



*APR - 2 2013*

To All Interested Government Agencies and Public Groups:

Under the National Environmental Policy Act (NEPA), an environmental review has been performed on the following action.

**TITLE:** Programmatic Environmental Assessment (PEA) for the NOAA Marine Debris Program (MDP)

**LOCATION:** All coastal and nearshore habitats in state and territorial waters, plus offshore habitats within the U.S. Exclusive Economic Zone and high seas.

**SUMMARY:** The NOAA MDP is proposing to undertake and fund activities to reduce the adverse impacts of marine debris to benefit the marine environment and navigation safety as mandated by the Marine Debris Act. Under the proposed action alternative, the MDP will conduct marine debris research, prevention, and reduction projects that are implemented through direct action by division staff, and by awarding funds, primarily on a competitive and interagency basis (e.g., grants and contracts) to external entities to address one or more of the following categories of activities: 1) Research and Assessments; 2) Prevention, Reduction, and Removal; 3) Outreach and Education; and 4) Collaboration and Tools. The Proposed Action would not result in significant adverse impacts on any component of the environment. Implementation of site-specific marine debris activities under the Proposed Action may have minor adverse impacts over the short-term and on a small scale, and would provide benefits in the long-term on a larger scale.

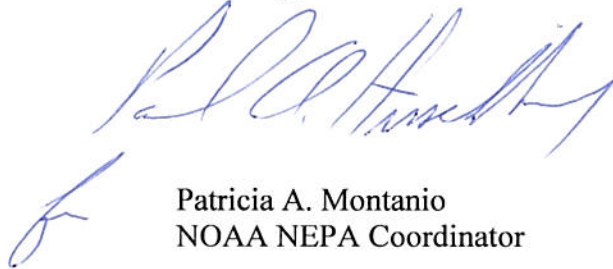
**RESPONSIBLE OFFICIAL:** Holly Bamford, Ph.D.,  
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Silver Spring, Maryland 20910  
Tel: 301-713-3074

The environmental review process led us to conclude that this action will not have a significant effect on the human environment. Therefore, an environmental impact statement will not be prepared. A copy of the finding of no significant impact (FONSI) including the supporting PEA is enclosed for your information.

APR - 2 2013

Although NOAA is not soliciting comments on this completed PEA/FONSI we will consider any comments submitted that would assist us in preparing future NEPA documents. Please submit any written comments to the responsible official named above.

Sincerely,

A handwritten signature in blue ink, appearing to read "Patricia A. Montanio". The signature is fluid and cursive, with a long, sweeping underline that extends to the left.

Patricia A. Montanio  
NOAA NEPA Coordinator

Enclosure

# **Programmatic Environmental Assessment for the NOAA Marine Debris Program**

**March 2013**

Marine Debris Division  
Office of Response and Restoration  
National Ocean Service  
National Oceanic and Atmospheric Administration  
U.S. Department of Commerce

# **Programmatic Environmental Assessment for the NOAA Marine Debris Program**

**March 2013**

**Lead Agency:**

Marine Debris Program (MDP)  
Office of Response and Restoration (ORR)  
National Ocean Service (NOS)  
National Oceanic and Atmospheric Administration (NOAA)  
U.S. Department of Commerce

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**Abstract:**

This document is a Programmatic Environmental Assessment (PEA) for the Marine Debris Program (MDP), a division within ORR/NOS/NOAA. It describes the planned actions of the MDP and potential environmental impacts resulting from those actions. The MDP is proposing to undertake and fund activities to reduce the adverse impacts of marine debris to benefit the marine environment and navigation safety as mandated by the Marine Debris Act.

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## **Executive Summary**

### **Introduction**

This document is a Programmatic Environmental Assessment (PEA) for the Marine Debris Program (MDP), a division within the Office of Response and Restoration (ORR), National Ocean Service (NOS), National Oceanic and Atmospheric Administration (NOAA). It describes the planned actions of the MDP and potential environmental impacts resulting from those actions. The MDP is proposing to undertake and fund activities to reduce the adverse impacts of marine debris to benefit the marine environment and navigation safety as mandated by the Marine Debris Research, Prevention, and Reduction Act (MDRPRA - 33 U.S.C. §§ 1951 et seq.), renamed the Marine Debris Act (MDA - P.L. 112-213, Title VI, § 603, 126 Stat. 1576, December 20, 2012).

This PEA would be used to streamline the overall MDP NEPA review process. The MDP anticipates using this PEA to guide decision-making for site-specific actions over the next ten years. The MDP would review the PEA, and relevant environmental concerns, five years and ten years after the date of this PEA to determine whether its scope and analysis remain applicable to the program. Each proposed MDP project would be evaluated to determine if its potential environmental impacts have been addressed in this PEA. The review would be conducted by MDP staff as outlined in chapter 7.

Marine debris is one of the most widespread pollution problems facing the world's oceans and waterways. The main types of marine debris addressed by the MDP include plastics; glass, metal and rubber; derelict fishing gear; and derelict vessels. Sources of debris may be ocean-based (e.g., fishing vessels, stationary platforms, cargo ships, or other vessels) or land-based (e.g., littering, storm water discharges, or extreme natural events).

Since its inception in 2006, the MDP has overseen and directed numerous marine debris activities. These include educational programs, research coordination, emergency response, and internal grant competitions, as well as those in cooperation with the NOAA National Marine Fisheries Service (NMFS) Restoration Center Community-based Program and the National Fish and Wildlife Foundation. These activities are designed to bring together public and non-profit organizations, industry, academia, commercial organizations, corporations and businesses, youth conservation corps, students, landowners, and local governments, and state and federal agencies to implement marine debris-related projects to support NOAA's mission.

### **Purpose and Need of Action**

The purposes of the MDP and the proposed action are to meet the congressional mandate of the MDA to undertake and fund activities to reduce the impacts of marine debris that pose a threat to living marine resources and navigation safety. The MDP supports local, state, and national partnerships with agencies, educational institutions, NGOs, and community groups focused on identifying, assessing, reducing and preventing the occurrence of marine debris and to protect and conserve the nation's marine environment and navigation safety from the impacts of marine debris.



The need for the MDP and the proposed action is required by the Marine Debris Act (MDA) and stems from the rising threat from and damage to the marine environment resulting from an increased amount of marine debris worldwide. Marine debris poses a serious threat to the marine environment, NOAA trust resources, navigation safety, as well as human health and safety. Marine debris is a pervasive problem spanning the world's oceans, distributed far from its sources by winds and ocean currents. Its varied sources, ubiquity, and persistence demand a multidisciplinary approach to reduce the impacts of this pollutant.

### **Proposed Action and Alternatives**

The Proposed Action/Preferred Alternative is to undertake activities internally or to award MDP funds (primarily on a competitive and interagency basis) to local, regional, and national partnership groups for various marine debris prevention and reduction activities (including identification, impact assessment, removal, prevention, reducing and preventing the loss of gear, regional coordination, and education and outreach as stated in the MDA) that would reduce the adverse impacts of marine debris and benefit the marine environment and navigation safety. Four categories of MDP activities are described: 1) Research and Assessments; 2) Prevention, Reduction, and Removal; 3) Outreach and Education; and 4) Collaboration and Tools. A description of best practices generally used for MDP activities to ensure compliance with applicable laws for environmental protection and to minimize or avoid potential adverse impacts on environmental resources is also included.

The PEA also evaluates the impact of the No Action alternative in which the MDP does not fund or undertake activities to address the threats from and impacts of marine debris on the environmental and navigation safety. No other action alternatives were considered because the proposed action is the only available alternative that can implement the MDP according to legal mandates.

### **Affected Environment**

The action area for the Proposed Action includes all coastal and nearshore habitats in state and territorial waters, including the Great Lakes, as well as offshore habitats within the U.S. Exclusive Economic Zone (EEZ) and high seas. Affected resources within the action area include coral reefs, mangroves, essential fish habitat, marine mammals, threatened and endangered species, and national parks, refuges, and sanctuaries.

### **Environmental Consequences**

Anticipated environmental impacts, both direct and indirect, that could result from the No Action and Proposed Action alternatives are evaluated including consideration of both beneficial and adverse impacts. The benefits of implementing the Preferred Alternative are many and include healthier coastal and marine ecosystems, improved coastal habitat conditions, less trash and debris in the oceans and coastal areas, safer conditions for humans and improved economic benefits, and enhanced conservation and management measures intended to reduce the amount of marine debris in the ocean and coastal areas. Adverse impacts are expected to be minimal, and primarily associated with research and removal activities. Marine debris research/assessment and prevention/reduction/removal activities, those with the greatest likelihood of having environmental impacts, would generally have minor adverse impacts within a specific geographic location and over a short period of time. Longer term impacts to habitat, species, and

their associated environments are generally expected to be beneficial. No substantial social or economic impacts related to the proposed action, nor any social or economic impacts related to potential biological or physical environmental impacts are expected.

### **Compliance with Environmental Laws and Regulations**

Major federal environmental laws that are likely to apply to implementation of site-specific projects are identified, and a description of how the MDP would comply is included. Other federal, state, or local-level laws may apply, and the MDP and its partners would evaluate compliance on a project-specific basis prior to implementation. This section also notes where compliance with applicable permits and consultations would be the responsibility of the award recipient, rather than the MDP.

### **Implementation**

As site-specific actions are being considered by the MDP, this PEA would be reviewed to determine whether they are within the scope of its analysis through the use of worksheets similar to the ones in Appendices E and F. If additional NEPA analysis is warranted for a specific decision, it may be tiered from this PEA as appropriate. Evaluation of project-specific impacts would be addressed during the planning process for each marine debris project at the earliest possible time to ensure that any significant environmental issues are identified; that applicable consultation among agencies, and coordination with other area programs, and the public occurs; and that a decision can be made on whether the PEA appropriately addresses all components of the MDP activity or whether additional analysis of the project is required. That additional analysis may be a memorandum documenting applicability of a categorical exclusion, a supplemental EA, or an EIS.

### **Conclusion**

This PEA considers the potential environmental impacts of funding and undertaking projects for various MDP project categories that would benefit marine resources and improve the quality of the human environment. Implementation of site-specific marine debris activities under the Preferred Alternative may have very localized and temporary adverse impacts over the short-term and on a small scale, and would provide benefits in the long-term on a larger scale.

The Proposed Action would not result in significant adverse impacts on any component of the environment. Some site-specific projects may result in short-term adverse impacts that are minor and from which the affected resources are expected to recover fully and quickly. Many projects involve no interaction with the environment and have no potential for adverse impacts. No projects are likely to result in long-term adverse impacts. All projects are expected to result in at least minor short-term benefits to the environment. Some projects may have long-term positive impacts, and the cumulative impact of implementing the proposed action is likely to be a long-term substantial improvement in the quality of the human environment on a global scale.

# 1. Introduction and Background

*This section introduces the NOAA Marine Debris Program's history and current status along with background about the National Environmental Policy Act (NEPA) requirements and rationale for completing a Programmatic Environmental Assessment.*

This document is a Programmatic Environmental Assessment (PEA) for the Marine Debris Program (MDP), a division within the Office of Response and Restoration (ORR), National Ocean Service (NOS), National Oceanic & Atmospheric Administration (NOAA). It describes the planned actions of the MDP and potential environmental impacts resulting from those actions. The MDP is proposing to undertake and fund activities to reduce the adverse impacts of marine debris to benefit the marine environment and navigation safety as mandated by the Marine Debris Research, Prevention, and Reduction Act (MDRPRA - 33 U.S.C. §§ 1951 et seq.), renamed the Marine Debris Act (MDA - P.L. 112-213, Title VI, § 603, 126 Stat. 1576, December 20, 2012).

**Marine debris** is defined by NOAA and the United States Coast Guard (USCG) as, *any persistent solid material that is manufactured or processed and directly or indirectly, intentionally or unintentionally, disposed of or abandoned into the marine environment or the Great Lakes* (15 C.F.R. Part 909 Section 909.1).

Marine debris is one of the most widespread pollution problems facing the world's oceans and waterways. The main types of marine debris addressed by the MDP include plastics; glass, metal and rubber; derelict fishing gear; and derelict vessels. Sources of debris may be ocean-based (e.g., fishing vessels, stationary platforms, cargo ships, or other vessels) or land-based (e.g., littering, storm water discharges, or extreme natural events).

## 1.1 Legal Basis for Addressing Marine Debris

The MDP undertakes and funds a multitude of activities to address the adverse impacts of marine debris, as mandated by the MDA (see Appendices A and B). The MDA gives NOAA the authority to identify, determine sources of, assess, prevent, reduce, and remove marine debris that poses a threat to living marine resources and navigation safety. The MDA also reauthorized a Marine Debris Program in NOAA to support a wide range of activities, from developing capacity and sound science to enhancing partnerships and management programs, and increasing public knowledge of marine debris. The proposed action supports this mandate from Congress.

The MDA establishes a program in NOAA with the following components:

- identify, determine sources of, assess, prevent, reduce, and remove marine debris;
- conduct regional coordination;
- reduce adverse impacts of lost and discarded fishing gear, through
  - research and development of alternatives and gear marking and recovery techniques; and
  - non-regulatory incentives to reduce gear in the environment.
- conduct outreach and education;
- develop interagency plans in response to “severe marine debris events,”

- lead coordination with states, tribes, and other federal agencies;
- assess debris composition, volume, and trajectory; and
- estimate potential impacts.
- enter into cooperative agreements and contracts and provide financial assistance in the form of grants for projects that address the adverse impacts of marine debris;
- reactivate the Interagency Marine Debris Coordinating Committee (IMDCC); and
- develop a federal marine debris information clearinghouse.

Other authorities supporting NOAA's marine debris efforts include:

- Clean Water Act of 1972, Section 303 (d) which calls for imposing "Total Maximum Daily Loads" on the amount of trash that cities can discharge through their storm drains into polluted waterways.
- Coastal Zone Management Act of 1972, Enhancement Grants Section 309 – Deals with reducing marine debris entering the Nation's coastal and ocean environment by managing uses and activities that contribute to the entry of such debris.
- Coral Reef Conservation Act of 2000 - States that NOAA must "provide assistance to states in removing abandoned fishing gear, marine debris, and abandoned vessels from coral reefs to conserve living marine resources."
- Marine Plastic Pollution Research and Control Act of 1972 - Deals with outreach and education and pollution from ships
- Marine Protection, Research, and Sanctuaries Act of 1972 - Regulates ocean dumping and monitoring and takes into account the aesthetic properties of the National Marine Sanctuaries in regards to marine debris.

## 1.2 General Description of the NOAA Marine Debris Program

The NOAA MDP leads national and international efforts to research, prevent, and reduce the impacts of marine debris. Staff are positioned around the country leading and coordinating marine debris projects in partnership with state and local agencies, tribes, nongovernmental organizations (NGOs), academia, and industry. The program spearheads national research efforts and works to change behavior through outreach and education.

The mission of the MDP is to support national and international efforts focused on preventing, identifying, and reducing the occurrence of marine debris and to protect and conserve the nation's natural resources, oceans, and coastal waterways from the impacts of marine debris. The MDP has a lead role in the research, prevention, and reduction of debris in the marine environment, including NOAA trust resources, within but not limited to shoreline, estuarine, and pelagic environments, including the Great Lakes. A more recent area of emphasis is to respond to "severe marine debris events," defined as "atypically large amounts of marine debris" caused by natural disasters. After debris such as floating docks from the March 2011 Japan tsunami began washing up on West Coast beaches, Congress recognized this emerging need to deal with the unusual amounts and types of marine debris which often follow events such as tsunamis or hurricanes.

The MDP supports a wide range of activities, from developing NOAA's sound science to enhancing partnerships and management programs, and increasing public knowledge of marine

debris and its impacts on living marine resources. In 1985, NOAA created the Marine Entanglement Research Program, which was a comprehensive marine debris research and management program, but it dissolved in 1996 due to the lack of funds to sustain the program. Between 1996 and 2005, NOAA supported limited marine debris clean-up and prevention activities, but these activities were not coordinated under a centralized program. The NOAA MDP was established in 2005 through a Congressional earmark, and was formally mandated in 2006 with the passage of the MDRPRA.

### **1.2.1 PROGRAM ADMINISTRATION**

The MDP is housed within the National Ocean Service (NOS), Office of Response and Restoration (ORR), which has received line-item funding for marine debris since 2005. The MDP draws on the expertise of the myriad NOAA offices that have an interest in addressing marine debris. A sample of these groups includes the NOS Offices of Ocean and Coastal Resource Management and the National Marine Sanctuaries, and the National Marine Fisheries Service (NMFS) Offices of Protected Resources, Sustainable Fisheries, and Habitat Conservation, and regional offices and science centers.

In accordance with the MDA, the MDP conducts marine debris research, prevention, and reduction projects that are implemented by NOAA or through grants, contracts, and interagency and cooperative agreements. The MDP has stationed staff in several locations throughout the country to manage, support, and coordinate marine debris activities to ensure outcomes are aligned with NOAA's mission and the requirements of the MDA. Regional staff work closely with local and state agencies, other NOAA offices, federal agencies, nongovernmental organizations, academia, private industry, and the interested public to identify key marine debris issues and then facilitate addressing them. This may occur through activities such as workshops, clean-up events, outreach events, and regular coordination meetings.

Fiscal year (FY) 2009 was the first year in which funds were requested in the President's Budget (\$4 million) for the MDP. In previous years, congressionally directed funds were provided for the program (FY2005 through FY2008) as well as supplemental funding from Congress for addressing marine debris related to the 2005 hurricane season. The FY2009, FY2010, and FY2011 enacted levels for the program were \$4 million and the FY2012 enacted budget was \$4.6 million and included supplemental funding from Congress for addressing marine debris related to the 2011 Japan earthquake and tsunami event. The bulk of funds each year are used to support research, assessment, removal, and outreach projects, both by NOAA and in partnership with external organizations. Partnerships are expected to catalyze a target audience to address marine debris in a way that would benefit living marine resources and/or navigation safety.

### **1.2.2 ACTIVITIES**

Since 2006, the MDP has overseen and directed numerous marine debris activities. These include educational programs, research coordination, emergency response, and grant competitions from the MDP (see Appendix C for Guidelines for the MDP Grant Program), as well as those in cooperation with the NOAA NMFS Restoration Center Community-based Program and the National Fish and Wildlife Foundation (NFWF). These activities are designed to bring together public and non-profit organizations, industry, academia, commercial organizations, corporations and businesses, youth conservation corps, students, landowners, and

local governments, and state and federal agencies to implement marine debris-related projects to support NOAA's mission. Diverse stakeholders are brought together at the national, state, and local level to contribute funding, technical assistance, workforce support or other in-kind services for the improvement of important living marine resources, their habitats, and other uses of the nation's oceans and coasts that are impacted by marine debris. MDP projects are conducted in an open, public, and collaborative fashion.

MDP activities may be initiated and completed by several means including:

- Undertaking activities with in-house NOAA resources;
- Federal financial assistance;
  - Grants;
  - Cooperative Agreements;
- Acquisition;
  - Contracts;
  - Procurement Orders;
- Interagency agreements or funds transfers;
- Volunteers;
- Emergency response; and
- A combination of one or more of the above.

The MDP coordinates and undertakes internally-funded activities, holds workshops, responds to debris-related emergency events, works directly with other NOAA offices and partners, collaborates with the NOAA Joint and Cooperative Institutes, funds contracts, and supports several competitive grant opportunities for marine debris activities. For example, in 2011-2012, the MDP collaborated with the Joint Institute for the Study of Atmosphere and Oceans to quantify and characterize microplastics in the environment, worked with the Joint Institute for Marine and Atmospheric Research to analyze monitoring results in the Pacific to aid in the understanding of marine debris deposition. Additional efforts included continued MDP competitive grant opportunities that included the NOAA Restoration Center's Community-based marine debris removal opportunity, outreach and education partnerships, and collaboration with the NFWF to expand Fishing for Energy port partner efforts to address derelict fishing gear. MDP efforts also support research, prevention, and reduction (including debris removal) projects to specifically address the impacts of marine debris in coastal and marine environments such as through the detection, assessment, and removal of derelict trawl and gill nets, crab and lobster pots, and other fishing gear that is lost or discarded at sea that impacts marine species, habitat, and navigation safety.

The MDP conducts interdisciplinary monitoring and research on the impacts of debris. Through research activities, the MDP compiles data to be used in prevention and reduction projects, as well as to support and inform management decisions and policy-making to address marine debris. The data collected may inform the development and adoption of new prevention and mitigation techniques tailored to specific debris characteristics. To date, monitoring activities have focused on shoreline assessments and pelagic trawl assessments, with additional assessments for future consideration. Other research projects include beach survey methods, studies on debris movement in the marine environment, identification of microplastics, and sampling techniques. Prevention efforts are expected to catalyze the public or a target audience

to address marine debris in a way that would benefit living marine resources and/or navigation safety, while reduction projects physically remove debris from the environment. The MDP applies its experience and knowledge to promote collaboration – both nationally and internationally – through workshops on such topics as abandoned and derelict vessels, microplastics and regional approaches to marine debris.

