C. 668dd-ee), National Park Service Organic Act (16 U.S.C. 1 *et seq.*), National Historic Preservation Act (16 U.S.C. 470 *et seq.*), Wilderness Act (16 U.S.C. 1131 *et seq.*), Magnuson-Stevens Fishery Conservation and Management Act (16 U.S.C. 1801 *et seq.*), Coastal Zone Management Act (16 U.S.C. 1451 *et seq.*), Endangered Species Act of 1973 (16 U.S.C. 1531 *et seq.*), Marine Mammal Protection Act (16 U.S.C. 1362 *et seq.*), Clean Water Act of 1977 (33 U.S.C. 1251 *et seq.*), National Environmental Policy Act, as amended (42 U.S.C. 4321 *et seq.*), Outer Continental Shelf Lands Act (42 U.S.C. 1331 *et seq.*), and other pertinent statutes, it is ordered as follows:

Section 1. Purpose. This Executive Order will help protect the significant natural and cultural resources within the marine environment for the benefit of present and future generations by strengthening and expanding the Nation's system of marine protected areas (MPAs). An expanded and strengthened comprehensive system of marine protected areas throughout the marine environment would enhance the conservation of our Nation's natural and cultural marine heritage and the ecologically and economically sustainable use of the marine environment for future generations. To this end, the purpose of this order is to, consistent with domestic and international law: (a) strengthen the management, protection, and conservation of existing marine protected areas and establish new or expanded MPAs; (b) develop a scientifically based, comprehensive national system of MPAs representing diverse U.S. marine ecosystems, and the Nation's natural and cultural resources; and (c) avoid causing harm to MPAs through federally conducted, approved, or funded activities.

Sec. 2. Definitions. For the purposes of this order: (a) "Marine protected area" means any area of the marine environment that has been reserved by Federal, State, territorial, tribal, or local laws or regulations to provide lasting protection for part or all of the natural and cultural resources therein.

(b) "Marine environment" means those areas of coastal and ocean waters, the Great Lakes and their connecting waters, and submerged lands thereunder, over which the United States exercises jurisdiction, consistent with international law.

(c) The term "United States" includes the several States, the District of Columbia, the Commonwealth of Puerto Rico, the Virgin Islands of the United States, American Samoa, Guam, and the Commonwealth of the Northern Mariana Islands.

Sec. 3. MPA Establishment, Protection, and Management. Each Federal agency whose authorities provide for the establishment or management of MPAs shall take appropriate actions to enhance or expand protection of existing MPAs and establish or recommend, as appropriate, new MPAs. Agencies implementing this section shall consult with the agencies identified in subsection 4(a) of this order, consistent with existing requirements.

Sec. 4. National System of MPAs. (a) To the extent permitted by law and subject to the availability of appropriations, the Department of Commerce and the Department of the Interior, in consultation with the Department

of Defense, the Department of State, the United States Agency for International Development, the Department of Transportation, the Environmental Protection Agency, the National Science Foundation, and other pertinent Federal agencies shall develop a national system of MPAs. They shall coordinate and share information, tools, and strategies, and provide guidance to enable and encourage the use of the following in the exercise of each agency's respective authorities to further enhance and expand protection of existing MPAs and to establish or recommend new MPAs, as appropriate:

(1) science-based identification and prioritization of natural and cultural resources for additional protection;

(2) integrated assessments of ecological linkages among MPAs, including ecological reserves in which consumptive uses of resources are prohibited, to provide synergistic benefits;

(3) a biological assessment of the minimum area where consumptive uses would be prohibited that is necessary to preserve representative habitats in different geographic areas of the marine environment;

(4) an assessment of threats and gaps in levels of protection currently afforded to natural and cultural resources, as appropriate;

(5) practical, science-based criteria and protocols for monitoring and evaluating the effectiveness of MPAs;

(6) identification of emerging threats and user conflicts affecting MPAs and appropriate, practical, and equitable management solutions, including effective enforcement strategies, to eliminate or reduce such threats and conflicts;

(7) assessment of the economic effects of the preferred management solutions; and

(8) identification of opportunities to improve linkages with, and technical assistance to, international marine protected area programs.

