
CHAPTER 1:
INTRODUCTION

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INTRODUCTION

This environmental assessment (EA) evaluates the activities proposed in Papahānaumokuākea Marine National Monument (Monument) Management Plan. The proposed Monument Management Plan is the Monument Co-Trustee agencies' overall guiding framework for their mission of well-coordinated management for strong long-term protection and perpetuation of the Northwestern Hawaiian Islands (NWHI) ecosystems. Management of the Monument is the responsibility of three Co-Trustees: the State of Hawai'i, through the Department of Land and Natural Resources; the U.S. Department of the Interior, through the Fish and Wildlife Service (FWS), and the Department of Commerce, through the National Oceanic and Atmospheric Administration (NOAA). The Monument Management Plan was developed to carry out Presidential Proclamation 8031 (Establishment of the Northwestern Hawaiian Islands Marine National Monument, June 15, 2006) to develop a joint management plan for the Monument, an effort that the State of Hawaii joined through a Memorandum of Agreement (MOA) signed by the Governor and the Secretary of Commerce and the Secretary of the Interior in December 2006. This EA has been developed in accordance with the National Environmental Policy Act of 1969 (NEPA) and Hawaii Revised Statutes (HRS) Chapter 343 Environmental Impact Statement Law. The purpose of the EA is to inform the relevant state and federal agencies and the public of the likely environmental consequences of the activities contained in the Monument Management Plan. It focuses on site-specific issues within the boundaries of the Monument and the socioeconomic effects on the State of Hawai'i.

1.1 OVERVIEW AND BACKGROUND

The NWHI make up the northern three-quarters of the Hawaiian archipelago, beginning in the northwest at Kure atoll, the most northerly coral reef atoll in the world, and extending approximately 1,200 miles (1,043 nautical miles[nm], 1,931 kilometers [km]) southeast to Nihoa Island, 165 miles northwest of Kaua'i. The President issued Presidential Proclamation 8031, which created the Monument under the authority of the Antiquities Act of 1906, as amended (16 United States Code [USC] 431-433).

The Proclamation and the December 2006 MOA between the Governor and the Secretaries of Commerce and the Interior (see Volume III, Appendix H) describes the principal entities

responsible for managing the Monument, NOAA, FWS, and the State of Hawai‘i (collectively, the Co-Trustees), the primary responsibility of each, and the institutional arrangements for management among the Co-Trustees. The MOA created a Monument Management Board (MMB) and described institutional arrangements and responsibilities to fulfill the vision, mission, and guiding principles of the Monument including representation of Native Hawaiian interests by the Office of Hawaiian Affairs on the MMB. The MMB implements policy guidance from the Co-Trustees and is responsible for on-site planning and program implementation.

The federal managers—NOAA and FWS—promulgated joint implementing regulations on August 19, 2006 (Northwestern Hawaiian Islands Marine National Monument, 50 CFR Part 404; see Appendix G). Specifically, these regulations codify the scope and purpose, boundary, definitions, prohibitions, and regulated activities of the Monument. Proclamation 8031 was amended on March 6, 2007, to declare the Hawaiian name for the Monument, Papahānaumokuākea and clarify some definitions (Presidential Proclamation 8112, Establishment of the Papahānaumokuākea Marine National Monument, March 6, 2007).

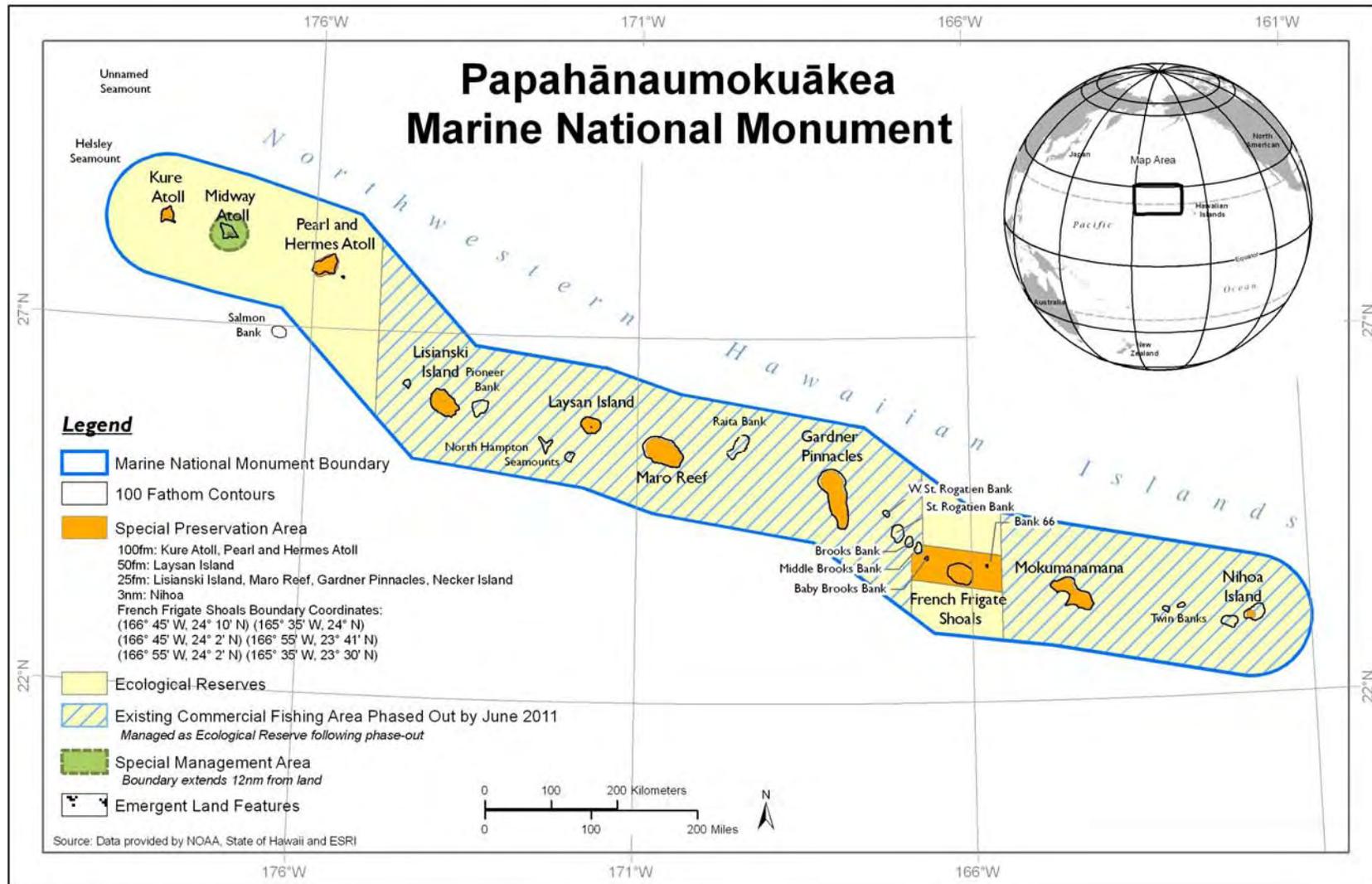
The Monument is the largest fully protected marine conservation area in the world (Figure 1.1). It encompasses 137,792 square miles (356,881 square km) of the Pacific Ocean, an area larger than all U.S. national parks combined. The Monument includes the Northwestern Hawaiian Islands Coral Reef Ecosystem Reserve, State of Hawai‘i Northwestern Hawaiian Islands Marine Refuge, Kure Atoll Wildlife Sanctuary, the Midway National Wildlife Refuge, the Hawaiian Islands National Wildlife Refuge, and the Battle of Midway National Memorial. This region supports a dynamic reef ecosystem, with more than 7,000 marine species, half of which are unique to the Hawaiian Island chain. This diverse ecosystem is host 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 and a connection to early Polynesian culture worthy of protection and understanding as noted in the Proclamation.

The boundaries of the Monument, Special Preservation Areas (SPAs), ecological reserves (ERs), and the Special Management Area at Midway Atoll are illustrated in Figure 1.1 and Appendix A to 50 CFR 404. In addition to activities that are prohibited throughout the Monument, those prohibited within the SPAs are swimming, snorkeling, or scuba diving and discharging or depositing any material or other matter except vessel engine cooling water, weather deck runoff, and vessel engine exhaust. In addition to the overarching regulations that govern activities in the Monument, the regulations governing activities in the reserve and wildlife refuges and State of Hawai‘i jurisdiction also apply.

1.2 PURPOSE AND NEED FOR THE PROPOSED ACTION

The Monument is important both nationally and globally, as it contains one of the world’s most significant marine and terrestrial ecosystems and areas of cultural significance. In accordance with Presidential Proclamation 8031, the Monument Management Plan is built on the foundation of the draft Sanctuary Management Plan, the Reserve Operations Plan, and input obtained through many hours of public consultation. In addition, the National Wildlife Refuge System Administration Act of 1966, as amended (16 U.S.C. 688dd-688ee) instructs FWS to develop

Figure 1.1 Papahānaumokuākea Marine National Monument



Comprehensive Conservation Plans (CCPs) with National Environmental Policy Act compliance for all National Wildlife Refuges by October 2012. So that there would be a single management plan for the Monument, FWS moved its planning effort forward to have the Monument Management Plan also serve as, and meet the requirements of, the CCPs for the two refuges within the Monument. The proposed Monument Management Plan would serve as a collective guiding framework to enable the Co-Trustees to effectively and efficiently achieve the overall vision of the Monument to ensure the health, diversity, and resources of the NWHI are protected. The ecosystems would be managed over the long term to achieve agency and Monument missions and purposes.

The need for the Monument Management Plan is defined both by legal mandates set forth in the designation of the Monument and priority management identified by the Co-Trustee agencies, with input from scientists, Native Hawaiian practitioners, and other stakeholders through numerous public scoping meetings and workshops. Priority management needs address multiple Monument goals and define areas for focused action, including improving our understanding of the NWHI, conserving wildlife and habitats, reducing threats to the ecosystem, managing human uses, coordinating conservation and management efforts, and achieving effective Monument operations. These priority management needs are described below and form the overall framework of action for the proposed Monument Management Plan.

Understanding and Interpreting the NWHI. The NWHI represents a unique opportunity to advance our understanding of ecosystem science through research, monitoring, and the incorporation of traditional knowledge. Coordinated research and continued development of long-term monitoring is needed to deepen our understanding of the composition, structure, and function of the NWHI ecosystems. The information from these activities would generate vital data and information necessary to document changes in ecosystem function over time. This would provide the needed predictive tools to make informed decisions and evaluate the effectiveness of management measures in protecting and restoring environmental integrity to the NWHI.

Incorporating traditional ecological knowledge into management practices would enrich and inform the MMB's approach to long-term planning. The further characterization of Native Hawaiian cultural relationships to the NWHI, through the study of oral histories, place names, and practices associated with the region, would enhance the physical record of activities in the NWHI. The unique aspects of island and Pacific maritime history, as well as historical and archaeological resources, collectively can provide a basis for developing effective management of resources.

Conserving Wildlife and Habitats. The preservation of the NWHI through active conservation and management of wildlife and their habitats is in the public interest. The NWHI is a large ecosystem home to many diverse terrestrial and marine flora and fauna, including many endemic species and 23 federally listed threatened or endangered species. This priority management need is concerned with maintaining biological integrity, diversity, and environmental health of the Monument and with assisting in the recovery of threatened and endangered species; managing migratory bird populations; and conserving, managing, and where appropriate, restoring the habitats of the Monument's native flora and fauna.

Reducing Threats to the Ecosystem. Despite their remote location, marine and terrestrial ecosystems of the NWHI are at risk from a range of threats from human activities within and outside the Monument. Natural and anthropogenic threats to the Monument include habitat alteration or damage from marine debris, the changing climate, including increased storm intensity and frequency, introduction of alien species, potential vessel and aircraft effects, release of hazardous materials from former landfills, vessel grounding, and past human effects. Development and implementation of threat reduction protocols and monitoring are needed to protect, preserve, maintain and, where appropriate, restore natural communities, including habitats, populations, native species, and ecological processes as a public trust for current and future generations. In addition to threat reduction, emergency response in the Monument would be coordinated through building an internal and interagency capacity to contribute to emergency response efforts.

Managing Human Activities. The NWHI has experienced a long history of human use, with periods of overexploitation, that have contributed to the current endangered status of some species, including land birds, several plants, sea turtles, and the Hawaiian monk seal. Although the extent of resource exploitation has been limited in recent years, human activities and the use of Monument resources must be carefully managed through permitting, enforcement, and managing uses, including Native Hawaiians engaging in cultural practices and people visiting Midway Atoll National Wildlife Refuge (NWR).

Coordinating Conservation and Management Efforts. The Monument can only be comprehensively conserved and monitored through effective interagency coordination and partnerships with a broad range of stakeholders. Coordination among the Co-Trustees, MMB members, and other stakeholders is needed to maintain existing resource protection measures, to increase the efficiency and effectiveness of management and enforcement, and to reduce conflicts and duplication of Monument management activities. Education and outreach efforts require coordination among government agencies, nongovernmental organizations, and other stakeholder groups. Coordination with stakeholders and the public is needed to provide a forum for advice and input on Monument management and to improve awareness and understanding of the ecological, Native Hawaiian cultural significance, and historic significance of the NWHI. Coordination with international initiatives is needed to address Pacific regional and global management issues affecting the Monument.

Achieving Effective Monument Operations. Monument operations include central and field operations, information management, and overall program evaluation. Central and field operations are essential to support action plans to address all other priority management needs. Central operations are located in the main Hawaiian Islands and include support offices, interpretive facilities, and information management facilities. Field operations include, but are not limited to, shipboard and research diving operations, operation of power generation facilities and maintenance of buildings and other infrastructures at field stations and camps. Operational effectiveness must be evaluated and improved through an adaptive management process that captures lessons learned and transforms them into action.

1.3 SCOPE OF ANALYSIS

This EA has been developed in accordance with the National Environmental Policy Act and Hawaii Revised Statutes Chapter 343. Its purpose is to inform decision makers and the public of the likely environmental consequences of the Proposed Action and No Action Alternatives. This EA identifies, documents, and evaluates the effects of the Proposed Action, to implement new and expanded activities described in the Monument Management Plan and No Action , if no new activities were to be conducted beyond the current activities.

The Monument Management Plan is composed of 22 action plans, organized under six priority management needs. Each action plan describes strategies and activities to achieve a desired outcome under each priority management need. Many activities described in the Monument Management Plan are ongoing and are mandated by federal and state laws and existing agency policies and programs. These ongoing activities serve as the baseline for analyzing environmental and socioeconomic consequences. Current activities are described as the No Action alternative and would continue regardless of the development of the Monument Management Plan. Other activities in the Monument Management Plan represent expanded or new activities proposed to achieve the desired outcome for each action plan. Collectively, these activities are the Proposed Action alternative, and their environmental and socioeconomic effects are analyzed in comparison to the No Action alternative. Activities in the Monument Management Plan are also categorized as planning and administrative, field activity, or infrastructure and development to distinguish between those activities that focus primarily on coordination among Co-Trustee agencies and those activities that occur primarily in the Monument.

An interdisciplinary team of environmental scientists and other specialists has analyzed the Proposed Action in light of existing conditions and has identified relevant effects associated with implementing the Proposed Action compared to the No Action alternative. This EA is an analysis of NOAA activities at a programmatic level. The focus is on the scope of the actions proposed by NOAA. Activities either have already been analyzed (No Action) or new and expanded activities will have additional project-specific analysis. FWS activities may be both general or specific and thus require either a programmatic or more detailed analysis. State activities will be evaluated on a case-by-case basis to determine if additional analysis is needed. This analysis covers the biological, cultural, and historic resources of the Monument, as well as the terrestrial and marine environments of the NWHI and the main Hawaiian Islands, as appropriate.

1.4 ALTERNATIVES CONSIDERED BUT NOT ANALYZED

In the development of the Monument Management Plan, the MMB also considered other alternatives for managing the Monument. Some comments received from the public have been to close the area that is now the Monument entirely. However, the Proclamation establishes parameters and provides for certain access and activities in the Monument administration, and as such, this is not an option for the Co-Trustees. Providing public use opportunities, education and interpretation at Midway Atoll NWR facilitates a broader understanding and appreciation of the unique NWHI ecosystem.

The Midway Conceptual Plan describes three alternatives to support field activities and visitor services at Midway Atoll: Alternatives A (No Action), B (Integrated Action), and C (Enhanced Action). The enhanced Alternative C was considered but not carried forward for analysis. The enhanced alternative would focus on staff and resources on restoring Midway Atoll habitat and species, cleaning up contaminated sites, and preserving historic resources and limiting visitor services. This alternative would require additional staff and housing to support larger and more focused efforts. Short-term overnight visitation would be as much as 50 volunteer-visitors, while seasonal or long-term contractors, researchers, and habitat specialists would be up to 130 people, thus totaling approximately 180 people on any given night. The increased island population from the current regular capacity of 120 people would require increased utility systems infrastructure. Increased staffing for accelerated restoration and preservation would limit public visitation, and on-site interpretive and educational facilities would be minimal. Visitation would be restricted to those who would carry out approved refuge management activities, essentially closing the Monument to a large interested constituency, including many WWII veterans. A more integrated approach, which balances restoration, preservation, and visitor services, was preferred, and thus this alternative (Alternative C) was not carried forward.

1.5 DESCRIPTION OF NO ACTION ALTERNATIVE

Under the No Action alternative, the Co-Trustees would continue to implement activities to address priority management needs of the Monument based on agency-specific plans. These current activities fall under 22 action areas, as summarized below and described in detail in the Monument Management Plan. Efforts that would result in direct actions are identified and described in the paragraphs and tables below as planning and administrative, field, or infrastructure and development activities.

1.5.1 Marine Conservation Science

Current marine conservation science activities in the Monument are described in the Monument Management Plan and include planning and administrative and field activities (see Monument Management Plan, sections 1.1, 1.2, and 1.4 and section 3.1.1, Marine Conservation Science Action Plan). A summary of current activities in the Monument is provided below with references to specific activities in Marine Conservation Science (MCS) Action Plan.

1.5.1.1 Current planning and administrative activities

Current planning and administrative activities would continue to be focused on coordinating research efforts, managing data, and incorporating research results into school curricula. Research update meetings are coordinated among research partners (MCS-2.5). Regularly scheduled meetings are coordinated among managers, staff, and researchers to facilitate information exchange and to provide updates on research efforts in the Monument. These ongoing activities engage scientists conducting research in the NWHI to share their results with each other and with the MMB to assist identify research priorities to improve management decision making. Annual meetings are conducted to present research in the NWHI (MCS-3.1). These meetings provide a forum for the multidisciplinary research community, managers, and interested public to present current research initiatives and recent findings from research, including studies of the ecosystem, Native Hawaiians, maritime heritage, and economics.

Research, monitoring, and bathymetric data are being collected, analyzed, and input to appropriate databases to better inform management decisions (MCS-1.5). Current protocols allow for consistency in data collection protocols over time, which is of primary importance in any monitoring program in order to enable statistically valid comparisons among time periods (MCS-2.2).

Efforts are underway to translate NWHI research findings to the public and to incorporate them into the classroom curricula (MCS-3.2). Many of the materials developed during previous marine research expeditions have been incorporated into other outreach products, specifically displays at the Mokupāpapa Discovery Center, slideshows, and educational curricula. Similarly, educational materials have been associated with satellite tracking of albatross and migration of Golden Plovers (MCS-3.4).

1.5.1.2 Current field activities

Current field activities would continue to be focused on characterizing shallow- and deepwater marine habitats and on integrating education components on some research expeditions. The MMB and its partners would continue to conduct fieldwork to characterize shallow-water marine habitats and their spatial distributions in the NWHI, using a combination of methods, including remote sensing and underwater surveys (MCS-1.1). The shallow-water coral reef ecosystems would continue to be monitored, using sampling protocols developed through an interagency collaborative effort (MCS-1.2).

The MMB and its partners would continue to conduct deepwater mapping and characterization using submersibles, remotely operated vehicles, remote underwater cameras, and multibeam and sidescan sonar (MCS-1.3). Some current scientific expeditions include educational components that have been highly successful for education and outreach. Components include live Web sites with updates from the research vessel, imagery, and video (MCS-3.3).

Current activities described above that would be expanded under the Proposed Action alternative include MCS-1.3, MCS-1.5, MCS-2.2, MCS-3.2, MSC-3.3, and MSC-3.4.

1.5.2 Native Hawaiian Culture and History

Current Native Hawaiian culture and history activities in the Monument are described in the Monument Management Plan and include planning and administrative and field activities (see section 1.3 on resource condition and status and section 3.1.2, Native Hawaiian Culture and History Action Plan, which describes current status and background). A summary of activities in the Monument is provided below with references to specific activities in the Native Hawaiian Cultural and History (NHCH) Action Plan.

1.5.2.1 Current planning and administrative activities

Current planning and administrative activities would continue to be focused on identifying research needs and priorities, assessing cultural resource capacity, and integrating Native Hawaiian traditional ecological knowledge and management into Monument management. Scientific and Native Hawaiian cultural research needs would continue to be identified and prioritized through consultation with the Native Hawaiian Cultural Working Group and other

Native Hawaiian institutions and organizations (NHCH-1.1). Ongoing efforts to develop cultural research priorities would continue alongside associated management challenges and opportunities (NHCH-1.2). Limited cultural and historical research about the NWHI has already been directly conducted by NOAA and FWS, in conjunction with partner organizations such as the Office of Hawaiian Affairs and the Bishop Museum (NHCH-2.1). Current agreements with the University of Hawai‘i are limited to curriculum development (NHCH-2.7). The MMB would continue to assess capacity to support cultural resource management activities (NHCH-3.1). Monument resource managers have varying backgrounds and experiences of Native Hawaiian cultural significance in the Monument, and efforts would continue to inform them about these issues (NHCH-3.3). Native Hawaiian traditional ecological knowledge and management concepts would continue to inform management decisions in the Monument (NHCH-3.4). Native Hawaiian values and cultural information have been used in certain outreach and education programs targeted at both Native Hawaiians and the general public (NHCH-5.1). The development of a culturally based strategy for education and outreach makes information relevant, attractive, and accessible to Native Hawaiians (NHCH-5.2). Currently anyone granted a permit to access the Monument receives a cultural briefing to help foster a deeper respect for the NWHI through better understanding of, and respect for, Hawaiian values and cultural significance of the place (NHCH-5.3).

1.5.2.2 Current field activities

Current field activities would continue to focus on cultural field research and education. Limited cultural field research and education has been facilitated by the Monument. (NHCH-2.3). Two cultural access trip has occurred since the Monument was established (NHCH-2.6). Native Hawaiian practitioners and cultural experts, along with the Native Hawaiian Cultural Working Group, have been advising the OHA on Monument management activities; OHA provides information and recommendations based on this advice to the MMB (NHCH-3.2). Both Nihoa and Mokumanamana are recognized as culturally significant. They are listed on the National Register of Historic Places and protected by FWS in accordance with the National Wildlife Refuge System Administration Act (NWRSA) of 1966, as amended, and the National Historic Preservation Act of 1966 (NHCH-4.2).

Current activities described above that would be expanded under the Proposed Action alternative include NHCH-2.1, NHCH-2.3, NHCH-2.6, NHCH-2.7, NHCH-3.2, NHCH-3.3, NHCH-4.2, NHCH-5.1, NHCH-5.2, and NHCH-5.3.

1.5.3 Historic Resources

Current historic resources activities in the Monument are described in the Monument Management Plan and include planning and administrative and infrastructure and development activities (see Monument Management Plan, section 3.1.3, Historic Resources Action Plan). A summary of current activities in the Monument is provided below.