With the occurrence of natural events that create significant severe marine debris issues, the MDP has also incorporated an aspect of emergency response into its activities. Initially responding to the needs that arose after Hurricanes Katrina and Rita, the MDP has also provided service after the 2009 American Samoa tsunami, Deep Water Horizon Oil Spill (2010), the 2011 Japan Great East or Tohoku earthquake and tsunami, and response to damage from storm Sandy (2012).

### 1.3 NEPA Compliance

The National Environmental Policy Act (NEPA), as amended (42 U.S.C. §§ 4321, *et seq.*), was enacted in 1969 to establish a national policy for the protection of the environment. It applies to federal agency actions that have the potential to affect the quality of the human environment. It requires federal agency decision-makers to conduct a review process to ensure consideration of potential environmental impacts through a systematic and interdisciplinary approach, including consideration of the natural and social sciences in planning, evaluation, and decision-making. Federal agencies are obligated to comply with NEPA regulations adopted by the Council on Environmental Quality (CEQ) (40 C.F.R. Parts 1500-1508). These regulations outline the responsibilities of federal agencies under NEPA and provide specific procedures for preparing environmental documentation to comply with NEPA. NOAA's Administrative Order (NAO) 216-6 describes NOAA's policies, requirements, and procedures for complying with NEPA and the implementing regulations (NOAA 1999).

If the action is subject to NEPA review, then the environmental impacts must be documented at one of three levels of NEPA analysis:

- 1) By preparing a brief memorandum to the administrative record documenting that the activity qualifies for a categorical exclusion (CE);
- 2) By preparing an environmental assessment (EA), and, if appropriate, a Finding of No Significant Impact (FONSI); or
- 3) By preparing an environmental impact statement (EIS).

#### 1.3.1 PURPOSE OF USING A PROGRAMMATIC ENVIRONMENTAL ASSESSMENT

Generally, federal agencies prepare an Environmental Assessment (EA) to determine whether an action would have a significant effect on the quality of the human environment (40 C.F.R. 1508.27; NAO 216-6, 6.01b). One of the overall goals is to provide decision makers and the public with information about the potential for impacts due to NOAA's proposed action before a final decision is made. Once this process is final, NOAA has the necessary analysis to determine if the effects may be significant. If there is potential for significant impacts, then an Environmental Impact Statement (EIS) is prepared. If the impacts are not expected to be significant, a Finding of No Significant Impact (FONSI) is prepared.

A Programmatic Environmental Assessment (PEA) would allow the MDP to more effectively address NEPA compliance at a higher, programmatic level. PEAs are broad in scope and may address a number of related actions or projects, an entire program; a broad action, or Federal Financial Assistance activities (NOAA 2009b). A PEA is intended to accomplish NEPA compliance by:

- 1) summarizing the current environmental situation;
- 2) describing the purpose and need for the activities;
- 3) identifying alternative actions; and
- 4) assessing the potential environmental impacts of all alternatives.

Before a federal agency implements policies, programs, plans, and projects, NEPA requires documented, formal consideration of major federal actions and analyses of potential impacts associated with alternatives to the action. Most NEPA documents focus on site-specific projects. However, by changing the scope of analysis, federal agencies can assess potential impacts stemming from policies, programs, and plans. Such programmatic documents are inherently broader in scope, due to a wider geographic area of potential effect and therefore the potential to affect a larger portion of the U.S. population (Plater et al. 1992).

A PEA also allows NOAA to reduce paperwork and to identify potential impacts at a program level so that the implementation personnel in the regions can be aware of them at a site-specific or project level. The relevant regulations developed by CEQ include:

**Section 1500.4 Reducing paperwork.**

Agencies shall reduce excessive paperwork by:

...

- (i) Using program, policy, or plan environmental impact statements and tiering from statements of broad scope to those of narrower scope, to eliminate repetitive discussions of the same issues (Sections. 1502.4 and 1502.20).

...

**Section 1502.4 Major Federal actions requiring the preparation of environmental impact statements.**

...

- (b) Environmental impact statements may be prepared, and are sometimes required, for **broad Federal actions** (emphasis added) such as the adoption of new agency programs or regulations (Sec. 1508.18). Agencies shall prepare statements on broad actions so that they are relevant to policy and are timed to coincide with meaningful points in agency planning and decision making.

(c) When preparing statements on broad actions (including proposals by more than one agency), agencies may find it useful to evaluate the proposal(s) in one of the following ways:

...

2. Generically, including actions with relevant similarities such as common timing, impacts, alternatives, methods of implementation, media, or subject matter.

Programmatic environmental impact statements and environmental assessments and tiering from other analyses can reduce or eliminate redundant and duplicative efforts and effectively address cumulative effects. In this case, a PEA may be used to address the impacts of actions, or project types that are similar in nature or broad in scope, including cases where cumulative impacts are of concern. For consideration of potential impacts from specific actions and/or individual projects, tiering allows an agency to rely largely on the analysis of the programmatic NEPA



document to address the impacts (Canter 1996). Trends indicate that federal agencies are expanding their use of programmatic NEPA documents (CEQ 1997b; NEPA Task Force 2003).

If the project type or impacts are not adequately covered in this PEA, the proposed project would be the subject of additional NEPA review. Depending upon the degree of the project's potential impacts, this review could involve the preparation of a CE memorandum, a supplemental EA tiered from this PEA, a new EA, or an EIS. This PEA addresses NEPA compliance at the program level. Evaluation of project-specific impacts would be addressed during the planning and selection process for each project to ensure that any significant environmental issues are identified; that consultation among agencies, other area programs, and the public occurs; and that a decision may be made on whether an EA, EIS, or a CE determination is the appropriate level of analysis. This process is further documented in the implementation chapter of this document (see chapter 7).

### **1.3.2 SCOPE OF PEA**

The scope of this PEA includes all activities that the MDP undertakes and funds to address the adverse impacts of marine debris and their effects on the human environment.

## **2. Purpose and Need**

*The following section explains why the action is being considered and specifies the underlying purpose and need to which NOAA is responding.*

### **2.1 Purpose of Action**

The purposes of the MDP and the proposed action are to meet the congressional mandate of the MDA to undertake and fund activities to reduce the impacts of marine debris that pose a threat to living marine resources and navigation safety. The MDP supports local, state, and national partnerships with agencies, educational institutions, NGOs, and community groups focused on identifying, assessing, reducing, and preventing the occurrence of marine debris and to protect and conserve the nation's marine environment and navigation safety from the impacts of marine debris.

### **2.2 The Need**

The need for the MDP and the proposed action is required by the MDA due to the rising threat and damage to the marine environment resulting from an increased amount of marine debris worldwide. Marine debris poses a serious threat to the marine environment, NOAA trust resources, navigation, as well as human health and safety. Marine debris is a pervasive problem spanning the world's oceans, distributed far from its sources by winds and ocean currents. Its varied sources, ubiquity, and persistence demand a multidisciplinary approach to reduce the impacts of this pollutant.

### 2.2.1 SOURCES OF MARINE DEBRIS

People and their actions, whether intentional or accidental, are the source of most marine debris. For this reason, it is important to identify and target the specific locations or types of activities that generate and convey materials that ultimately become marine debris. The MDP, in accordance with the formal definition of “marine debris,” recognizes an extreme variety of objects, materials, and particles that comprise marine debris. These range in size from abandoned and derelict vessels, to fishing traps and nets, to single-use plastic bottles, to pre-production plastic pellets, and the breakdown products of larger debris items. Marine debris is made of many materials, including but not limited to cloth, glass, metal, plastic, processed lumber, and rubber. Two source categories are generally acknowledged: (1) actions that take place on land (land-based sources), and (2) actions that take place in the marine environment (ocean-based sources). More detailed examples from both sources are listed below, but it is not an exhaustive list due to the wide-spread nature of this problem.

The National Marine Debris Monitoring Program (NMDMP), a five-year national study of trash in the ocean and monitored debris on beaches in the United States, found that land-based sources are responsible for approximately 49 percent of marine debris items along beaches, while ocean-based sources are responsible for approximately 18 percent of debris. The remaining shoreline debris, about 33 percent, was identified as general source debris because it could come from either land- or ocean-based sources (Sheavly 2007). It is important to note that these results do not consider floating and submerged marine debris in both the nearshore and open-ocean environments, and the relative importance of various sources of this unaccounted debris may differ from that suggested by debris found on beaches.

Because of ocean transport mechanisms, it may be very difficult to determine the source of marine debris, which is one reason for NMDMP’s general source category. An example of general source debris cycling in the open ocean is a location called the North Pacific Subtropical Gyre (hereafter referred to as the Gyre). The Gyre is made of the North Pacific, California, North Equatorial, and Kuroshio currents, along with atmospheric winds. Persistent and pervasive marine debris from both land- and ocean-based sources around the Pacific Rim aggregates in the currents of the Gyre. This debris may remain in the Gyre for long periods of time, becoming what is known as legacy debris. It is difficult to determine the age, origin, and source of legacy debris.

#### 2.2.1.1. *Land-based Sources*

Land-based sources of marine debris may originate from coastal areas or farther inland. Waterfront areas, including beaches, piers, harbors, riverbanks, marinas, and docks are common land-based sources of marine debris. Debris also may originate from sources that carry material by precipitation runoff into waterways and, ultimately, the ocean. Debris may be the result of improper trash disposal, improper handling of materials, or inadequate reception facilities for waste. Natural disasters, such as hurricanes and tsunamis, also may lead to a significant amount of marine debris in the ocean. Litter, regardless of whether it is purposely or accidentally discarded or lost, has the potential to become marine debris. Fishing gear, monofilament line, and other fishing-related items may also be introduced into the marine environment from waterfront areas and fishing piers (Yoshikawa and Asoh 2004).

Rising populations in coastal areas have increased the potential for introducing marine debris. Improperly disposed trash may wash into streams, sewer systems and storm drains, and eventually be carried into coastal and ocean waters. Combined sewer systems are older sewer systems that combine sewage and stormwater runoff into the same infrastructure. These systems may become overwhelmed during periods of heavy rain, and everything in the pipes, including street litter and sewage-related items (e.g., condoms, tampons, syringes), is diverted away from the treatment plant to the nearest receiving waters (EPA 1993a). Municipal separate storm sewer systems also have the potential to transport materials that may become marine debris as these systems often do little more than convey precipitation runoff down the storm drain and into the nearest surface water, bringing with the runoff all the remnants of human activity from around that storm drain.

The growth in coastal populations has also required expansion of waste repositories such as landfills and transfer stations. Overused and poorly managed landfill and transfer stations often may result in increased marine debris. Trash that is improperly covered during transport or deposition into landfills may be carried by wind into the marine environment or into other aquatic systems that transport the trash to the marine environment.

Industrial facilities are another source of land-based marine debris. By-products from production, particularly persistent synthetic materials such as plastics, may become marine debris when dropped, washed, or blown away during transport to or from the factory or during production. While this was particularly true in the past during transport of pre-production plastic resin pellets, implementation of best management practices by industry has helped reduce this source of marine debris (ACC and SPI 2007). The Environmental Protection Agency (EPA) worked with the plastics industry to assess the release of these pellets to determine how they entered the environment (EPA 1993b). An effective example of industry best management practices is Operation Clean Sweep, which is an international program designed to prevent resin pellet loss and help keep pellets out of the marine environment and developed by the Society of the Plastics Industries, Inc., in partnership with the U.S. EPA (see more information: <http://www.opcleansweep.org/>).

Natural events such as tornadoes, floods, tsunamis, and hurricanes may all create large amounts of debris washed from near-shore areas that may end up in the marine environment. The high winds, waves, and storm surges produced by these natural events cause land-based items to be introduced into the aquatic environment. After the 2004 Indian Ocean tsunami, smothering by debris was a principal cause of damage to coral (Wilkinson et al. 2006). The amount of marine debris resulting from the hurricane season of 2005 along the Gulf of Mexico coast provides a strong example of the potential source contribution that a natural event may have on the marine environment. In the Sabine National Wildlife Refuge in Louisiana alone, an estimated nine million cubic yards of debris were spread over 1,770 acres of marsh (FWS 2006). To address submerged debris in traditional fishing grounds, Congressional funding was appropriated to NOAA to survey with side scan sonar over 1500 square nautical miles from September 2006 to December 2009. In the nearshore waters of Alabama, Mississippi, and Louisiana, over 7,100 objects were located, with some areas having a density of up to 200 objects per square nautical mile (NOAA 2009a). The Pacific Rim has experienced significant event activity in recent years, with tsunamis occurring in American Samoa in 2009 and off the coast of Japan in 2011. Debris

resulting from the Japan tsunami has become a significant focus for the MDP as Congressional interest, particularly for the affected states, increases. With the 2012 passage of the MDA Amendments, the MDP has an additional mandated focus on emergency response due to debris generated from these types of events such as Hurricane Sandy.

#### *2.2.1.2 Ocean-based Sources*

In the ocean, vessels of various sorts and structures are all potential vectors for the introduction of debris into the marine environment. Even with strict adherence to environmental regulations, debris may still enter the marine environment from vessels at sea through accidental loss, especially in inclement or severe weather. All vessels have the potential to adversely impact the aquatic environment by improperly disposing of their trash at sea. The type, magnitude, and impacts of vessel-generated marine debris differ according to vessel size, purpose, and their respective enforcement and compliance regimes. However, all vessels under United States jurisdiction are subject to the discharge regulations established under the Act to Prevent Pollution from Ships, which include the prohibition of disposal of plastic at all distances from shore; a prohibition against the disposal of any type of garbage within three miles of shore; and 12- and 25-mile minimum distance requirements for the disposal of other types of garbage.

Fishing vessels may introduce marine debris into the ocean environment when items such as nets, traps, monofilament, lines, light sticks, and floats are lost or discarded at sea. Derelict fishing gear either lost at sea or improperly disposed of by fishing vessels is of particular concern. Along both the West and East Coasts of the U.S., thousands of crab pots are lost each year due to severe winter storms that may move them many miles from their point of deployment, or because the floats tied to the pots are cut by passing vessels and the pots are no longer accessible for retrieval. In the Pacific, for example, debris may get trapped in the North Pacific Subtropical Gyre and accumulate along convergence zones that may transport debris to the remote islands of the Papahānaumokuākea Marine National Monument. From 1996 to 2007, 570 metric tons of derelict nets were removed from the Monument, which are known to act as a repository for marine debris (NOAA 2008). These nets may come from all areas of the Pacific Rim, get caught in the convergence zone, potentially stay in the convergence zone for many years, and end up in the Monument. Other fishing related items, such as light sticks, buoys, and rope particularly constructed of plastic also demonstrate persistence in the marine environment. In a 16-year study (Morishige et al. 2007) at French Frigate Shoals Tern Island (within the Papahānaumokuākea Marine National Monument), 23 percent of the total items collected in this study originated from the maritime industry. This activity is not restricted just to the Pacific region, but to all coastal areas with intense fishing efforts.

Large, heavily regulated vessels such as cruise ships and cargo carriers are a potential vector for the introduction of marine debris. Due to their size, these ships are subject to Port State Control compliance inspections and garbage record book requirements, in addition to all regulations placed on smaller vessels. Each industry's potential contribution to marine debris is influenced by the ship's purpose (the carriage of crew or cargo). For example, cruise ships carry significantly more passengers and crew than cargo carriers; therefore, cruise ships are potentially more likely to create a larger proportion of domestic waste. Cargo ships may lose cargo or cargo containers at sea as a result of severe weather or poor loading practices. Industry experts estimate that anywhere from 2,000 to 10,000 containers fall off ships each year, less than 1% of the

number of containers sent by sea annually (Silke Carty 2006). Geography is another key factor; some cruise ships operate in environmentally sensitive habitats such as Caribbean islands or the Inside Passage of Alaska where marine debris may have a more significant impact (Butt 2007). However, both the cargo and cruise industries have initiated programs to minimize the impact of their activities. In order to eliminate (to the maximum extent possible) the disposal of MARPOL Annex V wastes at sea, some cruise ships have voluntarily developed advanced programs for waste minimization, waste reuse and recycling, and waste stream management. Best practices to minimize container loss overboard were published in 2008 and distributed to containership owners and operators (Lloyd's List 2008).

Recreational vessels are also a potential source of ocean-based marine debris. Vessels over 26 feet are subject to a MARPOL placarding requirement, and vessels over 40 feet must maintain a garbage management plan. Recreational fishing gear and domestic waste are likely components of marine debris contribution from these vessel types.

An additional source of marine debris is derelict or abandoned vessels and off-shore materials and equipment (e.g., research buoys, cables, aquaculture infrastructure). In high-wave conditions, severe storms events, or tsunamis, these vessels or structures may be broken up and strewn across the ocean floor, adversely affecting habitat and navigational safety. In pristine coral reef habitats, the iron enrichment from metal debris has been demonstrated to lead to algal blooms and to upset the ecological balance of the reef (Green et al. 1997).

Offshore oil and gas platforms and drilling rigs are another potential ocean-based source of marine debris. This may be the result of improper disposal of wastes or equipment, or loss during heavy weather. . The Bureau of Ocean Energy Management (BOEM) and its sister agency, the Bureau of Safety and Environmental Enforcement (BSEE), formerly the Minerals Management Service, have regulations, policies, and programs in place to reduce, eliminate, and remove debris emanating from facilities and operations under the agency's jurisdiction. However, heavy weather events demonstrate that government oversight and intervention, as well as industry best practices, cannot completely prevent the introduction of debris from regulated facilities. In 2005, the offshore oil and gas industry lost 117 platforms on the Outer Continental Shelf, and dozens more were significantly damaged as a result of Hurricanes Katrina and Rita. The Gulf sustained another hit in 2010 with the Deepwater Horizon oil spill, which resulted in oiled debris on the shores.

### **2.2.2 IMPACTS OF MARINE DEBRIS**

Regardless of origin, debris entering the aquatic environment may have significant impacts on ecology, human health and safety, and the economy. In addition to being unsightly, marine debris poses significant threats to ocean ecosystems, wildlife, and human health and safety. The impacts of marine debris vary in scope and intensity depending on the type of debris (e.g., plastic bags, miscellaneous plastics, derelict fishing gear, shipping containers, etc.) and its location (e.g., floating in shipping lanes or resting on sensitive habitats). Some examples of these impacts are described below and include:

- *Ecological Impacts:* impacts to the physical and biological environments including habitat destruction, wildlife entanglement, ingestion, and death, the spread of invasive species, and effects from chemical transport;

- *Human Health and Safety Impacts:* endangering human health and safety and hazards to navigation;
- *Economic Impacts:* reduced tourism, diminished aesthetic value, beach closures and clean-ups, and vessel damage.

#### 2.2.2.1 Ecological Impacts

Marine debris may cause adverse impacts on both the physical and biological environments including aquatic ecosystems, such as coral reefs, wetlands, fish habitats, beaches, and migratory species breeding grounds and pathways. Marine debris may impact species directly, such as through entanglement or smothering of species, or indirectly, such as through changes to habitat. Ecological impacts may also vary depending on the type of marine debris. Abandoned nets, plastic tarps, fishing gear and other debris may smother and crush sensitive ecosystems and their bottom dwelling species.

Derelict fishing gear may have significant impact on habitats and fisheries. For example, derelict gear, as well as other large blanketing debris, may damage coral reefs by smothering, breaking apart, or abrading corals (Chiappone et al. 2005; Donohue et al. 2001; Asoh et al. 2004). It modifies the structure of the reef by damaging the coral substrate. After net debris snags on a coral reef, wave action acting on that debris breaks the coral heads on which that debris is fixed, freeing it to subsequently snag and similarly damage additional corals. This action continues until it is removed or becomes adequately weighted with broken corals to sink. The damage to corals caused by such nets can be substantial and continuous (NMFS PIFSC 2010). Derelict gear may also result in “ghost fishing,” which occurs when marine species become trapped in lost or abandoned pots or nets that continue to catch prey without being retrieved by fishermen to harvest (Matsuoka et al. 2005; Pawson 2003; Bullimore et al. 2001). Ghost fishing does not discriminate: target and non-target species, as well as local and migratory species including those protected under the Endangered Species Act (ESA), may be impacted (Seitz and Poulakis 2006). In many situations, animals captured in derelict traps serve as attractants for other animals resulting in a self-baiting ‘ghost’ fishing cycle.