(b) In carrying out the requirements of section 4 of this order, the Department of Commerce and the Department of the Interior shall consult with those States that contain portions of the marine environment, the Commonwealth of Puerto Rico, the Virgin Islands of the United States, American Samoa, Guam, and the Commonwealth of the Northern Mariana Islands, tribes, Regional Fishery Management Councils, and other entities, as appropriate, to promote coordination of Federal, State, territorial, and tribal actions to establish and manage MPAs.

(c) In carrying out the requirements of this section, the Department of Commerce and the Department of the Interior shall seek the expert advice and recommendations of non-Federal scientists, resource managers, and other interested persons and organizations through a Marine Protected Area Federal Advisory Committee. The Committee shall be established by the Department of Commerce.

(d) The Secretary of Commerce and the Secretary of the Interior shall establish and jointly manage a website for information on MPAs and Federal agency reports required by this order. They shall also publish and maintain a list of MPAs that meet the definition of MPA for the purposes of this order.

(e) The Department of Commerce's National Oceanic and Atmospheric Administration shall establish a Marine Protected Area Center to carry out, in cooperation with the Department of the Interior, the requirements of subsection 4(a) of this order, coordinate the website established pursuant to subsection 4(d) of this order, and partner with governmental and non-governmental entities to conduct necessary research, analysis, and exploration. The goal of the MPA Center shall be, in cooperation with the Department of the Interior, to develop a framework for a national system of MPAs, and to provide Federal, State, territorial, tribal, and local governments with the information, technologies, and strategies to support the system. This

national system framework and the work of the MPA Center is intended to support, not interfere with, agencies' independent exercise of their own existing authorities.

(f) To better protect beaches, coasts, and the marine environment from pollution, the Environmental Protection Agency (EPA), relying upon existing Clean Water Act authorities, shall expeditiously propose new science-based regulations, as necessary, to ensure appropriate levels of protection for the marine environment. Such regulations may include the identification of areas that warrant additional pollution protections and the enhancement of marine water quality standards. The EPA shall consult with the Federal agencies identified in subsection 4(a) of this order, States, territories, tribes, and the public in the development of such new regulations.

Sec. 5. Agency Responsibilities. Each Federal agency whose actions affect the natural or cultural resources that are protected by an MPA shall identify such actions. To the extent permitted by law and to the maximum extent practicable, each Federal agency, in taking such actions, shall avoid harm to the natural and cultural resources that are protected by an MPA. In implementing this section, each Federal agency shall refer to the MPAs identified under subsection 4(d) of this order.

Sec. 6. Accountability. Each Federal agency that is required to take actions under this order shall prepare and make public annually a concise description of actions taken by it in the previous year to implement the order, including a description of written comments by any person or organization stating that the agency has not complied with this order and a response to such comments by the agency.

Sec. 7. International Law. Federal agencies taking actions pursuant to this Executive Order must act in accordance with international law and with Presidential Proclamation 5928 of December 27, 1988, on the Territorial Sea of the United States of America, Presidential Proclamation 5030 of March 10, 1983, on the Exclusive Economic Zone of the United States of America, and Presidential Proclamation 7219 of September 2, 1999, on the Contiguous Zone of the United States.

Sec. 8. General. (a) Nothing in this order shall be construed as altering existing authorities regarding the establishment of Federal MPAs in areas of the marine environment subject to the jurisdiction and control of States, the District of Columbia, the Commonwealth of Puerto Rico, the Virgin Islands of the United States, American Samoa, Guam, the Commonwealth of the Northern Mariana Islands, and Indian tribes.

(b) This order does not diminish, affect, or abrogate Indian treaty rights or United States trust responsibilities to Indian tribes.

(c) This order does not create any right or benefit, substantive or procedural, enforceable in law or equity by a party against the United States, its agencies, its officers, or any person.



THE WHITE HOUSE,
May 26, 2000.