1.5.3.1 Current planning and administrative activities

Current planning and administrative activities would continue to be guided by the Midway Atoll NWR Historic Preservation Plan for long-term management and treatment for each of the

63 historic properties eligible for inclusion in the National Register of Historic Places. The procedures in the plan would continue to be used for treating new discoveries. Updates to the Midway Atoll Historic Preservation Plan would continue by reconciling it with the Midway Visitor Service Plan, lead paint abatement plan, and other facilities maintenance and use plans (HR-1.1). Approval of the updated Historic Preservation Plan from Monument partners and the Advisory Council on Historic Preservation would be executed in an agreement document (HR-1.2). Historic preservation responsibilities and procedures would continue to be addressed in annual training of Monument staff and Midway contractors (HR-2.2). Plan and conduct a field survey and documentation of selected National Historic Landmark sites and features within 2 years (HR-3.2). Updating and maintaining the Battle of Midway National Historic Landmark would continue, and interested parties would be included in this planning activity (HR-3.3).

FWS manages the historic properties at Midway Atoll according to a Programmatic Agreement and Historic Preservation Plan. This plan prescribes six different treatment categories for each of the 63 historic properties, based on qualitative measures recommended by interest groups, specialists, and the Advisory Council on Historic Preservation.

1.5.3.2 Current infrastructure and development activities

Current infrastructure and development activities would continue to be guided by the Midway Atoll NWR Historic Preservation Plan for long-term management and treatment for each of the 63 historic properties eligible for inclusion in the National Register of Historic Places. The procedures in the plan would continue to be used for treating new discoveries. Repair and maintenance treatments at National Historic Landmark features would continue to be implemented, with volunteers and unskilled laborers performing maintenance activities and specially trained historic preservation architects and engineers performing repair work (HR-3.4).

Current activities described above that would be expanded under the Proposed Action alternative include HR-1.1, HR-1.2, HR-2.2, HR-3.2, HR-3.3, HR-3.4.

1.5.4 Maritime Heritage

Current maritime heritage activities in the Monument are described in the Monument Management Plan and include planning and administrative, and field activities (see Monument Management Plan, section 3.1.4, Maritime Heritage Action Plan) A summary of current activities in the Monument is provided below with references to specific activities in the Maritime Heritage (MH) Action Plan.

1.5.4.1 Current planning and administrative activities

Current planning and administrative activities would continue to be focused on basic documentary research. Current maritime heritage resource documentation and inventory plans and practices would continue to include annual collection and review of appropriate documentation (MH-1.1). Artifact recovery operation status reports would be developed (MH-1.4), along with an internal maritime heritage resource database (MH-1.5). Maritime heritage information would continue to be incorporated into public education and outreach (MH-2.1). Presentations on maritime heritage resources would continue to be developed and delivered at professional conferences and public events (MH-2.2).

Coordination of interagency maritime heritage resource management would continue to be conducted annually (MH-3.1). Protective measures would be enhanced for selected sites within the NWHI through the National Register of Historic Places nomination process (MH-3.2). A Monument Maritime Heritage Research Plan is being developed for implementation within two years (MH-3.3).

1.5.4.2 Current field activities

Current field activities would continue to focus on coordinated field mapping surveys (MH-1.2). These field surveys include shoreline terrestrial surveys and inventory and marine remote sensing using a magnetometer and side-scan sonar.

1.5.5 Threatened and Endangered Species

Current threatened and endangered species activities in the Monument are described in the Monument Management Plan and include planning and administrative and field activities (see Monument Management Plan sections 1.1, 1.2, and 1.4 (Monument setting, resource status and conditions, and stressors) and 3.2.1 (Threatened and Endangered Species Action Plan, Current Status, and Background). A summary of current activities in the Monument is provided below with references to specific activities in the Threatened and Endangered Species (TES) Action Plan.

1.5.5.1 Current planning and administrative activities

Current planning and administrative activities would continue to focus on evaluating potential threats and management needs for threatened and endangered species. NOAA Fisheries has conducted initial habitat loss projections due to sea level rise to evaluate potential threats to Hawaiian monk seals (TES-1.3). Monument staff would continue to reduce any effects of human interactions with monk seals through a variety of methods, including consultations, permitting, and promoting watchable wildlife guidelines. Increased outreach and education activities focused on the Hawaiian monk seal are now being conducted (TES-1.5). Materials have been created for public outreach and attendance at domestic and international meetings to carry out government-to-government communication on fisheries measures that can reduce by-catch of birds that may nest in the Monument during commercial fishing operations that are taking place outside the Monument (TES-4.3).

Ongoing efforts to cooperate with the Japanese government continue to establish one or more breeding populations of short-tailed albatrosses on islands free from threats, such as active volcanoes and introduced mammals (TES-4.1). FWS would continue to evaluate the potential to establish one to three colonies of three endangered plants, *Amaranthus brownii*, *Schiedea verticillata*, and *Pritchardia remota* outside of their historic ranges (TES-7.5). In addition, the MMB would continue to conduct Endangered Species Act (ESA) consultations for all authorized actions (TES-8.1, TES-8.3).

1.5.5.2 Current field activities

Current field activities would continue to focus on conserving, protecting, and managing habitat specifically for the Hawaiian monk seal, green turtle, cetaceans, short-tailed albatross, Laysan

duck, passerines (perching birds), and a variety of listed plant species, One aspect of habitat management is the ongoing efforts to reduce marine debris, particularly in key monk seal habitat; this action is intended to reduce the number of injuries and mortality due to entanglement (TES-1.1). Current emergency response efforts related to Hawaiian monk seals are handled on a case-by-case basis in monk seal camps (TES-1.2).

Cetacean (whales, dolphins, and porpoises) population census research is ongoing (TES-2.1). Spinner dolphin mark and recapture photo identification surveys would continue yearly (TES-2.2), and Monument staff would continue monitoring, characterizing, and addressing the effects of marine debris on cetaceans (TES-2.3). To date, no cases of a cetacean with an infectious disease have been documented in the NWHI, but the appropriate response to any suspected infectious disease incidents would be completed in a timely manner, and contingency response plans would be developed, if required (TES-2.4). However, controls are being used to prevent negative human-cetacean interactions that may occur as a result of visitor programs or research activities (TES-2.5).

Research has been conducted on the green turtle nesting population in the NWHI since 1973 and is one of the longest series of nesting abundance data for any sea turtle population around the globe (TES-3.1). Green turtle nesting and basking habitat is protected by prohibiting undesirable habitat alteration and controlling access to nesting and basking beaches (TES-3.2). People are prevented from driving and in some cases walking on nesting beaches. Turtle best management practices are being implemented to avoid and to minimize any potential to disturb sea turtle foraging areas (TES-3.3).

Initial studies have been conducted to evaluate the correlation between reproductive success of albatross and contaminant body burdens (TES-4.2). The population of the Laysan duck would continue to be monitored (TES-5.2). The feasibility of translocating Laysan finch, Nihoa finch, and the Nihoa millerbird to other areas of the Monument is being evaluated to buffer against catastrophic declines of current natural populations (TES-6.2).

Efforts to protect all endangered plant species from extinction would continue by collecting their seeds from Nihoa and Laysan Islands and sending them to seed banks, such as the Lyon Arboretum and National Tropical Botanical Garden (TES-7.1).

MMB does not stop at monitoring existing population but seeks to increase numbers and locations of *Amaranthus brownii* and *Schiedea verticillata* on Nihoa by 2018 (TES-7.2) and to establish a self-sustaining Nihoa fan palm (*Pritchardia remota*) population on Laysan Island by 2012 (TES-7.3). These efforts are supported through continued greenhouse operations on Laysan Island to propagate and outplant these and other rare plant species (TES-7.4).

The MMB continues to monitor populations of threatened and endangered species by conducting annual spinner dolphin mark and recapture photo identification surveys (TES-2.2), population monitoring of Laysan ducks on Laysan Island and Midway Atoll (TES-5.1), and annual censuses of populations of each passerine species, along with monitoring their food and habitat requirements (TES-6.1). In addition, ecological baselines of listed species and critical habitat, description of sensitive areas, and other information currently and is being periodically updated (TES-8.2).

Current activities described above that would be expanded under the Proposed Action alternative include TES-1.2, TES-1.3, TES-1.5, TES-2.1, TES-2.3, TES-2.4, TES-2.5, TES-3.1, TES-3.3, TES-4.1, TES-4.2, TES-4.3, TES-5.2, TES-6.2, TES-7.1, and TES-8.2.

1.5.6 Migratory Birds

Current Migratory bird activities in the Monument are described in the Monument Management Plan and include planning and administrative and field activities (see Monument Management Plan, section 3.2.2). A summary of current activities in the Monument is provided below, with references to specific activities in the Migratory Bird (MB) Action Plan.

1.5.6.1 Current planning and administrative activities

Current planning and administrative activities would continue to focus on reducing the effect of fisheries outside the Monument on migratory bird populations and ensuring that spill response plans are aimed at minimizing mortality to migratory birds. The Monument staff work with partners to reduce the effect of commercial and sport fisheries on migratory bird populations (MB-2.5). They provide data on seabird population and status and biological expertise regarding migratory bird bycatch and other fishing effects on bird species, particularly the Laysan albatrosses and black-footed albatrosses. Monument staff's biological expertise is tapped to teach seabird identification skills to fishers and fisheries observers and assisting with the development of mitigation techniques should significant effects occur. The MMB would ensure that all spill response plans have adequate coverage of actions necessary to minimize mortality to migratory birds (MB-2.3).

1.5.6.2 Current field activities

Current field activities would continue to focus on controlling or eradicating nonnative species, conducting surveillance of avian diseases, monitoring contaminant levels in birds and the environment, monitoring populations of seabirds, and restoring seabird populations. Nonnative species would continue to be controlled at all sites where they have a negative effect on the survivorship or reproductive performance of migratory birds (MB-1.1). Native vegetation communities would continue to be restored that are important to seabird nesting (MB-1.2). In addition, species-specific social attraction techniques, such as automated playback of calls and providing nesting boxes to encourage recolonization of Bulwer's petrels and Tristram's storm-petrels are ongoing at Midway Atoll (MB-4.1).

The MMB and participating agencies would continue to conduct surveillance for evidence of avian disease outbreaks (including Asian H5N1 Avian Influenza), reporting all instances of unusual mortality, collecting samples, and following response plans if disease is detected (MB-2.1). Contaminant levels in birds and their habitats would continue to be evaluated to determine if the potential exists to cause lethal or slightly below lethal effects (MB-2.2). Furthermore, rigorous quarantine protocols would be maintained to prevent the introduction of alien species that may prove hazardous, specifically to migratory birds (MB-2.4).

Using standard methods devised for tropical seabirds, monitoring a suite of 15 focal seabird species would continue at specific sites in the Monument to track changes in population size and help researchers understand the underlying causes of that change (MB-3.1). Changes in habitat

quality would continue to be monitored by measuring reproductive performance and diet composition in selected seabird species (MB-3.2). Standardized methods would continue to be used to accurately assess the population size and trends of overwintering and migrating Pacific golden plovers, bristle-thighed curlews, wandering tattlers, and ruddy turnstones (MB-3.3).

Current activities described above that would be expanded under the Proposed Action alternative include MB-1.1, MB-1.2, MB-2.2, MB-2.3, MB-3.1, MB-3.2, MB-3.3.

1.5.7 Habitat Management and Conservation

Current habitat management and conservation activities in the Monument are described in the Monument Management Plan and include field activities (see Monument Management Plan, sections 3.2.3). A summary of current activities in the Monument is provided below with references to specific activities in the Habitat Management and Conservation (HMC) Action Plan.

1.5.7.1 Current field activities

Current field activities would continue to focus on habitat restoration and monitoring to document contamination that is degrading habitats within the Monument. Locations of shoreline dumps and other discarded material are documented when found at Kure Atoll (HMC-2.1). Locations of documented landfills would continue to be sought (HMC-2.3). Monument staff would continue to collect and fingerprint washed up oil from mystery spills and its effect on wildlife (HMC-2.5). Studies also would continue on an area of Laysan Island that was contaminated by the insecticide carbofuran (HMC-2.6) to document contamination that degrades habitats within the Monument. Oil fingerprinting is used to determine its origin and to build an oil sample archive for possible use as evidence in liability assignment.

Propagation and outplanting of extant native species identified in the pollen record and historical documents from Laysan Island would continue to occur in 250 acres of vegetated area at Midway Atoll (HMC-4.1). Alien and invasive species would continue to be replaced with native species on Midway and Laysan Islands (HMC-4.3). Habitat restoration activities are part of the routine field season on Kure Atoll (HMC-4.6).

Currently, MMB is monitoring changes in species composition and structure of the coastal shrub and mixed grass communities on all the coralline islands and atolls of the Monument (HMC-4.7) and on basalt islands (HMC-5.2). Water levels, salinity, and other water quality parameters of Laysan Lake continue to be monitored (HMC-6.1). When needed, activities such as installing drift fences are undertaken to slow the movement of sand and the drift of dunes into the lake (HMC-6.2).

Activities described above that would be expanded under the Proposed Action alternative include HMC-2.1, HMC-2.3, and HMC-4.7.

1.5.8 Marine Debris

Current marine debris activities in the Monument are described in the Monument Management Plan and include planning and administrative and field activities (see Monument Management

Plan, section 1.4 and section 3.3.1, Marine Debris Action Plan). A summary of current activities in the Monument is provided below, with references to specific activities in the Marine Debris (MD) Action Plan.

1.5.8.1 Current planning and administrative activities

Current planning and administrative activities are focused on collating marine debris data from various entities. Information and data are collected from these entities that use a variety of data collection methods (MD-2.2).

1.5.8.2 Current field activities

Current field activities focus on multiagency marine debris cleanup. Current multiagency marine debris cleanup efforts have been highly effective in removing marine debris from shallow water areas and beaches of the Monument (MD-1.1). These efforts have also included documenting, securing, and removing hazardous materials that wash ashore (MD-1.2). The MMB also works with governmental, nongovernmental, and industry partners to support studies on marine debris issues. One study underway is to assess net scar recovery over time at Midway Atoll (MD-2.1).

Current activities described above that would be expanded under the Proposed Action alternative include MD-1.1, MD-1.2, MD-2.1, and MD-2.2.

1.5.9 Alien Species

Current alien species management activities in the Monument are described in the Monument Management Plan and include planning and administrative and field activities (see Monument Management Plan section 3.3.2, Alien Species Action Plan). A summary of current activities in the Monument is provided below, with references to specific activities in the Alien Species (AS) Action Plan.

1.5.9.1 Current planning and administrative activities

Current planning and administrative activities would continue to focus on developing outreach materials and working with various groups to address invasive species issues. As part of the outreach to all Monument permittees, Monument staff would continue to develop best management practices to prevent, control, and eradicate alien species (AS-1.2) and to develop outreach informational materials that include information on regulations, permit requirements, and best management practices related to alien species (AS-9.1). The spread of invasive species and the success of control measures would be tracked in a GIS database of marine and terrestrial alien species (AS-2.2). Some alien species information has been integrated into general Monument outreach materials. For example, the “Navigating Change” curriculum and video series developed in 2004 contained information on the threat of invasive species to native ecosystems (AS-9.2). The MMB is currently working with a number of groups addressing invasive species in Hawai‘i, including the Hawai‘i Invasive Species Council, the Alien Aquatic Organism Task Force, and the Coordinating Group on Alien Pest Species, among several others. The Pacific Invasives Network is addressing invasive species issues in Pacific islands (AS-10.1).

1.5.9.2 Current field activities

Current field activities would continue to focus on alien species prevention, detection, control, and eradication methods. The control of alien species would continue to be addressed through the continued strict enforcement of existing quarantine protocols (AS-3.1) and mandatory hull inspections of all permitted vessels entering the Monument (AS-3.2) to keep the incidence of new invasive species in the NWHI low. Aggressive control of nonnative species is occurring at Tern, Laysan, and Midway Atoll (AS-6.1). For example the grass, sandbur, was eradicated at Laysan (AS-6.2), and work is occurring to control *Pluchea*, *Sporobolus*, and swine cress at Laysan (AS-6.3). Also, alien species have begun to be surveyed and mapped on Kure (AS-6.4).

Research is conducted on alien species detection and effects of invasive species on native ecosystems (AS-8.1). Terrestrial research is conducted on alien species prevention and control methods for native ecosystems (AS-8.2). Existing invasions of alien species are periodically monitored to determine rate of spread and distribution relative to sensitive species (AS-2.1).

Current activities described above that would be expanded under the Proposed Action alternative include AS-1.2, AS-2.1, AS-2.2, AS-6.1, AS-6.2, AS-6.3, AS-6.4, AS-8.1, AS-8.2, AS-9.1, AS-9.2, AS-10.1.

1.5.10 Maritime Transportation and Aviation

Current maritime transportation and aviation activities in the Monument are described in the Monument Management Plan and include planning and administrative, field, and infrastructure and development activities (see Monument Management Plan, section 3.3.3, Maritime Transportation and Aviation Action Plan). A summary of current activities in the Monument is provided below, with references to specific activities in the Marine Transportation and Aviation (MTA) Action Plan.

1.5.10.1 Current planning and administrative activities

Current planning and administrative activities conducted to manage maritime transportation within the NWHI include coordinating implementation of domestic and international shipping designations with appropriate entities (MTA-1.1). The International Maritime Organization (IMO) has designated the Monument as a Particularly Sensitive Sea Area. This augments protective measures by alerting international mariners to exercise extreme caution when navigating through the area. The IMO adopted associated protective measures for the area that include expanded areas to be avoided and a ship reporting system. Protocols exist for safe aircraft and vessel operations within the Monument (MTA-2.2). Information on alien species introductions, cultural protocols, anchoring, discharge, and Monument regulations are incorporated into training for Monument users and vessel operators before they can access the area (MTA-2.3).

1.5.10.2 Current infrastructure and development activities

Current infrastructure and development activities would continue to focus on encouraging energy and water conservation on all vessels operating with the Monument. Water and energy conservation measures would be continually improved on all vessels operating within the

Monument, upgrading to new practices and technologies as they become available (MTA-2.4). The NOAA vessel *Hi'ialakai* is increasing shipboard conservation measures by recycling, installing water-saving devices, and testing alternative fuels and hydraulic fluids. The MMB would continue to work with various ship managers to encourage similar practices for all vessels operating within the Monument.

Activities described above that would be expanded under the Proposed Action alternative include MTA-2.2 and MTA-2.3.

1.5.11 Emergency Response and Natural Resource Damage Assessment

Current emergency response and natural resource damage assessment activities in the Monument are described in the Monument Management Plan and include planning and administrative activities (see Monument Management Plan, section 3.3.4, Emergency Response and Natural Resource Damage Assessment Action Plan). A summary of activities in the Monument is provided below, with references to specific activities in the Emergency Response and Natural Resource Damage Assessment (ERDA) Action Plan.

1.5.11.1 Current planning and administrative activities

Current planning and administrative activities include incident response and contingency planning. Emergency response in the NWHI is coordinated under a series of plans and systems, including the National Response Plan and the National Incident Management System. The National Response Plan establishes a comprehensive all-hazards approach to enhance the ability of the United States to manage domestic incidents, including oil and hazardous chemical spills. This plan incorporates the National Contingency Plan and its regulations governing how response is conducted by various parties. The NWHI is also covered by a more specific Area Contingency Plan for the Hawaiian Islands.

Appropriate Monument staff would receive training and certifications, including Incident Command System (ICS), hazardous waste Operations and emergency response, boat safety, flight safety, first responder, and first aid, as needed (ERDA-1.2). Monument staff attend Regional Response Team meetings, as appropriate, to keep abreast of current communication and training and to build working relationships with agency staff that make up both the Regional Response Team and the Coast Guard agency staff. Participation in emergency response drills and other events would help with preparedness and better integration into the response process (ERDA-1.3). Appropriate Monument staff have been trained and work closely with a variety of damage assessment programs, to ensure that appropriate response, injury assessment, and restoration activities take place for any given case (ERDA-1.4). There is an area contingency plan and environmental sensitivity indices for the Monument, which damage assessment personnel follow (ERDA-3.1). Monument staff respond to non-ICS events within the Monument (ERDA-3.2). The MMB uses technical experts to consult on permit applications.

Activities described above that would be expanded under the Proposed Action alternative include ERDA-1.2, ERDA-1.3, ERDA-1.4, ERDA-3.1, ERDA-3.2.

1.5.12 Permitting

Current Permitting responsibilities and activities in the Monument are described in the Monument Management Plan and include planning and administrative activities (see Monument Management Plan section 2, Management Framework and section 3.4.1, Permitting Action Plan). A summary of current activities in the Monument is provided below, with references to specific activities in the Permitting (P) Action Plan.

1.5.12.1 Current planning and administrative activities

Current planning and administrative activities include reviewing and tracking permit applications and reports. The Monument staff serve as the central portal through which all permit inquiries and applications are received and processed (P-1.1). Each year, the permit application, instructions, and template are evaluated and updated based on lessons learned from the previous year (P-1.2). Monument staff regularly bring all permits and permit-related issues before the MMB for discussion and decision making. In addition, individual permit applications are reviewed for environmental, cultural, and historic effects, and a case-by-case environmental analysis under NEPA may be conducted as necessary (P-1.3). The MMB uses technical experts to consult on permit applications (P-1.4). Monument staff have begun to develop a geographic information system (GIS)-based permit tracking system, consisting of historical permit data (P-2.1).

Permits are issued based on regulatory requirements and proclamation findings and other criteria established by the MMB to assist with permit reviews. Currently, reports from permittees are received in an unstandardized format (P-2.4). Many of the action plans include educational or outreach activities related to permitting or regulations (P-3.1). Permit applicants are required to meet the findings detailed in Proclamation 8031 and receive a cultural briefing before they are allowed access to the Monument (P-3.2). Information on the permitting process has been placed on the Monument website, including application forms and instructions (P-3.3). Training in advance of a visit to the Monument is an important component of all permitted activities and is required for all those planning to enter the Monument for the first time. Several MMB agencies have formal and informal training mechanisms already in place (P-3.4).

Previously, the State of Hawai'i Land Board was the primary public forum for being notified of Monument permit applications under consideration by Co-Trustees in Hawaiian waters. To ensure that the general public has access to and is informed of all permit applications under review, a policy on public posting was developed and finalized in November 2007 to regularly update the public on proposed and permitted activities (P-3.5). In addition, the permit application, instructions, and template are evaluated and updated yearly based on lessons learned from the previous year. In addition, feedback from permittees and applicants are gathered yearly to maintain the most efficient and comprehensible permit program possible.

Activities described above that would be expanded under the Proposed Action alternative include P-1.4, P-2.1, P-2.4, P-3.1, P-3.2, P-3.3, P-3.4.

1.5.13 Enforcement

Current enforcement responsibilities and activities in the Monument are described in the Monument Management Plan and include planning and administrative and field activities (see Monument Management Plan, section 2, and section 3.4.2, Enforcement Action Plan). A summary of current activities in the Monument is provided below with references to specific activities in the Enforcement (EN) Action Plan.

1.5.13.1 Current planning and administrative activities

Current planning and administrative activities would continue to focus on enforcement of Monument and other applicable regulations, assessment of threats, and operation of a vessel monitoring system. Enforcement activities in the Monument are conducted by the individual Co-Trustee agencies, NOAA Office of Law Enforcement, FWS Law Enforcement, Hawai'i State Department of Land and Natural Resources (DLNR) Division of Conservation and Resource Enforcement, and the United States Coast Guard (USCG). At the national level, NOAA and FWS have agreements on enforcement (EN-1.2). Collaboration between agencies is conducted on an informal basis as needed to address enforcement issues. Enforcement training is conducted individually by each enforcement entity. A comprehensive threat assessment and enforcement plan is being developed to ensure surveillance resources can be effectively deployed Monument wide and law enforcement agencies can accurately assess threats (EN-2.1).