Fishing line, nets, rope and other debris may entangle, maim, and even drown many wildlife species by encircling or ensnaring the animals. The entanglement may occur accidentally or when an animal is attracted to the debris as part of normal behavior or out of curiosity. Diving seabirds, such as albatross, may be caught, entangled, and subsequently drowned by debris. Animals may incur lacerations or other wounds from debris, potentially leading to infection and debilitation (Page et al. 2004). When marine species become entangled within debris, their mobility is limited. Constricted movement may inhibit the animal’s ability to collect food or breathe and may lead to starvation, suffocation, exhaustion, and increased predation. It is typical for marine animals such as the endangered Hawaiian monk seal to investigate foreign items in their local marine habitat, which may lead to injury, drowning, or suffocation in nets, line (including monofilament), straps, or plastic items (Boland and Donohue 2003; Henderson 2001). In the Northwestern Hawaiian Islands between 1982 and 2006, 268 entanglements of the endangered monk seal were documented (NOAA 2007). This figure likely underestimates actual entanglement rates because it only reflects those seals that became entangled but were still mobile enough to reach shore at a time of year when humans were able to find them. In some cases, debris acts as habitat. Species are attracted to in situ debris for both shelter and for the

food sources trapped within. This can complicate moving or removing objects as endangered species or predators may also be attracted.

Although large debris items, such as derelict fishing gear, may have severe and highly visible impacts, smaller debris items such as bottle caps, lighters, and plastic pieces are also hazardous to wildlife. Some debris may be mistaken for food by animals. Once ingested, these materials may cause starvation and/or choking. Seabirds are known to ingest small debris items along with their food (Dickerman and Goelet 1987; Harrison et al. 1983). Northern fulmars and other marine birds that ingest plastic debris do not have the capacity to regurgitate the indigestible material (Mallory et al. 2006). Ingestion of marine debris may lead to starvation or malnutrition because the ingested items may collect in the animal's stomach and lessen the desire to feed. In addition, ingestion of sharp objects may damage the mouth, digestive tract, or stomach lining and cause loss of nutrition, infection, sickness, starvation, and even death (Derraik 2002; Redford et al. 1997). Ingested items also may block air passages and cause suffocation. Ingestion may occur accidentally, but often animals feed on marine debris because it resembles their food (Gramentz 1988). For example, sea turtles have been known to ingest plastic bags in the marine environment instead of their target prey, jellyfish (Carr 1987). In a study of green sea turtles, 23 of 38 animals were shown to have ingested anthropogenic debris (Bugoni et al. 2001). In addition, some debris items may leach harmful chemicals when ingested. The extent to which this occurs is unclear. Several efforts are investigating the potential for debris, especially plastic debris, to be a vector of chemicals to marine systems and organisms (Arthur and Baker 2012; Kershaw and Leslie 2012).

An indirect impact of marine debris on shoreline habitats occurs on beaches as a result of debris reduction and removal efforts. Mechanical beach raking, accomplished with a tractor or human labor, is used to remove debris from the shoreline and may help to remove floatable material from beaches and marine shorelines. However, beach raking may also be harmful to aquatic vegetation, nesting birds, sea turtles, and other types of aquatic life. A study by the U.S. Fish and Wildlife Service (FWS) on the effect of mechanical beach cleaning on threatened piping plovers found that such practices harmed nesting birds by destroying potential nesting sites, crushing nests and chicks, and removing the natural wrack-line feeding habitat. To minimize this impact, FWS suggested that beach raking should not be conducted during nesting season (FWS 1996).

Storm events, such as hurricanes and tsunamis, often mobilize marine debris, impacting various species and habitats as it moves throughout the water column. Marine debris may also indirectly damage the environment if it causes vessel accidents that spill oil or hazardous materials. Indirect impact also occurs through alien species transport and the introduction of invasive species such as those carried on a floating dock that washed ashore in Oregon in June 2012 and was confirmed to be from the March 2011 tsunami that struck Japan. It carried a biofouling community that included over 90 marine species that were not native to the west coast of North America. Some of these species were known to be invasive and could cause ecosystem and economic harm.

#### *2.2.2.2 Human Health and Safety Impacts*

Marine debris may also endanger human health and safety. Beachgoers may be injured by stepping on broken glass, cans, needles or other items. Swimmers and divers may also become entangled in abandoned netting and fishing lines. Vessels may directly strike floating or submerged marine debris, which may lead to human injury or severe damage to the vessel. Passengers may be injured or killed if the vessel is damaged or disabled. Grocery and trash bags, fishing line, nets, rope and other debris may wrap around boat propellers and clog seawater intakes, causing costly damage to vessels and becoming a safety hazard. This may impact movement and navigation by disabling the vessel, and ultimately endangering human lives. In 1993, derelict fishing gear contributed to the sinking of the Korean passenger ferry M/V Seo-Hae, which resulted in the deaths of numerous passengers (Cho 2006). Recreational boaters have also been subject to stranding due to engine fouling from plastic bags blocking intake valves or derelict fishing nets or lines becoming entangled around propellers.

Medical and personal hygiene debris may enter waterways when sewer systems fail or overflow. These items often contain harmful bacteria and pathogens. Syringes, broken glass and other hazardous items pose obvious dangers to barefooted beachgoers. Human impacts from marine debris also may occur from direct contact with sharp debris objects such as broken glass, rusted metal, or medical debris, on beaches or the ocean floor. In the late 1980s, beaches in New York and New Jersey were closed to protect the public from medical waste, including syringes and bandages from hospitals that washed ashore (Ofiara and Brown 1999). Humans also may be directly impacted by marine debris when, for example, SCUBA divers become entangled in lost or abandoned fishing line and nets. While this is a rare occurrence, entangled divers may be seriously injured or killed.

### *2.2.2.3 Economic Impacts*

Marine debris may have substantial economic impacts. Although lack of comprehensive economic assessments limits the ability to fully estimate the overall economic impact of marine debris, evidence of economic losses for specific cases is available. Direct economic losses from marine debris may be measured in a number of different ways, including analysis of impacts on tourism, losses in catch revenues, loss of fishing gear, damaged vessels, and human injuries. Marine debris may be detrimental to the tourism industry by creating unsightly, dangerous beaches. Beach closures, often a direct result of marine debris, may have particularly serious economic ramifications in coastal areas dependent upon tourism (Oigman-Pszczol and Creed 2007). In addition, the costs associated with cleanups and proper disposal of debris may be significant. Cleanup-related costs may include the cost of restoring the habitat impacted by marine debris, beach cleanup costs, the costs to clean piers, harbors, marinas, docks, and other waterfront areas, and the costs associated with at-sea cleanups.

Environmental contamination from debris in the marine environment, both onshore and in local fish habitats, may also have significant economic impacts. For example, loss in tourism was estimated to be between \$706 million and \$2,977 million (in 2008 U.S. Dollars) as a result of medical debris wash-ups in New Jersey in 1988 (Ofiara and Brown 1999). Commercial fishery revenues may be adversely impacted due to bycatch of target fish or shellfish in lost nets or other types of “ghost” fishing gear. For example, an estimated 200,000 pounds of Dungeness crab are killed in derelict crab pots every year in Puget Sound, an amount worth approximately \$335,000 (June 2007). Within the European Union, it is estimated that 1,500 demersal cod/turbot gillnets



are lost each year in the Baltic Sea fishery, removing anywhere from 0.01 to 3.2 percent of the commercial harvest (Brown et al. 2005). Such bycatch not only reduces the standing stock of fish or shellfish available to a fishery but also may reduce reproductive capacity and thereby the long-term viability of the stock.

Vessels adversely impacted by marine debris may incur economic costs. As described earlier, marine debris has the potential to disable vessels through collisions, or by wrapping around propellers or blocking intakes. In 1992 Japan estimated their fishing industry spent U.S. \$4.1 billion in boat repairs resulting from damage caused by marine debris (McIntosh et al. 2000). In addition to property damage, marine debris may cause “lost opportunity” costs. For example, fishermen may lose opportunities to fish if they are forced to stop operations as a result of entanglement or vessel damage incurred from marine debris. This opportunity cost may have a range of economic impacts on communities dependent on fishing revenues. Additionally, it may impose costs to locate, mark, and remove debris that could pose a hazard to navigation.

### **3. Proposed Action and Alternatives**

*The following section provides a detailed description of the proposed action and alternative. General project types that would be funded by the MDP are also described.*

Two alternatives are evaluated in this PEA: The No Action Alternative (not preferred), and the Proposed Action Alternative. No other action alternatives are evaluated because the proposed action is the only available alternative that can implement the MDP according to legal mandates. No potentially significant impacts to important resources were identified during scoping. Decisions about whether individual projects are technically and economically feasible, meet the MDP objectives, and resolve need would be made as site-specific proposals are ready for consideration.

#### **3.1 No Action Alternative**

The no action alternative would consist of NOAA not undertaking or funding marine debris research, prevention, and reduction activities. Marine debris would continue to accumulate and harm the environment and threaten living marine resources and navigation safety unmitigated by the implementation of a MDP as described in chapter 2.

#### **3.2 The Proposed Action/Preferred Alternative: Undertake and Fund Marine Debris Activities to Reduce the Impacts of Marine Debris**

The Proposed Action/Preferred Alternative is for the MDP to undertake activities internally and to award funds (primarily on a competitive and interagency basis) to local, regional, and national partnership groups for various marine debris prevention and reduction activities (including identification, impact assessment, removal, prevention, reduction and prevention of gear loss, regional coordination, and education and outreach as stated in the MDA) that would reduce the adverse impacts of marine debris and benefit the marine environment and navigation safety.

The MDP’s Preferred Alternative is to undertake activities through direct action by division staff, and by awarding funds, primarily on a competitive and interagency basis (e.g., grants and contracts) to external entities to address one or more of the following categories of activities (described in more detail below):

- 1) Research and Assessments
- 2) Prevention, Reduction, and Removal
- 3) Outreach and Education
- 4) Collaboration and Tools

Under this alternative, several activity types could be implemented under one project. For example, a project to address derelict fishing gear in a particular area could include assessing the amount of derelict gear, researching into its impacts and the best ways to prevent and remove it, physically removing gear, developing educational materials, conducting community outreach, and organizing stakeholder meetings and workshops. The four categories are complementary in nature, and the Preferred Alternative would allow different entities to carry out work under each category. By supporting multiple partners from multidisciplinary fields of work, the Preferred Alternative promotes coordination of expertise that may not be readily available within NOAA. Calls for proposals may solicit projects in only one activity area or across multiple activity areas. Table 1 below categorizes the four types of projects done by the MDP (either undertaken in-house or through funding to a partner), associated activities, and related techniques. This is a comprehensive listing of past, current, and future types of activities for the program. Each project type is explained in further detail in the sections that follow.

**Table 1. Overview of MDP Project Types, Activities, and Techniques**

Type of Project	Activities	Techniques
<p><b>1. Research and Assessments</b></p>	<ul style="list-style-type: none"> <li>• Quantify ecological impacts</li> <li>• Quantify socio-economic impacts</li> <li>• Survey</li> <li>• Identify and determine sources</li> <li>• Map</li> <li>• Monitor</li> <li>• Analyze and assess (composition, volume, trajectory)</li> <li>• Study debris movement</li> <li>• Develop models</li> <li>• Produce visualizations and other data display tools</li> <li>• Investigate technological advances (to detect, mitigate, reduce debris and its impacts)</li> <li>• Produce data</li> <li>• Synthesize data</li> <li>• Observe and detect</li> </ul>	<p><b>Field Research:</b></p> <ul style="list-style-type: none"> <li>• Field surveys and monitoring:                             <ul style="list-style-type: none"> <li>○ Shoreline including intertidal</li> <li>○ Benthic (Remotely Operated Vehicles –ROVs, autonomous underwater vehicle - AUVs, sonar)</li> <li>○ Water column, both nearshore and offshore (sonar, SCUBA, LiDAR, radar, nets)</li> </ul> </li> <li>• Aerial surveys</li> <li>• Satellite surveys</li> <li>• Debris characterization</li> <li>• Disposal alternatives (also in lab)</li> <li>• Gear alternatives, gear marking, and recovery techniques</li> <li>• Impact assessments (also by computer or in lab)</li> </ul> <p><b>Laboratory Research</b> <i>(could potentially have field component):</i></p> <ul style="list-style-type: none"> <li>• Experiments to determine chemical sorption and leaching</li> <li>• Experiments to determine rates of degradation of debris material</li> <li>• Experiments to investigate fouling of debris</li> </ul>

Type of Project	Activities	Techniques
<b>1. Research and Assessments</b> <i>(continued)</i>		<b>Computer-based Research &amp; Assessments:</b> <ul style="list-style-type: none"> <li>• GIS mapping and GPS</li> <li>• Computer modeling</li> <li>• Debris maps</li> </ul>
<b>2. Prevention, Reduction and Removal</b>	<ul style="list-style-type: none"> <li>• Shoreline cleanups and removal</li> <li>• Underwater cleanups and debris removal</li> <li>• Surface water cleanups and debris removal</li> <li>• Disposal of removed debris</li> <li>• Recycling of removed debris</li> <li>• Reducing and preventing fishing gear loss</li> <li>• Invasive species mitigation, removal and disposal</li> </ul>	<ul style="list-style-type: none"> <li>• Shoreline debris removal by hand</li> <li>• Shoreline debris removal by mechanical means</li> <li>• Underwater debris removal by hand</li> <li>• Underwater debris removal mechanical means               <ul style="list-style-type: none"> <li>○ Derelict fishing gear (crab pots, ghost nets, etc.)</li> </ul> </li> <li>• Surface water debris removal by hand</li> <li>• Surface water debris removal by mechanical means</li> <li>• Derelict vessel removal or impact mitigation</li> <li>• Recycling or take-back programs for applicable debris items               <ul style="list-style-type: none"> <li>○ e.g., boat shrink-wrap recycling program in Great Lakes</li> <li>○ Reel In &amp; Recycle monofilament bins</li> <li>○ Fishing for Energy bins, fishing net containers</li> <li>○ Gear incentives</li> </ul> </li> <li>• Debris compaction, sorting and intermediary processing</li> <li>• Disposal/Recycling</li> <li>• Invasive Species Removal</li> </ul>
<b>3. Outreach and Education</b>	<ul style="list-style-type: none"> <li>• Outreach</li> <li>• Communications</li> <li>• Education</li> <li>• Partnership development</li> <li>• In-reach to NOAA leadership</li> <li>• Public Relations (media)</li> <li>• Legislative Affairs</li> </ul>	<ul style="list-style-type: none"> <li>• Meetings</li> <li>• Briefings</li> <li>• Presentations</li> <li>• Conference attendance and presentations</li> <li>• Events</li> <li>• Permanent and semi-permanent learning displays and exhibits</li> <li>• Written materials: brochures, 1-pagers, signage</li> <li>• Websites and other digital communications</li> <li>• Social media (e.g., Facebook, Twitter, etc.)</li> <li>• Multi-media products including videos</li> <li>• Public Service Announcements</li> <li>• Contests (e.g., art)</li> <li>• Educational and outreach kits</li> <li>• Curriculum (classroom, adult education, etc.)</li> <li>• Children activities</li> <li>• Distribution</li> <li>• Printing</li> <li>• Press releases</li> <li>• In the field media and story production</li> </ul>

Type of Project	Activities	Techniques
<p><b>4. Collaboration and Tools</b></p> <p><i>* All activities are office based, no environmental interaction</i></p> <p><i>** National &amp; International</i></p> <p><i>***Including travel to attend events</i></p>	<ul style="list-style-type: none"> <li>• Regional coordination with states, tribes and other federal agencies</li> <li>• Meetings (internal, public, stakeholders)</li> <li>• Listening sessions</li> <li>• Workshops</li> <li>• Conferences</li> <li>• Trainings</li> <li>• General technical assistance</li> <li>• Strategic planning</li> <li>• Plan and guidance document development</li> <li>• Information sharing</li> <li>• Tool development (including databases)</li> <li>• Interagency collaboration (including Interagency Marine Debris Coordinating Committee)</li> <li>• Partnership building</li> <li>• Management practices and policy development</li> </ul>	<ul style="list-style-type: none"> <li>• Meetings (in person and WebEx)</li> <li>• Calls</li> <li>• Training sessions</li> <li>• Tool/database development (Clearinghouse)</li> <li>• Plans (e.g., regional action plans, interagency plans in response to “severe marine debris events”)</li> <li>• Reports to congress</li> </ul>

### 3.2.1 RESEARCH AND ASSESSMENTS

The objectives of the research and assessment project category are to:

- support greater knowledge in and understanding of the distribution, abundance, and impacts of marine debris by type;
- model and identify hotspots where debris accumulates;
- ascertain impacts on ocean and human health; and
- develop technologies to detect debris in a variety of habitats.

Projects are undertaken in-house by the MDP or through external funding through research grants or cooperative agreements with NOAA Joint Research Institutes. FY13 is the first time the MDP has organized a research grant competition. These types of projects may be done in the field, laboratory, or in the office (e.g., computer-based). Research projects (field or lab-based) are collaborative and accomplished mainly through partnerships with academic institutions. Lab work is typically done through funded projects.

Research projects may be conducted in many different geographic areas where NOAA has resource management responsibilities, on the shoreline and pelagic environments, including but not limited to coral, estuarine, and Great Lake environments. Monitoring and assessment projects may be conducted in many different geographic areas where NOAA has resource management responsibilities, on both the shoreline and in the marine environment, including but not limited to: nearshore, shoreline, coral, estuarine, lacustrine, and pelagic areas, including the Great Lakes.

The goal for the MDP research program is to understand the fate and impacts of marine debris, and to mitigate those impacts to the extent possible. Since the MDP’s inception, research has

yielded basic information about probable and recognized areas of marine debris accumulation; distribution and abundance; impacts of debris by type; and technology to detect debris in a variety of habitats. Assessment projects are office-based work done on computers that may be undertaken by the MDP or accomplished through partnerships with other NOAA offices.

Monitoring is included as a type of projects supported under this category. Specifically, MDP monitoring projects include efforts to standardize protocols for long-term monitoring of debris, assess the quantity of debris at specific locations to then extrapolate to a greater area by correlating debris density with other parameters, examine the spatial distribution and variability of debris, investigate temporal trends in debris amounts, as well as improved understanding of re-accumulation rates of marine debris and associated habitat recovery following removal and/or mitigation activities.

By their extremely varied nature, research and assessment projects may incorporate many types of data collection. A few key, foreseeable types of data collection include: (1) collecting environmental observations to quantify debris items, which could involve remote sensing, remotely operated aircraft, autonomous underwater vehicles, aerial surveys, vessel-based surveys, or other survey methods; (2) collecting environmental samples of debris items, which could involve collecting physical samples of environmental matrices such as sediments, sand, and water; (3) conducting experiments in the field, which could involve frequent visits to simulated debris items to obtain data to inform impact estimates; (4) conducting experiments in the laboratory, which could involve building mesocosms, conducting standard assays, and using quantitative techniques to assess debris quantity and chemical impact; and (5) sampling organisms using non-invasive methods (e.g., necropsies) for entanglement or ingestion studies.

As a further example, marine debris monitoring involves up to seven types of data collection including: (1) shoreline assessments for coastal debris; (2) underwater assessments for benthic submerged debris; (3) surface water trawls for floatable debris; (4) at-sea visual surveys of floating debris; (5) sediment and sand samples; (6) remote sensing of at-sea debris; and (7) sub-surface trawls and water samples for suspended debris.

Research and assessment projects include, but are not limited to, the following types of activities as listed in Table 1:

- Quantify ecological impacts;
- Quantify socio-economic impacts;
- Survey;
- Identify and determine sources;
- Map;
- Monitor;
- Analyze and assess (composition, volume, trajectory);
- Study debris movement;
- Develop models;
- Produce visualizations and other data display tools;
- Investigate technological advances (to detect, mitigate, reduce debris and its impacts);
- Produce data;
- Synthesize data; and

- Observe and detect.

For this PEA, techniques within this project type have been further categorized into: *Field Research*, *Laboratory Research*, and *Computer-based Research and Assessments*. An overview of these techniques is described below.

**Field Research:** Marine debris field research includes a wide variety of activities and techniques such as: field surveys and monitoring of marine debris which occurs on shorelines, along the benthos, and in the water column. Debris characteristics are investigated, as are gear and disposal alternatives. Impact assessments may determine, for example, rates of ingestion and entanglement of wildlife. Information for field research may be gathered through the study of marine debris currently in the marine environment through observation and surveys, at-sea detection (e.g., direct sight, aerial, marine surface, side scan sonar), beach monitoring, and data collection.