Federal Register

**Thursday,
December 7, 2000**

Part X

The President

**Executive Order 13178—Northwestern
Hawaiian Islands Coral Reef Ecosystem
Reserve**

Presidential Documents

Title 3—

Executive Order 13178 of December 4, 2000

The President

Northwestern Hawaiian Islands Coral Reef Ecosystem Reserve

By the authority vested in me as President by the Constitution and the laws of the United States of America, including the National Marine Sanctuaries Act, (16 U.S.C. 1431 *et seq.*), and the National Marine Sanctuaries Amendments Act of 2000, Public Law 106-513, and in furtherance of the purposes of the Magnuson-Stevens Fishery Conservation and Management Act (16 U.S.C. 1801 *et seq.*), Marine Protection, Research, and Sanctuaries Act (33 U.S.C. 1401 *et seq.*), Coastal Zone Management Act (16 U.S.C. 1451 *et seq.*), Endangered Species Act (16 U.S.C. 1531 *et seq.*), Marine Mammal Protection Act (16 U.S.C. 1362 *et seq.*), Clean Water Act (33 U.S.C. 1251 *et seq.*), National Historic Preservation Act (16 U.S.C. 470 *et seq.*), National Wildlife Refuge System Administration Act (16 U.S.C. 668dd-ee), and other pertinent statutes, it is ordered as follows:

Section 1. Preamble. The world's coral reefs—the rain forests of the sea—are in serious decline. These important and sensitive areas of biodiversity warrant special protection. While United States waters contain approximately 3 percent of the world's coral reefs, approximately 70 percent of U.S. coral reefs are in the Northwestern Hawaiian Islands. The 3.5 million acres of coral reefs around the remote, mostly uninhabited Northwestern Hawaiian Islands are spectacular and almost undisturbed by humans. The approximately 1,200 mile stretch of coral islands, seamounts, banks, and shoals are unquestionably some of the healthiest and most extensive coral reefs in the United States. In their own right, the spectacular coral reefs and lands provide an amazing geological record of volcanic and erosive powers that have shaped this area. This vast area supports a dynamic reef ecosystem that supports more than 7,000 marine species, of which approximately half are unique to the Hawaiian Island chain. This incredibly diverse ecosystem is home to many species of coral, fish, birds, marine mammals, and other flora and fauna including the endangered Hawaiian monk seal, the threatened green sea turtle, and the endangered leatherback and hawksbill sea turtles. In addition, this area has great cultural significance to Native Hawaiians as well as linkages to early Polynesian culture—making it additionally worthy of protection and understanding. This is truly a unique and special place, a coral reef ecosystem like no place on earth, and a source of pride, inspiration, and satisfaction for all Americans, especially the people of Hawaii. It is fully worthy of our best efforts to preserve a legacy of America's natural wonders for future generations. Due to the special significance of this area, I have determined that it is in the best interest of our Nation, and of future generations, to provide strong and lasting protection for the coral reef ecosystem of the Northwestern Hawaiian Islands.

On May 26, 2000, I directed the Secretaries of Commerce and the Interior, working cooperatively with the State of Hawaii and consulting with the Western Pacific Fishery Management Council, to develop recommendations for a new, coordinated management regime to increase protection of the coral reef ecosystem of the Northwestern Hawaiian Islands and provide for sustainable use of the area. Upon consideration of their recommendations and comments received during the public visioning process on this initiative, and based on the statutory authorities set forth above, I am issuing this Executive Order.

Sec. 2. Purpose. The purpose of this Executive Order is to ensure the comprehensive, strong, and lasting protection of the coral reef ecosystem and related marine resources and species (resources) of the Northwestern Hawaiian Islands.

Sec. 3. Establishment of Coral Reef Ecosystem Reserve. There is hereby established in the Northwestern Hawaiian Islands a coral reef ecosystem reserve to be known as the Northwestern Hawaiian Islands Coral Reef Ecosystem Reserve (Reserve). The Reserve shall include submerged lands and waters of the Northwestern Hawaiian Islands, extending approximately 1,200 nautical miles (nm) long and 100nm wide. The Reserve shall be adjacent to and seaward of the seaward boundaries of the State of Hawaii and the Midway Atoll National Wildlife Refuge, and shall overlay the Hawaiian Islands National Wildlife Refuge to the extent that it extends beyond the seaward boundaries of the State of Hawaii. The boundaries of the Reserve are described in section 6 of this order.