Currently the Monument relies on USCG platforms for enforcement operations (EN2-4). A Vessel Monitoring System is required by Monument regulations (50 CFR 404), and all permitted vessels must have this system to operate in the Monument (EN-2.2). Current briefings for permittees include information on Monument regulations, permit requirements, and best management practices (EN-3.1). No enforcement personnel are currently stationed in the Monument.

1.5.13.2 Current field activities

Current field activities would continue to focus on enforcement of Monument and other applicable regulations, assessment of threats, and operation of a vessel monitoring system. Enforcement activities in the Monument are conducted by the individual Co-Trustee agencies, NOAA Office of Law Enforcement, FWS Law Enforcement, DLNR Division of Conservation and Resource Enforcement, and the USCG. Midway Atoll is predicted to be a hub of activities for the Monument, and a continued increase in law enforcement capacity is necessary to ensure visitor and staff safety, regulatory compliance, and enforcement (EN-1.5).

Current activities described above that would be expanded under the Proposed Action alternative are EN-1.2, EN-1.5, EN-2.4, EN-3.1.

1.5.14 Midway Atoll Visitors Services

Current Midway Atoll visitor services are described in the Monument Management Plan and include field activities (see Monument Management Plan, 3.4.3, Midway Atoll Visitor Services Action Plan). A summary of current activities in the Monument is provided below with references to specific activities in the Midway Atoll Visitor Services (VS) Action Plan.

1.5.14.1 Current field activities

Current field activities would continue to focus on tours and educational opportunities to visitors consistent with the May 2007 Interim Midway Atoll National Wildlife Refuge Visitor Services Plan. In January 2008, the new program began offering limited opportunities for visitors to experience Midway and the Monument's natural, cultural, and historic resources. The interim visitor services plan, in accordance with the Refuge System Administration Act, has determined that certain recreational uses are compatible. Educational opportunities, which include diving, kayaking, and photography, are consistent with the interim visitors services plan (VS-1.1). Currently, walking tours and snorkeling are offered up to 40 people at a time, consistent with the interim visitors services plan (VS-1.2). Visitor effects and compatibility, as required by FWS policies, would continue to be monitored (VS-1.3). A voluntary visitor satisfaction survey is provided to each guest, with information provided to the refuge manager for appropriate action (VS-2.1).

Current activities described above that would be expanded under the Proposed Action alternative are VS-1.1, VS-1.2, VS-1.3, VS-2.1.

1.5.15 Agency Coordination

Current agency coordination activities in the Monument are described in the Monument Management Plan and include planning and administrative and field activities (see Monument Management Plan, section 2, Management Framework, and section 3.5.1, Agency Coordination Action Plan). A summary of current activities in the Monument is provided below, with references to specific activities in the Agency Coordination (AC) Action Plan.

1.5.15.1 Current planning and administrative activities

Current planning and administrative activities are focused on agency coordination among government partners responsible for Monument management activities and other government entities. The MMB currently employs agreed on standard operating procedures for meetings and other events (AC-1.1). A Memorandum of Agreement among the Department of Commerce, the Department of the Interior, and the State of Hawai'i was signed in 2006 and outlines the coordinated management of the Monument (AC-2.1). Efforts exist to coordinate with agencies outside of the MMB through the Interagency Coordinating Committee (AC-2.2). The collaboration of agencies provides a means to improve management effectiveness in order to assess, prioritize, and plan activities at the Monument. An interagency strategic planning workshop is conducted with the Interagency Coordination Committee to discuss previous year activities, to plan and prioritize new activities, and to identify gaps or additional needs (AC-2.3).

The MMB maintains open communication with the Department of Defense (DOD) and the U.S. Navy on potential areas of cooperation (AC-3.1). The MMB collaborates with managers of marine protected areas and constituents in Hawai'i and the Pacific to share information on the management challenges common to coral reef ecosystems and the importance of those ecosystems to the world (AC-3.2). The State of Hawai'i would continue to take the lead within the MMB and would collaborate with agencies to develop a World Heritage application as the

U.S. considers obtaining World Heritage Site status from the United Nations Educational, Scientific, and Cultural Organization (UNESCO) World Heritage Center (AC-3.3).

Current activities described above that would be expanded under the Proposed Action alternative are AC-1.1, AC-2.1, AC-2.2, AC-3.1

1.5.16 Constituency Building and Outreach

Current constituency building and outreach activities are described in the Monument Management Plan and include planning and administrative activities (see Monument Management Plan, section 3.5.2, Constituency Building and Outreach Action Plan). A summary of current activities in the Monument is provided below with references to specific activities in the Constituency Building and Outreach (CBO) Action Plan.

1.5.16.1 Current planning and administrative activities

Current planning and administrative activities would continue to focus on building a constituency of informed stakeholders. Monument staff would continue to refine and implement the Monument Media Communications Protocol to engage news media in informing the public about the Monument's resources and activities (CBO-1.2). The Monument serves as a powerful focal point for engaging a broad and diverse base of constituents and increasing ocean ecosystem literacy (CBO-1.4).

Monument staff will continue to produce a variety of materials to aid Monument constituencies in understanding key aspects of the Monument. The overall site brochure is the primary informational mechanism to help the public, and update letters have been provided to the public regularly during development of the Monument Management Plan (CBO-2.2).

Establishment of the Monument has created great interest from documentary filmmakers, writers, photographers, and others. The MMB supports those endeavors that provide significant benefit to Monument resources and management, and our constituents without affecting Monument resources (CBO-2.3).

Because most people are not able to visit the Monument due to its remoteness and fragility, it is important to bring the place to the people. Through discovery centers, Web sites, public outreach activities and materials, and the Monument media communications protocol, Monument information is dispersed in an accurate, consistent, and timely manner in order to reach a broader audience (CBO-3.1). Public forums have been held regarding specific aspects of the Monument (CBO-3.2). As the Hawaiian Archipelago is most closely related to other sites across Oceania, it is important for the MMB to continue to collaborate with a network of marine managed areas in this region (CBO-3.3). These partnerships would allow for a greater exchange of knowledge and expertise. They would also provide opportunities to build awareness about the important connection between cultural and conservation practices. A volunteer program would continue to be conducted in support of the Monument (Tern, Laysan, Midway, and Kure) (CBO-3.4). Guidance and support relative to Native Hawaiian cultural issues would continue to be provided to the Monument through OHA (CBO-3.6). Nonprofit friends groups would continue to be partners in contributing to the interpretation or recreation and educational programs of Midway (CBO-3.7). The NWHI Coral Reef Ecosystem Reserve Advisory Council, formed in 2001 for the

Reserve, would continue to be convened until the Monument Alliance is established (CBO-3.8). The Reserve Advisory Council has served as a mechanism for public input and a venue for public comment on management activities.

Initial discussions of Monument-wide interpretive themes have been held among the Co-Trustee agencies (CBO-4.1). Two existing interpretive facilities at Hilo and on Midway Atoll NWR would continue to provide interpretive information (CBO-4.2). Monument staff would continue to be engaged in a variety of interpretive efforts to better inform Monument constituencies (CBO-4.3).

1.5.16.2 Current field activities

Because most people are not able to visit the Monument due to its remoteness, current field activities are focused on investigating new technologies to bring the place to the people. To accomplish this goal, Monument staff are investigating a variety of technologies, including underwater video cameras, real-time video transmission, virtual field trips, Web site interfaces, and exhibits in discovery centers (CBO-1.5).

1.5.17 Native Hawaiian Community Involvement

Current Native Hawaiian community involvement activities are described in the Monument Management Plan and include planning and administrative activities (Monument Management Plan, section 3.5.3, Native Hawaiian Community Involvement Action Plan). A summary of current activities in the Monument is provided below, with references to specific activities in the Native Hawaiian Community Involvement (NHCI) Action Plan.

1.5.17.1 Current planning and administrative activities

Current planning and administrative activities would continue to focus on partnerships with existing Native Hawaiian groups and identifying how traditional ecological knowledge can be integrated into Monument management and research activities. A working group consisting of kūpuna, cultural practitioners, Native Hawaiian resource managers, and others established under the NWHI Coral Reef Ecosystem Reserve would continue through OHA to provide advice regarding management of the Monument and ensure the continuance of Native Hawaiian practices (NHCI-1.1). Cultural research and consultation related to the NWHI under the established partnership with the Kamakākūokalani Center for Hawaiian Studies would continue (NHCI-2.1).

Current activities described above that would be expanded under the Proposed Action alternative are NHCI-1.1 and NHCI-2.1.

1.5.18 Ocean Ecosystems Literacy

Current environmental literacy activities in the Monument are described in the Monument Management Plan and include planning and administrative and field activities (see Monument Management Plan, section 3.5.4, Ocean Ecosystems Literacy Action Plan). A summary of activities in the Monument is provided below, with references to specific activities in the Ocean Ecosystems Literacy (OEL) Action Plan.

1.5.18.1 Current planning and administrative activities

Current planning and administrative activities focus on education in elementary, middle, and high school. “A Teacher’s Guide to Navigating Change” is an integral part of the NWHI-based curricula developed under the Navigating Change partnership and the new Hawai‘i Marine Curriculum (OEL-1.1). The Navigating Change partnership would continue to work closely with the Native Hawaiian community to ensure appropriate cultural information is included in curricula (OEL-1.2). Multi-agency educational partnerships would continue to conduct teacher workshops in the main Hawaiian Islands in support of middle/high school environmental education programs, including the “Navigating Change” curriculum (OEL-1.4). The Mokuāpāpapa Discovery Center for Hawaii’s Remote Coral Reefs hosts an average of six school groups per month (OEL-1.6). Education programs would continue to be evaluated to ensure desired goals are being met and target audiences are being reached (OEL-1.9). Monument staff have begun to identify new and innovative projects that could help to increase ocean ecosystems literacy (OEL-2.1).

1.5.18.2 Current field activities

Current field activities would continue to focus on teacher development both in the main Hawaiian Islands and NWHI and on exploring technologies to help those who cannot visit the NWHI experience it remotely. Over the past five years, more than 15 workshops have been conducted on the main Hawaiian Islands to introduce the standards-based Navigating Change curriculum to local teachers. Agency planning for Midway Atoll teacher workshops began in 2007, and a focus group of teachers, curriculum developers, educational leaders, and Navigating Change Educational Partnership members held a planning workshop on Midway Atoll in January 2008 (OEL-1.7). Each year, teachers active in learning about the NWHI and using Monument educational materials are provided with opportunities to participate in teacher and class-at-sea expeditions in conjunction with NOAA research cruises (OEL-1.5). Two opportunities per year are provided for accredited colleges, universities, or private/nonprofit environmental or historical organizations to conduct wildlife-dependent or historical college-level courses or to administer informal educational camps (OEL-1.8). The MMB would continue to use new technologies for educational and outreach activities (OEL-2.2)

Activities described above that would be expanded under the Proposed Action alternative are OEL-1.1, OEL-1.2, OEL-1.6, OEL-1.7, OEL-1.9, OEL-2.1, and OEL-2.2.

1.5.19 Central Operations

Current Central Operations activities in the Monument are described in the Monument Management Plan and include planning and administrative and infrastructure and development activities (see Monument Management Plan section 2 and section 3.6.1, Central Operations Action Plan). A summary of current activities in the Monument is provided below with references to specific activities in the Central Operations (CO) Action Plan.

1.5.19.1 Current planning and administrative activities

Current planning and administrative activities would continue to focus on coordination among the MMB. The MMB has had varying levels of human resources and facility infrastructure in

place before the Monument was established. Although research and management activities are conducted in the Monument, most staff and administrative support is conducted in Honolulu and at other locations within the main Hawaiian Islands. To better coordinate among management agencies and to increase the effectiveness of site operations, annual operating plans would be developed and coordinated in accordance with the Monument management agencies' guiding policies and procedures (CO-1.1). Human resource and organizational capacity needs are regularly assessed to organize and better utilize staff, and identify technical and administrative human resource overlaps and gaps (CO-2.1). Human resource development, including staff recruitment, retention, recognition, training, communication, regular meetings, time and attendance, and staff safety, would continue (CO-2.2). Although some Monument staff are collocated, individual agencies primarily assess the status and future needs of their infrastructure independently (CO-3.1).

1.5.19.2 Current infrastructure and development activities

Current infrastructure and development activities would continue to focus on maintaining physical assets. Maintaining and retaining current physical assets and procuring or leasing additional assets would continue to be driven by individual agency need and available funding (CO-3.2). Appropriate computer equipment would continue to be acquired, upgraded, and maintained to meet management needs (CO-3.3).

Current activities described above that would be expanded under the Proposed Action alternative are CO-2.1, CO-2.2, CO-3.1, CO-3.2, and CO-3.3.

1.5.20 Information Management

Current information management activities in the Monument are described in the Monument Management Plan and include planning and administrative activities (see Monument Management Plan, section 3.6.2, Current Status and Background). A summary of activities in the Monument is provided below.

1.5.20.1 Current planning and administrative activities

Planning and administrative activities are focused on compiling a broad spectrum of information and data into an information management system. Multiagency Reef Assessment and Monitoring Program expeditions in the NWHI, which began in 2000, represent an initial attempt to establish a multiagency data clearinghouse for management purposes. This effort would continue because only a portion of the many years of NWHI data have been processed and made available. An annotated bibliography of cultural resources for the NWHI incorporates past cultural, geological, and biological studies in the NWHI and would continue to be updated. The MMB would continue to participate in the National Marine Sanctuary Program's Information Management and Spatial Technology (IMaST) plan for all field sites. The IMaST plan organizes the many spatial resources within the National Marine Sanctuary System and makes them available to all sites and partner staff needing geospatial information, data, training, software, hardware, and hands-on experience.

Additionally, the MMB would continue developing a field-based tool to help collect research and vessel activity data from scientific expeditions conducted aboard research vessels active in

the NWHI. This system would help to meet permit criteria for data management and reporting and would assist in data entry, metadata recording, and data integrity. This system is one component of the larger Information Management System that would continue to be developed based on a set of priority management questions. A GIS spatial bibliography database for the NWHI is under development and will continue to be updated. This GIS incorporates geographical positions of past habitat characterization and field research into spatially referenced electronic documents.

1.5.21 Coordinated Field Operations

Current coordinated field operations activities in the Monument are described in the Monument Management Plan and include planning and administrative, field activities, and infrastructure and development (see Monument Management Plan, section 3.6.3). A summary of current activities in the Monument is provided below with references to specific activities in the Coordinated Field Operations (CFO) Action Plan.

1.5.21.1 Current planning and administrative activities

Current planning and administrative activities are focused on coordinating field operations and supporting dive operations. Continuing activities include implementing infrastructure rehabilitation, reconstructing and developing facilities on Midway Atoll (CFO-1.1), and applying “greening” methods and technologies for facilities and assets (CFO-1.4). An overarching MOA defines the working relationship among MMB agencies and provides a foundation for future specific field oriented agreements (CFO-2.1).

1.5.21.2 Current field activities

Current field activities would continue to focus on each agency operating under their own field operations procedures (CFO-2.2). Field operations in the Monument rely on ships, aircraft, seasonal field camps, and field stations. Permitted activities are monitored through field activity reports to assess the threats they may pose to the resources. Reporting requirements are being developed with partners that would draw on existing databases when available (CFO-2.3). To enhance interagency planning and coordination for field operations, field operations are coordinated annually to efficiently deploy personnel and share resources among agency partners and ensure that priority management needs are met (CFO-2.4).

Individual MMB agencies inventory, maintain, and coordinate the use of their own small boats and related field resources (CFO-6.1). Interagency dive operations would continue to focus on maintaining reciprocity agreements, communication between dive masters and chief scientists, and ensuring certifications and training (CFO-8.4).

1.5.21.3 Current infrastructure and development activities

Current infrastructure and development activities include routine maintenance activities at Tern and Laysan Islands and Kure and Midway Atolls. Houses would continue to be routinely maintained at Midway Atoll, and lead-based paint removal efforts would continue or be planned for all buildings (CFO-3.4). Routine maintenance of housing and facilities at Kure Atoll are part of the day-to-day operation during the field season (CFO-3.5). Buildings and equipment would

continue to receive routine maintenance and solar power and water would continue to be produced at French Frigate Shoals (CFO-3.6), along with seasonal tent camp operations at Pearl and Hermes Atoll (CFO-3.7) and routine maintenance of tent camps at Laysan Island (CFO-3.8).

Regular maintenance of a recently replaced fuel farm at Midway would continue to be conducted to meet fuel requirements for vessel, aircraft, and utility and equipments needs (CFO-4.1). The present water catchment area, storage tank, and distribution pipeline would be maintained (CFO-5.1). The recently rehabilitated septic and wastewater system would continue operation (CFO-5.2). Termites would be treated in all historic wooden structures at Midway Atoll if funding is available (CFO-5.3). The Clipper House would continue to have limited food service capacity for approximately 70 (CFO-5.4). The seaplane hangar is a historic structure that would be maintained as is, without needed repairs (CFO-5.5). The inner harbor seawall would continue to deteriorate creating safety issues (CFO-5.6).

FWS maintains several small boats at Midway for work in and around the atoll (CFO-6.1). FWS currently charters a twin engine aircraft (Gulf Stream 1 or G-1) to transport people and supplies to Midway. The G-1 would continue to provide service through fiscal year 2008 (CFO-7.1). Marine field research would be limited to Midway Atoll and its surrounding area with the existing small boats (CFO-6.2), and research/enforcement would continue to be limited by the availability of small research/enforcement vessels (CFO-6.3).

The Navy installed a dive recompression chamber at Midway, which was refurbished in the late 1990s in support of commercial dive tour operations and research (CFO-8.1). This diving chamber is no longer functional. Scientists would continue scuba-based research in the remote NWHI, but their research capacity would be limited by the availability of a portable dive recompression chamber (CFO-8.2). The current boathouse at Midway would continue to be in a state of disrepair; it is subject to flooding and limits dive operations support capability (CFO-6.5 and 8.3).

Limited transportation is arranged on a case-by-case basis to assist in moving threatened and endangered species as issues arise (CFO-9.3). Rehabilitation of the Midway Mall and commissary building would be minimal (CFO-9.4).

Current activities described above that would be expanded under the Proposed Action alternative are CFO-1.1, CFO-1.4, CFO-2.1, CFO-2.2, CFO-2.3, CFO-3.5, CFO-3.6, CFO-3.7, CFO-3.8, CFO-5.1, CFO-5.2, CFO-5.3, CFO-5.4, CFO-5.5, CFO-5.6, CFO-6.1, CFO-6.2, CFO-6.3, CFO-6.5, CFO-7.1, CFO-8.1, CFO-8.2, CFO-8.3, CFO-9.3, CFO-9.4.

1.5.22 Evaluation

Evaluation activities in the Monument are described in the Monument Management Plan and include planning and administrative activities (Monument Management Plan, section 3.6.4, Evaluation Action Plan). A summary of current activities in the Monument is provided below with references to specific activities in the Evaluation (EV) Action Plan.

1.5.22.1 Current planning and administrative activities

Planning and administrative activities would focus on agency-specific annual program reviews (EV-1.2). Agency leads are responsible for describing the status of activity implementation and making recommendations for adjusting activities if considered necessary.

1.6 DESCRIPTION OF PROPOSED ACTION ALTERNATIVE

Under the Proposed Action alternative, the Co-Trustees would continue to implement activities described in the No Action Alternatives to address priority management needs of the Monument. These activities are described above and are not repeated here. In addition, some of the No Action alternative activities would be expanded. This section describes new and expanded activities proposed for the Monument. Some of the proposed activities would require additional compliance actions as additional plans are completed, including NEPA, section 7 of ESA, section 106 of the NHPA, and MMPA.

1.6.1 Marine Conservation Science

Proposed marine conservation science activities are described in the Monument Management Plan and include planning and administrative and field activities (see Monument Management Plan sections 1.1, 1.2, and 1.4 and section 3.1.1, Marine Conservation Science Action Plan, which describes current status and background and activities). All activities described in the No Action alternative would continue, but several current activities would be expanded under the Proposed Action. In addition, new activities are proposed to increase understanding of the distributions, abundances, and functional links of marine organisms and their habitats in space and time to improve ecosystem-based management decisions in the Monument. These activities are listed in the table below and are summarized in this section.

Proposed Action Alternative: Marine Conservation Science	Status	Activity Type
Activity MCS-1.3: Map and characterize deepwater habitats	Expanded	Field activity
Activity MCS-1.4: Establish and implement monitoring program for deep-water ecosystems	New	Field activity
Activity MCS-1.5: Collect, analyze and input research, monitoring, and bathymetric data into appropriate databases to inform management decisions	Expanded	Planning/administrative
Activity MCS-2.1: Develop a prioritized Natural Resources Science Plan within 1 year	New	Planning/administrative
Activity MCS-2.2: Assess monitoring program protocols	Expanded	Planning/administrative
Activity MCS-2.3: Formalize collaborative regional monitoring programs for the NWHI	New	Planning/administrative
Activity MCS-2.4: Implement research priorities identified in the Monument Natural Resources Science Plan	New	field activity
Activity MCS-3.2: Identify and prioritize research, monitoring, and modeling projects for education and outreach	Expanded	Planning/administrative
Activity MCS-3.3: Include an educational component in marine research expeditions	Expanded	Field activity
Activity MCS-3.4: Use materials gathered and created during	Expanded	Planning/administrative

Proposed Action Alternative: Marine Conservation Science	Status	Activity Type
research expeditions to develop or enhance education and outreach products		

Note: This table only includes proposed expanded and new activities; however, there are other activities in this action area, which are described under the No Action alternative.

1.6.1.1 Expanded planning and administrative activities

Expanded planning and administrative activities include efforts to regularly update information management systems, to evaluate the effectiveness of monitoring and sampling protocols, and to identify research projects dissemination of results for education and outreach. While efforts to collect research and monitoring data would continue, the Monument Information Management System would be updated regularly to manage, analyze, summarize, and interpret research data collected in the NWHI (MCS-1.5). As management needs evolve and our understanding of ecosystem variability improves, monitoring protocols, sampling design, and sampling intervals would be evaluated for their effectiveness in meeting management needs and accurately reflecting change in the environment (MCS-2.2). These evaluations would be conducted on a cycle consistent with five-year management plan reviews with the interagency technical group on research. Working with partner agencies, research, monitoring, and modeling projects would be identified and prioritized for dissemination for education and outreach (MCS-3.2).

1.6.1.2 New planning and administrative activities

New planning and administrative activities include the development of a Natural Resources Science Plan (NRSP) and formalization of collaborative regional monitoring programs for the NWHI. The NRSP would identify and prioritize marine and terrestrial research; and monitoring activities conducted in the NWHI would serve as a more detailed implementation plan that supports the management and research strategies, as well as specific management-related surveys, research, and monitoring priorities found in other action plans (MCS-2.1). The NRSP would align management priorities among agencies to facilitate resource and information sharing and would address both baseline information needs and management-driven needs. Several independent monitoring initiatives are being conducted in the NWHI, and new initiatives are being planned, such as monitoring for invasive species, seabird colonies, Monument management zone’s effectiveness, and water quality (MCS-2.3). Regional monitoring programs would provide essential information to track long-term ecosystem integrity in the Monument.

1.6.1.3 Expanded field activities

Expanded field activities would include use of new technologies to map and characterize deepwater habitats and new ideas to integrate education and outreach components on all research expeditions. In addition to the current use of submersibles, ROVs, sidescan sonar, and other methods, technical diving would be used to collect data needed to continue mapping and characterizing deepwater habitats in the Monument (MCS-1.3). While education and outreach components have been previously integrated on research expeditions, innovative ideas would be explored to incorporate education and outreach components on all marine research and monitoring expeditions aboard NOAA research vessels (MCS-3.3).