- **Field Surveys and Monitoring:** aim to develop and maintain long-term studies and quantitative estimates of debris concentrations with standardized, statistically-valid methodologies and protocols focusing on abundance and density of marine debris, and are needed to inform other research (e.g., risk estimates; distribution and fate models) and to determine the success of the other types of MDP projects. These projects are critically important in determining priority areas for debris removal and impact mitigation activities, as well as improving understanding of re-accumulation rates of marine debris. They involve standard protocol development; assessment of debris concentration; and analysis of spatial and temporal variation, as well as reaccumulation and habitat recovery rates following debris removal. Defined transects would be used for all marine debris surveys described below (e.g., shoreline, benthic, water column).
  - Shoreline (including intertidal) Field Surveys and Monitoring: There are two main types of shoreline surveys: accumulation and standing-stock surveys. Accumulation studies provide information on the rate of deposition of debris and debris is removed during the process. Standing stock-studies provide information on the amount and types of debris tallied within transects. For beach shoreline field surveys and monitoring, standardized NOAA MDP protocols are used. These protocols instruct surveyors to tally and/or collect debris items larger than 2.5 cm while walking shoreline transects from the waters' edge to the first change in substrate, which might be a vegetation line, dune, man-made structure, or other barrier.
  - Benthic Field Surveys and Monitoring: Using technologies such as Remote Operated Vehicles (ROVs) and Autonomous Underwater Vehicles (AUVs) with cameras or other sensors attached, dragging nets, utilizing sound waves to identify objects in the water with multibeam or side scan sonar, SCUBA diving or snorkeling to locate derelict fishing gear or crab pots on the bottom of a body of water. Remote sensing is also used to quantify marine debris in remote areas. Frequently, the MDP opportunistically tags onto other NOAA or partner studies to conduct this type of research. The program has also funded towed side scan sonar projects through partnerships with state and federal agencies and NGOs.

Methods to look for derelict fishing gear include side scan sonar, side imaging, multibeam sonar, diver towed video, or propeller cameras. For example, a sonar unit

- records water temperature, depth, vessel speed, direction, and GPS location. Sometimes a hand-held GPS is used to pinpoint derelict gear that is not accessible by boat. Side scan sonar is valuable for assessing numbers of derelict crab pots in deep waters and helpful to supplement visual surveys in shallow waters. Typically the sonar used is commercially available low powered, high frequency sonar systems, and are not fundamentally different from sonar used by most recreational boats, fishing vessels, and commercial ships for navigation. The sonar are typically directed at the water column or the seabed directly beneath a vessel. These operate at 50-150 m range scales per channel, for a 100-300 m total coverage. These systems are either towed on a cable from a small boat, or mounted to the gunwale and deployed from the surface. Examples of these used systems include the Klein 3900 operating at 455 or 900 kHz, the MarineSonics system, operating between 300-600 kHz, and the Humminbird system, operating between 455-800 kHz.
- **Water column (both nearshore and offshore) Surveys and Monitoring:** This technique includes surveying floating marine debris. Methods include sonar, SCUBA, LiDAR, radar, surface water trawls and transects, and towing nets off of vessels (either chartered or vessels of opportunity). When the net is retrieved and cod-end contents are sieved, any living species (e.g., small fish) are returned to the water. These projects may be undertaken by the MDP (e.g., in the Chesapeake Bay on board NOAA vessels of opportunity) or funded. Visual surveys from boats are an effective way to locate, examine, and potentially remove shallow water derelict crab pots.
  - **Aerial Surveys:** Use a range of aircraft including helicopters, long-range, fixed-wing aircraft, multi-engine, single-engine wheel or float planes. Aerial surveys provide the ability to survey large areas of open-ocean and are effective complements to land-based surveys. The goal is to proactively mitigate the problem of marine debris by identifying and removing items from the open ocean before it has an opportunity to reach a reef and become ensnared. The MDP has not done this frequently although it could be as part of a funded project and done by a subcontractor or through a partnership within NOAA or with another Federal agency. Typically an aerial survey would be done by charter aircraft flying 500-2000 feet above the shoreline. The type of aircraft chosen for survey work is dependent on the mission parameters including geographical location of survey, flight endurance requirements, required crew, imaging equipment, requirements to land on water or airport, and meteorological conditions. Examples of these procedures include:
    - **Fixed-wing Aircrafts:** may fly at the slowest speed possible within safety limits at altitudes of 213–305 m to conduct surveys. One observer would be positioned on each side of an aircraft.
    - **Helicopters:** may fly at a speed of 20–60 kn on a flight path following the shoreline at altitudes of 30–152 m. The doors of a helicopter may be removed to enhance observer visibility. On the right side of a helicopter, 2 observers may be positioned, and a pilot and data recorder would be on the left side. When marine debris specialists observe debris, a GPS waypoint would be logged and descriptive data about that debris would be recorded (color, size class, and debris type)(NMFS PIFSC 2010).
    - **Unmanned Aircraft Systems (UAS):** Where appropriate, survey flights may be accomplished through the use of UAS. These systems vary in size and capability, from small four-rotor helicopters or model-plane sized aircraft used for nearshore survey to large high altitude aircraft used for wide area, long duration surveys. These

systems are selected for specific missions based on the same mission parameters considered for manned aircraft selection, and are conducted with all appropriate permitting from resource management agencies as well as airspace management and stakeholder agencies. Typical shoreline and nearshore surveys are conducted at 500-2000 feet, dependent on specific operational goals.

- **Satellite Surveys:** Satellites may be used to detect marine debris in the open ocean such as what has been done in the Japan Tsunami response. This technique capitalizes on existing satellites that are already collecting data for another federal agency such as the National Geospatial-Intelligence Agency to evaluate and exploit the capability to detect debris density or debris aggregation features. Sensors used for this include multiple resolution multi and hyperspectral, visual and Synthetic Aperture Radar. Generally, MDP does not contribute funding to image acquisition, but may support analysis of the images which are already being collected under existing contracts or tasking.
- **Debris Characterization:** A clear understanding of the characteristics of marine debris is important in order to detect and assess the debris itself as well as detect and quantify the potential impacts. Characterization activities may include analysis and cataloging of debris physical characteristics including size, shape, material, weight, density, etc. Other activities include exploring natural marine and climatological processes that influence debris dispersion, movement, and accumulation, net identification work, debris detection testing (e.g., putting debris in the water for a short period to test if it can be seen), and debris tagging to profile movement and life-cycle patterns.
  - Net Identification: To identify nets based on composition, design, and function. Collect samples of nets in order to identify and catalog net types to aid in identification of future debris. Work is done by funded staff within NOAA or partner organizations, and is typically performed in an office or lab setting.
  - Debris Detection in Water: To test detection of debris by various sensors, debris may be placed in the marine environment. In general, there are very few times when the MDP would deploy debris into the environment. This would be done in the most structured way possible to avoid loss of debris or contamination of sensitive areas with invasive species. Any debris deployed in the environment would be constantly tracked and monitored, and moored if possible (depending on the study). This technique would involve releasing debris for a controlled and short period of time, and tethering it to either a stationary object (such as a buoy) or attaching it to a deploying vessel. Sensors are then trained on the area to test if the debris may be detected. This may include floating debris on the surface, or simulated trap or other debris on the bottom. This activity may be performed by NOAA MDP internally, or by funded partners inside or outside of NOAA. Though rarely done, objects may be placed into the marine environment for multiple research purposes, each of which involves deployment of different objects in different ways, as listed below. In each case, debris is deployed in the most controlled manner possible, structured to avoid any potential negative impacts.
    - 1) *Deployment of long term tracking devices* - In these cases, small inert objects would be deployed that either actively transmit their location, or were labeled to request reporting by whomever finds them (as with the NOAA drift cards). Objects would not be likely to cause impact by colonization by invasive species or direct impact in sensitive areas based on both inert composition and small size.



2) *Deployment of simulated or example debris objects for testing of detection techniques* - In these cases, debris objects, such as crab pots, fish traps, nets, or other debris objects would be placed in the environment for a short period of time, during which a sensor is focused on them to test the ability to detect and identify the object. Examples include deployment of simulated derelict traps in Chesapeake Bay or Puget Sound, or the deployment of sample debris off Oahu. In all cases, debris was tethered either to a buoy or other retrieval device, or the deploying vessel for immediate retrieval, and was under consistent monitoring. Items were selected to reduce entanglement threat. In addition, all items would be thoroughly cleaned to ensure no biofouling was present prior to deployment.

3) *Deployment of debris in nearshore waters to test degradation or bycatch/ghostfishing impacts of that debris*. In these cases, debris would be deployed with a structured and permitted plan for consistent debris monitoring throughout the experimental period and mechanisms in place to allow eventual removal.

- Debris Physical Characteristics: to test the behavior of debris in the marine environment over time. Test or controlled debris may be deployed in the environment to evaluate degradation of the debris material, movement of debris or habitat and species impact of the debris over time. These studies may include introduction of simulated derelict traps or other fishing gear, introduction of floating debris to test for movement patterns or profiles, and introduction of stationary debris to test for patterns in degradation. Work may be performed by NOAA MDP or by funded partners inside or outside of NOAA.
- Debris Tagging: to better understand movement and sources of debris. This type of work could be conducted by tagging nets (or other fishing gear) and tracking them over time. It may be utilized in the future ducted to better understand a new material that has specific sources (e.g., a new plastic composite) to note its entrance into the environment relative to other plastics. The MDP has funded this type of study in the past and may again in the future although no current or planned studies exist at this time.
- **Disposal Alternatives**: Explore options for debris disposal after removal. Alternatives may include catchment systems, skimmers, densifiers, or potentially burners. This type of research has not been undertaken or funded by the MDP yet, but may possibly be conducted in the future as this technology develops.
- **Gear Alternatives**: Fishing gear research, development, and design would take place both in field and through in-lab testing. The MDP has funded this type of work.
- **Impact Assessments (could have field, lab, and computer components)**: Impact Assessments are tools used to assess and quantify the socioeconomic (including human health) or ecological impacts of marine debris. Socioeconomic impact assessments explore the human social and behavioral aspects of marine debris generation, and provide quantitative estimates of the impact of marine debris to navigation, and other human uses of the marine environment (e.g., tourism, fishing, recreational water sports, etc.). Ecological impact assessments provide quantitative estimates of the biological and chemical impacts of marine debris on affected and potentially affected species, populations, and marine environments; and incorporate into risk models as appropriate. This could include understanding impacts to wildlife, such as determining ingestion and entanglement rates;

impacts to habitat, such as determining recovery after marine debris removal occurs in sensitive living habitats.

Depending on the type of study, this kind of research could be conducted as a literature review, in the lab, in the field, or as a combination of these three. Examples include evaluating the dollar cost of cleanup to local communities or the bycatch of target and/or no-target species from derelict fishing gear. Quantification of impacts is essential in order to evaluate the scope of the problem and/or balance the costs and benefits associated with mitigation and prevention of marine debris. This technique is currently being conducted by the MDP, both as in-house and through funded research. In-house projects are limited to desk-based synthesis of results from previous research.

**Laboratory Research:** Describes efforts in which the researcher seeks to control conditions and variables to determine whether a clinical intervention produced the desired effects or if other factors were responsible for the desired effects. This type of research may have a field component as well as taking place in a lab. For example, MDP funded a study to develop analytical techniques to quantify marine microplastics (in water, sand, and sediments). This study includes analyzing microplastics in a limited number of surface water tows and sediment samples collected from U.S. coastal waters, including the Great Lakes, and both field and laboratory procedures. The purpose in this example was to develop a simple, reproducible method to count the tiny plastic marine debris pieces, or “microplastics,” in the environment. Other examples of laboratory research experiments may include studies to: determine chemical sorption and leaching; investigate fouling of debris; and, determine rates of degradation for debris materials. All laboratory procedures follow Occupational Safety and Health Administration (OSHA) requirements for safety and proper disposal of laboratory waste.

**Computer-based Research and Assessments:** These types of activities occur in an office setting and involve assembling, analyzing and presenting data that has already been collected and translating them into maps, models or summaries. To date, the MDP has funded some computer modeling and conducted in-house Geographic Information Systems (GIS) and maps using GPS. Debris maps of areas of high concentrations are another example product.

Marine debris research and assessment projects overall vary greatly and may focus on determining the cumulative impacts of marine debris on the physical and biological environment, socio-economic factors, and human health and navigation safety. In order to achieve this outcome, it is necessary to incorporate research and development into new or existing technologies to find, collect, and assess marine debris. In addition, monitoring and assessment are needed to compare marine debris source, abundance, distribution, movement, and impact data on regional, national, and global scales. This information is beneficial in determining priority areas for debris removal and impact mitigation activities. Additionally, monitoring and assessment projects are necessary in determining success of debris removal activities. Thus, strategic research projects inform other programmatic activities, including removal and educational projects. Exploring and testing new technology to quantify debris, minimize debris impacts, locate areas of accumulation, modify fishing gear to reduce loss, and remove debris from remote regions is also an important element of this goal.

**Highlighted examples of MDP research and assessment projects include:**

1. The Marine Debris Monitoring and Assessment Project (MD-MAP) - has developed standardized methods for monitoring and assessment of marine debris on shorelines and in surface waters. In 2012, in partnership with Versar, Inc., the MDP completed a project to test the protocols and develop guidelines for the frequency and amount of sampling needed. The results of this project will be published in 2013, and will include guidelines for monitoring in benthic, water column, and marsh environments. In addition, the MDP and the NOS National Centers for Coastal Ocean Science Cooperative Oxford Laboratory completed a multi-year field component of a pilot project on Chesapeake Bay tributaries to test and refine the MD-MAP protocols.
2. UAS Debris Detection Trials Held in June 2012 Off of Oahu, HI. This effort involved testing satellite detection of simulated in-situ marine debris as part of a previously scheduled UAS test off of Oahu, HI. Simulated debris objects were deployed in a designated area and imaged by multiple satellites with different sensor capabilities. At the same time, the debris was overflown by a small UAS. This allowed for evaluation of detection capabilities across sensor and debris types and involved multiple NOAA offices. Debris items were secured by rope and tethered to the vessel to ensure that they would not be lost and caution was taken in choosing and preparing debris items to ensure that they did not pose an entanglement threat. All marine debris items used were also thoroughly cleaned to ensure no biofouling was present prior to deployment.
3. Microplastic Marine Debris Research. The MDP is leading efforts within NOAA on the emerging issue of microplastic ( $\leq 5\text{mm}$ ) marine debris. Standardized field methods for collecting sediment, sand, and surface water microplastic samples have been developed and are undergoing further testing in the Chesapeake Bay and Puget Sound, in partnership with the lab of Dr. Joel Baker at the University of Washington Tacoma. This project, funded through the Joint Institute for the Study of the Atmosphere and Ocean, determined a cost-effective, and unbiased laboratory method to estimate the quantity of three plastics (polyethylene, polypropylene, and polyvinylchloride) in environmental samples. This method has also been applied to common personal care products that contain polyethylene. Eventually, field and laboratory protocols will allow for global comparisons of the amount of microplastics released into the environment, which is the first step in determining final distribution, impacts, and fate.

**3.2.2 PREVENTION, REDUCTION AND REMOVAL**

The objective of the marine debris prevention, reduction and removal project category is to mitigate the impacts of marine debris on marine habitats, commercial and non-commercial fishery resources, and NOAA trust resources, including marine mammals and threatened and endangered marine and anadromous species. This category focuses on limiting the amount of marine debris that enters coastal and marine waters as well as removing existing debris from shores and waters. The MDP is directly mandated to conduct marine debris reduction activities through the MDA, and removal activities are a necessary tool to mitigate the detrimental impacts of marine debris in the environment. Reduction activities are essential while both intentional and inadvertent improper disposal of trash and debris occurs. The MDP has, since its inception, provided funding support for removal activities. Staff may occasionally participate in these types

of activities, but do not undertake these projects directly. The action area for this category includes both office-based and field work.

Prevention, reduction and removal projects are an important component of all marine debris mitigation strategy as removal activities are a necessary tool to address both intentional and inadvertent improper disposal of debris. These projects may be conducted in many different geographic areas where NOAA has resource management responsibilities, on both the shoreline and in the marine environment, including but not limited to: nearshore, coral reefs, estuarine, lacustrine, and pelagic areas; and the Great Lakes.

The types of projects supported under this category include efforts to remove: shoreline debris by hand; shoreline debris by mechanical means; underwater debris by hand; underwater debris by mechanical means; surface water debris by hand; and of surface water debris by mechanical means. “Mechanical means” may incorporate the use of powered tools, material handling equipment, heavy equipment, marine vessels, vehicles, submersibles, aircraft, and remotely operated systems, or a combination of the aforementioned.

Debris, including lost fishing gear should be removed in such a way as to minimally disturb or disrupt the marine environment. If the process of removing the item is going to damage habitat more than the presence of it is damaging the marine environment, it should not be removed, and/or it should be modified in place, e.g. net gear in the water column can be cut at its base in the sediment or on the reef or bundled in place; net gear embedded in sediment that cannot be easily removed by hand can be cut and trimmed where exposed to reduce its potential for entangling organisms; a trap can be secured in an open position to prevent confining of trapped organisms. Gear that is completely or partially embedded in the seafloor or encrusted on a reef should not be removed by mechanical means (e.g. a winch on a surface vessel), because removal would be damaging to the substrate and/or will suspend sediment, and because mechanical removal has the potential to damage the gear (e.g. rip off sections) in such a way as to make it difficult to impossible to remove what gear remains in the water. As well, sometimes nets or pots/traps may become so encrusted by marine life that they might be best left alone depending on the potential hazard it poses to marine life or humans, and/or the degree to which it is negatively modifying habitat. Such gear has become such an integral part of the substrate that to remove it might damage habitat and potentially reactivate sections that were benign (SeaDoc Society 2009).

Prevention, reduction and removal projects include, but are not limited to, the following types of activities as listed in Table 1:

- Shoreline cleanups and removal;
- Underwater cleanups and removal;
- Surface water cleanups and removal;
- Disposal of removed debris;
- Recycling of removed debris;
- Reducing and preventing fishing gear loss; and
- Invasive species (transported on debris) mitigation, removal and disposal.

The specific techniques used in this project category are described below:

- **Shoreline Debris Removal by Hand:** Involves funding projects that includes volunteers walking the beach picking up trash (e.g., general litter, plastic bottles, bags, packaging, cigarette butts, fishing line, etc.), putting it in garbage bags or buckets, and then disposing of it by proper means via dumpster or trash cans. When something large such as a net is found, team members collect data such as size, type, and GPS location. Nets would be cut into smaller, manageable sizes and then carried or dragged on tarps by hand to truck beds. Partially buried items would be dug free using shovels and picks before being removed. These activities would use appropriate trash or recycling receptacles according to state and local laws and the material typically ends up in an existing landfill. The trash may first be moved up to the high tide line temporarily and sometimes materials would be sorted to separate recyclables. The geographic scope varies by place and project. Projects are need based and typically performed through partnerships. The MDP also partners with Ocean Conservancy for the annual International Coastal Cleanup (ICC) event. Cleanups are always done in coordination with landowners and all restrictions are observed. Event organizers are required to obtain applicable land-use permits. For example, MDP shoreline survey protocols are followed and include contacting land managers (e.g., park rangers) before any activities take place, at which time any shoreline closures due to ESA concerns would be discussed, for example snowy plover nesting season at Pt. Reyes National Seashore. Shoreline cleanup activities would not occur during such closures. In addition, NMFS BMP's for protected species (e.g., Hawaiian monk seal, green sea turtle) are also adhered to during shoreline cleanups. These include protocols such as maintaining a minimum distance so as not to disturb the animal. Typically, if that cannot be done (e.g., shoreline is too narrow), the cleanup would not occur.
- **Shoreline Debris Removal by Mechanical Means:** To remove larger items on shorelines, a wide range of heavy equipment (e.g., front loaders, cranes, trucks, saws, etc.) may be necessary. All-terrain vehicles (ATVs) or trucks may be utilized on beaches to haul away items in inaccessible areas. This is only done where it is allowed and with special use permits from appropriate agencies. Rarely, helicopters may be necessary to help remove large debris from inaccessible shorelines. If large items such as derelict fishing gear are found on a shoreline that is inaccessible by roads or by sea and the area is not known to have protected species, then helicopters may be used for recovery. All sites targeted for helicopter sling-load activities would be prepped first by cutting the item into smaller sections and placing pieces into a sling-load cargo net 1–2 days prior to helicopter arrival. A typical sling-load takes between 10–20 seconds to attach to a helicopter. A cable with an emergency release mechanism is used, and a load would then flown to a drop-off container to be transported to a recycling facility by partner agencies. Typically, a helicopter could carry between 272–363 kg per load, depending on conditions (NMFS PIFSC 2010).
- **Underwater Debris Removal by Hand:** Uses SCUBA or surface supply divers, snorkelers, and skin divers to remove debris from underwater. This type of activity always follows the OSHA diving protocols and requirements. Marine debris specialists would be selected for their in-water expertise and have been carefully evaluated by the NOAA Diving Program. Before field deployments, specialists undergo intensive field-based training in boat handling, towed-diver surveys, emergency response, and net recovery. Marine debris recovery operations would include in-water surveys (towed-diver and swim surveys), aerial surveys, boat-based removal, and removal of debris from intertidal zones (NMFS PIFSC 2010). SCUBA operations may be done through roving surveys.