Sec. 4. Management Principles. The Secretary of Commerce, or his designee, (hereafter "Secretary") shall, subject to section 10(b) of this order, manage the Reserve in accordance with the following principles:

(a) The principal purpose of the Reserve is the long-term conservation and protection of the coral reef ecosystem and related marine resources and species of the Northwestern Hawaiian Islands in their natural character;

(b) The Reserve shall be managed using available science and applying a precautionary approach with resource protection favored when there is a lack of information regarding any given activity, to the extent not contrary to law;

(c) Culturally significant, noncommercial subsistence, cultural, and religious uses by Native Hawaiians should be allowed within the Reserve, consistent with applicable law and the long-term conservation and protection of Reserve resources;

(d) The Reserve shall be managed using, when appropriate, geographical zoning and innovative management techniques to ensure that the Reserve resources are protected from degradation or harm;

(e) To the extent consistent with the primary purpose of the Reserve, the Reserve shall be managed to support, promote, and coordinate appropriate scientific research and assessment, and long-term monitoring of Reserve resources, and the impacts or threats thereto from human and other activities, to help better understand, protect, and conserve these resources and species for future generations;

(f) To the extent consistent with the primary purpose of the Reserve, the Reserve shall be managed to enhance public awareness, understanding, and appreciation of Reserve resources, and the impacts or threats thereto from human and other activities;

(g) The Reserve shall be managed to further restoration and remediation of degraded or injured Reserve resources; and

(h) The Reserve shall be managed to facilitate coordinated management among Federal and State agencies and other entities, as appropriate, to provide comprehensive (looking beyond jurisdictional boundaries) conservation of the coral reef ecosystem and related marine resources and species throughout the Northwestern Hawaiian Islands, consistent with applicable authorities and the Management Principles of this section.

Sec. 5. Implementation. (a) Management of the Reserve. The Secretary shall manage the Reserve under the National Marine Sanctuaries Act and in accordance with this order.

(b) *Reserve Operations Plan.* The Secretary, in consultation with the Secretary of the Interior and the Governor of Hawaii, shall develop an operations plan to govern the management of the Reserve. In developing the Reserve Operations Plan the Secretary shall consider the advice and recommendations of the Reserve Council established pursuant to paragraph (c) of this section.

The Reserve Operations Plan shall be directed at priority issues and actions that, at a minimum, provide for:

- (1) Coordinated management among the Reserve, Hawaiian Islands National Wildlife Refuge, Midway Atoll National Wildlife Refuge, and the State of Hawaii, consistent with relevant authorities;
- (2) Coordination among Federal agencies and the Director of the National Science Foundation to make vessels and other resources available for conservation and research activities for the Reserve;
- (3) The cleanup and prevention of marine debris in the Reserve;
- (4) The restoration or remediation of any degraded or injured resources of the Reserve;
- (5) Research, monitoring, and assessment of the Reserve;
- (6) Education and outreach about the Reserve and its resources and efforts to conserve them;
- (7) Enforcement and surveillance for the Reserve, including the use of new technologies and coordination with the United States Coast Guard and other relevant agencies;
- (8) Identification and coordination with Native Hawaiian interests, regarding culturally significant, noncommercial subsistence, cultural, and religious uses and locations within the Reserve;
- (9) Identification of potential tourism, recreational, and commercial activities within the Reserve and actions necessary to ensure that these activities do not degrade the Reserve's resources or diminish the Reserve's natural character;
- (10) Use of vessel monitoring systems for any vessel entering or transiting the Reserve, if warranted. To this end, the Secretary in consultation with the Department of State, United States Coast Guard, and the Department of Defense, shall evaluate the need for the establishment of vessel monitoring systems and, if warranted, shall initiate the steps necessary to have the appropriate domestic agencies, and request that the International Maritime Organization, adopt a vessel monitoring system requirement for the Reserve;
- (11) Any regulations, in addition to the conservation measures and Reserve Preservation Areas established under this order, that the Secretary determines are necessary to manage the Reserve in accordance with this order; and
- (12) Coordination of all relevant activities with the process to designate the Reserve as a National Marine Sanctuary, as provided under paragraph (f) of this section.