1.6.1.4 New field activities

New field activities include establishing a monitoring program for deepwater ecosystems and implementing research priorities identified in the NRSP. Monitoring deepwater ecosystems would provide essential information and data for ecosystem-based management of the Monument (MCS-1.4). The implementation of research priorities identified in the NRSP would ensure that research activities are focused on addressing critical questions of managing Monument resources, especially endangered and threatened species (MCS-2.4).

1.6.2 Native Hawaiian Culture and History

Proposed Native Hawaiian culture and history activities are described in the Monument Management Plan and include planning and administrative and field activities (see section 1.3 on resource condition and status and section 3.1.2, Native Hawaiian Culture and History Action Plan). All activities described in the No Action alternative would continue, several of which would be expanded. In addition, new activities are proposed to increase the understanding and appreciation of Native Hawaiian histories and cultural practices related to the Monument and to effectively manage cultural resources for their cultural, educational, and scientific values. New and expanded cultural activities are described in the Monument Management Plan (section 3.1.2, Native Hawaiian Culture and History AP). These activities are listed in the table below and are summarized in this section.

Proposed Action Alternative: Native Hawaiian Culture and History	Status	Activity Type
Activity NHCH-2.1: Continue to compile information and conduct new cultural and historical research about the NWHI.	Expanded	Planning/administrative
Activity NHCH-2.2: Continue to provide direct financial and logistical support.	Expanded	Planning/administrative
Activity NHCH-2.3: Facilitate field research and cultural education opportunities annually during the field season.	Expanded	Field activity
Activity NHCH-2.4: Convene a Native Hawaiian nomenclature working group.	New	Planning/administrative
Activity NHCH-2.5: Incorporate cultural resources information into the Monument Information Management System.	New	Planning/administrative
Activity NHCH-2.6: Support Native Hawaiian cultural access to assure cultural research needs are met.	Expanded	Field activity
Activity NHCH-2.7: Establish agreements with local universities and museums to address possible curation, research, use, return, and repatriation of collections.	Expanded	Planning/administrative
Activity NHCH-3.2: Engage Native Hawaiian practitioners and cultural experts and the Native Hawaiian Cultural Working Group in the development and implementation of the Monument’s management activities.	Expanded	Field activity

Proposed Action Alternative: Native Hawaiian Culture and History	Status	Activity Type
Activity NHCH-3.3: Increase knowledge base of Native Hawaiian values and cultural information through “in reach” programs for resource managers.	Expanded	Planning/Administrative
Activity NHCH-4.1: Prepare a cultural resources program plan.	New	Planning/ administrative
Activity NHCH-4.2: Develop and implement specific preservation plans, as appropriate, to protect cultural sites and collections at Nihoa and Mokumanamana.	Expanded	Field activity
Activity NHCH-4.3: Implement the Monument Cultural Resources Program.	New	Field activity
Activity NHCH-5.1: Integrate Native Hawaiian values and cultural information into general outreach and education program.	Expanded	Planning/administrative
Activity NHCH-5.2: Develop a culturally based strategy for education and outreach to the Native Hawaiian community.	New	Planning/administrative
Activity NHCH-5.3: Integrate Native Hawaiian values and cultural information into Monument permittee education and outreach program.	Expanded	Planning/administrative

Note: This table includes only proposed expanded and new activities. Activities in this action area that are not included in this table are described under the No Action alternative.

1.6.2.1 Expanded planning and administrative activities

Expanded planning and administrative activities include efforts to increase knowledge and appreciation of MMB, resource management, and the public regarding Native Hawaiian culture and history. Efforts would increase to compile existing information about the region and to initiate new research based on the priorities developed (NHCH-2.1). As management needs evolve and our understanding of ecosystem variability improves, monitoring protocols, sampling design, and sampling intervals would be evaluated for their effectiveness in meeting management needs and accurately reflecting change in the environment. These evaluations would be conducted on a cycle consistent with five-year management plan reviews with the interagency technical group on research (NHCH-2.2). The scope of future agreements would be expanded to provide proper stewardship of cultural resources and artifacts. Agreements would be developed as the need arises and would be established in concert with the Cultural Resources Program Plan (NHCH-2.7). Efforts would be made to increase the knowledge base of Native Hawaiian cultural significance by Monument resource managers. This would be accomplished by having Monument resource managers and staff and MMB members, as appropriate, participate in informal and formal briefings, cultural workshops, and cultural exchanges in cooperation with other marine protected area sites that integrate traditional ecological knowledge into their management (NHCH-3.3). Cultural information and traditional Native Hawaiian values would be infused into education and outreach materials aimed at the general public through the “Navigating Change” program, school curricula, promotion of Hawaiian place names in Monument materials, videos, articles, and the lecture series at Mokupāpapa Discovery Center (NHCH-5.1). Integration of Native Hawaiian values and cultural information into Monument

permittee education and outreach programs would be increased to include numerous other approaches (NHCH-5.3).

1.6.2.2 New planning and administrative activities

New planning and administrative activities include efforts to convene a nomenclature working group, to incorporate research into the Monument Information Management System, and to develop a Cultural Resources Program and education and outreach programs. The MMB would convene a working group for nomenclature for yet-to-be discovered regions, islands, geographical and oceanic features, sites, and plant and animals species. Partnerships would be made through agreements with local universities and museums to facilitate research (NHCH-2.4). New knowledge learned through additional research would be incorporated into the Monument Information management System (NHCH-2.5). A Cultural Resources Program Plan would be developed to identify cultural resources, sites, and other locations and procedures for collections, curation, and disposition of archaeological materials, other artifacts, and human remains (NHCH-4.1). Native Hawaiian values and cultural information has been used in certain outreach and education programs targeted to both Native Hawaiians and the general public (NHCH-5.2).

1.6.2.3 Expanded field activities

Expanded field activities would provide additional opportunities to conduct cultural research and education activities in the Monument. Cultural research and education activities in the field would be expanded to provide logistical support and berthing space aboard research vessels and to put researchers and educators in touch with others doing similar work (NHCH-2.3). Increased cultural access would be facilitated and would include consistent access to Mokumanamana for Hawaiian religious practices and regular access for Polynesian voyaging canoes for wayfinding, navigational, and cultural protocol training (NHCH-2.6). The Native Hawaiian Cultural Working Group and other Native Hawaiian cultural practitioners and experts would be consistently consulted and integrated into the creation and implementation of programs. Examples of their participation may include providing cultural briefings; where feasible, accompanying permittees accessing the Monument to experience, practice, and learn from the Monument resources while educating others; and including Native Hawaiians, particularly the younger generations, as part of cultural and scientific research teams, when feasible (NHCH-3.2). To further protect cultural sites and collections at Nihoa and Mokumanamana, preservation plans for both islands would be developed and implemented, as would plans for other cultural elements and yet-to-be discovered sites within the Monument. These preservation plans would address the monitoring and stabilization of cultural sites and curatorship or return/repatriation agreement with museums and institutions that house the artifact collections (NHCH-4.2).

1.6.2.4 New field activities

New field activities would be based on the Cultural Resources Plan. The MMB would initiate strategies and activities contained in the Cultural Resources Plan (NHCH-4.3).

1.6.3 Historic Resources

Proposed historic resources activities are described in the Monument Management Plan and include planning and administrative, field, and infrastructure and development activities (see Monument Management Plan, section 3.1.3, Historic Resources Action Plan). All activities would continue as described in the No Action alternative, but several activities would be expanded. Recognizing their statutory responsibilities to inventory, evaluate, and interpret historic resources throughout the NWHI, the Co-Trustees propose new activities to identify, document, preserve, protect, stabilize, and, where appropriate, reuse, recover, and interpret historic resources associated with Midway Atoll and other historic resources within the Monument. These activities are listed in the table below and are summarized in this section.

Proposed Action Alternative: Historic Resources	Status	Activity Type
Activity HR-1.1: Reconcile the Historic Preservation Plan with the Midway Visitor Service Plan, lead paint abatement plan, and other facilities maintenance and use plans.	Expanded	Planning/administrative
Activity HR-1.2: Submit the updated Historic Preservation Plan for approval to the Advisory Council on Historic Preservation and Monument partners	Expanded	Planning/administrative
Activity HR-2.1: Within 3 years, create dedicated capacity to implement the updated Historic Preservation Plan	New	Planning/administrative
Activity HR-2.2: Annually train Monument staff and the Midway contractors on the content of the Historic Preservation Plan and implementation of appropriate treatments	Expanded	Planning/administrative
Activity HR-2.3: Incorporate into the Midway Atoll visitor services program semiannual opportunities and events for visitors or volunteers to implement historic preservation treatments	New	Field activity
Activity HR-3.1: Identify, collect, and review publications, data sets, and documents on the National Historic Landmark within 2 years of Monument Management Plan adoption	New	Planning/administrative
Activity HR-3.2: Plan and conduct a field survey and documentation of selected National Historic Landmark sites and features within 2 years	Expanded	Field activity
Activity HR-3.3: Consult with interested parties and update the National Historic Landmark nomination within 4 years	Expanded	Planning/administrative
Activity HR-3.4: Implement repair and maintenance treatments at National Historic Landmark features within 6 years	Expanded	Infrastructure and development
Activity HR-4.1: Prepare a Scope of Collections Statement within 5 years	New	Planning/Administrative
Activity HR-4.2: Remodel the Midway museum space within 7 years	New	Infrastructure and development
Activity HR-4.3: Organize and curate collections within 8 years	New	Planning/administrative
Activity HR-5.1: Identify, collect, and review publications, data sets, and documents within 12 years	New	Planning/administrative
Activity HR-5.2: Plan, conduct, and report on field surveys and documentation of selected sites within 15 years.	New	Infrastructure and development

Proposed Action Alternative: Historic Resources	Status	Activity Type
Activity HR-6.1: Begin a long-term annual program to compile, collect, curate, and publish oral histories of life on Midway Atoll within 3 years	New	Planning/administrative
Activity HR-6.2: Conduct archaeological investigation of the Commercial Pacific Cable Station site within 10 years.	New	Field activity
Note: This table includes only proposed expanded and new activities. Activities in this action area that are not included in this table are described under the No Action alternative.		

1.6.3.1 Expanded planning and administrative activities

Expanded planning and administrative activities involve updating the Midway Historic Preservation Plan and National Historic Landmark nomination, training staff on plan contents and implementation, and consulting interested parties on updates. To better identify, interpret, and protect historic resources in the NWHI, the Historic Preservation Plan would be reconciled with the Midway Visitor Service Plan, lead paint abatement plan, and other facilities maintenance and use plans (HR-1.1). The updated plan would be submitted for approval to the Advisory Council on Historic Preservation and MMB (HR-1.2). Annual training programs for Monument staff and Midway contractors would be conducted to ensure that the content of the updated plan and implementation of appropriate treatments are communicated and understood by all (HR-2.2). Interested parties would be consulted to prepare an updated National Historic Landmark nomination within four years (HR-3.3).

1.6.3.2 New planning and administrative activities

New planning and administrative activities involve increasing capacity to implement the updated Historic Preservation Plan, organization collections, conducting archival research and recording oral histories. A dedicated capacity to implement the updated plan would be developed within three years (HR-2.1). Within two years of the Monument Management Plan adoption, data would be gathered on the National Historic Landmark (HR-3.1). For the purpose of improving the function and capacity of the Midway museum, a Scope of Collections Statement would be prepared within five years (HR-4.1). Collections would be organized within eight years (HR-4.3). Additionally, archival research on historic resources would be conducted beyond Midway Atoll NWR within 12 years (HR-5.1). A long-term program to record oral histories of life on Midway Atoll would begin within three years (HR-6.1).

1.6.3.3 Expanded field activities

Expanded field activities include field surveys on selected National Historic Landmark sites (HR-3.2). Standard historical archaeological practices would be exercised.

1.6.3.4 New field activities

New field activities include semiannual opportunities and events for visitor participation in historic preservation treatments, which would be incorporated into the visitor services program as well (HR-2.3). The Refuge visitor services program would be refined to recruit volunteers to help maintain historic properties, including painting, window restoration, and landscape

maintenance. An archaeological investigation of the Commercial Pacific Cable Station site would be conducted within 10 years (HR-6.2). Archaeological and historical research, including excavation, would be conducted to shed light on Midway’s earliest permanent residents.

1.6.3.5 Expanded infrastructure and development activities

Expanded infrastructure and development activities include the appropriate maintenance and repair treatments on the National landmark within six years (HR-3.4). Depending on the treatment, some repair and maintenance activities may be accomplished by volunteers.

1.6.3.6 New infrastructure and development activities

New infrastructure and development activities include remodeling the Midway museum space (HR-4.2). The Scope of Collection Statement would help define the types of artifacts and other historic materials that Monument staff would acquire for proper curation. Archaeological field surveys would be conducted on selected sites in the Monument within 15 years (HR-5.2). Standard historical archaeological practices would be exercised.

1.6.4 Maritime Heritage

Proposed maritime heritage activities are described in the Monument Management Plan and include planning and administrative activities (Monument Management Plan, section 3.1.4, Maritime Heritage Action Plan). All activities described in the No Action alternative would continue under the Proposed Action. One new activity is proposed to identify, interpret, and protect maritime heritage resources in the Monument. These activities are listed in the table below and are summarized in this section.

Proposed Action Alternative: Maritime Heritage Resources	Status	Activity Type
Activity MH-1.3: Complete a status report on potential environmental hazards within 1 year, and update it annually	New	Planning/administrative

Note: This table includes only proposed expanded and new activities. Activities in this action area that are not included in this table are described under the No Action alternative.

1.6.4.1 New planning and administrative activities

New planning and administrative activities would aim to document environmental hazards from maritime heritage resources to natural resources and water quality. A status report would be completed on potential environmental hazards posed by wreck sites and other debris. This report would be updated annually as new sites are identified (MH-1.3).

1.6.5 Threatened and Endangered Species

Proposed threatened and endangered species activities are described in the Monument Management Plan and include planning and administrative and field activities (see Monument Management Plan, section 3.2.1). All activities described in the No Action alternative would continue; however several activities would be expanded under the Proposed Action. In addition, new activities are proposed to protect marine mammals and aid in the recovery of threatened and

endangered species populations within the Monument. These activities are listed in the table below and summarized in this section.

Proposed Action Alternative: Threatened and Endangered Species	Status	Activity Type
Activity TES-1.2: Support and facilitate emergency response for Hawaiian monk seals.	Expanded	Field activity
Activity TES-1.3: Conserve Hawaiian monk seal habitat.	Expanded	Planning/ administrative
Activity TES-1.4: Reduce the likelihood and impact of human interactions.	Expanded	Planning/administrative
Activity TES-1.5: Support outreach and education on Hawaiian monk seals.	Expanded	Planning/administrative
Activity TES-2.1: Census cetacean populations.	Expanded	Field activity
Activity TES-2.3: Monitor, characterize, and address the effects of marine debris on cetaceans in the Monument.	Expanded	Field activity
Activity TES-2.4: Respond to any suspected disease and unusual mortality incidents affecting cetaceans.	Expanded	Field activity
Activity TES-2.5 Prevent human interactions with cetaceans.	Expanded	Field activity
Activity TES-3.1: Collect biological information on nesting turtle populations.	Expanded	Field activity
Activity TES-3.3: Protect and manage marine habitat, including foraging areas and migration routes.	Expanded	Field activity
Activity TES-4.1: Work cooperatively with the Japanese government to establish one or more breeding populations on islands free from threats, such as active volcanoes and introduced mammals.	Expanded	Planning/administrative
Activity TES-4.2: Conduct studies to examine the correlation between reproductive success and contaminant loads.	Expanded	Field activity
Activity TES-4.3: Create and disseminate information on fisheries bycatch and bycatch reduction to all fisheries occurring outside the Monument.	Expanded	Planning/administrative
Activity TES-5.2: Carry out translocations to other sites in the Monument.	Expanded	Field activity
Activity TES-6.2: Implement translocations of each species and site restoration as needed by developing appropriate techniques for capture, translocation, and release	Expanded	Field activity
Activity TES-7.1: Ensure all endangered plant species from Nihoa and Laysan Islands are fully represented in an ex situ collections, such as a nursery or arboretum.	Expanded	Field activity
Activity TES-8.2: Develop baseline assessments for listed species and critical habitat and streamline the Monument consultation process to facilitate ESA consultations.	Expanded	Field activity

Note: Activities TES-6.2 and TES-7.1 would require Hawaii State Cultural Impact Assessment Evaluation. This table includes only proposed expanded and new activities. Activities in this action area that are not included in this table are described under the No Action alternative.

1.6.5.1 Expanded planning and administrative activities

Expanded planning and administrative activities include conducting feasibility studies for habitat restoration, scrutinizing permit applications for an expanded range of factors that may affect endangered and threatened species, and enhancing education and outreach for human effects on Hawaiian monk seals. The MMB would investigate the feasibility of restoring and enhancing habitat essential for endangered and threatened species. Restoring or rebuilding habitat may be essential for the reproduction of monk seals and other protected species, such as turtles and sea birds, at several alternative sites that could lead to rebuilding preferred, stable pupping habitat (for example, accessibility, long shoreline, and stable beach) (TES-1.3). To reduce the likelihood and effect of human interactions, Monument staff would scrutinize all permit applications that may involve increased nearshore ship traffic, beach use, noise, and unnecessary research, among others. MMB would expand its support of outreach and education on Hawaiian monk seals to provide the public and interest groups with information to understand the critical status of the Hawaiian monk seal population and the urgent action that is needed to prevent extinction (TES-1.5).

The Monument staff would expand cooperation with the Japanese government by working directly with Japanese biologists on satellite tagging projects and other studies. These efforts are needed to identify sites for one or more breeding populations of short-tailed albatross on islands, free from threats in Japanese breeding colonies, such as active volcanoes and introduced mammals (TES-4.1).

Materials would be created for public outreach and attendance at domestic and international meetings for government-to-government communication on fisheries measures that can reduce bycatch during commercial fishing operations that could affect Monument resources, such as albatross (TES-4.3).

1.6.5.2 Expanded field activities

Expanded field activities include expanding efforts to conserve threatened and endangered species habitat and to protect individual plants and animals, including Hawaiian monk seal, green turtle, cetaceans, short-tailed albatross, Laysan duck, passerines, and a variety of listed plant species.

Agreed-on and standardized protocols would be put into place to ensure that a rapid and well-organized response, including assessment, proper collection of evidence, and continued monitoring, occurs during and after an emergency response. The Monument would facilitate these types of responses through coordination, permitting, transportation, and logistical support (TES-1.2).

In order to best develop management strategies for cetaceans in the Monument, surveys and observations would be pursued to gain information on species presence and abundance estimates (TES-2.1). Annual population census monitoring activities, in addition to other ongoing monitoring would support characterizing and addressing the effects of marine debris on cetaceans in the Monument (TES-2.3). Planning and pre-stage equipment would be established, Should an affected cetacean be sighted, it would be examined and sampled for a spectrum of

possible diseases, and it would be treated appropriately and monitored for recovery (TES-2.4). Cetacean conservation would be further enhanced by preventing human interactions. This would be accomplished by eliminating disturbances to resting cetaceans in Monument lagoons or nearshore and by preventing geological research using sound levels known to be dangerous to marine mammals (TES-2.5). (Note: Under the terms of Proclamation 8031, activities and exercises of the Armed Forces are exempt from Monument prohibitions or permitting requirements. However, activities that may impact cetaceans or other marine mammals remain subject to laws of general applicability, such as the Marine Mammal Protection Act and the Endangered Species Act, which apply within the Monument to the same extent they do elsewhere.)

In addition to maintaining current green turtle nesting abundance monitoring at East Island, distribution of nesting activity throughout the Monument would be periodically reassessed. As the population increases, new sites may be used for nesting (TES-3.1).

Monument staff would identify turtle foraging habitat in the Monument to better manage these areas and minimize vessel hazards to turtles (TES-3.3).

The short-tailed albatross is endangered in the U.S. Most of the world's population breeds on two small Japanese islands (TES-4.1). MMB and partnering agencies would cooperate with the Japanese government to establish one or more breeding populations of short-tailed albatross on islands free of threats, such as active volcanoes and introduced mammals. These efforts include attracting birds to Midway Atoll using decoys and recorded colony sounds. Once a breeding colony is established, it would be monitored. Data collected from studies of contaminant levels in black-footed albatrosses would be used as surrogate data to estimate contaminant body-burdens in short-tail albatrosses (TES-4.2). Finally, because of the hazards to seabirds, the MMB would create and disseminate information on fisheries bycatch and bycatch reduction techniques to all fisheries outside the Monument that may effect seabirds (TES-4.3).

To supplement conservation efforts targeting the Laysan duck, MMB would restore and create habitat necessary to support Laysan duck populations, translocate juveniles, and implement post-release monitoring (TES-5.2). Further efforts to establish additional bird populations include implementing translocations of Laysan finch, Nihoa finch and Nihoa millerbird and site restoration by developing appropriate techniques for capture, translocation, and release (TES-6.2).

Lastly, all endangered plant species from Nihoa and Laysan would be fully represented in an ex situ collections, such as nurseries or arboretums. This would ensure the endangered plants' genetic material would be preserved in perpetuity (TES-7.1).

Information regarding ecological baselines of listed species and critical habitat and description of sensitive areas would be made available to agencies to determine whether or not their activities may affect listed species and, if so, to improve their biological assessments for consultations. Also, ESA and other consultation procedures would be reviewed and streamlined to benefit from the preparation of current baseline descriptions (TES-8.2).

1.6.6 Migratory Birds

Proposed migratory bird conservation activities are described in the Monument Management Plan and include planning and administrative and field activities (see Monument Management Plan, section 3.2.2). All activities described in the No Action alternative would continue, but several activities would be expanded under the Proposed Action alternative. In addition, new activities are proposed to conserve migratory populations and habitats within the Monument. These activities are listed in the table below and are summarized in this section.

Proposed Action Alternative: Migratory Birds	Status	Activity Type
Activity MB-1.1: Control or eradicate nonnative species at all sites where they have a negative impact on the survivorship or reproductive performance of migratory birds	Expanded	Field activity
Activity MB-1.2: Restore components of the native vegetation communities that are important to seabird nesting	Expanded	Field activity
Activity MB-2.2: Monitor contaminant levels in birds and their habitats, and respond if the potential exists to cause immediately lethal or sublethal effects	Expanded	Field activity
Activity MB-2.3: Ensure that all spill response plans have adequate coverage of actions necessary to minimize mortality to migratory birds	Expanded	Planning/administrative
Activity MB-2.6: Research mite impacts on black-footed albatross chicks on Kure Atoll	New	Field activity
Activity MB-3.1: Using standard methods devised for tropical seabirds, monitor a suite of 15 focal seabird species at specific sites in the Monument to track changes in population size and understand underlying causes of that change	Expanded	Field activity
Activity MB-3.2: Monitor changes in habitat quality by measuring reproductive performance and diet composition in selected seabird species.	Expanded	Field activity
Activity MB-3.3: Develop and use standardized methods to accurately assess the population size and trends of overwintering and migrating Pacific golden plovers, bristle-thighed curlews, wandering tattlers, and ruddy turnstones.	Expanded	Field activity
Activity MB-4.1: Use social attraction techniques to encourage recolonization at Midway and Kure Atolls by Bulwer’s petrels and Tristram’s storm-petrels.	Expanded	Field activity

Note: This table includes only proposed expanded and new activities. Activities in this action area that are not included in this table are described under the No Action alternative.

1.6.6.1 Expanded planning and administrative activities

Expanded planning and administrative activities would expand existing oil spill response plans to include actual response plans and natural resource damage assessments through multiagency collaboration. These plans would be evaluated, revised, and followed to minimize mortality to migratory birds (MB-2.3).