- **Towed-diver Surveys:** 2 snorkelers would be towed ~ 10 m behind a lead boat and visually inspect the water column and benthos for marine debris.
- **Swim or Snorkel Surveys:** would be conducted in areas where towed-diver surveys are not possible. Swim surveys would be used in shallow waters at depths of < 2 m and in regions with complications such as complex reef structures.
- **Intertidal-zone Removal:** when debris would be found washed ashore but below or at the high-tide line, it would be removed by hand or by helicopter sling load.

An example project is the extensive multiagency debris removal program led by the NMFS Pacific Islands Fisheries Science Center, Coral Reef Ecosystem Division which has removed 755 metric tons of derelict fishing gear from the coral reefs and shores of various locations of the Northwestern Hawaiian Islands from 1996 - 2012. The goals of this project include assessing the abundance and distribution of marine debris on coral reefs, nearshore areas, and beaches; removing debris that can be safely and practically recovered without further damage to the environment; evaluating rates and sources of debris accumulation; developing techniques for collecting marine debris at sea before it can damage coral reef environments; and increasing public awareness of marine debris issues (NMFS PIFSC 2010).

In 2006, this removal effort switched to a “maintenance mode” where smaller, more targeted removal efforts are conducted focusing on high-density areas of derelict fishing gear. The MDP, NOAA's Coral Reef Conservation Program, and Papahānaumokuākea Marine National Monument contributed funding to this effort, and NMFS has been responsible for the project planning and environmental compliance. MDP has typically contributed \$100,000 - 200,000 to this effort annually since 2006 as a contributing partner. These lost or abandoned nets entangle and kill critically endangered Hawaiian monk seals, threatened green sea turtles, sea birds, and other wildlife, damage sensitive coral reef habitat, and have been known to act as a vector for the introduction of non-native species.

Team members systematically survey reefs using swim surveys and towed-diver surveys to locate debris in shallow water at depths < 10 m, within a range generally workable by snorkel or free diving. Upon sighting a derelict net or net fragment, a GPS waypoint is taken. Debris type, size, fouling level, water depth, and substrate of the adjacent habitat are recorded. Nets are evaluated before removal actions to determine appropriate removal strategies, including the use of lift bags for heavier and larger conglomerates of debris.

If attached to a reef, debris is carefully removed by hand to avoid any further reef damage and is then hauled into the small boats using lines and manpower. As much as possible, detached coral heads and fragments entangled in nets are extracted on-site and returned to the seafloor. Derelict nets with > 75% of their surface area incorporated into a reef structure and that are no longer an entanglement hazard are left in place to avoid additional coral damage. At the end of a field day, debris is offloaded onto the large support vessel. During each phase of operations, interactions with any protected species are avoided.

During training and operations, small boats are carefully anchored only on sand or rubble substrate so that benthic disturbance is minimized. The operational area is continuously monitored for listed species, and all activities are modified to minimize disturbances or

interactions. The anchor is lowered rather than thrown overboard, and a diver checks the deployed anchor to make sure it does not drag or entangle any bottom organisms or listed species (NMFS PIFSC 2010). Cleanup uses a contractor or NOAA vessel in water, small inflatables, and people on the shoreline. All nets brought back are used to create electricity in the Nets to Energy Program.

Another example includes removal of abandoned spiny lobster and stone crab trap debris and casitas (artificial structures illegally deployed by divers to attract lobsters for subsequent harvest) from the nearshore waters of the Florida Keys.

- **Underwater Debris Removal by Mechanical Means:** Commercial fishing vessels or small boats may use multiple means to remove debris from the environment. Methods include grapples (pulling a hook and chain along bottom to snag debris on the bottom) to pick up lobster pots, winches on a surface vessel, or ROVs may be used for targeted removal. Grapples have not been frequently utilized in MDP projects, but if used, they would be paired with side scan sonar to ensure removal efforts are targeted and can avoid sensitive areas. The specific process used for ROVs may use a snipping device attached to the manipulating arm to cut line and a grabbing device to grasp material such as a net fragment; then a carabineer (metal hook) could be clipped onto a net or trap with the grabbing arm, and as the ROV was retrieved the line is transferred to the boat's hydraulic winch and the gear can be hauled to the surface.

Derelict fishing gear (crab pots, ghost nets, etc.) is a specific type of underwater debris that is a common issue for the MDP. These lost or abandoned fishing nets and traps have been removed underwater by multiple means including grapple and ROV, but some may be done by hand such as “casita” spiny lobster traps in the Florida Keys or derelict Dungeness crab pots in Washington and Alaska.

Side scan sonar may also be utilized to help locate derelict gear. Typically the sonar used is commercially available low powered, high frequency sonar systems. These operate at 50-150 m range scales per channel, for a 100-300 m total coverage. These systems are either towed on a cable from a small boat, or mounted to the gunwale and deployed from the surface. Examples of these used systems include the Klein 3900 operating at 455 or 900 kHz, the MarineSonics system, operating between 300-600 kHz, and the Humminbird system, operating between 455-800 kHz.

In addition, ROVs have been used to retrieve crab pots near Essential Fish Habitat (EFH) to ensure minimum disturbance and avoid safety concerns related to diving activities in high traffic areas. ROVs may complete this work using roving surveys.

- **Surface Water Debris Removal by Hand:** This technique involves people in boats using nets to remove debris. This technique is not common or currently funded by the MDP, but may be explored more in the future. Occasionally it may be done opportunistically, e.g., when fishermen discover and retrieve ghost nets. Opportunistic ghost-net collection is conducted when, at open sea, a derelict net would be sighted and deemed recoverable after considering size, storage capacity aboard, and overall safety of the vessel, crew and those involved in collection. Attempts to remove marine debris encountered at sea are very variable and can be unfeasible because of operational, vessel, or safety constraints. However,

sometimes attaching a satellite-tracked marker to debris makes it possible to locate that debris in the future and to track and analyze its drifting patterns.

- **Surface Water Debris Removal by Mechanical Means:** This may be done by a boat such as a barge using a crane or winch or through a Manta trawl (a net system for sampling the surface of the ocean with a thin mesh net towed behind a vessel). Skimmers on a boat or at docks may also be utilized to remove trash from the surrounding area. This technique is not employed commonly or currently funded by the MDP, but may possibly be explored in the future.
- **Derelict Vessel Removal or Impact Mitigations:** This debris type is not commonly addressed by MDP, as it is frequently under the U.S. Coast Guard purview. The technique could include using equipment to remove boats from the shore in circumstances where vessels have washed up as a result of a natural disaster such as hurricane or tsunami, or as a result of direct abandonment. For example, in the past, the MDP supported a project to remove derelict and abandoned vessels from Fordson Island, MI. Funding from the MDP and Great Lakes Restoration Initiative, through NOAA's Great Lakes Habitat Restoration Program, created jobs for volunteers to clean up the shoreline and remove the vessels in the near-shore area. Through five separate events within this effort, volunteers have to-date removed 21 derelict boats, roughly 40 tires, and other surface debris from the island for a combined total of 122 metric tons of debris.
- **Recycling or Take-back Programs for Applicable Debris Items:** This technique involves providing disposal options, no-cost recycling, or financial incentives for returning fishing gear or other materials that may potentially become marine debris. Examples include a boat shrink-wrap recycling program in Great Lakes, the "Reel-In & Recycle" monofilament recycling program with the Boat U.S. Foundation; and the MDP partnership in 2011 with the Oregon Dungeness Crab Commission and Oregon Department of Fish and Wildlife to pay fishermen for retrieving derelict gear. The Fishing for Energy program highlighted below is another example of a gear-incentive program.
- **Debris Compaction, Sorting and Intermediary Processing:** This may include compacting Styrofoam or other materials before disposing of them, or sorting of debris by type for more efficient/effective disposal processing.
- **Disposal/Recycling:** This technique relates to disposal of debris such as temporarily placing dumpsters in locations of cleanups or areas of high debris accumulation such as with the Japan tsunami debris washing up on the coast of Washington and Oregon in the summer of 2012. The placement and use of dumpsters and collection containers is done in compliance with local ordinances and within existing waste-management facilities.
- **Invasive Species Removal from Marine Debris:** This technique relates to assessment and removal of invasive plants and animals from large items of debris typically already on the shoreline or partially submerged. The process may include scraping the debris surface, removing it from water, disposing of materials on land, and burning all exposed surfaces on the object. This effort focuses on prevention of the spread of invasives or alien species that have been transported on or in marine debris. Safe removal processes and protocols were developed in partnership with the MDP as an outcome of the *Regional Preparedness and Response Workshop to Address Biofouling and Aquatic Invasive Species on Japan Tsunami Marine Debris* as outlined in the "Response Protocols for Biofouled Debris and Invasive Species Generated by the 2011 Japan Tsunami" after a large dock from Japan washed up on



the coast of Oregon in June 2012 with a tremendous amount of invasive species still intact after over a year in the Pacific Ocean (NOAA et al. 2012).

**Highlighted examples of MDP prevention, reduction, and removal projects include:**

1. The NOAA NMFS Restoration Center Community-based Marine Debris Removal Partnership Grant Competition: This effort has been open annually since 2006, and catalyzes on the implementation of locally driven, community-based marine debris prevention and removal projects that benefit coastal habitat, waterways, and NOAA trust resources including anadromous fish. The MDP has provided annual funding to NMFS to participate in their grant competition. (See FY13 Federal Funding Opportunity Announcement in Appendix D).
2. Fishing for Energy: is a gear incentive partnership started in 2008 between MDP, Covanta Energy Corporation, National Fish and Wildlife Foundation (NFWF), and Schnitzer Steel, to reduce derelict fishing gear through prevention activities, and working with the fishing community and related industries to find positive solutions to address derelict fishing gear. The partnership provides a place for the fishing community to dispose of old or derelict fishing gear they recover while at sea at no cost. Partnerships are formed with ports, cities, marinas, and fishermen's cooperatives, as appropriate, to reach out to fishermen, provide disposal facilities and to advertise the project. MDP helps to fund the net disposal containers at the partner fishing ports. Once removed from the environment, the gear is transported to the nearest Covanta Energy-from-Waste facility.
3. Japan 2011 Tsunami Marine Debris Removal Projects: The MDP recognized the need for additional funding for cleanup efforts in response to the 2011 Japan tsunami. In the summer 2012, the MDP allocated \$50,000 in grants for debris projects to each of the impacted states – Alaska, Washington, Oregon, California, and Hawaii – to aid in removal and cleanup efforts.
4. Derelict Fishing Gear Mapping and Removal in the Main Hawaiian Islands. This project, coordinated by the NOAA Pacific Islands Fisheries Science Center Coral Reef Ecosystem Division in 2008, included the survey and removal of marine debris around the main Hawaiian Islands by certified divers. A goal of this project was to assist federal, state, and local coastal managers, along with local communities, in identifying and prioritizing cleanup areas and targeting specific sites for future monitoring. The cleanup of Oahu removed over 18 tons of nets and other debris and a cleanup of Lanai yielded approximately 19 tons.
5. Derelict Nets Survey and Removal in Washington State. In 2011 and 2012, the Northwest Strait Foundation executed a project to remove derelict fishing nets from priority areas in the Puget Sound, Washington. Commercial harvest divers, trained and experienced in derelict net removal, removed 220 derelict nets, 210 of which were gillnets. The nets covered a total area of 41 acres of habitat, ranging from rocky reef habitat to mud/sand/gravel bottom habitat. Numerous animals were found entangled in the nets including three dead mammals, over 50 dead birds, hundreds of dead and live fish, and thousands of crustaceans. It is believed that many more animals were entangled and died

during the years the nets were in the water. This project is a continuation of a long-term effort started in 2002 to rid the Puget Sound of the estimated 5,000 derelict nets, most of which are legacy nets from a fishing effort now greatly reduced. This effort has been funded by the MDP/NOAA Restoration Center grants.

### **3.2.3 OUTREACH AND EDUCATION**

The MDP is mandated by the MDA to conduct education and outreach activities for the public and other stakeholders. These activities are key to fostering understanding and awareness of marine debris issues, in order to achieve one of the program's major goals: changing behavior in the general public for better environmental stewardship of oceans and coasts. The MDP also considers education and outreach to be a form of indirect prevention. The majority of this work takes place in offices or public forums (aquaria, outreach events, etc.), but in the rare instance that it may be done in the field, it would not have significant environmental impacts and would be done in compliance with existing applicable laws. Marine debris is an international problem that knows no political or geographic boundaries, and as such, these types of projects could be conducted at local, regional, national, and/or international scales. These projects typically focus on areas where NOAA has resource management responsibilities, including but not limited to: nearshore, shoreline, coral, estuarine, and pelagic coastal areas, including the Great Lakes.

The primary objectives of outreach and education efforts are to:

- Provide the public with access to information on marine debris issues, science, and solutions.
- Improve awareness of marine debris issues with the general public, industry, and policy makers and engage constituents in behavior-changing activities.
- Raise awareness and understanding of the MDP, its mission, and its activities, so that it is a widely trusted source for marine debris information.

The MDP achieves these objectives through varied measures and approaches, including traditional and non-traditional outreach and communication methods. Activities are undertaken in-house by the program or through funding to partners mainly through grants such as the NMFS Restoration Center Community-based Marine Debris Removal grants or the MDP outreach and education grants. Examples of in-house activities conducted by the MDP include, but are not limited to, outreach contests, development of educational kits, curriculum, permanent learning displays, tools, products, and other materials, classroom and children's activities, media relations, website and online product development, attendance at conferences and other events, and public presentations.

Strategic partnerships are critical for the program to achieve its outreach and education goals. These mutually-beneficial relationships are formed with non-profits, industry, academia, or other non-governmental organizations, and they often contain outreach and education components that expand NOAA's reach to new audiences. Examples of past and current partners include the Ocean Conservancy, the Alice Ferguson Foundation, BoatUS, the Legacy Foundation, the National Fish and Wildlife Foundation, and the American Chemistry Council. Activities conducted in coordination with these partners include, but are not limited to, Trash-free Seas and anti-litter campaigns, development of tools and products, and promotion of fishing gear recycling programs.

The program also offers a two-year Prevention and Outreach Partnership grant, which is awarded to applicants that have the capacity and expertise to identify, evaluate, fund, and administer marine debris prevention through education and outreach projects and campaigns across a range of scales that meet NOAA's mission to restore marine and coastal ecosystems, and support formal and informal education at all levels. As examples, in previous years the MDP has awarded a grant to the Ocean Conservancy, to reach new audiences through a massive online campaign, and to the University of Georgia to develop a *Marine Debris Tracker* smartphone application.

Outreach and education projects include, but are not limited to, the following types of activities as listed in Table 1:

- Outreach;
- Communications;
- Education;
- Partnership development;
- In-reach to NOAA leadership;
- Public Relations (media); and
- Legislative Affairs.

The techniques used in this project category are described below and include:

- **Meetings, Briefings, Presentations:** Attending meetings and providing briefings and presentations to a variety of different audiences including Girl Scouts, students, etc.
- **Conference Attendance and Presentations:** MDP staff are encouraged to attend and present at professional conferences. This technique may be undertaken by staff, or involve preparation of invitational travel for others. For example, MDP was a sponsor of the Fifth Annual International Marine Debris Conference (SIMDC) in March 2011, partnering with the United Nations Environmental Programme (UNEP) and Ocean Conservancy on conference organization and planning, and provided staff support as well.
- **Events:** MDP hosts outreach booths at public venues such as Earth Day events. This involves staff manning the booth and interacting with the public and providing outreach at partner events (e.g., award dinners, film festivals, book signings, etc.).
- **Written Materials - Brochures, Factsheets, Signage:** This technique may be accomplished in-house or contracted out and involves writing and developing informational materials for the public.
- **Websites and Other Digital Communications:** This technique may be accomplished in-house or funded externally. An example would include the grant to the NGO Ocean Conservancy to develop the “Keep Coast Clear” website.
- **Social Media (e.g., Facebook, Twitter, Blogs, etc.):** This activity is typically undertaken in-house and includes informational exchange and interactions using various internet applications.
- **Multi-media Products including Videos:** This technique may include providing funding to partners to develop videos, developing content for the “NOAA Ocean Today” video series, consulting on panels to provide oversight and review subject matter content. An example was the preparation of a video showing a map of the JTMD sightings trends over time along with a narration explaining the event. This technique may also be

undertaken by the MDP by directly filming debris in the field (e.g., filming reference video footage of debris on the beach). All disentanglement photos or videos that may be displayed on the MDP website attempt to show permit numbers when available.

- **Permanent and Semi-permanent Learning Displays and Exhibits:** This includes developing pop-up exhibits, posters, and informational displays for the public and may be done both in-house through contracts or partnerships.
- **Public Service Announcements (PSAs):** PSAs are short messages, audio or video, which relate to public issues. These may be developed in-house and distributed through the MDP website. The program also may contract out these activities in the future or provide content to a partner who would develop the product.
- **Contests (e.g., art):** The MDP organizes educational and outreach contests. For example, there is an existing student art contest (K-8) where the finalists' art is included in MDP annual calendars/planners; no cash awards are involved. In the future, the program may organize and promote photo contests. If this were pursued, the MDP would encourage responsible wildlife viewing guidelines.
- **Educational and Outreach Kits:** This could include developing games or hands-on activities and could be conducted by the MDP or through contracts.
- **Curriculum Development (Classroom, Adult Education, etc.):** This technique provides information to teachers or other audiences and may include hosting meetings. Examples include providing materials on the marine debris issue for the U.S. Coast Guard Boat Permit class, Sea Scout curriculum, or consulting on curriculum or developing materials for educational manuals. This is undertaken in-house and through contracts.
- **Children Activities:** This may involve school visits during which MDP staff direct students through a bolus dissection (the indigestible material in the stomach contents of a juvenile albatross that is "thrown up."), which includes a large amount of plastics. Shaped like a fat cigar, one may dissect a bolus to assess the health of our ocean, the foraging ground for thousands of albatross trying to gather enough food to feed their hungry chicks. The U.S. Fish and Wildlife Service gathers bolus found on the ground at Midway Atoll and occasionally sends them to the MDP. Birds are not disturbed by this process.
- **Distribution:** Dissemination of marine debris education and outreach materials typically involves the MDP contracting to a mail carrier service.
- **Printing of Materials:** This is typically done in-house through normal administrative mechanisms or may be contracted out for large quantities.
- **Press Releases:** This involves working through NOAA Public Affairs to summarize relevant marine debris information for the media and is done in-house working with standard NOAA policies and procedures.
- **In-the-Field Media and Story Production:** This technique may involve taking media into field to learn about a marine debris issue. This happens rarely, but would include following all existing regulations for safe boating, etc.
- **Legislative Affairs:** This activity involves coordinating legislative activity for NOAA related to marine debris issues and is undertaken by MDP staff or other NOAA staff in-providing updates to the Hill staff on marine debris and the NOAA program.

**Highlighted examples of MDP outreach and education projects include:**

1. “Keep the Sea Free of Debris!” Art Contest (In-house). The MDP holds an annual art contest for students in kindergarten through eighth grades. This popular contest draws hundreds of submissions from all over the country, each depicting how marine debris impacts the environment. The contest serves as a mechanism for teachers to introduce their students to the concept of marine debris in a fun and engaging way. Students are also asked to write a short paragraph explaining how marine debris impacts them and what they’re doing about it. A panel of judges from different offices in NOAA selects 13 winning entries, and the art is displayed in the MDP’s yearly planner.
2. Keep Oceans Clean Campaign (Multi-partner). NOAA MDP, NOAA NMFS, and The Walt Disney Company, along with the Ad Council, National Marine Sanctuary Foundation, U.S. Department of Interior, and the Environmental Defense Fund, renewed a partnership to enhance the Keep Oceans Clean Alliance through the release of the prequel to the popular Disney movie, *The Little Mermaid*. The project uses the characters of the new movie, *Ariel’s Beginnings*, to provide a central focus on the importance of keeping our oceans clean of marine debris by putting trash in its proper place, using reusable items, and recycling. The campaign includes DVD inserts with specially produced educational information; billboard, radio, and television public service announcements; and an updated website and video game.
3. Marine Debris Tracker. The mobile phone App *Marine Debris Tracker* is a joint partnership of the NOAA MDP and the Southeast Atlantic Marine Debris Initiative (SEA-MDI), located within the College of Engineering at the University of Georgia. The app, created for both iPhone and Android platforms, was developed so that the public may use their mobile device (e.g., smartphone) to log a marine debris item or items on a leisure beach visit or for an official beach cleanup. This information is then uploaded onto a related website for publication.

Minor indirect long-term benefits to the physical and biological environment are produced by promoting accurate information, fostering understanding of marine debris issues and encouraging behavioral changes. The overall expected benefits of outreach and education activities include: improving knowledge about the issues, changing behavior by raising awareness, justifying MDP existence and funding through promotion. The activities as described here are not known to adversely impact the environment. They are primarily office-based in existing sites, involving no direct or indirect interactions with the biological or physical environment or alterations to the built environment. When activities do take place outdoors, such as presentations or outreach events at public parks, they are held in places open to the general public and are conducted in accordance with applicable ordinances for public gatherings and use of the site.