(c) *Conservation Measures.* The Reserve Operations Plan shall also include the conservation measures in section 7 of this order and the Reserve Preservation Areas in section 8 of this order.

(d) *Memorandum of Agreement.* To further paragraph (b)(1) of this section, and subject to section 10(b) of this order, and in particular to promote coordinated management of the entirety of the shallow areas of the coral reef ecosystem throughout the Northwestern Hawaiian Islands, the Secretary shall work with the Secretary of the Interior and Governor of the State of Hawaii to enter into one or more memoranda of agreement for the coordinated conservation and management of the Reserve, Midway Atoll and Hawaiian Islands National Wildlife Refuges, and State of Hawaii submerged lands and waters within the Northwestern Hawaiian Islands.

(e) *National Marine Sanctuary.* The Secretary shall initiate the process to designate the Reserve as a national marine sanctuary pursuant to sections 303 and 304 of the National Marine Sanctuaries Act (16 U.S.C. 1433, 1434). In doing so the Secretary shall supplement or complement the existing Reserve. The Secretary shall, in consultation with the Governor of the State of Hawaii, determine whether State submerged lands and waters should be included as part of the sanctuary. In designating and managing the

sanctuary, the Secretary shall consider the advice and recommendations of the Reserve Council established pursuant to paragraph (f) of this section.

(f) *Council.* After considering input from the Secretary of the Interior and Governor of the State of Hawaii, the Secretary shall establish a Coral Reef Ecosystem Reserve Council pursuant to section 315 of the National Marine Sanctuaries Act (16 U.S.C. 1445a) to provide advice and recommendations on the Reserve Operations Plan and designation and management of any sanctuary. The Council shall include:

(1) Three Native Hawaiian representatives, including one Native Hawaiian elder, with experience or knowledge regarding Native Hawaiian subsistence, cultural, religious, or other activities in the Northwestern Hawaiian Islands.

(2) Three representatives from the non-Federal science community with experience specific to the Northwestern Hawaiian Islands and with expertise in at least one of the following areas:

(A) Marine mammal science.

(B) Coral reef ecology.

(C) Native marine flora and fauna of the Hawaiian Islands.

(D) Oceanography.

(E) Any other scientific discipline the Secretary determines to be appropriate.

(3) Three representatives from nongovernmental wildlife/marine life, environmental, and/or conservation organizations.

(4) One representative from the commercial fishing industry that conducts activities in the Northwestern Hawaiian Islands.

(5) One representative from the recreational fishing industry that conducts activities in the Northwestern Hawaiian Islands.

(6) One representative from the ocean-related tourism industry.

(7) One representative from the non-Federal community with experience in education and outreach regarding marine conservation issues.

(8) One citizen-at-large representative.

(9) One representative from the State of Hawaii as appointed by the Governor.

(10) One representative each, as nonvoting, *ex officio* members, from the Department of the Interior, United States Coast Guard, Department of Defense, Department of State, the National Marine Fisheries Service, the Hawaiian Islands Humpback Whale National Marine Sanctuary, National Science Foundation, Marine Mammal Commission, and Western Pacific Regional Fishery Management Council.

(g) *Report.* The Secretary shall provide a progress report on the implementation of this order to the Chair of the Council on Environmental Quality within 1 year from the date of this order.

Sec. 6. Area of the Reserve. The Reserve includes the waters and submerged lands of the Northwestern Hawaiian Islands as follows:

(a) The seaward boundary of the Reserve is 50nm from the approximate center geographical positions of Nihoa Island, Necker Island, French Frigate Shoals, Gardner Pinnacles, Maro Reef, Laysan Island, Lisianski Island, Pearl and Hermes Reef, Midway Atoll, and Kure Island. Where the areas are not contiguous, parallel lines drawn tangent to and connecting those semi-circles of the 50nm areas that lie around such areas shall delimit the remainder of the Reserve.