1.6.6.2 Expanded field activities

Expanded field activities would expand habitat restoration efforts and establish standardized methods for monitoring the health and status of seabirds. To protect and enhance terrestrial and marine migratory birds’ habitats, MMB and its staff would control and eradicate nonnative species at all sites where they have a negative effect on the survivorship or reproductive performance of migratory birds (MB-1.1). Alien species eradication would be followed by restoring native coastal mixed grass and shrub communities (MB-1.2). Each of these activities minimizes the effect of alien species and habitat destruction on migratory birds. Monument staff, using standard methods devised for tropical seabirds, would monitor a suite of 15 focal seabird species at specific sites in the Monument to track changes in population size and to understand underlying causes of that change (MB-3.1). Specifically, they would monitor contaminant levels in birds and their habitats and would respond if the potential exists to cause immediately lethal or sublethal effects (MB-2.2). In addition, MBB staff would monitor changes in habitat quality by measuring reproductive performance and diet composition in selected focal species (MB-3.2). These efforts would not be limited to seabirds, but staff would develop and use standardized methods to accurately assess the population size and trends of overwintering and migrating Pacific golden plovers, bristle-thighed curlews, wandering tattlers, and ruddy turnstones (MB-3.3).

1.6.6.3 New field activities

New field activities would target the design and conduct of research on the effect of mites on black-footed albatross chicks on Kure Atoll (MB-2.6). In addition, species specific social attraction techniques, such as automated playback of calls and provision of nesting boxes to encourage recolonization of Bulwer’s petrels and Tristram’s storm-petrels, are proposed at Kure Atoll (MB-4.1).

1.6.7 Habitat Management and Conservation

Proposed habitat management and conservation activities are described in the Monument Management Plan and include planning and administrative and field activities (see Monument Management Plan, section 3.2.3). All activities described in the No Action alternative would continue, several activities would be expanded under the Proposed Action. In addition, new activities are proposed to protect and maintain the native ecosystems and biological diversity of resources in the Monument. These activities are listed in the table below and are summarized in this section.

Proposed Action Alternative: Habitat Management and Conservation	Status	Activity Type
Activity HMC-1.1: Identify and prioritize restoration needs in shallow-water reef habitats impacted by anthropogenic disturbances within 5 years.	New	Planning/administrative
Activity HMC-1.2: Analyze historic and present impacts on reef growth at Midway Atoll and determine factors limiting nearshore patch reef growth to facilitate restoration of natural reef building	New	Field activity

Proposed Action Alternative: Habitat Management and Conservation	Status	Activity Type
Activity HMC-1.3: Where feasible, implement appropriate restoration activities	New	Field activity
Activity HMC-2.1: Evaluate effects of contamination in terrestrial and nearshore areas from shoreline dumps at French Frigate Shoals and at Kure, Midway, and Pearl and Hermes atolls and prioritize cleanup action based on risk assessments	Expanded	Field activity
Activity HMC-2.2: Work with partners and responsible parties to verify the integrity of known landfills and dumps and to conduct additional remediation if necessary	Expanded	Field activity
Activity HMC-2.3: Locate historic disposal sites at Tern Island (French Frigate Shoals) and at Kure, Midway, and Pearl and Hermes atolls, and investigate them for contamination	Expanded	Field activity
Activity HMC-2.4: Evaluate costs to ecosystem function and benefits of removing anthropogenic iron sources such as metal from shipwrecks and discarded debris from reefs throughout the Monument	New	Planning/administrative
Activity HMC-2.7: Conduct ecological risk assessment to determine allowable lead levels in soils at Midway and remove lead from buildings and soils to nonrisk levels	New	Planning/administrative
Activity HMC-3.1: Evaluate loss of beach strand and crest due to erosion and sea level rise to aid in formulating a restoration plan that would stop as much net loss of beach strand and beach crest habitat as is possible	New	Field activity
Activity HMC-3.2: Inventory manmade structures and changes in natural beach and reef state that may influence erosion and depositional processes at all of the beach strand units of the Monument	Expanded	Field activity
Activity HMC-4.4: Formulate and implement a restoration plan for Lisianski Island using guidelines established for neighboring Laysan Island	New	Planning/administrative
Activity HMC-4.5: Propagate and outplant native vegetation on 34-acre Southeast Island at Pearl and Hermes Atoll to replace native plant community extirpated by invasion of the alien plant golden crownbeard.	New	Field activity
Activity HMC- 4.6: Implement the coordinated ecosystem restoration activities on Kure Atoll.	Expanded	Field activity
Activity HMC-4.7: Monitor changes in the species composition and structure of mixed grass and shrub communities at each site.	Expanded	Field activity
Activity HMC-5.1: Inventory and document life histories of endemic terrestrial invertebrates at Nihoa and Mokumanamana.	Expanded	Field activity
Activity HMC-7.1: Monitor salinity, parasites, contaminants, and native arthropods associated with freshwater seeps, ponds, and streams.	Expanded	Field activity
Activity HMC-7.2: Evaluate potential for development, and create as needed, additional freshwater sources at potential translocation sites of the Laysan duck, Nihoa finch, and Nihoa millerbird.	Expanded	Planning/administrative

Proposed Action Alternative: Habitat Management and Conservation	Status	Activity Type
Activity HMC-8.1: Remove ironwood on Sand Island from 50 acres outside designated woodland and control young ironwood in areas managed for grass and shrubs.	Expanded	Field activity
Activity HMC-8.2: Devise and implement methods for monitoring population size and reproductive success in tree-nesting seabird species.	New	Field activity
Activity HMC-9.1: Educate other federal agencies about overflight rules and promote compliance regarding overflights and close approaches	Expanded	Planning/administrative
Activity HMC-9.2: Develop and implement techniques for monitoring plant and animal populations on cliff habitats in the Monument within 10 years.	New	Planning/administrative
Activity HMC-10.1: Conduct a wilderness review of the Hawaiian Islands and Midway Atoll NWRs within 5 years.	New	Planning/administrative

Notes: This table includes only proposed expanded and new activities. Activities in this action area that are not included in this table are described under the No Action alternative.

1.6.7.1 Expanded planning and administrative activities

Expanded planning and administrative activities include evaluating potential translocation sites for endangered endemic birds and education activities regarding overflight to sensitive habitats in the Monument. The potential for developing additional freshwater sources would be evaluated at potential translocation sites of the Laysan duck, Nihoa finch, Laysan finch, and Nihoa millerbird (HMC-7.2). Personnel at other federal and state agencies would be educated about rules for overflights and close approaches to Nihoa and Mokumanamana cliff habitats to promote compliance with rules and regulations (HMC-9.1).

1.6.7.2 New planning and administrative activities

New planning and administrative activities include developing habitat- and species-specific restoration plans, risk-based approach for prioritizing cleanup and remediation actions, and techniques to monitor cliff-dwelling plant and animal populations. Habitat- and species-specific restoration plans would also be developed and implemented. Restoration needs would be developed and implemented for shallow-water reef habitats modified by humans (HMC-1.1); a plan would include restoring original population levels of black-lipped pearl oysters at Pearl and Hermes Atolls. Ecological risk assessments would be conducted to determine allowable lead levels in soils at Midway and to remove lead from buildings and soils to nonrisk levels (HMC-2.7). The costs to ecosystem function and benefits of removing man-made iron sources, such as metal from shipwrecks and discarded debris from reefs throughout the Monument, would be evaluated (HMC-2.4). Cleanup and remediation actions would be prioritized, based on risk assessments. MMB would also formulate restoration and management plans or would implement administrative plans for various islands including Kure Atoll and Lisianski Island (HMC-4.4). This activity would undergo additional NEPA analysis, as described in section 1.8. Techniques for monitoring plant and animal populations on cliff habitats in the Monument would be developed and implemented (HMC-9.2). A wilderness review of the Hawaiian Islands and Midway Atoll NWRs will be conducted within five years (HMC-10.1).

1.6.7.3 Expanded field activities

Expanded field activities include increased investment in identifying, containing, and removing contaminated sites, in determining the feasibility of creating water sources or wetlands for translocating endangered species, in conducting comprehensive monitoring and inventorying all terrestrial habitats, and in restoring native terrestrial vegetation. The effects of contamination due to shoreline dumps on birds nesting on the dumps and marine organisms in adjacent waters would be investigated at Kure Atoll, French Frigate Shoals, Midway Atoll, and Pearl and Hermes Atolls (HMC-2.1). Efforts to ameliorate the effects of contamination would focus on locating, evaluating, monitoring, containing, and removing contamination from shoreline dumps and landfills (HMC-2.2). The Coast Guard created a new unlined landfill on Green Island, Kure Atoll, during remediation of the LORAN (Long-Range Aid to Navigation) station. The landfill would be investigated to confirm that PCBs placed in it are not leaching to groundwater and that the documented surface hotspots have been removed. Cleanup levels of PCBs need to be evaluated to ensure that these levels protect wildlife (HMC-2.3).

FWS would conduct an inventory of man-made structures and changes in natural beach and reef condition that may influence erosion and depositional processes at all the beach strand units of the Monument (HMC-3.2). Feasibility studies would determine if Kure is appropriate as a translocation site for Laysan ducks. If feasible, appropriate wetland habitats, such as a pond, would be developed for this purpose (HMC-4.6). Changes in the species composition and structure of mixed grass and shrub communities would be monitored on all coralline islands and atolls (HMC-4.7).

MMB intends to implement, and if necessary, develop methods to inventory and monitor a range of habitats and a variety of organisms. Endemic terrestrial invertebrates at Nihoa Island and Mokumanamana would be inventoried and their life histories would be documented (HMC-5.1). The salinity, parasites, contaminants, and native arthropods associated with freshwater seeps, ponds, and streams would be monitored to evaluate the potential for development. Additional freshwater sources would be created, with particular emphasis on potential translocation sites of the Laysan duck, Nihoa finch, and Nihoa millerbird (HMC-7.1). Examples of these restoration goals are to remove ironwood on Sand Island from 50 acres outside designated woodland and to control young ironwood in areas managed for grass and shrubs (HMC-8.1).

1.6.7.4 New field activities

New field activities would focus on evaluating historic and present effects on reef growth, evaluating the loss of beach habitats, outplanting new areas, and employing new methods to monitor tree-nesting seabird populations. New field research would be conducted to analyze historic and present effects on reef growth at Midway Atoll and to determine limiting factors of reef growth (HMC-1.2); then restoration would be conducted to facilitate natural reef building (HMC-1.3). Research would be designed to evaluate loss of beach strand and crest due to erosion and sea level rise (HMC-3.1); this would help formulate a restoration plan that would stop as much net loss of beach strand and beach crest habitat as is possible. Propagating and outplanting native vegetation on 34-acre Southeast Island at Pearl and Hermes Atolls would be conducted to replace the native plant community extirpated by the invasive golden crownbeard

(HMC-4.5). Methods for monitoring population size and reproductive success in tree-nesting seabird species would be devised and implemented (HMC-8.2).

1.6.8 Marine Debris

Marine debris cleanup activities would continue, as described in the Monument Management Plan, and include planning and administrative and field activities (see Monument Management Plan, section 3.3.1, Marine Debris Action Plan). All activities described in the No Action alternative would continue, but several activities would be expanded under the Proposed Action. In addition, new activities are proposed to reduce the negative effects of marine debris to Monument resources and to reduce the amount of debris entering the North Pacific Ocean. These activities are listed in the table below and are summarized in this section.

Proposed Action Alternative: Marine Debris	Status	Activity Type
Activity MD-1.1: Continue working with partners to remove marine debris in the Monument and reduce additional debris entering the Monument.	Expanded	Field activity
Activity MD-1.2: Catalog, secure, contain, and properly remove hazardous materials that wash ashore in the NWHI.	Expanded	Field activity
Activity MD-1.3: Develop and implement a 5-year marine debris removal and prevention strategy for the Monument.	Expanded	Planning/administrative
Activity MD-1.4: Work with the U.S. Department of State to gain international cooperation and involvement for marine debris issues.	New	Planning/administrative
Activity MD-1.5: Work with the fishery management councils to address marine debris prevention with U.S. fishing fleets.	Expanded	Field activity
Activity MD-2.1: Work with partners on marine debris studies.	Expanded	Field activity
Activity MD-2.2: Develop and standardize monitoring protocols for marine and terrestrial habitats.	Expanded	Planning/administrative
Activity MD-3.1: Work with partners to continue to develop and implement an outreach strategy for marine debris.	New	Planning/administrative

Note: This table includes only proposed expanded and new activities. Activities in this action area that are not included in this table are described under the No Action alternative.

1.6.8.1 Expanded planning and administrative activities

Expanded planning and administrative activities include developing standardized protocols for marine debris removal and developing a multiagency outreach strategy for marine debris. The MMB would work with all federal and state partners to standardize protocols to maximize the use and utility of data collected by the various programs (MD-2.2). To better explain the scope and effects of marine debris in the NWHI, an outreach strategy would be developed with the multiagency partnership to reach a broad audience and specific fishing communities (MD-3.1).

1.6.8.2 New planning and administrative activities

New planning and administrative activities include highlighting marine debris prevention internationally. The MMB would work through the Interagency Marine Debris Coordinating Committee, the U.S. Department of State, and other appropriate U.S. agencies to call

international attention to marine debris problems in the NWHI and to identify approaches to reducing foreign debris sources (MD-1.4).

1.6.8.3 Expanded field activities

Expanded field activities include increased efforts to intercept marine debris at sea before it enters the Monument. Efforts to remove marine debris in the Monument would be increased, and efforts to reduce additional debris entering the Monument would be undertaken. New technology, such as unmanned aerial vehicles, would be tested to detect marine debris at sea (MD-1.1). Efforts to document, secure, and remove hazardous materials that wash ashore would increase (MD-1.2). Marine debris removal in the Monument would be expanded through the efforts of multiagency partnerships and working with the fishery management councils to address marine debris prevention with U.S. fishing fleets (MD-1.5). The MMB would continue current research efforts with the Marine Debris Program and would expand them to determine marine debris accumulation rates, biological and habitat effects, efforts to track sources and types of debris, and documentation of the cost estimates of damage (MD-2.1).

1.6.9 Alien Species

Proposed alien species management activities are described in the Monument Management Plan and include planning and administrative and field activities (see Monument Management Plan, section 3.3.2, Alien Species Action Plan). All activities described in the No Action alternative would continue, but several activities would be expanded under the Proposed Action. In addition, new activities are proposed to detect, control, eradicate where possible, and prevent the introduction of alien species into the Monument. These activities are listed in the table below and are summarized in this section.

Proposed Action Alternative: Alien Species	Status	Activity Type
Activity AS-1.1: Complete an Integrated Alien Species Management Plan.	New	Planning/administrative
Activity AS-1.2: Develop best management practices to prevent, control, and eradicate alien species.	Expanded	Planning/administrative
Activity AS-2.1: Survey distributions and populations of known alien species at regular intervals.	Expanded	Field activity
Activity AS-2.2: Maintain a GIS database of marine and terrestrial alien species.	New	Planning/administrative
Activity AS-2.3: Develop and implement monitoring protocols for early detection and characterization of new infestations.	New	Field activity
Activity AS-4.1: Produce a house mouse eradication plan within 5 years and procure appropriate permits for chosen eradication techniques.	New	Planning/administrative
Activity AS-4.2: Implement and complete house mouse eradication.	New	Field activity
Activity AS-5.1: Within 5 years, formulate a priority list of locations and species and a treatment plan to control and eventually eradicate all social Hymenopterans, such as ants and wasps, at all islands in the Monument.	New	Planning/administrative

Proposed Action Alternative: Alien Species	Status	Activity Type
Activity AS-5.2: Conduct toxicant trials to evaluate their efficacy and document ecological effects at selected islands on highest-priority invasive species of ants and wasps.	New	Field activity
Activity AS-5.3: Control and if possible eradicate the two introduced mosquito species at Midway Atoll within 10 years using methods prescribed in the Integrated Pest Management Plan.	New	Field activity
Activity AS-5.4: Develop and implement a plan to control and if possible eradicate the invasive gray bird locust wherever it occurs.	New	Field activity
Activity AS-5.5: Protect endangered plants threatened by gray bird locust outbreaks at Nihoa Island by developing appropriate baits for localized application of toxicants to protect specific high-priority plant sites.	New	Field activity
Activity AS-6.1: Control and eventually eradicate golden crownbeard and co-occurring weedy shrubs in all areas where they occur.	Expanded	Field activity
Activity AS 6.2: Control and eventually eradicate the invasive grass sandbur from all areas of the Monument where it currently occurs.	Expanded	Field activity
Activity AS-6.3: Control and eventually eradicate Indian pluchea, Sporobolus pyramidatus, and swine cress from Laysan Island.	Expanded	Field activity
Activity AS-6.4: Control and eventually eradicate prioritized alien plant species from Kure Atoll.	Expanded	Field activity
Activity AS-7.1: Map, control and eventually eradicate invasive red algae where it occurs.	New	Field activity
Activity AS-7.2: Conduct surveillance at appropriate sites for snowflake coral and other incipient marine invasives.	New	Field activity
Activity AS-8.1: Support and conduct research on alien species detection and the effects of invasive species on native ecosystems.	Expanded	Field activity
Activity AS-8.2: Support and conduct research on invasive species prevention, control methods, and eradication techniques.	Expanded	Field activity
Activity AS-9.1: Integrate alien species information into the overall outreach program for Monument permittees.	Expanded	Planning/administrative
Activity AS-9.2: Integrate alien species information into general Monument outreach materials.	Expanded	Planning/administrative
Activity AS-10.1: Build relationships with other resource managers and invasive species experts in the state, nation, and other countries based on shared challenges concerning invasive species.	Expanded	Planning/administrative

Note: This table includes only proposed expanded and new activities. Activities in this action area that are not included in this table are described under the No Action alternative.

1.6.9.1 Expanded planning and administrative activities

Expanded planning and administrative activities include developing enhanced outreach materials and working with new groups involved with alien species control. Specific protocols and requirements for preventing, controlling the spread of, and eradicating alien species, such as hull inspections and island quarantine protocols, a description of each partner's role in alien species control, best management practices to prevent the spread of species within the NWHI, and priority areas would be expanded to address threats from alien species on Monument resources. Monument staff would expand activities for responding to alien species through further development of best management practices for preventing, controlling and eradicating alien species (AS-1.2). Outreach activities would be expanded through the integration of alien species information in outreach materials for both general education and to provide Monument permittees with information on regulations, permit requirements and best management practices for preventing alien species introductions. A guide to marine and terrestrial alien species with photographs, modes of transport, reporting protocols, and best management practices would be used as part of the outreach program. Outreach may consist of printed materials, as well as presentations that are part of the permit application process and as taxonomy training for staff and volunteers (AS-9.1). Monument staff would increase integration of messages on alien species into general education and outreach materials when appropriate opportunities arise (AS-9.2). Monument staff would participate in public and professional conferences, working group meetings, and activities focused on reducing the effects of alien species statewide and in the Pacific region. Increased information exchange would maximize the effectiveness of collective resources and keep the MMB current on invasive species research, management, and outreach efforts throughout Hawai'i and the Pacific (AS-10.1).

1.6.9.2 New planning and administrative activities

New planning and administrative activities include developing an integrated plan to control and eradicate alien species, implementing new monitoring protocols for early detection, and prioritizing control efforts for ants and wasps.

An Integrated Alien Species Management Plan would be developed to prioritize alien species management actions for the Monument (AS-1.1). Data collected during alien species monitoring would be added to the Monument's GIS database for tracking and analysis (AS-2.2). This data would help track the spread of invasive species and the success of control measures instituted by Monument managers. Through the development and implementation of monitoring protocols, new infestations of alien species can be detected and characterized early. An eradication plan would be developed for the house mouse at Midway Atoll (AS-4.1). A priority list of locations and species would be formulated and a treatment plan would be developed to control and eventually eradicate all social Hymenopterans, such as ants and wasps, at all islands in the Monument (AS-5.1).

1.6.9.3 Expanded field activities

Expanded field activities include additional monitoring and standardization of data collection protocols. Monitoring would be expanded and standardized and new data collection would be incorporated into existing annual monitoring (AS-2.1). The distributions and populations of

known alien species would be surveyed annually to facilitate early detection. The highest priority terrestrial alien plant species would be controlled using hand pull, mow where appropriate, and treat with glyphosate at 1,098 acres at Midway, 75 acres at Kure, and 34 acres at Pearl and Hermes (AS-6.1). Sandbur would be controlled and eradicated at all other locations in the Monument. A year-round program of hand-pulling and limited glyphosate spraying would be used (AS-6.2). Further removal efforts of invasive species would treat and prevent seed set to eventually eradicate at Laysan (AS-6.3). The eradication of alien species would be prioritized according to the management plan (AS-6.4).

Research would be expanded beyond terrestrial areas to include the marine ecosystem. Monument staff, working with experts, would determine which methods for alien species detection and control would be appropriate for use in the NWHI (AS-8.1). Successful invasive species control and eradication programs require systematic investigations into the efficacy of techniques chosen and the ecological effects of any methods used. Terrestrial and marine research to document the effectiveness of these measures would aid those managing other wildlands in choosing quarantine methods (AS-8.2).

1.6.9.4 New field activities

New field activities would control and eradication of the house mouse, mosquitoes, and gray bird locust and mapping and surveillance of two marine invasive species. The house mouse eradication plan would be implemented using the methods proven successful for eradicating black rats (AS-4.2). Toxicant trials would be conducted on highest-priority invasive species of ants and wasps to evaluate their efficacy and document the ecological effects (AS-5.2). Monument staff would control and if possible eradicate two introduced mosquito species at Midway Atoll through using the methods prescribed in the Integrated Pest Management Plan (AS-5.3). Monument staff would continue efforts to address the gray bird locust invasion by developing and implementing a plan to control and possibly eradicate the gray bird locust (AS-5.4). Gray locust outbreaks that threatened endangered plants at Nihoa Island would be controlled by developing appropriate baits for localized application (AS-5.5). Early detection and characterization of new infestations of alien species would be possible through monitoring (AS-2.3). The Monument staff would map the extent of red algae infestation through the use of scuba or remotely operated vehicles to control and eventually eradicate invasive red algae (AS-7.1). The MMB would devise a plan to conduct surveillance activities at appropriate sites where snowflake coral and other incipient marine invasive species have been identified (AS-7.2).

1.6.10 Maritime Transportation and Aviation

Proposed maritime transportation and aviation activities are described in the Monument Management Plan and include planning and administrative and field activities (see Monument Management Plan, section 3.3.3, Maritime Transportation and Aviation Action Plan). All activities described in the No Action alternative would continue, but several activities would be expanded under the Proposed Action. In addition, new activities are proposed to investigate, identify, and reduce potential threats to the Monument from maritime and aviation traffic. These activities are listed in the table below and are summarized in this section.

Proposed Action Alternative: Maritime Transportation and Aviation	Status	Activity Type
Activity MTA-1.2: Develop boundary and zoning informational tools.	New	Planning/administrative
Activity MTA-1.3: Provide necessary updates to nautical charts and Notice to Mariners	New	Planning/administrative
Activity MTA-2.1: Conduct studies on potential aircraft and vessel hazards and impacts	New	Field activity
Activity MTA-2.2: Develop protocols and practices as needed and integrate with existing protocols for safe aircraft and vessel operations.	Expanded	Planning/administrative
Activity MTA-2.3: Improve existing pre-access information for inclusion on the Monument website and in permit application instructions.	Expanded	Planning/administrative

Note: This table includes only proposed expanded and new activities. Activities in this action area that are not included in this table are described under the No Action alternative.

1.6.10.1 Expanded planning and administrative activities

Expanded planning and administrative include developing new protocols and practices to reduce risk from maritime transportation and aviation. Existing protocols would be evaluated and other recommendations sought to reduce risks to personnel and the environment through pre-access training and standard procedures. New protocols and practices would be developed as needed (MTA-2.2). Existing and additional pre-access information would be incorporated into the Monument website and in permit application instructions. Additional information may include navigational hazards, zoning designations, including waste discharge location and types, and preventing the introduction of alien species (MTA-2.3).