These actions have no potential for adverse impacts on the human environment, individually or cumulatively, and meet the definition of a categorical exclusion (CE) in the CEQ regulations (40 C.F.R. 1508.4). These categories of MDP program activities are consistent with classes of actions identified in NAO 216-6 as categorically excluded from the need for further analysis under NEPA. The impacts of these categories of MDP program activities are not considered

further in this PEA. However, individual outreach and education projects considered for funding or action by the MDP would be evaluated to determine that they are consistent with the PEA's description of the category and that no "extraordinary circumstances"<sup>1</sup> apply that would preclude use of a CE in NAO 216-6.

### 3.2.4 COLLABORATION AND TOOLS

The MDP serves as a centralized capability within NOAA, coordinating and supporting activities within NOAA and with other federal agencies, as well as using partnerships to support projects carried out by state and local agencies, tribes, non-governmental organizations, academia, and industry. Because the MDP is a smaller program, collaboration, communication and leveraging resources are key to successfully accomplishing the mission. The MDP undertakes and funds collaboration and tool development activities, such as capacity building through training, workshops, conferences, and technical assistance, which are predominantly non-field activities.

The MDA mandates regional coordination and the program has regional staff members positioned around the country to support regional collaboration efforts, track progress of projects, review performance and efficiency measures, and conduct regional marine debris outreach to local audiences. The importance of this type of coordination became even more critical related to the 2011 Japan Tsunami Marine Debris response, where NOAA led efforts with federal, state, and local partners to collect data on debris quantity, location, and movement; assess potential impacts; and plan for efforts to reduce possible impacts to our natural resources and coastal communities. NOAA also worked with state and federal partners to develop contingency and prioritization plans for potential landfall of Japan tsunami marine debris. Most of this type of work has been conducted on computers or in meeting rooms, and products include meeting minutes, reports, summaries, presentations, and workshop abstracts.

The types of partner organizations that may be involved with this project type include:

- Any land owning agency;
- States agencies;
- Other parts of NOAA;
- Other federal agencies;
- State, county or local governments;
- Tribal or Native Organizations (Tribes, Corporations, etc.);
- NGOs;
- Academia;
- Industry;
- Private businesses; and
- Stakeholders (e.g., fisherman, boaters, etc.).

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<sup>1</sup> Consistent with CEQ regulations at 40 C.F.R. 1508.4 and Section 5.05c of NAO 216-6, actions that would normally qualify for a CE may be excluded from the CE class and require preparation of additional NEPA analysis if conditions exist that make the action markedly different from what is considered usual or customary for the class. Chapter 7 outlines how the MDP will screen actions for extraordinary circumstances.

Collaboration and tool projects include, but are not limited to, the following types of activities as listed in Table 1:

- Regional coordination with states, tribes and other federal agencies;
- Meetings (internal, stakeholders, public);
- Listening sessions;
- Workshops;
- Conferences;
- Trainings;
- General technical assistance;
- Strategic planning;
- Plan and guidance document development;
- Information sharing;
- Tool development (including databases);
- Interagency collaboration (including IMDCC);
- Partnership building; and
- Develop management practices and policies.

The techniques used in this project category are described below and include:

- **Meetings (in-person and virtual):** Funding may be used for staff to attend informational meetings or to support invitational travel. This could be used for event planning, logistics, room rental, etc. As an example, in 2009, MDP funded a Submerged Derelict Trap Detection Methods Workshop to share information about techniques such as using Side Scan Sonar for detecting crab pots. The program has also been involved with international meetings such as the South Korea joint project, hosting and planning the Fifth International Marine Debris Conference, convening an *International Research Workshop on the Occurrence, Effects, and Fate of Microplastic Marine Debris* in 2008, and attendance and presentations at international conferences (e.g., Japan, Germany, etc.).
- **Conference Calls:** This technique may be used when it is not feasible for people to gather in person and a large or small virtual meeting takes place over phone lines instead. This is a routine office-based procedure. Information sharing technologies such as webinars may be utilized. Calls may also occur between MDP staff and individuals in the normal course of business.
- **Training Sessions:** Includes both staff attending training sessions or providing the training to stakeholders (e.g., training volunteers how to use shoreline monitoring protocols on a beach).
- **Tool/Database Development:** These tools are developed to organize data, synthesize information, support MDP priorities, and to better share information. This technique is undertaken directly and funded by the MDP. It may involve monitoring a specialized emergency event or tracking grant proposals and could range from small project management spreadsheets used to display statistics and results up to full, online, secure databases for project and information tracking and reporting.
- **Plans (e.g., Regional Action Plans):** This technique typically involves MDP staff working with partners to coordinate and summarize information into documents such as

regional action plans, contingency plans, strategic plans, etc. The MDP does not have any regulatory plans.

- **Reports to Congress:** The MDP is required by Congress to prepare specific reports.

**Highlighted examples of MDP collaboration and tools projects include:**

1. Marine Debris Information Clearinghouse: The MDP is developing the Marine Debris Information Clearinghouse (formerly known as the Federal Information Clearinghouse as directed by the MDRPRA) to raise awareness of the information and data generated by projects undertaken in the field of marine debris. The goal of the clearinghouse is to allow users access to marine debris data and information to assist in a more specific way than general interest in the subject.
2. NOAA Marine Debris Information Forum: The NOAA MDP hosted the NOAA Marine Debris Information Forum in April of 2008. This information forum brought together scientists, program managers, and communication specialists from across the country to share information on marine debris research, prevention, and reduction projects that had been conducted nationally. The Forum served as an opportunity for participants to share their valuable work, to have in-depth discussions into marine debris research, prevention, and reduction, and to enhance networking and coordination nationwide.
3. Marine Debris Prioritization Workshops: Workshops have been held in each of the defined U.S. regions (Alaska, Hawaii, Great Lakes, West Coast, Southeast, Northeast, Gulf of Mexico) to prioritize marine debris issues, address specific aspects of marine debris (such as derelict fishing gear and abandoned vessels) and/or develop specific action plans for regional coordination.
4. The Fifth International Marine Debris Conference from March 20-25, 2011, in Honolulu, Hawaii. NOAA and the United Nations Environment Programme co-organized the conference, which brought together international marine debris researchers, natural resource managers, policy makers, industry representatives, and the nongovernmental community. This conference highlighted research advances, allowed sharing of strategies and best practices to assess, reduce, and prevent the impacts of marine debris, and provided an opportunity for the development of specific bilateral and regional strategies.

The overall expected benefits of collaboration and tool activities include: better decisions, more informed partners, prevention of more debris in the environment, more knowledgeable future actions and plans, enhanced conservation measures and management principles intended to protect living marine resources from marine debris, better coordination and communication, improved budget and strategic planning for the MDP, and accurate reporting of accomplishments to Congress and tax payers, and to assist with justifying future funding requests.

Collaboration and tool development activities as described here are not known to adversely impact and have no potential for adverse impacts on the human environment, individually or cumulatively, and meet the definition of a categorical exclusion (CE) in the CEQ regulations (40 C.F.R. 1508.4). They may be conducted in many different geographic areas, but are primarily office-based in existing sites, involving no direct or indirect interactions with the biological or



physical environment or alterations to the built environment. These categories of MDP program activities are consistent with classes of actions identified in NAO 216-6 as categorically excluded from the need for further analysis under NEPA. The impacts of these categories of MDP program activities are not considered further in this PEA. However, individual collaboration and tool projects considered for funding or action by the MDP would be evaluated to determine that they are consistent with the PEA’s description of the category and that no “extraordinary circumstances” apply that would preclude use of a CE in NAO 216-6.

### 3.3 Best Practices

The following best practices listed in Table 2 are generally used for MDP activities to ensure compliance with applicable laws for environmental protection and to minimize or avoid potential impacts on environmental resources. Some practices are species, location, and seasonal dependent and may have been developed in consultation with NMFS or the United States Fish and Wildlife Service (FWS) for prior MDP activities.

**Table 2. MDP Best Practices**

Best Practices	Type of impacts minimized or avoided
<p><b>Training:</b> People conducting the activities would be trained and educated in the use of low-impact techniques for each technique and habitat, to avoid or minimize any impacts due to foot traffic, diving, equipment handling, removal techniques, and any other activities associated with the activity. In ecologically sensitive areas such as coral reefs, appropriate methods and care would be used in equipment handling and vessel mooring. If applicable, monitoring would be conducted to ensure compliance with project design and success.</p>	<p>Disturbance of physical environment features and sensitive habitats</p>
<p><b>General Conservation:</b> All activities avoid or conserve habitat of any endangered or threatened species. This may include using buffer areas around sensitive resources (e.g., rare plants, archeological sites, etc., would be pre-identified and avoided). Other examples include not coming within three nautical miles of a Steller sea lion critical habitat without applicable federal permits; observing a buffer of at least 100 yards from an endangered species rookery; avoiding salmon spawning areas during spawning season, and avoiding piping plover nesting areas during nesting season, etc.</p>	<p>Disturbance of critical habitats and life history stages for ESA-listed species</p>
<p><b>Project Timing:</b> Timing of activities would be limited to periods when important species are least likely to be in the project area (e.g., pre-determined windows of time when anadromous fish are not expected to be utilizing the project area, etc.) to minimize any potential impacts to living marine resources. Actions are limited to times when vulnerable life history stages of protected species are not present to avoid potential adverse impacts on that life stage and overall minimize adverse impacts to that species. The MDP would consult with NMFS OPR before working in areas that are known to be utilized by endangered fish or other animals.</p>	<p>Disturbance of sensitive species and life-history stages</p>

Best Practices	Type of impacts minimized or avoided
<p><b>Coral:</b> Basic guidelines for activities near coral reefs include: not removing, stepping on, or touching coral; maintaining neutral buoyancy and good buoyancy control; maintaining control of fins, gauges, and accessories; not stirring up sediment near coral; securing all equipment so that it cannot drag or snag on corals; using mooring buoys instead of anchors when possible and never dropping anchors onto coral reefs; ensuring engines are well maintained to avoid release of petroleum products in reef areas; making sure sewage is disposed in a way that does not affect the nutrient balance of the reef ecosystem; following environmentally sound methods of trash disposal on boats and on the land; and, obeying all local dive rules, regulations, and customs.</p> <p>As of November 2012, NMFS proposed listing 66 reef-building coral species under the ESA: 59 in the Pacific and seven in the Caribbean and to reclassify Elkhorn and Staghorn corals as endangered instead of threatened. More species may be listed in the near future and the MDP will take the necessary steps to ensure that the program meets any new or additional requirements when working in areas with listed species. For example, BMPs to minimize damage to coral from underwater removal of derelict fishing gear (DFG) from coral reef habitat include: carefully cutting away and hand removing it from coral. If a coral reef is found with DFG that has been overgrown by the coral, it is left since it would cause more harm than good trying to remove it. However, loose pieces are removed in order to prevent entanglement risks.</p>	Disturbance of critical habitat, sensitive species and life-history stages
<p><b>Marine Mammals:</b> When activities would occur in marine mammal habitat, minimum approach distances and the operational protocols recommended in NMFS regional guidelines to minimize the potential for disturbance and illegal taking are observed. The guidelines can be found on-line at: <a href="http://www.nmfs.noaa.gov/pr/education/viewing.htm">http://www.nmfs.noaa.gov/pr/education/viewing.htm</a>. For example, without special permission from NMFS, no cleanups are done and access is restricted to northern fur seal rookeries on St. Paul and St. George Islands (Alaska) between June 1 and October 15.</p>	Disturbance of sensitive species and life-history stages
<p><b>Sea Turtles:</b> Sea turtles are susceptible to artificial lighting that is visible from the beach, barriers on the beach, and disturbance of the nest site by humans and predators. Avoid using light where possible; otherwise shield the light so it does not reach the beach. Minimize physical disturbance of beach material to reduce the likelihood of adverse impact to a sea turtle nest. Use animal-proof waste containers to minimize attraction of non-native predators to beach areas.</p>	Disturbance of sensitive species and life-history stages
<p><b>Essential Fish Habitat (EFH):</b> Should any activity propose to reduce the quality and/or quantity of EFH, appropriate consultations between the MDP and NOAA Office of Habitat Conservation would be undertaken to avoid, minimize, or offset any adverse impacts associated with the activity ensuring no reduction in the quality of quantity of EFH occurs as a result.</p>	Disturbance of critical habitat, sensitive species and life-history stages
<p><b>Seabirds:</b> Seabirds frequently fly at night and have been shown to be attracted to artificially-lighted areas, which may result in disorientation and subsequent fallout due to exhaustion. To minimize light attraction of seabirds, activities should only occur during daylight hours. Seabirds and their nesting colonies would be avoided in MDP projects.</p>	Disturbance of sensitive species and life-history stages

Best Practices	Type of impacts minimized or avoided
<p><b>Waterbirds:</b> To minimize potential adverse impacts to waterbirds, projects should not be situated in or near wetlands where possible. When projects are located near wetlands, an assessment of potential project impacts to waterbirds should be conducted. Point count surveys should be conducted at the proposed project site; the number of point count surveys required would depend on the scope of the proposed project. Surveys should be conducted prior to project implementation in all wetland habitats within and adjacent to a potential project site.</p>	Disturbance of sensitive species and life-history stages
<p><b>Listed Plants and Critical Habitat:</b> A number of listed plants and critical habitat are situated along coastlines. If vegetation must be disturbed (for instance, if driving off of existing roadways must occur), a qualified botanist should conduct botanical surveys prior to project implementation to document any listed plant species in the proposed disturbance area. Botanical surveys should be conducted during the wettest part of the year when target species may be more prevalent. Projects should be situated to minimize disturbance to listed plants and habitat suitable for listed plants.</p>	Disturbance of critical habitat, sensitive species and life-history stages
<p><b>Research:</b> Research projects include a scientific hypothesis and experimental design that ensure the project does not have significant impacts and that lessons learned from the project may be applied to future efforts, thereby mitigating the potential for future cumulative impacts. Having proper experimental controls and quality assurance (QA)/quality control (QC) help measure and minimize the effect of the experiment on the environment.</p>	General and unnecessarily duplicative impacts
<p><b>Aerial Surveys:</b> During aerial surveys, efforts are taken to reduce disturbance to animals, and applicable permits for Marine Mammal Protection Act (MMPA) and ESA are obtained. The pilot must be aware of any restricted airspace that might be encountered during a beach survey. The seasonal airspace concerns over bird rookeries and marine mammal haul-outs are generally marked on FAA Sectional Aeronautical charts. For example, to minimize disturbance of harbor seals on land, avoid flying surveys within two hours of low tide, when seals commonly haul out. Maintain an altitude of at least 1,000 feet when operating aircraft over marine mammal habitat. Also, no aerial surveys would be conducted within applicable habitats, during harbor seal pupping season, mid-May to mid-June, to avoid disturbing dependent harbor seal pups.</p>	Disturbance of sensitive species and life-history stages
<p><b>Shoreline Activities:</b> Whenever shoreline activities are conducted, projects are done in coordination and with permission from landowners (e.g. National Park Service permits).</p>	Disturbance of physical environment and unique characteristics of ecologically critical or historically and culturally significant areas
<p><b>Trash Disposal:</b> Trash and materials are disposed of or recycled as appropriate and beneficial following applicable local ordinances.</p>	Impacts on public health and human safety
<p><b>Noise:</b> Avoid making excessive or impactful noise from construction or operation of machinery that may adversely affect ESA-listed animals or marine mammals, especially during breeding seasons.</p>	Disturbance of sensitive species and life-history stages

Best Practices	Type of impacts minimized or avoided
<p><b>Heavy Equipment:</b> The use of heavy equipment (e.g., graders, front-end loaders, backhoes, etc.) that has the potential to impact soil stability should be avoided to the maximum extent possible. If the use of heavy equipment is not avoidable, then project-specific consultation and associated permitting may be required.</p>	Disturbance of physical environment and habitats
<p><b>Vessels:</b> The MDP does not operate vessels directly and therefore is not responsible for the environmental compliance for the operation of the vessel in general. NOAA vessels for other purposes (e.g. vessels of opportunity) or research partner vessels are typically used for MDP activities and these vessels comply with existing laws and regulations.</p>	Compliance with applicable laws
<p><b>SCUBA:</b> If Self-Contained Underwater Breathing Apparatus (SCUBA) and/or other use of compressed gas are required as a breathing medium (e.g., surface supplied air), it is the responsibility of NOAA for undertaken projects or a recipient organization to ensure that divers are trained to a level commensurate with the type and conditions of the diving activity being undertaken to be capable of exhibiting responsible dive practices to not injure organisms or cause unnecessary habitat impacts. The organization must have the capacity (appropriate insurance, safety policies, etc.) to oversee all proposed diving activities. All diving activities must meet, or be specifically exempted from, OSHA guidelines. Assuming all other relevant safety conditions are satisfied, divers that are not advanced divers may perform simple activities, such as underwater surveys and removal of light objects. Advanced divers are divers with advanced diving training for the proposed tasks and in compliance with OSHA guidelines. Activities that should be performed only by advanced divers include but are not limited to the following:</p> <ul style="list-style-type: none"> <li>- Moving or lifting heavy objects, or using hand tools, weighing more than 25 pounds underwater;</li> <li>- Performance of underwater tasks requiring substantial physical exertion;</li> <li>- Use of lift bags;</li> <li>- Underwater removal of potentially entangling debris, such as nets, crab or lobster pots, or fishing line; and</li> </ul> <p>All applicable federal, state, and local laws and regulations pertaining to the type of diving being undertaken must be met. Snorkeling activities are similarly restricted, in that snorkelers should complete only simple activities such as surveys and removal of light, non-entangling objects unless they receive specialized training. Divers and snorkelers should be capable of exhibiting responsible dive practices (e.g., proper buoyancy) such that they conduct activities in a safe manner and do not injure organisms or cause unnecessary habitat impacts especially to sensitive habitats such as coral reefs. Projects that involve the use of SCUBA are required to have a safety plan in place before any in-field work takes place.</p>	Disturbance of physical environment and habitats

Best Practices	Type of impacts minimized or avoided
<p><b>Fishing Gear:</b> Projects involving the use of traps, nets, trawls or other types of fishing gear used to sample fish populations must include measures to ensure that these gear types are not placed or used in locations where they will damage habitats and must be in accordance with local and federal regulations for the area including those related to ESA-listed species or marine mammals. For example, to reduce by-catch during surface water trawls, a 0.333 mm mesh-size manta net with a 70 cm diameter frame. A shipboard observer watches the net for the length of the tow and the trawl is stopped if a large object or organism is seen entering the net. When the net is retrieved and cod-end contents are sieved, any living species (e.g., small fish) are returned to the water.</p>	Disturbance of physical environment and habitats
<p><b>Grapples:</b> Grapples used for removal would be paired with side scan sonar to ensure removal efforts are targeted and can avoid sensitive areas. Training on the use of side scan sonar and removal methods, as well as for safety procedures would be necessary.</p>	
<p><b>Contaminated Sediments:</b> Removal efforts that could disturb sediment should not occur in areas of known contamination to avoid the suspension of contaminants in the water column. However, if removal of the gear has been identified as a high priority because of known damage or hazard posed by the gear, then removal should occur in close consultation and coordination with the appropriate state or local agency with jurisdiction over the specific area/location.</p>	
<p><b>Invasive Species:</b> Protocols should be carefully followed to avoid transport of diseased or invasive materials between sites. Measures should be taken to ensure invasive species are not introduced to non-native areas such as by thorough cleaning according to scientific protocols to ensure no biofouling is present (e.g. scraping, treating surface with a mild bleach solution, storing removed species in a safe location to decompose, etc.). All diving gear should be rinsed in a bleach solution at the end of each day in the field, and vessels and all gear should be sanitized before each departure from port. Only disinfected equipment and gear should be transported between a point of origin to destination and return. Decontamination of clothing and soft gear to be taken ashore from a vessel must be conducted by freezing materials for 48 hours or by the use of new clothing or soft gear as indicated by FWS regulations and guidelines.</p>	Invasive species
<p><b>Wildfire:</b> When using burning to remove invasive species from marine debris, any increased threat of wildfire to ESA-listed species or marine mammals, their habitat, or critical habitat that may result from the project should be minimized and project plans should include measures to ensure burned areas are restored and impacts of fire are mitigated.</p>	Disturbance of sensitive species and critical habitats for ESA-listed species

## 4. Affected Environment

*This section describes the environmental resources that could potentially be directly, indirectly, or cumulatively affected by the alternatives being considered in this PEA.*

## 4.1 General

The geographic scope of this PEA action area includes all coastal and nearshore habitats in state and territorial waters, plus offshore habitats within the U.S. Exclusive Economic Zone (EEZ) and high seas; it includes water column to substrate (as defined below). Activities may occur year-round depending on the specific project. When possible, timing of MDP activities would be limited to periods when ESA-listed species and marine mammals are least likely to be in the project area to minimize impacts to any potential living marine resources. Given the broad geographic scope of MDP activities, a wide range of environments associated with the proposed action may potentially be affected.