(b) The inland boundary of the Reserve around each of the areas named in subparagraph (a) of this section is the seaward boundary of Hawaii State waters and submerged lands, and the seaward boundary of the Midway Atoll National Wildlife Refuge, as appropriate.

(c) The Reserve boundary is generally depicted on the map attached to this order. The Secretary, after consultation with the Governor of the State

of Hawaii, may make technical modifications to the boundary of the Reserve, including providing straight-line boundaries for the Reserve for clarity and ease of identification, as appropriate.

Sec. 7. Protection and Conservation Measures. The conservation measures in this section apply throughout the Reserve.

(a) (1) *Commercial Fishing.* All currently existing commercial Federal fishing permits and current levels of fishing effort and take, as determined by the Secretary and pursuant to regulations in effect on the date of this order, shall be capped as follows:

(A) No commercial fishing may occur in Reserve Preservation Areas pursuant to section 8 of this order;

(B) There shall be no increase in the number of permits of any particular type of fishing (such as for bottomfishing) beyond the number of permits of that type in effect the year preceding the date of this order;

(C) The annual level of aggregate take under all permits of any particular type of fishing may not exceed the aggregate level of take under all permits of that type of fishing in the years preceding the date of this order, as determined by the Secretary, provided that the Secretary shall equitably divide the aggregate level into individual levels per permit, and further provided that the Secretary may make a one-time reasonable increase to the total aggregate to allow for the use of two Native Hawaiian bottomfishing permits;

(D) There shall be no permits issued for any particular type of fishing for which there were no permits issued in the year preceding the date of this order; and

(E) The type of fishing gear used by any permit holder may not be changed except with the permission of the Secretary, as provided under paragraph 3 of this section.

(2) *Recreational Fishing.* All currently existing (preceding the date of this order) levels of recreational fishing effort, as determined by the Secretary and pursuant to regulations in effect on the day of this order, shall be capped (i.e., no increase of take levels or levels of fishing effort, species targeted, or change in gear types) throughout the Reserve. However, fishing is further restricted as provided in section 8 of this order.

(3) The Secretary, after consultation with the Secretary of the Interior and Governor of the State of Hawaii, and after public review and comment and consideration of any advice or recommendations of the Reserve Council and Western Pacific Regional Fishery Management Council, may further restrict the fishing activities under subparagraphs (a)(1) and (a)(2) of this section if necessary to protect Reserve resources, or may authorize or require alternate gear types if such gear would offer equal or greater protection for Reserve resources.

(b) In addition to the conservation measures in paragraph (a) of this section, the following activities are prohibited throughout the Reserve:

(1) Exploring for, developing, or producing oil, gas, or minerals;

(2) Having a vessel anchored on any living or dead coral with an anchor, an anchor chain, or an anchor rope when visibility is such that the seabed can be seen;

(3) Drilling into, dredging, or otherwise altering the seabed; or constructing, placing, or abandoning any structure, material, or other matter on the seabed, except as an incidental result of anchoring vessels;

(4) Discharging or depositing any material or other matter into the Reserve, or discharging or depositing any material or other matter outside the Reserve that subsequently enters the Reserve and injures any resource of the Reserve, except fish parts (i.e., chumming material or bait) used in and during authorized fishing operations, or discharges incidental to vessel use such as deck wash, approved marine sanitation device effluent, cooling water, and engine exhaust; and

(5) Removal, moving, taking, harvesting, or damaging any living or nonliving Reserve resources, except as provided under paragraph (a) of this section and sections 8(a) and 9 of this order.

(c) The Secretary may conduct, or authorize by permit the activities listed in subparagraphs (b)(3)-(5) of this section to the extent that they are necessary for research, monitoring, education, or management activities that further the Management Principles of section 4 of this order.

Sec. 8. Reserve Preservation Areas.