1.6.10.2 New planning and administrative activities

New planning and administrative include the development of boundary and zoning information tools (MTA-1.2). In addition, existing nautical charts and mariner notices would be updated with boundary and zoning information (MTA-1.3). Overall, protocols and practices would be expanded to ensure safe aircraft and vessel operations, and improvements would be made to make pre-access information available on the Monument website and in permit application instructions.

1.6.10.3 New field activities

New field activities include various studies on potential aircraft and vessel hazards, which would be conducted based on priority threats identified in a comprehensive threat assessment conducted by the MMB (MTA-2.1). A range of studies may be conducted, such as feasibility studies on anchoring and mooring locations, effects of discharge, long-term study of hull inspections, alien species introductions via aircraft and other studies that would aid the MMB in making informed management decisions to protect Monument resources.

1.6.11 Emergency Response and Natural Resource Damage Assessment

Proposed emergency response and natural resource damage assessment activities are described in the Monument Management Plan and include planning and administrative activities (see Monument Management Plan, section 3.3.4, Emergency Response and Natural Resource

Damage Assessment). All activities described in the No Action alternative would continue, but several activities would be expanded. In addition, new activities are proposed to minimize damage to Monument resources through coordinated emergency response and assessment. These activities are listed in the table below and are summarized in this section.

Proposed Action Alternative: Emergency Response and Damage Assessment	Status	Activity Type
Activity ERDA-1.1: Create a Monument Emergency Response and Assessment Team for ICS responses.	New	Planning/administrative
Activity ERDA-1.2: Acquire and maintain training and certification to complement and support the Regional Response Team.	Expanded	Planning/administrative
Activity ERDA-1.3: Participate in emergency response and preparedness drills and meetings throughout the life of the plan.	Expanded	Planning/administrative
Activity ERDA-1.4: Participate in damage assessment programs and training throughout the life of the plan.	Expanded	Planning/administrative
Activity ERDA-2.1: In the second year, determine the non-ICS emergencies and the necessary type and scope of responses.	New	Planning/administrative
Activity ERDA-2.2: Designate appropriate Monument personnel for each non-ICS response team.	New	Planning/administrative
Activity ERDA-2.3: Throughout the life of this plan, ensure that appointed personnel acquire and maintain training and certifications.	New	Planning/administrative
Activity ERDA-3.1: Update and improve upon the Area Contingency Plan and the Environmental Sensitivity Indices	Expanded	Planning/administrative
Activity ERDA-3.2: Within 3 years, create damage assessment criteria and protocols	Expanded	Planning/administrative

Note: This table includes only proposed expanded and new activities. Activities in this action area that are not included in this table are described under the No Action alternative.

1.6.11.1 Expanded planning and administrative activities

Expanded planning and administrative activities include additional training, drills, and contingency plan updates and protocols development. Additional Monument staff receive training and certifications, ICS, hazardous waste operations and emergency response, boat safety, flight safety, first responder, and first aid, as needed (ERDA-1.2). Additional Monument staff would be added to the emergency response and assessment team and would participate in team meetings and drills, along with current staff (ERDA-1.3). Additional staff would be trained to work closely with a variety of damage assessment programs to ensure that appropriate response, injury assessment, and restoration activities take place for any given case (ERDA-1.4). Monument staff would update and improve on the area contingency plan and environmental sensitivity indices for the Monument (ERDA-3.1) Monument staff would develop non-ICS damage assessment criteria and protocols for the natural, cultural, and historic resources in the Monument (ERDA-3.2). The MMB would formalize the permit review process further by identifying and engaging a pool of experts trained in Monument-related subject matter, including policy, purpose, and proclamation findings.

1.6.11.2 New planning and administrative activities

New planning and administrative activities include creating a Monument Emergency Response and Assessment Team (ERAT) for ICS responses (ERDA-1.1)

With the creation of an ERAT, the regional response team’s training and certification would be enhanced and continual emergency response and preparedness drills would be conducted to increase emergency preparedness. This team would also continually participate in damage assessment programs and training to improve response capabilities. The MMB would also determine the type and scope of non-ICS emergencies (ERDA-2.1) and would designate appropriate Monument personnel for each non-ICS response team (ERDA-2.2).

All personnel involved in the emergency response and natural resource damage assessment activities would be required to acquire and maintain the necessary training and certifications throughout the life of the plan (ERDA-2.3).

1.6.12 Permitting

Permitting activities would continue, as described in the No Action alternative, but several activities would be expanded. In addition, new activities are proposed to implement an effective and integrated permit program for the Monument. This program would manage, minimize, or prevent negative human effects by allowing access only for those activities consistent with Presidential Proclamation 8031 and the implementing regulations of the Monument. In addition, individual permit applications would continue to be reviewed for environmental effects. Also, the MMB would conduct a case-by-case environmental analysis under NEPA or HRS Chapter 343 for each permit issued. New and expanded permitting activities are described in the Monument Management Plan (section 3.4.1, Permitting Action Plan). These activities are listed in the table below and are summarized in this section.

Proposed Action Alternative: Permitting	Status	Activity Type
Activity P-1.4: Engage outside experts in review of permit applications.	Expand	Planning/administrative
Activity P-1.5: Investigate individual and vessel insurance and other avenues to fund mitigation of any damages associated with permitted activities.	New	Planning/administrative
Activity P-2.1: Develop a Geographic Information System (GIS)-based permit tracking system.	Expand	Planning/administrative
Activity P-2.2: Analyze permit data to inform management decision making.	New	Planning/administrative
Activity P-2.3: Analyze permit data for patterns of compliance.	New	Planning/administrative
Activity P-2.4: Develop and implement a Monument reporting process.	Expand	Planning/administrative
Activity P-3.1: Develop and implement a permit and regulatory education program.	Expand	Planning/administrative
Activity P-3.2: Develop and implement a Native Hawaiian cultural education program for all permit applicants.	Expand	Planning/administrative
Activity P-3.3: Coordinate permitting outreach.	Expand	Planning/administrative
Activity P-3.4: Develop a pre-access training and briefing program.	Expand	Planning/administrative

Note: This table includes only proposed expanded and new activities. Activities in this action area that are not included in this table are described under the No Action alternative

1.6.12.1 Expanded planning and administrative activities

Expanded permitting and administrative activities include enhancing the permit review and tracking process and information outreach to permittees and the public. Expanded permitting activities also include emphasizing the cultural significance of the Monument to Native Hawaiians and the environmental and cultural conduct necessary for access to the Monument. An integrated MMB review of reports generated from the vast array of permit data collected would be established to ensure that reports are completed and submitted on time. One aspect of the report review process would ensure that data is logged and research results were made available. The MMB would formalize the permit review process further by identifying and engaging a pool of experts trained in Monument-related subject matter, including policy, purpose, and proclamation findings (P-1.4). Current and future permit data would be integrated into the GIS-based permit tracking system to ensure a comprehensive portrayal of activities in the region (P-2.1). The permit reporting process as a follow-up to field activities would be standardized (P-2.4).

Monument staff would work together to ensure that the educational activities proposed in these action plans are integrated to provide a consistent and effective message (P-3.1).

The MMB would develop and implement an educational program that could be provided online from the Monument Web site, which would educate prospective applicants about the Native Hawaiian culture (P-3.2).

Multiple information, outreach, and education programs would be developed to communicate permitting processes and regulatory information to the public, with particular attention given to interagency permitting efforts. Additional information and outreach, including presentations, publications, and DVDs, would aid interagency permitting efforts and better inform the public about Monument permitting (P-3.3). The MMB would develop and maintain a single Web site address committed to keeping the public engaged and regularly informed on all proposed and permitted activities that would be conducted in the Monument. This Web site would be the location for the public to access information regarding the Monument, including information on the Monument permit program (3.5).

In addition to the current pre-access training, new information on the Proclamation regulations, permit terms and conditions, reporting requirements, the significance of the NWHI to Native Hawaiians, and ways to best conduct activities to reduce human effects on the natural environment and cultural resources would be incorporated into the training (P-3.4).

1.6.12.2 New planning and administrative activities

New planning and administrative activities include defining insurance requirements for permittees and developing a data analysis system to identify potential environmental effects and patterns of compliance. The MMB would develop joint criteria for insurance that may be required before a permit authorizes activities in the Monument. Insurance requirements are intended to mitigate the potential risks of medical evacuations, vessel groundings, alien species introductions, and hazardous materials spills (P-1.5).

To assist in ecosystem based management decision making, permit data generated from each permit application and report would be analyzed to provide the insight needed to make informed management choices about appropriate levels and locations of permitted activities (P-2.2). Data generated from permit applications and reports would be analyzed to modify reporting requirements and make them more relevant. In addition, this data would be used to evaluate patterns of compliance and to aid in enforcement and other program area planning efforts (P-2.3).

1.6.13 Enforcement

Enforcement activities would continue, as described in the No Action alternative, but several activities would be expanded. In addition, new activities are proposed to achieve compliance with all regulations within the Monument. New and expanded enforcement activities are described in detail the Monument Management Plan (section 3.4.2, Enforcement Action Plan). These activities are listed in the table below and are summarized in this section.

Proposed Action Alternative: Enforcement	Status	Activity Type
Activity EN-1.1: Charter a Monument law enforcement working group.	New	Planning/administrative
Activity EN-1.2: Develop necessary interagency agreements.	Expand	Planning/administrative
Activity EN-1.3: Develop an integrated law enforcement training program.	New	Planning/administrative
Activity EN-1.4: Assess Monument law enforcement capacity and program effectiveness	New	Planning/administrative
Activity EN-1.5: Increase law enforcement capacity on Midway Atoll within 2 years	Expand	Field activity
Activity EN-2.3: Integrate additional automated monitoring systems and ship reporting systems for all vessels transiting the Monument	New	Planning/administrative
Activity EN-2.4: Increase available platforms to support law enforcement.	Expand	Infrastructure and development
Activity EN-3.1: Integrate regulations briefings into pre-access training required for all Monument users.	Expand	Planning/administrative

Note: This table includes only proposed expanded and new activities. Activities in this action area that are not included in this table are described under the No Action alternative.

1.6.13.1 Expanded planning and administrative activities

Expanded planning and administrative activities would include efforts to enhance interagency agreements, increase law enforcement capacity and assets, and refine pre-access briefings. Additional cooperative agreements at a regional level would allow law enforcement officers of partner agencies to enforce the variety of federal and state statutes that apply within the entire Monument, as well as future collaborations (EN-1.2). Current pre-access briefings would be standardized using videos, printed materials, and presentations (EN-3.1).

1.6.13.2 New planning and administrative activities

New planning and administrative activities include developing a Monument law enforcement working group, which would enhance communication and collaboration on law enforcement issues and needs (EN-1.1). The working group would also regularly assess the effectiveness of law enforcement activities and would identify hot spots that require additional focus (EN-1.4). New training programs would be developed to provide officers with the most current information, including environmental education and Native Hawaiian cultural practices (EN-1.3).

1.6.13.3 Expanded field activities

Expanded field activities include on-site enforcement presence at Midway Atoll NWR. Credentialed officers would be stationed there to ensure visitor and staff safety and regulatory compliance (EN-1.5) providing on-site enforcement capacity at the refuge and Monument-wide to respond to increased operations and recreational activities. Additional automated monitoring systems and ship reporting systems would be integrated in the Vessel Monitoring System to track vessels transiting the Monument (EN-2.3).

1.6.13.4 Expanded infrastructure and development activities

Expanded infrastructure and development activities would be used to evaluate aerial and ship-based surveillance systems. Due to the remoteness of this area, increased aerial and ship-based resources would be evaluated both for surveillance and for response and would be added as needed (EN-2.4).

1.6.14 Midway Atoll NWR Visitor Services

Proposed Midway Atoll visitor services activities are described in the Monument Management Plan. They include planning and administrative, field, and infrastructure and development activities (see Monument Management Plan, section 3.4.3, Midway Atoll Visitor Services Action Plan and Appendix B). All activities described in the No Action alternative would continue, but several activities would be expanded. In addition, new activities are proposed to offer visitors opportunities to discover, enjoy, appreciate, protect, and honor the unique natural, cultural, and historic resources of the Monument. These activities are listed in the table below and are summarized in this section.

Proposed Action Alternative: Midway Atoll Visitor Services	Status	Activity Type
Activity VS-1.1: Provide visitors with opportunities for wildlife-dependent recreation to enhance their knowledge and appreciation of the Monument’s natural resources.	Expand	Field activity
Activity VS-1.2: Provide visitors with opportunities to learn about and appreciate the Monument’s cultural and historic resources.	Expand	Field activity
Activity VS-1.3: Continuously monitor the impacts of visitors and other users on wildlife and historic resources to ensure their protection.	Expand	Field activity

Proposed Action Alternative: Midway Atoll Visitor Services	Status	Activity Type
Activity VS-2.1: Monitor visitor satisfaction surveys completed by outgoing visitors, adjusting activities, facilities, and maintenance schedules as appropriate on a monthly basis.	Expand	Field activity
Activity VS-2.2: Convene a team of visitor services specialists and Midway Atoll staff to review the visitor program on a biennial basis.	New	Planning/administrative
Activity VS-2.3: Based on the assessment above, seek funding, authority, or other needs to implement the recommendations for improvement.	New	Planning/administrative

Note: This table includes only proposed expanded and new activities. Activities in this action area that are not included in this table are described under the No Action alternative.

1.6.14.1 New planning and administrative activities

New planning and administrative activities would include engaging specialists to review the visitor services program every two years. A team of visitor services specialists and Midway Atoll staff would assess whether the visitor program is meeting the standards outlined in the Visitor Services Plan (VS-2.2). The team would also evaluate the need to adjust visitor fees and make recommendations on the program’s financial stability, including staffing and facility needs (VS-2.2). FWS would seek funding authority or other needs to implement any recommendations to improve the visitor program (VS-2.3).

1.6.14.2 Expanded field activities

Expanded field activities include efforts to provide visitors with opportunities to come to Midway Atoll and to continuously improve visitor services, based on monitoring effects and visitor satisfaction. As outlined in the Draft Midway Atoll Visitor Services Plan (Volume III, Appendix C), up to 50 visitors would be offered educational opportunities through tours, diving, kayaking, and photography (VS-1.1). In addition, tours and exhibits would be offered focusing on Midway’s and the Monument’s cultural and historic resources. One of the historic buildings on Sand Island would be restored to a visitor center and educational facility, offices and a permanent museum/library, which would include Monument-wide information.

An expanded snorkel and new dive program would be developed (VS-1.2). The Midway Atoll Visitor Services Plan would extend the interim plan and would include most of the same restrictions that would be carried over into a longer-term plan. To ensure resource protection, visitor effects and compatibility with conservation management would be monitored, as required by FWS policies (VS-1.3). A higher level of evaluation would be conducted with formal recommendations for improvements (VS-2.1).

1.6.15 Agency Coordination

Proposed agency coordination activities are described in the Monument Management Plan and include planning and administrative activities (see Monument Management Plan, section 2.0; Management Framework; and section 3.5.1, Agency Coordination Action Plan). All activities described in the No Action alternative would continue, but several activities would be expanded under the Proposed Action. In addition, new activities are proposed to continue the successful collaboration with government partners to achieve publicly supported, coordinated management

in the Monument. These activities are listed in the table below and are summarized in this section.

Proposed Action Alternative: Agency Coordination	Status	Activity Type
Activity AC-1.1: Establish standard operating procedures, as needed, to provide direction and improve communication within the MMB.	Expanded	Planning/administrative
Activity AC-2.1: Establish agreements for coordinated management and conduct cooperative management operations.	Expanded	Planning/administrative
Activity AC-2.2: Develop interagency agreements, grants, and memoranda of agreement as needed to carry out specific program priorities.	Expanded	Planning/administrative
Activity AC-3.1: Enhance communication and cooperation with the Department of Defense and the U.S. Navy Pacific Fleet.	Expanded	Planning/administrative

Note: This table includes only proposed expanded and new activities. Activities in this action area that are not included in this table are described under the No Action alternative.

1.6.15.1 Expanded planning and administrative activities

Expanded planning and administrative activities include enhanced coordination among Co-Trustee agencies and expanded collaborative agreements with other agencies, as appropriate. In order to ensure that unwritten knowledge and skills do not disappear when positions are filled with new staff, standard operating procedures for the MMB would be recorded, updated as necessary, and properly maintained (AC-1.1).

Building on the MOA signed in 2006, new agreements would be developed among the MMB to help coordinate management. Such agreements would specify roles, responsibilities, and periodic reviews (AC-2.1). Cooperative projects that may benefit from formal and other informal agreements would be pursued with agencies outside of the MMB. This would allow for ease in sharing resources and in-kind assistance and support, as appropriate (AC-2.2).

Formal and informal agreements may be developed for specific program priorities that require cooperative assistance from agencies outside the MMB. Through the ICC (International Code Council) and other forums, the MMB would enhance communications with the DOD and the U.S. Navy on potential areas of cooperation, including enforcement; minimizing the effects of military activities in the Monument; supporting zoning, permitting, and tracking programs; and restoring and protecting regional and local wildlife (AC-3.1).

1.6.16 Constituency Building and Outreach

Constituency building and outreach activities would continue, as described in the No Action alternative, but several activities would be expanded. In addition, new activities are proposed to cultivate an informed involved constituency that supports and enhances conservation of the natural, cultural, and historical resources of the Monument. New and expanded constituency building and outreach activities are described in the Monument Management Plan (section 3.5.2, Constituency Building and Outreach Action Plan). These activities are listed in the table below and are summarized in this section.

Proposed Action Alternative: Constituency Building and Outreach	Status	Activity Type
Activity CBO-1.1: Develop an integrated communications strategy based on an assessment of ongoing activities and future needs.	New	Planning/administrative
Activity CBO-1.3: Develop a consistent Monument identity to be used in all communications strategies that reflects its co-management within 1 year.	New	Planning/administrative
Activity CBO-1.4: Incorporate new perspectives for understanding the value of NWHI ecosystems, including socioeconomic studies, to increase ocean ecosystem literacy and conservation in the Monument within 5 years.	Expanded	Planning/administrative
Activity CBO-1.5: Research and implement new technologies and tools to increase public understanding of the NWHI ecosystems within 5 years.	Expanded	Field activity
Activity CBO-2.1: Establish a new Monument website that would allow constituents to visit a single site for all Monument-related information within 1 year.	New	Planning/administrative
Activity CBO-3.2: As needed, hold focused forums on various Monument-related issues or topics to inform and engage a broader range of constituents.	Expanded	Planning/administrative
Activity CBO-3.4: Continue to build and nurture volunteer programs that develop knowledge of, involvement in, and support for Monument programs and resources.	Expanded	Planning/administrative
Activity CBO-3.5: Establish and support a Papahānaumokuākea Marine National Monument Alliance to engage a broad range of constituents, who would provide us with recommendations and information on specific management issues on a regular basis, within 1 year.	New	Planning/administrative
Activity CBO-3.6: Continue to support the Native Hawaiian Cultural Working Group through the Office of Hawaiian Affairs.	Expanded	Planning/administrative
Activity CBO-3.7: Continue working with the Friends of Midway Atoll National Wildlife Refuge through FWS and support the establishment of a Monument-related “friends” group.	Expanded	Planning/administrative
Activity CBO-4.1: Develop interagency Monument interpretive themes to guide all interpretive products and activities.	Expanded	Planning/administrative
Activity CBO-4.2: Review existing interpretive sites and activities to determine their current relevance to the Monument and how they could better represent Monument themes.	Expanded	Planning/administrative
Activity CBO-4.3: Seek additional opportunities to expand Monument interpretive efforts to new sites and through new technologies, creating a network of coordinated interpretive sites.	Expanded	Planning/administrative
Activity CBO-4.4: Working with the National Park Service, U.S. Navy, and other key entities, develop off-site exhibits on the Battle of Midway and the associated National Memorial to be integrated into World War II memorial sites of the Pearl Harbor Historic District.	New	Infrastructure and development

Note: This table includes only proposed expanded and new activities. Activities in this action area that are not included in this table are described under the No Action alternative.

1.6.16.1 Expanded planning and administrative activities

Expanded planning and administrative activities include new products, messages, and modes of communication. The MMB would support and seek out traditional ecological knowledge, as well as new perspectives that contribute different ways of valuing the ecosystems of the NWHI. New and novel ways to look at the value of marine ecosystems, such as socioeconomic analysis of the nonmarket value of coral reefs, would also be supported (CBO-1.4). Additional materials would be developed to aid in the understanding of more specific aspects of the entire region and on the ways in which the public can participate. These printed materials may also include multimedia components or may be developed as a suite of materials (CBO-2.2).

The MMB would offer public forums on specific topics or issues, both to exchange information with our constituencies and to build awareness and support. These forums would be offered at various locations to facilitate participation by a broad range of constituents (CBO-3.2). The volunteer program would continue to be nurtured and grown in support of the Monument (CBO-3.4). Guidance and support provided to the Monument by the Native Hawaiian Cultural Working Group through OHA would be further considered (CBO-3.6). In addition to continuing to work with the Friends of Midway Atoll National Wildlife Refuge, the MMB would evaluate the possibility of establishing a Monument-wide friends group to provide similar support. (CBO-3.7).

A more focused study would be conducted to develop Monument-wide interpretive themes to guide the development and presentation of interpretive sites and products (CBO-4.1); existing interpretive facilities would be reviewed and updated. The Midway Atoll visitor center would be upgraded to include Monument-wide information (CBO-4.2). In addition, the inclusion of an interpretive facility at the proposed NOAA facility on Ford Island would be reviewed. The MMB would identify new sites and technologies to better reach our audiences and to include Monument messages in broader arenas (CBO-4.3).

1.6.16.2 New planning and administrative activities

New planning and administrative activities include a unified approach and identity for constituency building and outreach. To better reflect the shared management of the Monument, the MMB would work toward a unified strategy for constituency building and outreach (CBO-1.1). A new identity would be developed for the Monument, and a consolidated website for information would be created (CBO-1.3 and CBO-2.1). A range of constituent participation would be encouraged through holding public forums, expanding volunteer activities, and establishing a Monument Friends Group and a Monument Alliance group (CBO-3.5).

1.6.16.3 Expanded field activities

Expanded field activities would incorporate new technologies to increase public understanding of the Monument and its resources. The MMB would increase support for projects such as documentaries, photography, and writing, which would bring the place to the people (CBO 2.3). Telepresence technologies would play an important role in educating the public about the NWHI. Significant obstacles to implementing these technologies do exist, such as cost,

feasibility, and ecological sensitivities, but Monument staff would continue to use and expand these new technologies for providing this virtual experience (CBO-1.5).

1.6.16.4 New infrastructure and development activities

New infrastructure and development activities include possible additional interpretative centers. Additional opportunities to expand interpretive sites would be examined through working with the National Park Service, the U.S. Navy, and other key entities to develop off-site exhibits (CBO-4.4).

1.6.17 Native Hawaiian Community Involvement

Proposed Native Hawaiian community involvement activities are described in the Monument Management Plan and include planning and administrative activities (Monument Management Plan, section 3.5.3 Native Hawaiian Community Involvement Action Plan). All activities described in the No Action alternative would continue, but several activities would be expanded under the Proposed Action. In addition, new activities are proposed to engage the Native Hawaiian community in active and meaningful involvement in the Monument. These activities are listed in the table below and are summarized in this section.

Proposed Action Alternative: Native Hawaiian Community Involvement	Status	Activity Type
Activity NHCI-1.1: Formalize, expand, and convene the Native Hawaiian Cultural Working Group.	Expanded	Planning/administrative
Activity NHCI-1.2: Engage the Native Hawaiian Cultural Working Group in the development of a Monument Cultural Resources Program.	New	Planning/administrative
Activity NHCI-1.3: Establish an annual cultural resources exchange.	New	Planning/administrative
Activity NHCI-2.1: Continue to expand and explore opportunities to partner with institutions serving Native Hawaiians.	Expanded	Planning/administrative
Activity NHCI-3.2: Use and integrate Native Hawaiian traditional ecological knowledge in Monument management activities.	New	Planning/administrative

Note: This table includes only proposed expanded and new activities. Activities in this action area that are not included in this table are described under the No Action alternative.