### Definitions:

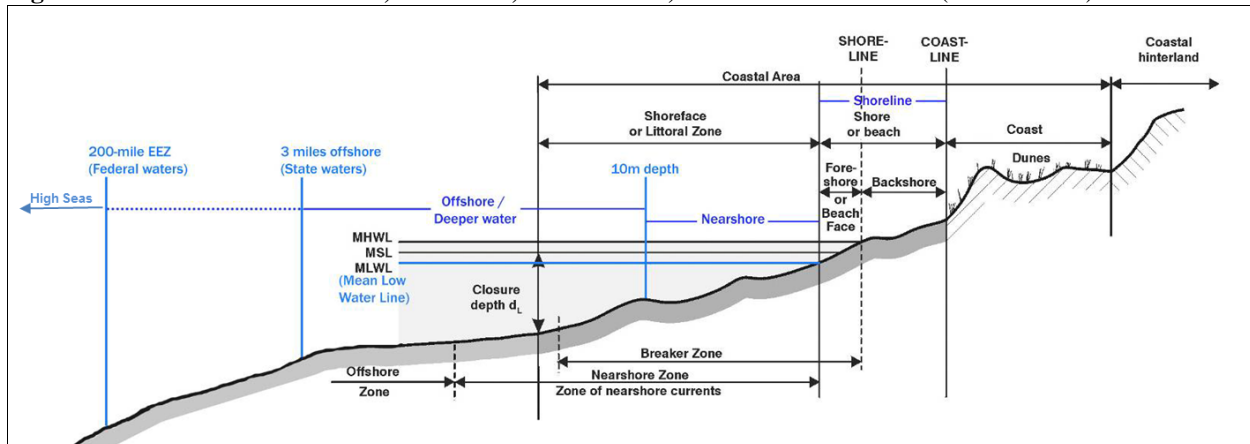
**Coastal Waters:** are defined by the Coastal Zone Management Act (CZMA) of 1972 as: (A) in the Great Lakes area, the waters within the territorial jurisdiction of the United States consisting of the Great Lakes, their connecting waters, harbors, roadsteads, and estuary-type areas such as bays, shallows, and marshes and (B) in other areas, those waters, adjacent to the shorelines, which contain a measurable quantity or percentage of sea water, including, but not limited to, sounds, bays, lagoons, bayous, ponds, and estuaries.” )

**The Exclusive Economic Zone (12 to 200 nm):** The Law of the Sea Convention allows each coastal nation to establish an Exclusive Economic Zone (EEZ), adjacent to its territorial sea, extending a maximum of 200 nm seaward from the baseline; in this zone, the coastal nation has sovereign rights for the purpose of exploring, exploiting, and managing living and non-living resources, whether found in ocean waters, the seabed, of subsoil.

**High Seas:** comprised of all parts of the sea that are not included in the EEZ, in the territorial sea or in the internal waters of a state, or in the archipelagic waters of an archipelagic state (NOAA General Counsel 2013).

**Marine environment:** means those areas of coastal and ocean waters, the Great Lakes and their connecting waters, and submerged lands over which the United States exercises jurisdiction including the Exclusive Economic Zone, consistent with international law (National Marine Sanctuaries Act 16 U.S.C. §1432(3)).

**Figure 1. Illustration of shoreline, nearshore, and offshore, as defined in this PEA (NOAA 2012).**



Physical, biological, and social and economic environments of the coastal and estuarine United States are described below. The targeted environments of MDP activities include coral reefs, seagrass beds, the pelagic environment, beaches, and other associated habitats, as well as the benthic invertebrates, marine mammals, and fish species that utilize these habitats. An ecosystem approach is used to describe these environments, and includes baseline information on each habitat type potentially affected by the proposed action and alternatives. An ecosystem approach considers the complex system of organisms, including humans, their environment, and the processes that control their dynamics.

## 4.2 Physical Environment

The presence of marine debris and the action of projects to research, prevent, reduce, and remove debris may cause damage to the physical environment. The physical environment includes marine habitats, the surrounding geologic structures and soil that form the physical structure of the system, and the water column that spans surface waters to benthic depths. Marine debris, in whatever form, has the capacity to negatively impact numerous species and their associated habitats, which together are encompassed in the term “living marine resources.” The concept of living marine resources overlaps with physical environment when considering living habitats such as seagrass beds and coral structures. This section will include an in-depth description of all marine habitats, and the following section on biological environment will generally refer back to this section instead of repeating the same information.

Living marine resources utilize a wide variety of biological habitats that are affected by marine debris, including coral reefs, mangrove and seagrass beds, wetlands and estuaries, mud flats, the pelagic environment, shorelines, ponds and lakes, stream and river channels, and riparian areas. Derelict fishing gear (DFG), such as lost and abandoned nets, can abrade and smother coral reef ecosystems, as can other pieces of general marine debris (e.g., trash). Marine debris may similarly result in species by-catch in addition to prohibiting growth in seagrass beds and wetlands. Marine debris may also impact naturally-occurring shoreline occurrences like wave action. These various habitats are targeted for debris removal efforts because they have suffered considerable degradation due to debris accumulation and are host to a variety of living marine resources which are impacted by debris. NOAA, as the federal trustee agency for these natural resources, is responsible for their conservation and restoration. MDP projects would generally benefit these resources.

### Threats

General threats to the physical environment caused by humans include: degraded water quality, turbidity, boating impacts, channel modification/shipping lanes, chemicals and toxins, climate variability, coastal development, dam operations/incompatible release of water (quality, quantity, timing), disruption of longshore transport of sediments, fishing gear impacts, harmful algal blooms, fishing pressures, industrial operations, recreational activities, industrial spills, invasive plants and animals, key predator/herbivore loss, beach nourishment and impoundments, nutrient loads, roads, bridges and causeways, shoreline hardening, surface water and groundwater withdrawal, vessel impacts, and climate change.

More details about the specific types of physical environments where MDP activities generally occur are described below.

#### **4.2.1 CORAL REEFS**

Coral reefs are fragile, highly complex communities which have great biological and habitat diversity. Together, with seagrass beds, mangrove forests, and their physical and chemical environments, they comprise the coral reef ecosystems which support well over a million species. Coral reefs are distinctive (e.g., the largest structures on earth of biological origin) and complex systems. Coral reefs grow upward from the sea floor as the polyps of new corals cement themselves to the skeletons of those below and in turn provide support for algae and other organisms whose calcium carbonate secretions serve to bind the skeletons together (NOAA Coral Reef Conservation Program 2013).

Corals are anthozoans, the largest class of organisms within the phylum Cnidaria. Comprising over 6,000 known species, anthozoans also include sea fans, sea pansies and anemones. Most stony corals are under the group “scleractinians” and are primarily responsible for laying the foundations of, and building up, reef structures (notable exceptions of stony corals outside this scleractinian order include Fire corals, which fall under the Hydrozoan, and Blue and Organ Pipe corals, which are Octocoral) (NOAA 2013).

Some coral reefs and species of coral are afforded special protection under various federal laws including the ESA, Magnuson-Stevens Fishery Conservation and Management Act - Essential Fish Habitat, the NWHI Coral Reef Ecosystem Reserve Executive Order, and the Marine Protected Areas Executive Order. When they occur within the boundaries of National Marine Sanctuaries, they are further protected by measures in Sanctuary management plans. In November 2012, NMFS proposed listing 66 reef-building coral species under the Endangered Species Act (ESA): 59 in the Pacific and seven in the Caribbean. More species may be listed in the near future and the MDP will take the necessary steps to ensure that the program meets any new/additional requirements when working in areas with listed species. More information can be found at: <http://www.nmfs.noaa.gov/stories/2012/11/82corals.html>. Compliance with these laws is discussed in Chapter 6.

##### *4.2.1.1 Shallow-Water Corals*

Shallow-water, reef-building (hermatypic) corals typically are found in tropical waters above 70 m depth and at temperatures between 23° and 29° C. They consist of consolidated limestone or unconsolidated rubble composed primarily from the skeletal remains of invertebrates and algae. Reef-building corals are restricted in their geographic distribution because the formation of highly consolidated reefs only occur where the temperature does not fall below 18°C for extended periods of time (NOAA 2013).

Living corals and other benthic organisms form a thin veneer that overlies a limestone framework deposited over thousands of years by their ancestors, and solidified by the combined processes of cementing coralline algae, mechanical action of waves, bioerosion from boring sponges and other organisms, and the chemical action of rainwater. Reef building scleractinian corals are the dominant organisms responsible for most of the framework growth, followed by coralline algae on wave exposed reef slopes, and green algae (e.g., Halimeda) in back reef and



lagoonal depositional zones. Other important organisms contributing sediments to reef structure include mollusks, foraminiferans, and echinoderms (NOAA 2005).

Coral may dominate a habitat (coral reefs), be a significant component (hardbottom), or exist as individuals within a community characterized by other fauna (solitary corals) (GMFMC 1998). Hardbottoms constitute a group of communities characterized by a thin veneer of live corals and other biota overlying associated sediment types. They are usually of low relief and occur on the continental shelf and may be associated with relict reefs. While most of the reef environment is depositional, the seaward-growing portion of the reef is essential for the survival and maintenance of the rest of the reef system (Wiens 1962; Guilcher 1987).

Coral reefs grow in oceanic waters that are low in nutrients. They contain symbiotic algae (zooxanthellae), which live in the coral tissues and produce food and take up nutrients excreted by the coral animal (Maragos 1992). Coral reefs have been called the “rainforests of the sea” because of their high level of biodiversity and productivity, providing habitat for thousands of species of fish and shellfish and hundreds of species of corals, algae, sponges, echinoderms, and many other groups of organisms (U.S. Coral Reef Task Force 2000). Coral reef systems provide food, shelter, breeding, and nursery areas for many reef and non-reef organisms. Coral reefs are also linked to mangroves and seagrasses where these systems occur in close proximity to one another (Maragos 1992). Most coral reefs are found in tropical areas and thrive in shallow, well-lit, clear tropical waters. However, deep water coral also exists although scientists know less about their distribution, biology, behavior, and function as essential habitats for fishes and invertebrates.

### Threats

Coral reef ecosystems are especially vulnerable to even slight variations in water temperature and quality. Tropical corals cannot survive sustained high water temperatures, nor may they build reefs in water colder than 16°C. They also cannot thrive in environments with insufficient light due to water depth or murky water caused by suspended sediment or contaminants (American University Washington College of Law 2013).

Threats to coral reefs include land-based sources of pollution such as toxics, sediments and nutrients stemming from unchecked land development and runoff waste from residential, industrial, agricultural, and mining activities. Untreated sewage and fertilizer cause eutrophication, which results in overgrowth of algae that cover the coral and block the sunlight. Deforestation increases movement of topsoil into coastal waters, also blocking light from reaching the coral (NOAA Coral Reef Conservation Program 2013).

Gear or humans that contact coral can break or disrupt corals, reducing structural complexity and reducing species diversity of the corals and other animals that utilize this habitat (NMFS OPR 2011). Anchors from vessels also threaten reefs, causing direct damage and loss by pulverizing coral and ripping them from their bases. Some fishing methods destroy coral, including blast fishing where dynamite is used to stun or kill fish. The blasting damages coral directly. Overharvest of some fish species, regardless of fishing method, damages coral reef ecosystems indirectly by reducing the numbers of herbivorous fish that eat fast-growing seaweeds that compete with coral for nutrients. Tourism is also a threat to coral reef ecosystems where coral

are “mined” to be sold as souvenirs. Marine debris may smother reefs causing major disturbances to entire ecosystems.

Climate change is of particular concern to the health of coral reef ecosystems. Even moderate increases in water temperature cause coral to overheat and release the symbiotic algae that provide their color and produce oxygen and other nutrients that the coral needs to live. This “bleaching” phenomenon exposes the white of the coral skeletons. Bleached reefs may return to their previous state if the water returns to optimal temperatures within a few weeks to months. Sustained elevated water temperatures lead to death of the coral, which are dependent on the symbiotic algae. Bleaching is a response to stress, usually elevated water temperatures, but may also result from other stressors including changes in the amount of sunlight, sedimentation, fresh water dilution, and disease. Additionally, ocean acidification, (carbon dioxide absorbed into the ocean from the atmosphere) has already begun to reduce calcification rates in reef-building and reef-associated organisms by altering sea water chemistry through decreases in pH (NOAA Coral Reef Conservation Program 2013).

The severity of these threats to coral reef ecosystems is compounded by the typically slow growth rate of coral reefs. A typical reef grows less than 12 m every 1,000 years, assuming optimal conditions (American University Washington College of Law 2013). Permanent losses may result from actions that remove large portions of a reef at once, by exposure to repeated impacts, or from general environmental degradation.

A number of rare or endangered species inhabit or are otherwise dependent on coral reef environments for some or all of their life history stages such as six species of sea turtles, Hawaiian monk seals, and many rare coral reef fish like the Nassau grouper, orange clownfish and the scalloped hammerhead shark. For a full, up-to-date listing, see: <http://www.nmfs.noaa.gov/pr/species/index.htm>. Coral reef ecosystems are particularly vulnerable to overexploitation of the species that inhabit or depend on them due to the complexity and interdependencies of the organisms in the reef (American University Washington College of Law 2013).

#### *4.2.1.2 Deep Sea Corals*

Deep sea corals are solitary and colonial assemblage-forming corals that inhabit deep, cold waters, at lightless depths just beneath the surface to the abyss (>2,000 m), and temperatures as cold as 4° C. They are distributed across a wide range of depths and latitudes, in both temperate and tropical oceans. Scientists have discovered deep-sea coral habitats on continental shelves, slopes, canyons, and seamounts throughout U.S. marine waters, yet their full geographic extent is still unknown (NOAA Coral Reef Conservation Program 2013).

Deep-water corals are similar in some ways to the more familiar corals of shallow, tropical seas. Like their tropical equivalents, the hard corals develop sizeable reef structures that host varied invertebrate and fish fauna. However, at these depths, corals lack the symbiotic algae (zooxanthellae) typical of most shallow water tropical corals. Deep-sea corals take in plankton and organic matter for much of their energy needs rather than using photosynthesis like their shallow water relatives (NOAA Coral Reef Conservation Program 2013). They provide vital habitat for numerous fish and invertebrate species, including commercially important grouper,

snapper, sea bass, rockfish, shrimp, and crab. They are also home to organisms that produce chemicals with great potential for biomedical uses (NMFS 2013).

Deep-water corals range in size from small solitary colonies to large, branching tree-like structures. However, little is known of their basic biology, including how they feed or their methods and timing of reproduction. Three main groups of corals make up deep-water coral communities: hard (stony) corals of the Order Scleractinia, which form hard, ahermatypic reefs; black and horny corals of the Order Antipatharia; and, soft corals of the order Alcyonacea, which includes the gorgonians (sea fans) (NOAA 2013).

Deep-sea corals are extremely slow-growing and fragile, but can survive for thousands of years. Some black corals have recently been estimated to be more than 4,200 years old—making them the oldest known living marine organisms. With more than 3,000 species and every variation of shape and color imaginable, the world of deep-sea corals has already proven to be incredibly diverse (NMFS 2013).

### Threats

Deep sea corals are slow-growing and delicate, which makes them susceptible to impacts from humans. Once damaged, the corals and the communities they support may take centuries to recover, if they recover at all. Activities that can directly impact deep-sea coral communities include fishing using bottom-tending fishing gear, deep-sea coral harvesting, fossil fuel and mineral exploration and extraction, and submarine cable/pipeline deployment. Invasive species, climate change and ocean acidification represent additional serious pressures.

Bottom trawling is the most widespread human threat to deep sea coral communities. Other fishing gears, including bottom longlines, gillnets, and longline pots, also damage these deep sea communities (NOAA Coral Reef Conservation Program 2013). They can also be damaged by activities associated with energy exploration and development, cable deployment, and other activities that disturb the seafloor. Additionally, ocean acidification—a result of the ocean absorbing increased carbon dioxide—can affect corals' ability to grow and maintain their structures (NMFS 2013). The saturation level of calcium carbonate decreases with depth, and therefore the effect of ocean acidification on deep-sea corals could be substantial. Other activities that may negatively impact deep-sea corals and associated communities include coral harvesting and marine debris.

### **4.2.2 MANGROVES**

The term mangrove is used to refer to a group of trees and shrubs that inhabit the coastal intertidal zone in the tropics and subtropics along protected coastlines, including cays, away from the direct action of waves. Mangrove trees have developed special adaptations to survive the variable flooding and salinity conditions imposed by the coastal environment. They act as a buffer between the land and sea, trapping much of the soil and nutrients that runoff from land. Mangrove communities, like salt marshes, facilitate much nutrient cycling, trapping nutrient-rich sediments and maintaining high rates of organic matter fixation (Cintron-Molero 1992). Mangroves also provide important shelter for larval fish and crustaceans, and contribute detritus and dissolved organic carbon to estuarine food webs (Heald 1969; Odum 1971; Twilley 1982).

Mangrove ecosystems are often coupled to other systems such as seagrass beds and coral reefs, supporting migratory species of fish, shrimp, and birds. Mangrove communities may also support large resident and migratory populations of mammals, reptiles, and other animals (Cintron-Molero 1992). Mangroves are highly productive structures. A significant amount of the net production is incorporated into leaves and fruits, allowing more energy to be incorporated into the food web. This results in an abundance of shellfish and finfish in mangrove areas, as well as a diversity and abundance of other associated fauna.

Mangroves maintain nearshore fisheries and are an important area for fish and shellfish production in the sea. Mangrove communities also protect the coast from storms; especially low-lying areas benefit. By trapping of nutrients and sediments from drainage, mangroves protect coral reefs, seagrass meadows and coastal waters in general. Mangrove forests trap sediment and prevent silt from damaging associated coral reefs and seagrass beds. Threats to mangroves may indirectly threaten coral reefs and seagrass beds.

Threats:

Mangroves are sensitive to environmental changes, and changes in tidal flushing patterns damage mangroves. Threats to mangroves include clear-cutting or deforestation related to commercial harvest, development and growth of shrimp farms and other aquaculture, property development, land reclamation, oil exploration and extraction, and other human activities. Development hazards that change the topography and water flow in mangrove areas (for example damming, dredging, bulk-heading and impoundment) cause damage. Mangrove habitat is also degraded by waste runoff from agriculture, industry, mining, etc. that affects water quality. Mangroves are also sensitive to salinity changes. Activities that substantially alter the salinity of water in mangrove forests, such as damming, irrigation, groundwater pumping, or freshwater diversions, further threaten the health of mangrove forests. Increased sedimentation and oil pollution may smother the root system and lead to die offs. Oil spills may be extremely harmful to mangrove communities. Excessive harvesting may weaken the natural production and regeneration capacity of the mangrove ecosystem.

Activities that damage or reduce coral reef ecosystems indirectly threaten associated mangroves. Loss of coral reefs acting as barriers subject mangroves to stronger-than-normal waves and currents that undermine the fine sediment in which the mangroves grow. This prevents new seedlings from taking root and washes away essential nutrients. Rising sea levels caused by climate change may result in loss of mangrove forests, which are dependent on long-term stability in water levels. Natural characteristics of water movement need to be maintained for the health of mangroves. Buffer zones are a useful tool in mangrove management (Siirilä 2010).

#### **4.2.3 SEAGRASS BEDS**

Seagrasses are submerged flowering plants growing in bays, lagoons, and shallow coastal waters. Similar to terrestrial vegetation, seagrasses have leaves, stems, flowers, seeds and roots, using the process of photosynthesis to produce food and oxygen. However, they must reproduce underwater. Because they require light for photosynthesis, good water quality is very important for seagrass survival (Phillips and Meñez 1988). Seagrasses and other rooted aquatic plants grow on soft sediments in sheltered shallow waters of estuaries, bays, lagoons, and lakes.

Seagrasses are able to tolerate a wide range of climates, located as far north as Alaska and as far south as the equator in the northern hemisphere. They can withstand temperatures as low as negative 6 degrees Celsius to readings as high as 40.5 degrees Celsius. Seagrass beds are typically found in the shallow subtidal zone of the coastal environment, although occasionally they may be exposed to the air during very low tides. Seagrasses occur across a wide depth range, from rocky intertidal habitats to depths of 40 meters, and for some species, broad latitudinal ranges. They can grow in salinities that range from freshwater to 42 parts per thousand (ppt). The most vibrant stands are normally found occurring in environments between 10 to 30 ppt (Phillips and Meñez 1988). Distribution patterns are influenced by light, salinity, temperature, substrate type, water clarity, protection from wave energy, and currents. For example, *Zostera marina* (eelgrass) extends from near the Arctic circle on both coasts of the U.S. to North Carolina on the East Coast and to the Gulf of California on the West Coast. Seagrasses prefer protected areas with clear waters that allow light penetration. The highest diversity of seagrasses is found in the Pacific, with over 30 recognized species (NOAA 2002).