(a) To further protect Reserve resources, the following areas are hereby established as Reserve Preservation Areas until some or all are made permanent after adequate public review and comment, within which all activities referred to in paragraph (b) of this section are prohibited.

(1) From the seaward boundary of Hawaii State waters and submerged lands to a mean depth of 100 fathoms (fm) around:

(A) Nihoa Island, provided that bottomfishing in accordance with the requirements of section 7(a)(1) of this order shall be allowed to continue seaward of a mean depth of 10fm, unless and until the Secretary determines otherwise after adequate public review and comment;

(B) Necker Island, provided that bottomfishing in accordance with the requirements of section 7(a)(1) of this order shall be allowed to continue seaward of a mean depth of 20fm, unless and until the Secretary determines otherwise after adequate public review and comment;

(C) French Frigate Shoals;

(D) Gardner Pinnacles, provided that bottomfishing in accordance with the requirements of section 7(a)(1) of this order shall be allowed to continue seaward of a mean depth of 10fm, unless and until the Secretary determines otherwise after adequate public review and comment;

(E) Maro Reef, provided that bottomfishing in accordance with the requirements of section 7(a)(1) of this order shall be allowed to continue seaward of a mean depth of 20fm, unless and until the Secretary determines otherwise after adequate public review and comment;

(F) Laysan Island, provided that bottomfishing in accordance with the requirements of section 7(a)(1) of this order shall be allowed to continue seaward of a mean depth of 50fm, unless and until the Secretary determines otherwise after adequate public review and comment;

(G) Lisianski Island, provided that bottomfishing in accordance with the requirements of section 7(a)(1) of this order shall be allowed to continue seaward of a mean depth of 50fm, unless and until the Secretary determines otherwise after adequate public review and comment;

(H) Pearl and Hermes Atoll; and

(I) Kure Island.

(2) Twelve nautical miles around the approximate geographical centers of:

(A) The first bank immediately east of French Frigate Shoals;

(B) Southeast Brooks Bank, which is the first bank immediately west of French Frigate Shoals, provided that the closure area shall not be closer than approximately 3nm of the next bank immediately west;

(C) St. Rogatien Bank, provided that the closure area shall not be closer than approximately 3nm of the next bank immediately east, provided further that bottomfishing in accordance with the requirements of section 7(a)(1) of this order shall be allowed to continue, unless and until the Secretary determines otherwise after adequate public review and comment;

(D) The first bank west of St. Rogatien Bank, east of Gardner Pinnacles;

(E) Raita Bank; and

(F) Pioneer Bank, provided that bottomfishing in accordance with the requirements of section 7(a)(1) of this order shall be allowed to continue, unless

and until the Secretary determines otherwise after adequate public review and comment.

(b) Activities Prohibited Within Reserve Preservation Areas.

(1) In addition to the conservation measures in section 7 of this order, which are applicable to the entire Reserve, the following activities are prohibited within the Reserve Preservation Areas listed in paragraph (a) of this section, except as expressly otherwise stated in this paragraph and sections (8)(a) and 9 of this order:

(A) Commercial and recreational fishing;

(B) Anchoring in any area that contains available mooring buoys, or anchoring outside an available anchoring area when such area has been designated by the Secretary;

(C) Any type of touching or taking of living or dead coral;

(D) Discharging or depositing any material or other matter except cooling water or engine exhaust; and

(E) Such other activities that the Secretary identifies after adequate public review and comment, and after consideration of any advice and recommendations of the Reserve Council.

(2) Notwithstanding the prohibitions in this paragraph, the Secretary may conduct, or authorize by permit, research, monitoring, education, or management activities within any Reserve Preservation Area that further the Management Principles of section 4 of this order.

(3) The Reserve Preservation Areas in this section are approximated using fathoms. The Secretary will develop straight line boundaries based on longitude and latitude coordinates to encompass each Reserve Preservation Area, to provide for clarity and ease of identification. The Secretary may make technical modifications to any such boundaries.