1.6.17.1 Expanded planning and administrative activities

Expanded planning and administrative activities include formally establishing the Native Hawaiian Working Group and establishing additional partnerships with other Native Hawaiian groups. The MMB, through OHA, would formally establish the Native Hawaiian Cultural Working Group, expanding the previously established working group, to ensure regular involvement of the Native Hawaiian community and a strong cultural link in planning and managing the Monument (NHCI-1.1). In addition to the partnership with the Kamakakūokalani Center for Hawaiian Studies, the MMB would also seek other opportunities to formally consult with and engage other Native Hawaiian groups and would develop outreach programs for the Native Hawaiian community (NHCI-2.1). Additional partnerships, contracts, grants, or formal agreements with Native Hawaiian organizations would be considered and established as opportunities arise.

1.6.17.2 New planning and administrative activities

New planning and administrative activities include developing a Monument Cultural Resource Program and integrating Native Hawaiian traditional ecological knowledge into Monument management activities. A Monument Cultural Resource Program and corresponding cultural resource management activities would be established and based on the recommendations of the Native Hawaiian Cultural Working Group and other Native Hawaiian organizations (NHCI-1.2). The MMB would annually convene groups of Native Hawaiians to discuss the knowledge, experiences, and new questions gained during the past research season (NHCI-1.3). This conference would update the Native Hawaiian community and would engage that community in determining the priorities and proposed methods of forthcoming research queries, theories, and needs. The Monument’s cultural resources staff would work with the Native Hawaiian community and cultural experts to identify how traditional ecological knowledge and associated practices may be woven into Monument management and research activities (NHCH-3.1). Based on traditional Hawaiian resource management strategies and traditional ecological knowledge, the MMB would integrate traditional perspectives, knowledge, and approaches in the management of Monument resources (NHCI-3.2).

1.6.18 Ocean Ecosystems Literacy

Ocean ecosystem literacy activities would continue, as described in the No Action alternative, but several activities would be expanded. In addition, new activities are proposed that would cultivate an ocean ecosystems stewardship ethic, strengthen the Nation’s science and cultural literacy, and create a new generation of conservation leaders through formal environmental education. New and expanded enforcement activities are described in the Monument Management Plan (section 3.5.4 Ocean Ecosystems Literacy Action Plan). These activities are listed in the table below and are summarized in this section.

Proposed Action Alternative: Ocean Ecosystem Literacy	Status	Activity Type
Activity OEL-1.1: Expand and improve the NWHI educational partnership’s Navigating Change curriculum for elementary and middle school students, with increased focus on ocean ecosystems literacy within 3 years.	Expanded	Planning/administrative
Activity OEL-1.2: As curricula are developed, work with Hawaiian language immersion schools and the Office of Hawaiian Affairs to ensure the curricula meet their needs, including translation into the Hawaiian language/	Expanded	Planning/administrative
Activity OEL-1.3: Develop an ocean stewardship program for middle school and high school students within 5 years.	New	Planning/administrative
Activity OEL-1.6: Expand educational programs for school groups at Mokupāpapa: Discovery Center for Hawai‘i’s Remote Coral Reefs to host at least 10 groups per month.	Expanded	Planning/administrative
Activity OEL-1.7: Provide biennial wildlife-dependent educator workshops at Midway Atoll, targeting a mix of science teachers and those from other fields of education and using the Navigating Change curricula, within 2 years	Expanded	Field activity
Activity OEL-1.9: Build formal evaluations into all education programs within 2 years.	Expanded	Planning/administrative

Proposed Action Alternative: Ocean Ecosystem Literacy	Status	Activity Type
Activity OEL-2.1: Identify and prioritize research and development projects to increase ocean ecosystems literacy and conservation in NWHI.	Expanded	Planning/administrative
Activity OEL-2.2: Use telepresence technology for educational and outreach activities within 5 years.	Expanded	Field activity

Note: This table includes only proposed expanded and new activities. Activities in this action area that are not included in this table are described under the No Action alternative.

1.6.18.1 Expanded planning and administrative activities

Expanded planning and administrative activities include developing new curricula, ensuring appropriate cultural information is included, increasing the capacity of the Discovery Center for education and outreach, evaluating the outcomes of educational programs developed for the Monument, and identifying priority research needs on new educational technologies. Additional study units would be added for the current guide targeted at fourth and fifth grade students, and units focusing on other grade levels would be developed. Education partners would work with the Department of Education and private and charter schools as curricula are being developed to ensure that the Department’s and schools’ needs are incorporated into the work and to help incorporate the new curricula into educational programming (OEL-1.1). The Navigating Change partnership would work closely with the Native Hawaiian community to ensure appropriate cultural information is included within all curricula and that the units meet the needs of Hawaiian-language immersion and culture-based charter schools (OEL-1.2). Educational programming at the Monument’s education and outreach venue, Mokupāpapa: Discovery Center for Hawai‘i’s Remote Coral Reefs, would be expanded. Discovery Center staff would create 40 educational partnerships to promote Mokupāpapa as an educational facility and field trip venue. Volunteer docent capacity would be developed to meet the increasing needs of school and community groups (OEL-1.6) Evaluating education and outreach programs and activities is critical to ensuring that the MMB is achieving its desired goals and reaching target audiences. Formal evaluations would be integrated into all Monument education programs (OEL-1.9). The MMB, working together with educational partnerships and other relevant groups, including the private sector, would identify and prioritize research and development projects for new products and innovative technologies that could be used to increase ocean ecosystem literacy and support for conservation of the NWHI (OEL-2.1).

1.6.18.2 New planning and administrative activities

New planning and administrative activities include working with educational partners to develop an ocean stewardship program for middle and high school students that provides real-world, hands-on experiences with issues of ocean management (OEL-1.3).

1.6.18.3 Expanded field activities

Expanded field activities include providing additional opportunities to engage teachers in experiencing Midway Atoll and use telepresence technologies to support broader public education. The teacher workshop program would be expanded to include workshops every other year on Midway Atoll. Offering more educators the opportunity to experience Midway Atoll and

bring the Monument back to their students would be an important role for Midway in the coming years (OEL-1.7). Because most people would not be able to visit the NWHI, the MMB would use such technologies as underwater video cameras, real-time video transmission, virtual field trips, formal distance learning programs, websites, and exhibits in discovery centers to educate the public about the NWHI. Significant obstacles to implementing these technologies do exist, such as cost, feasibility, and ecological sensitivities, but Monument staff would continue to use and expand these new technologies for providing this virtual experience (OEL-2.2).

1.6.19 Central Operations

Proposed central operations are described in the Monument Management Plan and include planning and administrative and infrastructure and development (see Monument Management Plan, section 2.0 and 3.6.1, Central Operations Action Plan). All activities described in the No Action alternative would continue, but several activities would be expanded under the Proposed Action. In addition, new activities are proposed to conduct effective and well-planned operations with appropriate human resources and adequate physical infrastructure in the main Hawaiian Islands to support management of the Monument. These activities are listed in the table below and are summarized in this section.

Proposed Action Alternative: Central Operations	Status	Activity Type
Activity CO-2.1: Regularly assess current status and future needs for human resources.	Expanded	Planning/administrative
Activity CO-2.2: Improve human resources and organizational capacity.	Expanded	Planning/administrative
Activity CO-3.1: Regularly assess current status and future needs for infrastructure and facilities.	Expanded	Planning/administrative
Activity CO-3.2: Maintain and improve infrastructure and facilities.	Expanded	Infrastructure and development
Activity CO-3.3: Improve information technology infrastructure.	Expanded	Infrastructure and development

Note: This table includes only proposed expanded and new activities. Activities in this action area that are not included in this table are described under the No Action alternative.

1.6.19.1 Expanded planning and administrative activities

Expanded planning and administrative activities include human resource and infrastructure needs assessments and capacity building. Monument staff would continue to regularly assess human resource needs for individual agencies. They would continue to identify and prioritize capacity building opportunities and regional capacities and opportunities to coordinate and share resources with partners (CO-2.1). As Monument staff grows, so would the human resource development capacity, including staff recruitment, retention, recognition, training, communication, regular meetings, time and attendance, and staff safety (CO-2.2). In conjunction with assessments of human resource needs, infrastructure and facilities needs would also be reviewed to optimize facilities utilization. These assessments would aim to organize and better use existing facilities and infrastructure, to identify physical resource overlaps and gaps, and to identify needs to support projected future growth and collocation (CO-3.1).

1.6.19.2 Expanded infrastructure and development activities

Expanded infrastructure and development activities include resource sharing among the MMB agencies and acquiring new computer technology to support Monument activities.

Use of assets among MMB agencies would be assessed to determine more efficient use of available resources and to plan for cooperative growth (CO-3.2). Appropriate computer equipment would be acquired, upgraded, and maintained to meet management needs, and new technologies would be integrated as warranted (CO-3.3).

1.6.20 Information Management

Proposed information management activities are described in the Monument Management Plan and include planning and administrative activities (see Monument Management Plan, section 3.6.2, Information Management Action Plan). All activities described in the No Action alternative would continue, but several activities would be expanded. In addition, new activities are proposed to consolidate and make accessible relevant information to meet educational, management, and research needs for the Monument. These activities are listed in the table below and are summarized in this section.

Proposed Action: Information Management	Status	Activity Type
Activity IM-1.1: Develop and implement a data discovery, inventory, and acquisition strategy.	New	Planning/administrative
Activity IM-1.2: Develop appropriate data management protocols, procedures, and agreements with partner agencies.	New	Planning/administrative
Activity IM-1.3: Continue to design, build, and maintain the Papahānaumokuākea Information Management System (PIMS).	Expanded	Planning/administrative
Activity IM-1.4: Begin incorporating information into PIMS.	New	Planning/administrative
Activity IM-2.1: Design tools for accessing the PIMS.	New	Planning/administrative
Activity IM-2.2: Assess data access needs and provide training for PIMS users.	New	Planning/administrative
Activity IM-2.3: Develop interfaces to feed data to repositories, such as National Biological Information Infrastructure, Pacific Basin Information Node, Coral Reef Information System, and Integrated Ocean Observing System.	New	Planning/administrative

Note: This table includes only proposed expanded and new activities. Activities in this action area that are not included in this table are described under the No Action alternative.

1.6.20.1 Expanded planning and administrative activities

Expanded planning and administrative activities include the continued development of the Papahānaumokuākea Information Management System (PIMS), which would be refined, configured, and maintained to meet a spectrum of needs of the MMB (IM-1.3).

1.6.20.2 New planning and administrative activities

New planning and administrative activities include the development of a data acquisition strategy, data management protocols, tools and training on accessing PIMS, and interfaces to major data repositories. A data discovery, inventory, and acquisition strategy would be developed and implemented to identify the types, format, and sources of new and existing information and data sets (IM-1.1). Once the data sources have been identified, protocols for how data would be collected, documented, stored, and shared would be developed and implemented (IM-1.2). A shipboard data collection tool, under development, would facilitate data capture, standardization, and chain-of-custody. While PIMS stores some data that is not already maintained by other partner agencies, it is primarily intended to be a portal to a decentralized data storage and management system. Data entry, formatting, and review would be formulated in conjunction with data providers as data and information is incorporated into PIMS (IM-1.4). The MMB would develop tools and training for accessing, updating, analyzing and receiving PIMS data (IM-2.1 and IM-2.2). Interfaces would be developed to feed data to other data repositories, such as the National Biological Information Infrastructure and the Integrated Ocean Observing Systems (IM-2.3).

1.6.21 Coordinated Field Operations

Proposed coordinated field operations activities are described in the Monument Management Plan and include planning and administrative, field, and infrastructure and development activities (see Monument Management Plan, section 3.6.3). All activities described in the No Action alternative would continue, but several activities would be expanded. In addition, new activities are proposed to coordinate field activities and to provide adequate infrastructure to ensure safe and efficient operations while avoiding effects on the ecosystems in the Monument. These activities are listed in the table below and are summarized in this section.

Proposed Action Alternative: Coordinated Field Operations	Status	Activity Type
Activity CFO-1.1: Initiate and complete necessary planning to implement the draft Midway Atoll Conceptual Site Plan.	Expanded	Planning/administrative
Activity CFO-1.2: Develop conceptual site plans for Hawaiian Islands National Wildlife Refuge and Seabird Sanctuary at Kure Atoll.	New	Planning/administrative
Activity CFO-1.3: Develop a strategy for long-term sustainability for operations throughout the Monument using alternative energy systems and waste reduction with 2 years.	Expanded	Planning/administrative
Activity CFO-1.4: Plan for use of sustainable construction and landscape architecture for facilities and assets throughout the Monument.	Expanded	Planning/administrative
Activity CFO-2.1: Develop interagency agreements to facilitate effective field coordination throughout the Monument.	Expanded	Planning/administrative
Activity CFO-2.2: Develop and implement standardized field operation protocols.	Expanded	Field activity
Activity CFO-2.3: Assess threats that field activities pose to Monument resources.	Expanded	Planning/administrative

Proposed Action Alternative: Coordinated Field Operations	Status	Activity Type
Activity CFO-2.5: Develop a staff coordination agreement between Midway Atoll NWR and the State Seabird Sanctuary at Kure Atoll.	New	Planning/administrative
Activity CFO-3.1: Construct low-impact structure pilot project at Midway Atoll.	New	Infrastructure and development
Activity CFO-3.2: Replace Bravo Barracks at Midway Atoll.	New	Infrastructure and development
Activity CFO-3.3: Replace Charlie Barracks at Midway Atoll.	New	Infrastructure and development
Activity CFO-3.4: Rehabilitate “Officers Row” Housing at Midway Atoll.	Expanded	Infrastructure and development
Activity CFO-3.5: Maintain and enhance, where appropriate, the infrastructure at Kure Atoll.	Expanded	Infrastructure and development
Activity CFO-3.6: Maintain and enhance, where appropriate, the infrastructure at French Frigate Shoals.	Expanded	Infrastructure and development
Activity CFO-3.7: Evaluate, maintain, and enhance the small tent field camp at Pearl and Hermes Atolls on Southeast Island.	Expanded	Infrastructure and development
Activity CFO-3.8: Maintain and enhance the existing tent field camp at Laysan Island.	Expanded	Infrastructure and development
Activity CFO-4.2: Develop biodiesel fuel capacity or other sustainable fuel types at Midway Atoll within 2 years.	New	Infrastructure and development
Activity CFO-5.1: Rehabilitate water catchment and distribution systems.	Expanded	Infrastructure and development
Activity CFO-5.2: Rehabilitate septic and wastewater systems.	Expanded	Infrastructure and development
Activity CFO-5.3: Treat all wooden historic structures at Midway Atoll for termites.	Expanded	Infrastructure and development
Activity CFO-5.4: Evaluate and expand food services as necessary.	Expanded	Infrastructure and development
Activity CFO-5.5: Rehabilitate seaplane hangar.	Expanded	Infrastructure and development
Activity CFO-5.6: Repair inner harbor seawall.	Expanded	Infrastructure and development
Activity CFO-6.1: Inventory, maintain, and coordinate the use of small boats and related field resources.	Expanded	Planning/administrative
Activity CFO-6.2: Within 2 years, station additional vessels at Midway for use during the summer marine research field season.	Expanded	Infrastructure and development
Activity CFO-6.3: Within 5-10 years, station a small research/enforcement vessel at Midway Atoll.	New	Infrastructure and development
Activity CFO-6.4: Construct new finger piers along the north wall of Midway’s inner harbor.	New	Infrastructure and development
Activity CFO-6.5: Redevelop existing boathouse at Midway into a multi-use facility.	New	Infrastructure and development
Activity CFO-6.6: Evaluate needed improvements to Pier No. 1 in the ship basin and the Tug Pier at Midway Atoll.	New	Planning/administrative

Proposed Action Alternative: Coordinated Field Operations	Status	Activity Type
Activity CFO-6.7: Make needed improvements to or replace the pier at Eastern Island.	New	Infrastructure and development
Activity CFO-7.1: Identify a reliable, efficient, cost-effective aircraft service to double the delivery capacity of personnel and cargo between Honolulu and Midway.	Expanded	Planning/administrative
Activity CFO-7.2: Within 5-10 years, evaluate the need for a dedicated aircraft for transportation, research, evacuation, education, surveillance, management, and enforcement in the Pacific region.	New	Planning/administrative
Activity CFO-7.3: Within 15 years, acquire appropriate aircraft to service the Monument and the Pacific region.	New	Infrastructure and development
Activity CFO-8.1: Refurbish or replace the dive recompression chamber at Midway.	Expanded	Infrastructure and development
Activity CFO-8.2: Investigate acquisition of portable dive recompression chamber for use on a small research vessel.	Expanded	Infrastructure and development
Activity CFO-8.3: Incorporate a dive operations center into refurbished boathouse facility at Midway.	Expanded	Infrastructure and development
Activity CFO-9.1: Design a marine laboratory at Midway and develop in phases.	New	Infrastructure and development
Activity CFO-9.2: Complete planning for and construct captive care monk seal facility on Sand Island.	New	Infrastructure and development
Activity CFO-9.3: Provide logistical, infrastructure, and transportation support for threatened and endangered species recovery actions.	Expanded	Infrastructure and development
Activity CFO-9.4: Complete Phase I rehabilitation of Midway Mall and the commissary building.	Expanded	Infrastructure and development
Activity CFO-9.5: Construct airport welcome center on Sand Island within 2 years.	New	Infrastructure and development

Note: This table includes only proposed expanded and new activities. Activities in this action area that are not included in this table are described under the No Action alternative.

1.6.21.1 Expanded planning and administrative activities

Expanded planning and administrative activities include necessary site planning to ensure coordinated field operations to achieve the purpose of the Monument, the Midway and Hawaiian Islands National Wildlife Refuges, NWHI Coral Reef Ecosystem Reserve, the Kure Atoll Wildlife Sanctuary, and the State of Hawai‘i Marine Refuge. Other activities are to incorporate “green” methods and technologies into future Monument operations and infrastructure. The completion and implementation of conceptual site plans for the Midway Atoll National Wildlife Refuge, the Kure Atoll Wildlife Sanctuary, and the Hawaiian Islands National Wildlife Refuge is fundamental to fulfilling the purpose and needs of these various needs. Co-trustees would coordinate on Midway Site Plan priorities, would conduct detailed planning, would initiate budget requests, and would implement actions as planning and compliance is completed and funding is available (CFO-1.1). Co-trustees also would work together to develop sustainable management and operations priorities (CFO-1.3) and to develop sustainable programs for construction, landscape architecture, and facilities (CFO-1.4).

Interagency agreements to coordinate field operations, share resources, and commit to joint implementation of field priorities would be developed, as appropriate (CFO-2.1). Permitted activities would continue to be monitored through field activity reports. In addition, data from these reports would be managed in a geographic information system to provide adaptive management for the MMB in conducting or authorizing future field activities (CFO-2.3). Small boats and support equipment would be inventoried Monument-wide to determine whether the Co-Trustees could use these resources more effectively and reduce duplicative efforts (CFO-6.1). The development of biodiesel fuel capacity or sustainable fuel types would be evaluated within two years to meet future fuel requirements for aircraft, vessel, utility, and equipment needs at Midway as part of a long-term sustainability strategy (CFO-1.3). Furthermore, in support of the “Greening of America,” sustainable construction and landscape architecture for facilities and assets would be incorporated into Monument infrastructure planning (CFO-1.4).

1.6.21.2 New planning and administrative activities

New planning and administrative activities include conceptual site plan development for other parts of the Monument and evaluation of transportation needs. Similar to Midway, conceptual site plans need to be developed for the Seabird Sanctuary at Kure Atoll and at various locations within the Hawaiian Islands National Wildlife Refuge to identify long-term infrastructure requirements and priorities (CFO-1.2). A staff coordination agreement would be developed between Midway Atoll National Wildlife Refuge and the State Seabird Sanctuary at Kure Atoll to ensure coordination of habitat restoration and management activities and wildlife monitoring activities between the state and FWS (CFO-2.5).

Pier 1 in the ship basin and the tug pier in the inner harbor at Midway would both be evaluated for needed improvements (CFO-6.6). Within five to ten years, the need for a dedicated aircraft for transportation, research, evaluation, education, surveillance, management, and enforcement in the Pacific region would be evaluated (CFO-7.2).

1.6.21.3 Expanded field activities

Expanded field activities include standardized protocols for field operations. Standardized environmental, safety, and preparedness protocols for field operations would be developed consistent with partner agency standards to provide resource protection and safe field operations (CFO-2.2). Principal investigators and managers working in the NWHI would receive a copy of the Field Operations Manual and would implement these protocols.

1.6.21.4 Expanded infrastructure and development activities

Expanded infrastructure and development activities include maintaining or rehabilitating additional facilities. Housing and facilities would be replaced as needed on a case-by-case basis, with any construction occurring within the existing development footprint, so there would be no loss of wildlife habitat. The ten houses in Officers Row would be rehabilitated at Midway Atoll (CFO-3.4). Infrastructure at French Frigate Shoals, Kure Atoll, Pearl and Hermes Atoll, and Laysan Island would be maintained and enhanced, where appropriate (CFO-3.5, CFO-3.6, CFO-3.7, CFO-3.8).

At Midway, critical utility systems and ailing structures and facilities would be rehabilitated within five to fifteen years. Specific projects include rehabilitating the water catchment and distribution system (CFO-5.1), septic and wastewater systems (CFO-5.2), food services (FCO-5.4), the seaplane hangar (CFO-5.5), and the inner harbor seawall (CFO-5.6). Wooden historic structures at Midway would be treated for termites (CFO-5.3). Food service facilities would be evaluated and expanded, as necessary (CFO-5.4).

NOAA would add additional small boats as needed to facilitate research, management, and education conducted by the MMB (CFO-6.2). Within five years, inter-island aircraft transportation options would be identified (CFO-7.1).

The dive chamber at Midway Atoll has not been serviced in over five years and needs to be assessed and refurbished or replaced. This chamber would be maintained by an on-site chamber operator/dive technician (CFO-8.1). Advanced recovery efforts, particularly efforts to address juvenile survival, would be met by developing logistical, infrastructure, and transportation capability to transport threatened and endangered species, equipment, and personnel among the various atolls more reliably (CFO-9.3). Phase 1 Rehabilitation of Midway Mall and the Commissary building would be completed as well (CFO-9.4).

1.6.21.5 New infrastructure and development activities

New infrastructure and development would increase housing, field camp, and transportation capacity. Housing and field camp capacity would be maintained and enhanced through various infrastructure projects, such as at Midway, the construction a low-impact pilot project for housing, replacement of Bravo Barracks (CFO-3.2), replacement of Charlie Barracks (CFO-3.3).

A small research/enforcement vessel would expand research, enforcement, education, response, and restoration capabilities from French Frigate Shoals to Kure Atoll. Repair and maintenance facilities would be established at Midway, and full-time support personnel would be identified to properly manage this asset (CFO-6.3). The boathouse, dive center, seaplane ramp and pier, and storage facility would be redeveloped. The facility would have maintenance bays for servicing small boats and a dive locker, including a compressor, recompression chamber, appropriate storage, and work area. The building would be resited and potentially raised to address concerns over flooding on the seaplane pad (CFO-6.5). Improving or replacing the pier at Eastern Island is proposed to ensure continued access for researchers and field workers (CFO-6.7). Aircraft to serve the Monument and the Pacific region would be acquired within 15 years (CFO-7.3).

A small, portable recompression chamber would be evaluated for use aboard the small research vessel referenced in CFO-6.3 to extend research capacity (CFO-8.2). A dive center would be incorporated into a newly refurbished boathouse, complete with storage, maintenance facility, compressor, recompression chamber, dive locker, and tool shed (CFO-8.3).