Sec. 9. *Native Hawaiian Uses.* Native Hawaiian noncommercial subsistence, cultural, or religious uses may continue, to the extent consistent with existing law, within the Reserve and Reserve Preservation Areas identified under section 8 of this order. The Secretary shall work with Native Hawaiian interests to identify those areas where such Native Hawaiian uses of the Reserve's resources may be conducted without injury to the Reserve's coral reef ecosystem and related marine resources and species, and may revise the areas where such activities may occur after public review and comment, and consideration of any advice and recommendations of the Reserve Council.

Sec. 10. *National Wildlife Refuges.*

(a) The Secretary of the Interior, in managing, through the U.S. Fish and Wildlife Service the Hawaiian Islands and Midway Atoll National Wildlife Refuges pursuant to the National Wildlife Refuge System Administration Act (16 U.S.C. 668dd-668ee) and other applicable laws, shall follow the Management Principles of section 4 of this order, to the extent consistent with applicable law.

(b) Wherever the Reserve overlaps the Hawaiian Islands National Wildlife Refuge, the Reserve shall be managed to supplement and complement management of the Refuge to ensure coordinated conservation and management of the Reserve and the Refuge, consistent with the purposes and policies of the National Marine Sanctuaries Act, the National Marine Sanctuaries Amendments Act of 2000, and this order, and the authorities of the U.S. Fish and Wildlife Service under the National Wildlife Refuge System Administration Act (16 U.S.C. 668dd-668ee) and other laws with respect to management of the Refuge. Nothing in this order shall enlarge or diminish the jurisdiction or authority of the Secretary or Secretary of the Interior in managing the Reserve or Refuge, respectively.

(c) The Secretary of the Interior, through the U.S. Fish and Wildlife Service, shall coordinate with the Secretary and the Governor of the State

of Hawaii, as provided under section 5(b) of this order, to ensure coordinated protection and management among the Reserve, Refuges, and State, consistent with relevant authorities.

Sec. 11. Administration and Judicial Review.

(a) *International Law.* Management of the Reserve and any regulations issued pursuant thereto and all other provisions of this order shall be applied consistently with the 1983 Presidential Proclamation on the Exclusive Economic Zone, the 1988 Presidential Proclamation on the Territorial Sea, and the 1999 Presidential Proclamation on Contiguous Zone and in accordance with generally recognized principles of international law, and with the treaties, conventions, and other agreements to which the United States is a party. The Secretary shall consult with the Department of State in implementing this order.

(b) *Agency Responsibilities.* All Federal agencies whose actions may affect the Reserve and any National Marine Sanctuary established by the Secretary pursuant to this order shall carry out such actions in accordance with applicable laws, regulations and Executive Orders, including Executive Orders 13089 of June 11, 1998, and 13158 of May 26, 2000.

(c) *National Security and Emergency Actions.* Consistent with applicable law, nothing in this order is intended to apply to military activities (including those carried out by the United States Coast Guard), including military exercises, conducted within or in the vicinity of the Reserve, consistent with the requirements of Executive Orders 13089 of June 11, 1998, and 13158 of May 26, 2000. Further, nothing in this order is intended to restrict the Department of Defense from conducting activities necessary during time of war or national emergency, or when necessary for reasons of national security as determined by the Secretary of Defense, consistent with applicable law. In addition, consistent with applicable law, nothing in this order shall limit agency actions to respond to emergencies posing an unacceptable threat to human health or safety or to the marine environment and admitting of no other feasible solution.

(d) *United States Coast Guard.* Nothing in this order is intended to limit the authority of the United States Coast Guard to enforce any Federal law, or install or maintain aids to navigation.

(e) *Funding.* This order shall be carried out subject to the availability of appropriated funds and to the extent permitted by law.

(f) *Territorial Waters.* Nothing in this order shall enlarge or diminish the jurisdiction or authority of the State of Hawaii or the United States over submerged or other lands within the territorial waters off the coast of Hawaii.

(g) *Judicial Review.* This order does not create any right or benefit, substantive or procedural, enforceable in law or equity by a party against the United States, its agencies, its officers, or any person.



THE WHITE HOUSE,
December 4, 2000.