A marine laboratory at Midway would be designed and developed in phases to serve as a hub for coordinated research (CFO-9.1). A captive care monk seal facility is planned for Sand Island (CFO-9.2), and an airport welcome center would be constructed to handle visitor arrival and departures from Midway (CFO-9.5). This facility would provide a welcome and briefing area for visitors and would contain restrooms, baggage handling, and a waiting area out of the weather.

1.6.22 Evaluation

Proposed evaluation would continue, as described in the Monument Management Plan, and include planning and administrative activities. All activities described in the No Action alternative would continue, but several new activities are proposed to determine the degree to which management actions are achieving the goals of the Monument. These activities are listed in the table below and are summarized in this section.

Proposed Action Alternative: Evaluation	Status	Activity Type
Activity EV-1.1: Prepare a comprehensive Monument evaluation strategy.	New	Planning/administrative
Activity EV-1.3: Conduct comprehensive evaluation and prepare a State of the Monument Report.	New	Planning/administrative
Activity EV-1.4: Conduct a management plan review.	New	Planning/administrative

Note: This table includes only proposed expanded and new activities. Activities in this action area that are not included in this table are described under the No Action alternative.

1.6.22.1 New planning and administrative activities

New planning and administrative activities include conducting a comprehensive evaluation. The successful management of the Monument by multi-agency partners is measured by implementing a comprehensive evaluation process. New evaluation activities include preparing the Monument evaluation strategy (EV-1.1), conducting a comprehensive evaluation in the fifth year of plan implementation and preparing a State of the Monument Report (EV-1.3), and conducting a review of the Monument Management Plan (EV-1.4). The review of recommended changes identified during the comprehensive evaluation would be reflected in a revised Monument Management Plan and revised Monument regulations (if needed).

1.7 COMPARISON OF ALTERNATIVES

The Monument Management Plan includes a range of activities to achieve the vision of the Monument. This section highlights new and expanded field and infrastructure and development activities described in the Proposed Action alternative; activities are highlighted in tables by action area (see section 1.6). This section also includes a comparison of these activities to current activities described in the No Action alternative (see section 1.8). Overall, new and expanded activities described in the Proposed Action alternative are designed to address priority management needs in all action areas. A comparison of key features of the No Action and Proposed Action alternatives is provided in Table 1.1.

**Table 1.1
Comparison of Key Elements of No Action and Proposed Action Alternatives**

	No Action	Proposed Action
PMN 1 - Understanding and Interpreting the NWHI		
Marine Conservation Science		
Planning	Continue to conduct research according to agency-specific priorities.	Develop and implement a Monument natural resources science plan to prioritize marine and terrestrial research needed for Monument management.
Research	Continue to characterize shallow-water and deepwater marine habitats using scuba diving, submersibles, remotely operated vehicles, underwater cameras, and multibeam and side scan sonar.	Same as No Action plus use technical diving in mapping and monitoring deepwater habitats.
Information Management	Continue to integrate data and information in the Monument information management system.	Same as No Action plus regular update of information management systems and protocols.
Education and Outreach	Coordinate research update and annual meetings to present current research.	Same as No Action plus integrate education component in research expeditions.
Native Hawaiian Culture and History		
Research	Continue to identify cultural research priorities.	Same as No Action plus provide berthing space on research vessels and logistical support.
Cultural access	Continue to support Native Hawaiian cultural access.	Same as No Action plus provide Native Hawaiian cultural access to ensure cultural lessons can be learned at specific sites.
Monument management	Continue OHA support informational meetings of the Native Hawaiian Cultural Working Group and cultural experts.	Same as No Action plus integrate consultations and traditional ecological knowledge and practices into Monument management and Native Hawaiian cultural information into education and outreach for Monument permittees.
Cultural resource management for Nihoa and Mokumanamana	National Register of Historic Places listing for Nihoa and Mokumanamana.	Same as No Action plus implement preservation plans for Nihoa and Mokumanamana.
Monument Cultural Resources Program	No Monument cultural resources program.	Develop and implement a Monument cultural resources program.
Historic resources		
Historic Preservation Plan for Midway	Continue to implement Midway Preservation Plan and maintain volunteer program at current levels.	Same as No Action plus reconcile Midway Preservation Plan with Midway Visitor Services Plan, lead paint abatement plan, and other facilities maintenance; recruit additional volunteers for work at Midway Atoll, seek private funding to restore and preserve a representative number of historic items at Midway Atoll. Complete

**Table 1.1
Comparison of Key Elements of No Action and Proposed Action Alternatives**

	No Action	Proposed Action
		surveys and restoration efforts within 15 years.
Field survey and documentation	Plan and conduct field survey and documentation as funding permits.	Midway Atoll Historic Preservation Plan, survey and documentation completed within two years.
Repair and maintenance treatments	Promote through volunteer programs and trained specialists at present levels and funding.	Repair and maintenance treatments complete within six years.
Remodel museum	Remodeling dependent on sufficient funding.	Complete remodel within seven years.
Archaeological site surveys	Complete surveys at existing levels, as budgets permit.	Complete archaeological surveys within 15 years.
Commercial Pacific Cable Station Survey and Restoration	Complete surveys and restoration at existing levels, as budgets permit.	Complete surveys and restoration within 10 years.
Maritime Heritage		
Field mapping and surveys	Continue field work and complete progress reports annually.	Same as No Action.
PMN 2- Conserving Wildlife and Habitats		
Threatened and Endangered Species		
General	Continue threatened and endangered species research and management with current funding levels.	Dedicate more resources to threatened and endangered species management and subsequently increase the numbers and locations of threatened and endangered species throughout Monument.
Marine debris	Continue to support marine debris removal activities.	Same as No Action plus target marine debris prevention, characterize and address the effects of marine debris; develop proactive methods to remove marine debris at sea in areas where it is concentrated; and expand educational and outreach programs domestically and internationally to prevent debris from entering the ocean.
Endangered species consultations	Conduct adequate endangered species consultations.	Add additional Monument staff as needed to thoroughly conduct endangered species consultations.
Hawaiian monk seal	Maintain current level of protection for seals and their pupping and habitat.	Evaluate the loss of habitat from erosion and other factors; Restore nesting, breeding, and pupping habitat for seals; develop standardized interagency protocols for emergency response for Hawaiian monk seal; increase juvenile survivorship through appropriate management tools, such as supplemental feeding through NOAA monk seal

**Table 1.1
Comparison of Key Elements of No Action and Proposed Action Alternatives**

	No Action	Proposed Action
		captive care programs.
Cetaceans	Continue to monitor spinner dolphin populations by photo-identification surveys and DNA sampling.	Same as No Action plus conduct annual censuses of cetacean populations and minimize human interactions with cetaceans; respond to any suspected infectious disease incidents affecting citations; and explore the use of remote sensing to survey cetaceans.
Green turtles	Protect and manage green turtle nesting and basking habitat; monitor nest nesting or breeding female abundance using standardized and consistent protocols; and maintain current level of protection for turtles and their nesting habitat.	Same as No Action plus identify areas of high turtle foraging activity in benthic habitats; map high use corridors used by turtles migrating between their breeding and foraging sites outside the Monument; ensure that nesting populations of green turtles at source beaches are stable or increasing; assess distribution of nesting activity throughout the Monument; and take action to reduce night lighting effects on nesting turtles.
Birds	<p>Mark and recapture surveys of Laysan duck; monitor Laysan duck reproductive success and survival for population modeling, disease screening, and prevention; avoid translocating unhealthy individuals and genetic research to prevent loss of genetic diversity; and conduct annual censuses of populations of Laysan finch, Nihoa finch, and Nihoa millerbird and monitor their food and habitat.</p> <p>Maintain quarantine protocols and standard operating procedures for those permitted entry onto the islands and for the supplies shipped into islands within the Monument.</p> <p>Conduct annual censuses of passerine species and monitor their food and habitat requirements; continue monitoring reproductive success and productivity of albatrosses, tropicbirds, boobies, frigates, and other breeding seabird species, as funding permits, at French Frigate Shoals, Laysan Island, and Midway Atoll and continue to monitor all other species of nonbreeding migratory birds through surveys as funding permits.</p>	<p>Same as No Action plus restore breeding populations of short-tailed albatross; restore or create habitat for the Laysan duck; transport juvenile Laysan ducks from established populations to additional islands, and conduct post-release monitoring; maintain stable or increasing populations of Laysan finch on Laysan Island.</p> <p>Maintain stable populations of Nihoa finch and Nihoa millerbird.</p> <p>Conduct annual censuses of passerine species and monitor their food and habitat requirements; identify habitat suitability, prioritize sites for establishing new populations, and restore habitat if necessary; develop techniques for capture, translocation, and release; continue monitoring reproductive success and productivity of albatrosses, tropicbirds, boobies, frigates, and other breeding seabird species, as funding permits, at French Frigate Shoals, Laysan Island, and Midway Atoll and continue to monitor all other species of nonbreeding migratory birds through resite surveys, as funding permits.</p> <p>Encapsulate lead-based paint on structures to reduce likelihood of ingestion by birds.</p>

Table 1.1
Comparison of Key Elements of No Action and Proposed Action Alternatives

	No Action	Proposed Action
Plants	Continue efforts to increase the numbers and locations of <i>Amaranthus brownie</i> and <i>Schiedea verticillata</i> on Nihoa and establish a self-sustaining <i>Pritchardia remota</i> population on Laysan Island.	Same as No Action plus establish populations of each listed plant species on one to three additional Monument islands and ensure the genetic material of all endangered plant species from Nihoa and Laysan Islands are preserved in perpetuity. Hire additional two to four additional biological technicians to eradicate 90 percent of <i>Verbesina enceliodes</i> and other invasive plants at Midway Atoll in the next 15 years.
Migratory Birds		
Alien species	Maintain rigorous quarantine protocols to prevent the introduction of alien species	Same as No Action plus eradicate nonnative species at all sites where they have a negative effect on the survivorship or reproductive performance of migratory birds.
Avian diseases	Conduct surveillance for evidence of avian disease outbreaks.	Same as No Action.
Effects from commercial and sport fisheries	Continue efforts to reduce the effect of commercial and sport fisheries occurring outside Monument on migratory bird populations; teach seabird identification skills to fishers and fisheries observers; and assist with the development of techniques to minimize bycatch.	Same as No Action.
Conservation	Continue efforts to monitor migratory bird populations.	Same as No Action plus assess the population size and trends of overwintering and migrating Pacific golden plovers, bristle-thighed curlews, wandering tattlers, and ruddy turnstones; monitor a suite of 15 focal seabird species; and restore native coastal mixed grass and shrub communities.
Habitat Management and Conservation		
General	Continue to monitor and restore habitats of the Monument	Same as No Action plus expand restoration efforts to shallow-water marine areas, cleanup of contaminated sites, and feasibility studies for restoring beach and crest habitats.
Contamination	Monitor oil and other anthropogenic contamination.	Same as No Action plus within 10 years, investigate and inventory sources of known contamination from post-contact historic human use of the NWHI; and coordinate with responsible parties to develop plans and complete cleanup actions, conduct risk assessment to determine acceptable levels of lead (from

**Table 1.1
Comparison of Key Elements of No Action and Proposed Action Alternatives**

	No Action	Proposed Action
		lead-based paint) in soils; conduct risk assessment to determine acceptable levels of contaminants, such as PCBs and dioxin, for Laysan ducks; investigate contamination levels in both terrestrial and marine species, especially threatened and endangered species; investigate contaminant effects on wildlife.
Alien species	Continue to remove alien and invasive species.	Same as No Action plus within 10 years investigate and inventory sources of known contamination from post contact historic human use of the NWHI; coordinate with responsible parties to develop plans and complete cleanup actions; conduct risk assessment to determine acceptable levels of lead (from lead-based paint) in soils; conduct risk assessment to determine acceptable levels of contaminants, such as PCBs and dioxin, for Laysan ducks; investigate contamination levels in both terrestrial and marine species, especially threatened and endangered species; investigate contaminant effects on wildlife.
Restoration	Propagate and out-plant extant native species.	Same as No Action plus within 10 years, develop and implement a plan for restoring shallow reefs and shoals; protect and restore beach and crest habitats at French Frigate Shoals, Laysan Island, Lisianski Island, and Pearl, Hermes, Midway, and Kure Atolls for 15 years; and within 10 years restore and maintain coastal mixed grasses and shrublands on basalt islands in the Monument (Nihoa, Mokumanamana, La Perouse and Gardner Pinnacles).
Conservation	Monitor changes in species composition and habitat structure.	Same as No Action plus inventory and monitor all Monument habitats, evaluate potential for development of additional freshwater sources for translocation sites for Laysan duck, Nihoa finch, and Nihoa millerbird; remove ironwood on Sand Island and Midway Atoll to provide nesting and roosting habitat for migratory birds; and protect and maintain areas of vertical rocky cliff face habitat at Nihoa and Mokumanamana Islands for nesting terns, black noddies, brown boobies, and white-tailed and red-tailed tropicbirds.

**Table 1.1
Comparison of Key Elements of No Action and Proposed Action Alternatives**

	No Action	Proposed Action
PMN 3- Reducing Threats to Monument Resources		
Marine Debris		
Research activities	Research marine debris sources, types and accumulation rates.	Same as No Action plus complete within five years.
Debris removal activities	Continue to remove hazardous materials on beaches and marine debris onshore and in shallow waters.	Same as No Action plus catalog and remove hazardous materials on beaches and expand marine debris removal activities to offshore waters.
Alien Species		
Monitoring and surveillance	Continue to monitor alien species annually, using existing protocols; identify existing snowflake coral infestation.	Same as No Action plus refine or develop new protocols for monitoring alien species and survey new infestations of snowflake coral and incipient marine invasive species.
Species prevention, control and eradication	Continue programs to prevent and control alien species introductions into the Monument; collect climate data and measure gray bird locust abundance on Nihoa Island, Mokumanamana, French Frigate Shoals, and Lisianski Island.	Same as No Action plus implement eradication plans for the house mouse on all of Sand Island, Midway, within 15 years, two species of mosquitoes at Midway Atoll within 10 years, gray bird locust on Nihoa Island, Mokumanamana, French Frigate Shoals, and Lisianski Island, invasive red algae from waters near Mokumanamana.
Research	Continue research on alien species.	Conduct toxicant trials on high priority invasive species within five years and develop appropriate baits for gray bird locust.
Maritime Transportation and Aviation		
Aircraft and vessel hazards studies	Continue studies on aircraft hazards.	Same as No Action plus conduct comprehensive assessment of threats posed by aircraft and vessels on Monument resources.
Boundaries and zoning	Continue to work with the IMO on designations and protocols for domestic and international shipping.	Develop boundary and zoning information materials and updates to nautical charts to enhance notice to mariners of Monument boundaries and zoning.
Aircraft and vessel conservation measures	Use water recycling and reducing program and biofuels or nonpetroleum-based hydraulic fluid on NOAA ship.	Same as No Action.
Emergency Response and Natural Resource Damage Assessment		
Contingency planning	Continue implementing contingency plan and protocols.	Update and improve the Area Contingency Plan.
Incident command systems (ICS)	Continue incident response.	Establish Monument Emergency Response Team for ICS responses and a

**Table 1.1
Comparison of Key Elements of No Action and Proposed Action Alternatives**

	No Action	Proposed Action
		non-ICS response team.
Certification, training and drills	Continue training.	Provide additional training for incident Command System and Hazards Waste Operations and Emergency Response, boat safety, first responder, and drills for emergency response in the Monument and ensure Emergency Response Team maintains appropriate certifications.
PMN 4 - Managing Human Uses		
Permitting		
Permit review and tracking	Continue to review and track permit applications and reports.	Same as No Action plus engage additional outside experts in permit application review; develop GIS-based permit tracking systems.
Pre-access training and briefing	Continue multiple agency-specific pre-access training and briefing programs.	Develop and conduct a unified pre-access training and briefing programs that incorporates a Native Hawaiian cultural education program.
Enforcement		
Midway Atoll	No on-site enforcement presence.	Establish on-site enforcement presence at Midway Atoll to address increase in operational and recreational activities.
Monument	Continue informal collaboration among enforcement entities and operation of Vessel Monitoring System for vessels conducting permitted activities.	Establish a chartered Monument law enforcement working group to enhance communication and collaboration among law enforcement entities; integrate additional automated monitoring systems for vessels transiting the Monument.
Enforcement platforms	Continue enforcement using nondedicated platforms.	Increase number of platforms dedicated to enforcement; and research and development of remote surveillance technologies and deployment in 10 years.
Midway Atoll Visitors Services		
Wildlife-dependant recreation opportunities	Continue to offer limited visitor opportunities.	Expanded educational opportunities through tours and other recreational activities.
Opportunity for cultural and historic resources information and interpretation	Continue focus in on the human history in Midway and the Monument.	Expand focus to include information on the importance of the NWHI in the Native Hawaiian culture.
Monitoring visitor effects and satisfaction	Continue limited monitoring of the effects of visitors and surveys on visitor experience.	Expand monitoring visitor effects and visitor satisfaction surveys.
Visitor satisfaction surveys	Survey information is compiled on a monthly basis.	Activities would be adjusted on a monthly basis based on feedback

Table 1.1 Comparison of Key Elements of No Action and Proposed Action Alternatives		
	No Action	Proposed Action
		received in surveys.
PMN 5 - Coordinating Conservation and Management Activities		
Agency Coordination	No field activities anticipated.	Same a No Action.
Constituency Building and Outreach		
Materials and exhibits	Continue to use multiple agency-specific Web sites and prepare informational materials to provide the public with information on the Monument.	Establish a unified Monument Web site, identity, integrated communications strategy, and education and outreach themes; develop new exhibits on the Battle of Midway and other historic events and a network of interpretative sites in partnership with existing and new sites.
Volunteer programs	Continue to support limited volunteer opportunities.	Enhance support for volunteer programs and Monument Alliance to engage a broad range of constituents in Monument activities
Native Hawaiian Community Involvement	Continue to foster partnerships with existing Native Hawaiian groups.	Same as No Action plus formalize and expand the Native Hawaiian Working Group, use and integrate Native Hawaiian traditional ecological knowledge in Monument management.
Ocean Ecosystems Literacy		
Formal education	Continue to conduct teacher workshops on main Hawaiian Islands on navigating change curriculum four times a year.	Same as No Action plus develop new curriculum and conduct educator workshops at Midway Atoll biennially.
Interpretative facilities	Continue educational opportunities for school groups per month at the Mokuapāpapa Discovery Center.	Same as No Action plus expand educational opportunities for school groups to 10 groups per month.
Research and Technology	Continue education and outreach through video and teleconferencing.	Same as No Action plus identify and prioritize research and development projects to increase ocean literacy and expand education with innovative technologies, such as telepresence, to bring the place to the people.
PMN 6 - Achieving Effective Monument Operations		
Central Operations	Continue to coordinate annual site operations planning and implementation.	Same as No Action plus assessment and enhancement of human resource and organizational capacity and physical infrastructure and facilities.
Information Management	Continue to update and maintain a Monument Information Management System; GIS-based database of past habitat characterization and field research; participate in National Marine	Same as No Action plus conduct workshops to facilitate data sharing, access, security, and use; develop protocols for data collection, documented, stored and shared; and

**Table 1.1
Comparison of Key Elements of No Action and Proposed Action Alternatives**

	No Action	Proposed Action
	Sanctuary’s IMAST program; and develop a field-based data collection tool.	develop educational materials that interpret data and make the information accessible and understandable.
Coordinated Field Operations		
Planning	Continue to conduct multiple agency-specific field operations planning, field activities, and infrastructure and development.	Same as No Action plus develop interagency agreements to facilitate effective field coordination throughout the Monument and develop a comprehensive dive operations program and research, education, visitor, and administrative facilities Monument-wide.
Midway Atoll	Continue to maintain infrastructure in suboptimal operating condition.	Same as No Action plus transform Midway into the operational hub for the Monument; implement Midway Conceptual Site Plan; replace and maintain rehabilitating critical utility systems and ailing structures and facilities at Midway Atoll; strategy for long-term sustainability using alternative energy, waste reduction, and low impact construction; meet fuel requirements for aircraft, vessel, utility and equipment needs at Midway Atoll; improve the small boat operational capacity; develop a monk seal captive care facility.
Other field camps	Continue to maintain field camps in suboptimal condition.	Enhance and maintain field camps at Kure Atolls, French Frigate Shoals, Pearl and Hermes Atolls, and Laysan Island.
Evaluation	Continue to evaluate program activities by conducting agency-specific annual program review.	Develop and implement a comprehensive Monument evaluation strategy and Monument Management Plan review.

1.8 ACTIONS DESCRIBED REQUIRING FUTURE NEPA/HRS CHAPTER 343 ANALYSIS

A number of activities described in the Monument Management Plan are at a conceptual stage of development. If these activities are developed beyond the conceptual stage, additional NEPA and potentially HRS Chapter 343 analysis would be required and conducted. These activities include some of the proposed infrastructure and development to expand Midway as an operational hub for the Monument. Proposed infrastructure needs include increasing boat storage, constructing new piers, and building a marine laboratory at Midway Atoll. In addition, infrastructure improvements are proposed to support visitors, volunteers, researchers, and managers at Midway. Proposed restoration activities related to habitat, such as Hawaiian monk seal haul out

areas at French Frigate Shoals, and to species, such as the black-lipped oyster, would require assessment and feasibility studies before specific activities could be defined.

1.9 REGULATORY FRAMEWORK

The following federal laws, proclamations, and state constitutional provisions and statutes or regulations are the most relevant to coordinated management of the Monument:

- Antiquities Act, 16 U.S.C. § 431, et seq., provides statutory authority for the establishment of national monuments;
- Proclamations 8031, June 15, 2006 (71 FR 36443) and 8112, March 6, 2007 (72 FR 10031), establishing the NWHI as a marine national Monument;
- Papahānaumokuākea Marine National Monument, codifying regulations, 50 CFR 404;
- State of Hawai‘i Organic Act of April 30, 1900, c339, 31 Stat.141 § 2, and Hawai‘i Admission Act of March 18, 1959, Pub. L. 86-3, 73 Stat. 4 § 2;
- Constitution of the State of Hawai‘i, Article XI, §§ 1,2,6,9 and Article XII § 7, including Hawai‘i Administrative Rules Title 13, Chapter 60.5 Northwestern Hawaiian Islands Marine Refuge. Hawai‘i Administrative Rules Title 13 Rules Regulating Wildlife Sanctuaries;
- Title 1, Chapter 10, §§ 10-1, 10-3, 10-4, Title 12, Ch. 171, § 171-3, Ch. 183D, § 183D-8, Ch 187A, § 187A-8, Ch. 188, §§ 188-37, 188-53, Ch. 195D, §195D-5, and Ch. 199, § 199-3, Hawai‘i Revised Statutes; and Title 13, Ch. 60.5 and Ch. 125 Hawai‘i Administrative Rules;
- National Marine Sanctuaries Amendments Act of 2000, Pub. L. 106-513 § 6(g) (2000);
- Endangered Species Act of 1973, as amended, 16 USC. § 1531 et seq.;
- Marine Mammal Protection Act of 1972, 16 USC. § 1361 et seq.;
- National Historic Preservation Act of 1966, as amended through 2000, 16 U.S.C. § 470 et seq.;
- Magnuson-Stevens Fishery Conservation and Management Act, 16 U.S.C. § 1801 et seq.;
- National Wildlife Refuge System Administration Act of 1966, as amended, 16 USC. §§ 668dd-ee;
- Refuge Recreation Act, 16 U.S.C. § 460k-3;
- Fish and Wildlife Act of 1956, 16 U.S.C. § 742f; and
- Fish and Wildlife Improvement Act of 1978, 16 U.S.C. § 742l.