Seagrass beds provide food, shelter, and nurseries for fishes and invertebrates, and also play an important role in trapping sediments and excess nutrients from reef communities and land. Seagrasses supply many habitat functions, including: (1) support of large numbers of epiphytic organisms; (2) damping of waves and slowing of currents that enhances sediment stability and increases the accumulation of organic and inorganic material; (3) binding by roots of sediments, thus reducing erosion and preserving sediment microflora; and, (4) roots and leaves provide horizontal and vertical complexity to habitat, which, together with abundant and varied food sources, support densities of fauna generally exceeding those in unvegetated habitats (Wood *et. al.* 1969; Thayer *et. al.* 1984). Seagrass communities also harbor a wide range of benthic, demersal, and pelagic organisms. This includes permanent residents, which spawn and spend most of their lives in seagrass beds, as well as transient species. Transient species spend their lives in seagrass beds during their juvenile through adult life cycle, but spawn outside the seagrass beds, or they move between habitats on a daily basis, using seagrass beds for food or shelter. Other transients seek food and shelter in seagrass beds during their juvenile stage, and move to other habitats as sub-adults or adults (NOAA 2005).

#### Threats:

Factors that affect the establishment and growth of seagrass include light availability, water temperature, salinity, sediment composition, nutrient levels, wave energy, and tidal range. Seagrass most often occurs in areas of low to moderate current velocities where the water is clear; thereby allowing sunlight to penetrate to the leaf blades. Seagrass also stabilize sediments and help maintain water clarity (Florida Fish and Wildlife Conservation Commission 2012). Threats relate to overpopulation, commercial development, and recreation in the coastal zone. The most serious threat to seagrass habitats is reduced water quality from human nutrient loading and sedimentation. Non-point source pollution is the most significant source. Other pressures are from the addition of organic and inorganic chemicals, boat groundings, propeller damage from boats, boat wakes, construction, dredging and filling activities, hydrological modifications to estuarine systems, fish harvesting techniques that disturb the bottom, derelict fishing gear that may smother or abrade habitat, and climate change. Natural sources of seagrass loss from pathogens and storms are much less than anthropogenic sources.

#### 4.2.4 KELP

Kelp “forests” are subtidal marine communities dominated by large brown algae (kelps) that form floating canopies on the surface of the sea. Kelp forest communities are found from sea level to as deep as 60 meters, depending on light penetration (Foster and Schiel 1985). The major species that form floating surface canopies along the west coast are *Macrocystis pyrifera* and *Nereocystis luetkeana*, off California, and *Alaria fistulosa* in Alaska (Druel 1970). A kelp canopy may reduce surface light by over 90%, thus affecting species composition and growth rates in the understory (Reed and Foster 1984). Severe water motion can modify kelp communities by removing the kelp plants (Cowen *et al.* 1982, Dayton and Tegner 1984a), but in milder conditions the floating canopy may act as an offshore damper that reduces wave forces (Schiel and Foster 1992). Kelps with floating canopies do not occur along the east coast, although plants may obtain heights of over 6 m (R. Vadas, pers. comm. to Schiel and Foster 1992).

Kelp forests are highly productive and also create a three-dimensional aspect to the nearshore environment, providing habitat and food for hundreds of other species of plants (algae) and animals. Kelp forests on hard reef areas may harbor lush understory layers of red and brown algae, as well as mobile and encrusting invertebrates. Throughout the kelp forest there are hundreds of species of fish, and there are vertical layers of vegetation that vary with depth (Schiel and Foster 1992). Food is exported from kelp forests to associated communities such as sandy beaches and the deep sea.

#### Threats

Numerous natural impacts as well as human activities, affect kelp forest environments. Various issues influence kelp forest stability: kelp harvesting; grazing by fishes, sea urchins, and crustaceans; plant competition; storms; El Niño events; sedimentation; vessel activity, and pollution. By most accounts, because of its remarkable growth rates, kelp recovers quickly from physical disturbances such as storms that might uproot the fragile plants. However, the health is proportional to the number of adverse conditions to which it is exposed. Commercial kelp harvesting is the greatest potential threat to long-term kelp stability. Non-point and point source pollution including sewage, industrial disposal, and coastal runoff contribute to kelp forest degradation. In addition, kelp may experience reduced growth rates and reproductive success in more toxic waters and sediments (NOAA Office of National Marine Sanctuaries 2012).

#### 4.2.5 WATER RESOURCES

Water resources are the primary medium for transporting marine debris, and are generally responsible for transport and fate of marine debris through wind-driven mixing, surface and geostrophic currents, and watershed transport from freshwater systems to the ocean. For our purposes, the MDP focuses on debris in marine systems while recognizing that much transport occurs inland and thus is the target of prevention campaigns.

Marine waters affected by marine debris include nearshore waters that buffer coastlines in each region of the United States as well as pelagic waters in the open ocean. Surface waters and the entire water column may be affected by marine debris, as certain debris – especially certain plastic polymers – are neutrally or positively buoyant. Environmental forcing acts on debris to transport it vertically within the water column as well as horizontally from coastal to open ocean environments.

### Threats:

General threats to water resources include human disturbance such as development, toxic substances, pollution including marine debris and nutrients, climate change, pathogens, and invasive species.

Specific types of water resources in which MDP activities occur are detailed below.

#### *4.2.5.1 Estuaries*

An estuary is a partially enclosed body of water formed where freshwater from rivers and streams flows into the ocean, mixing with the salty seawater. Additionally, freshwater estuaries occur where freshwater from rivers mixes with large freshwater bodies. Estuaries are also found throughout every region of the United States and vary in character in and along different coastlines. Estuaries in the Pacific Northwest include examples of all of the various estuarine classes: drowned river valleys, fjords, bar-built, and tectonic (Pritchard 1967; Russell 1967). These estuarine types differ dramatically from one another in habitat structure. Estuaries harbor unique plant and animal communities because their waters are brackish—a mixture of fresh water draining from the land and salty seawater. Estuaries are some of the most productive ecosystems in the world. Many animal species rely on estuaries for food and as places to nest and breed. Human communities also rely on estuaries for food, recreation, and jobs. Human activities have led to a decline in the health of estuaries, making them one of the most threatened ecosystems on Earth.

#### *4.2.5.2 Pelagic and Benthic Environment*

The open ocean, or pelagic zone, is the area of the water outside of coastal areas. This zone includes the entire water column and is the world's largest habitat. Depending on depth, the pelagic zone varies widely in the amount of sunlight, temperature, pressure, and dissolved oxygen. The pelagic zone is also influenced by oceanic currents, winds, and wave action. The benthic environment is considered separate from the pelagic environment. This area is the region near or at the bottom of a pond, lake, or ocean where substrates are usually rocky or sandy.

Pelagic life is found throughout the water column, although the numbers of individuals and species decrease with increasing depth. The regional and vertical distributions of pelagic life are governed by the abundance of nutrients and dissolved oxygen; the presence or absence of sunlight, water temperature, salinity, and pressure; and the presence of continental or submarine topographic barriers. Species tend to be highly migratory and are adapted to relative changes in pressure. Species range from small zooplankton which forms the base of the pelagic food web, to large marine mammals. The abundance of pelagic life, including fish species, has led to harvesting of stocks for commercial value.

Unlike pelagic species, benthic organisms are not adapted to wide changes in pressure and are relatively short ranging. Benthic biomass is largely controlled by water column productivity and is therefore linked to the pelagic zone. Like the pelagic zone, benthic organism diversity is dependent on overlaying water factors including depth, nutrient availability, dissolved oxygen, temperature, salinity, and pressure.

#### 4.2.5.3 *Ponds and Lakes*

Ponds and lakes are freshwater habitats located in topographic depressions where water is naturally or artificially impounded and stored for extended periods of time. Ponds and lakes are located throughout the United States, occurring in every state and region. Of notable interest is the Great Lakes ecosystem which is the largest freshwater system in the world and the only lake system managed by NOAA. Ponds and lakes are critical ecological resources with respect to the proposed action; similar to the freshwater wetlands with which they are often intricately associated, ponds and lakes provide habitat for species such as waterfowl that also use coastal resources. In addition, many lakes and ponds are hydrologically connected with coastal or marine resources through processes such as surface water flow and groundwater recharge. They provide nutrients, sediment and pollution filtration, and water storage, among many other functions.

Ponds and lakes are critical ecological resources with respect to the proposed action and projects could occur within the water or on bottom sediments. Similar to the freshwater wetlands with which they are often intricately associated, ponds and lakes provide habitat for species such as waterfowl that also use coastal resources. Lake and pond ecosystems support complex and important food web interactions and provide habitat for wildlife and supply people with drinking water, food, and medicine (EPA Office of Water 2009).

#### 4.2.5.4 *Stream/River Channels and Riparian Zone*

Tidal and non-tidal stream and river systems and riparian zones are located in every region covered by the MDP. Many rivers and streams along the coast are tidal, with the effects of ocean tides extending upstream. The channel of a stream or river is the portion of the cross section that is usually submerged and totally aquatic (EPA Office of Water 2004). Channel substrates may be composed of various materials, including cobbles, boulders, sand, clay, and silt. Tidal portions of a river channel often contain biological elements such as oyster reefs or submerged aquatic vegetation beds that help shape or define the channel. The riparian zone is the land immediately adjacent to a stream or river. Riparian environments are maintained by high water tables and experience seasonal or periodic flooding. Riparian zones contain or adjoin riverine wetlands and share many functions including water storage, sediment retention, nutrient and contaminant removal as well as habitat functions. They often share some of the characteristics of wetlands but cannot be defined as wetlands because they are saturated at much lower frequencies.

The integrity of stream and river channels is important to the viability of not only the streams and rivers themselves, but also to the estuaries, oceans, marshes, and wetlands connected to them. Processes such as channel erosion, pollution, diking, damming, channel alteration, scouring, and dumping may drastically affect the rivers and streams and their receiving waters by causing clogging, sedimentation, and alteration of temperature and water quality, among other factors.

Stream and river channels are also critical to the viability of living coastal and marine resources. In addition to providing fresh water, river and streams transport nutrients and provide habitat for thousands of aquatic and terrestrial species, including birds, shellfish, finfish, amphibians, reptiles, mammals, plants, and invertebrates. Vegetation that grows along the banks of rivers and



streams stabilizes the banks, shades the water, and provides cover and food for animals and nutrients for the ecosystem.

The riparian zone is a characteristic association of substrate, flora, and fauna within the 100-year floodplain of a stream or, if a floodplain is absent, a zone hydrologically influenced by a stream or river (Hunt 1988). Riparian ecosystems have distinctive vegetation and soils, and are characterized by the combination of species diversity, density, and productivity. Continuous interactions occur between riparian, aquatic, and upland ecosystems through exchanges of energy, nutrients, and species (NRC 1995).

#### **4.2.6 WETLANDS**

Wetlands are areas that are covered by water or that have waterlogged soils for significant periods during the growing season (the interim between the last killing frost in the spring and the first killing frost in the fall). Wetland resources are found throughout the area potentially affected by MDP-funded projects, including all regions and many areas along coastlines, rivers, streams, estuaries, and other water bodies or receiving areas. Wetlands generally include swamps, marshes, bogs, and similar areas (Titles 40 C.F.R. § 230.3 and 33 C.F.R. § 328.3).

Coastal wetlands are among the most productive ecosystems in the world, supporting thousands of species of plants, animals, shellfish, finfish, birds, invertebrates, and microbes (NMFS 2011). Approximately 85 percent of commercially harvested fish depend on estuaries and near coastal waters at some stage in their life cycles (National Research Council 1997). Adult stocks of commercially harvested shrimp, blue crabs, oysters, and other species throughout the United States are dependent on wetland quality and quantity (Turner and Boesch 1988). Marshes are of paramount ecological importance because vital nutrient exchange takes place in marshes, as detritus and algae in the marshes are consumed and nutrients excreted by birds, fish, and shellfish are recycled by the flora (Zedler 1992). Wetlands also provide important recreational and economic benefits for humans, providing opportunities for boating, fishing, waterfowl hunting, nature observation, and photography.

##### *Threats*

Since the 1700s, millions of acres of wetland resources in the United States have been degraded by humans through processes such as ditching, draining, filling, and pollution. Half of the world's wetlands have disappeared since 1900. Threats include development, drainage, extraction of minerals, overfishing, tourism, siltation, pesticide discharges from agriculture, toxic pollutants, and construction of dams and dikes, invasive species, and conversion of land (WWF 2012).

The primary types of wetlands that occur in the project area covered by this PEA include tidal wetlands and freshwater wetlands. These are described in more detail below.

##### *4.2.6.1 Tidal Wetlands (Marshes)*

Tidal wetlands include salt, brackish, and fresh tidal marshes that are transitional habitats between terrestrial and aquatic systems where the water table is usually at or near the surface, or the land is covered by shallow water tidally or seasonally (Thayer et al., 2003). Marshes occur in every region where MDP undertakes or funds activities. Marsh habitats vary with coastal

geographic location. The steep, high-energy shores of the Pacific Coast generally support smaller marsh areas (Zedler 1992) than other coasts. Salt marshes on the Gulf Coast sometimes grow right next to the seashore but on the Atlantic and Pacific Coasts, they usually grow on sediment deposits behind protective barrier islands. All coastal marsh habitats are influenced by daily tides. Most marine fish depend on the resources of tidal wetlands during some part of the life cycle. Salt marshes are found on all coasts of the United States around low-energy resources such as estuaries, lagoons, bays, and river mouths.

#### 4.2.6.2 Freshwater Wetlands

Freshwater wetlands include a wide variety of inland areas and habitat types, including ponds, bogs, fens, swamps, and freshwater marshes. Freshwater wetlands are found in every state and region. Some freshwater wetlands provide nursing and spawning habitat for migratory fish species and are hydrologically connected with coastal areas.

#### 4.2.7 SEDIMENT AND SOIL

The MDP works in regions across the country that vary significantly with respect to the structure of the physical environment. Marine ecosystems across the United States include widely varying geologic structures of underwater canyons, rocky shorelines, sandy and pebble beaches, estuarine systems with composite sandy/loamy/silty soils, and volcanic island systems and archipelagos. Geology and soil resources potentially impacted by the MDP projects vary greatly between and within regions, and include sandy beach and barrier island, mud flats/bottom, rocky coastline, and many other types of substrate and source material. Geologic features and soils generally depend on location, local physical geography, climate, geologic activity level, and other properties. Since MDP projects may occur nationwide, this section describes general types of geology, characteristics, and associated locations. A few specific types of environment that are more commonly impacted by MDP projects are described in more detail below including in Table 3 (NOAA 2002).

**Table 3. Description of Types of Sediment and Soils Common in MDP Projects**

Types	Description	Locations
1. Sandy Beaches and Barrier Islands	The shoreline interface between land and ocean, unstable areas of constant action of waves, currents, and winds.	Coastlines throughout the U.S. mainly in the Southeast, Gulf Coast, Southern California, Great Lakes and Hawaii.
2. Mud Flats	Low-energy intertidal areas composed mostly of unconsolidated silts and clays.	Northwest, Alaska, Southwest, Pacific Islands, Great Lakes, Southeast and Caribbean
3. Rocky Coasts	High-energy areas made of rock.	Pacific Coast (Northern California, Oregon, Washington, Alaska), Great Lakes, and New England.
4. Sand Flats	Low-energy intertidal areas of unconsolidated sands.	Northwest, Alaska, Southwest, Pacific Islands, Southeast and Caribbean.
5. Rocky Flats	Low- and medium energy intertidal areas of unconsolidated gravel, cobble or boulders.	Common in all regions
6. Peat Flats	Submerged or former tidal marsh plains made mostly of peat.	New England and Great Lakes.

MDP projects may also potentially affect the following sediment and rock types:

- **Clay-silts:** often found in estuaries, marshes, slow-moving rivers and streams, pools and deltas;
- **Limestone:** calcium carbonate substrate associated with coral reefs occurs on the coasts of Florida and the Gulf of Mexico;
- **Volcanic materials:** habitat of relatively recent volcanic material occurring in Hawaii and Alaska.

### Threats

Potential threats to sediment and substrate include severe storms and human actions such as recreation, using heavy equipment (e.g., cleaning the wrack line disturbs dune plants and other resident species), beach engineering and nourishment projects, pollution including marine debris, and oil spills.

## **4.3 Biological Environment**

Marine debris, in whatever form, has the capacity to adversely impact numerous species and their associated habitats, which together are encompassed in the term “living marine resources.” The biological environment in the ocean spans the visible spectrum, encompassing the smallest bacteria and plankton and the largest marine mammals and sea turtles. Some of these organisms provide living habitat and were described in section 4.2. Other organisms may be considered living marine resources, and others are described as endangered, threatened, or otherwise protected species and have specific legislation addressing their conservation. This section describes these general categories of organisms that together comprise the biological environment. The variety of marine debris in the ocean leads to the conclusion that all types of organisms in the biological environment may feel the impact of marine debris and that MDP projects generally benefit these resources.

### **4.3.1 LIVING HABITAT**

The physical environment overlaps with the biological environment when considering living marine habitats. These include the following: coral reefs, mangroves, seagrass beds, kelp, estuaries, and wetlands. Please see associated sections (4.2.1 - 4.2.6.2) above for more information.

There are areas of special importance, especially those under NOAA jurisdiction, in the PEA action area, e.g., National Marine Sanctuaries, ESA designated critical habitat, Magnuson-Stevens Act Essential Fish Habitat (EFH), wild and scenic rivers, sites listed on National Register of Historic Places, etc. and potentially other federal sites, which may require permits or consultations, such as National Wildlife Refuges, National and State Parks, etc. Section 6 outlines compliance with applicable laws for land use and access.

### **4.3.2 ENDANGERED, THREATENED, AND PROTECTED SPECIES**

Under the ESA, species of wildlife and plants may be classified as “endangered” when they are determined to be in danger of extinction throughout all or a significant portion of their range. Species may be classified as “threatened” under the ESA when they are determined likely to become an endangered species within the foreseeable future throughout all or a significant portion of their range. When it has been concluded that species of plants and animals that have

been studied should be proposed for addition to the federal endangered and threatened species list, they are classified as “candidate species” ) (16 U.S.C. §§ 1531 et seq.).

When a species is classified as “threatened” or “endangered”, special protections under the ESA are triggered that prohibit activities that may further endanger or hinder the recovery of the species, including hunting, collection, possession, or sale. The ESA also prohibits “take” of listed species where “take” includes to harass, harm, pursue, hunt, shoot, wound, kill, trap, capture, or collect (16 U.S.C. §§ 1531 et seq.). The regulations implementing the ESA define “harm” to include significant habitat modification where it actually kills or injures a listed species through impairment of essential behavior (e.g., nesting or reproduction) (50 C.F.R. 222.102).

The distribution of a wide variety of species listed as threatened or endangered overlap with the action area for this PEA, including marine mammals, sea turtles, invertebrates, teleost and elasmobranch fish, sea and shore birds, and plants. The FWS maintains a list of species designated as threatened or endangered under the ESA and has management authority for most, except some marine and anadromous species that are managed by NMFS. An electronic list of species that is updated daily can be found at 50 eC.F.R. 17.11 (wildlife) and 17.12 (plants). Also see the most recent NMFS ESA listed species in 50 eC.F.R. 223 and 224. See link: <http://www.ecfr.gov/> .

The FWS website has “Species Profiles” that include information on the status of the species such as where it is listed, special rules, critical habitat, Federal Register announcements and notices, Habitat Conservation Plans, National Wildlife Refuges, and other details that apply to the specific species. The website also links to Recovery Plans, which detail threats to the species and outline actions necessary to recovery of the species. The home page for the FWS Endangered Species Program is <http://www.fws.gov/endangered/index.html>. For species managed by NMFS, links to Recovery Plans, species profiles, etc. may be found through links from the main protected resources species page: <http://www.nmfs.noaa.gov/pr/species/>.

There are approximately 125 marine mammal species worldwide. The Marine Mammal Protection Act (MMPA) prohibits “take” of marine mammals, regardless of their population status. The MMPA defines “take” similarly to the ESA, as to harass, hunt, capture, kill or collect, or attempt to harass, hunt, capture, kill or collect. NMFS manages all species of cetacean (whales, dolphins, porpoises) and all seals and sea lions (pinnipeds) (16 U.S.C. §§ 1361 et seq.). FWS is responsible for management of walrus, sea otters, polar bears, manatees and dugongs. A list of marine mammals and links to species profiles may be found on the NMFS website: <http://www.nmfs.noaa.gov/pr/species/mammals/>. This site also links to Stock Assessment Plans that outline the population abundance and distribution trends, and known anthropogenic threats, for species in U.S. waters.

This PEA does not contain an exhaustive list of threatened and endangered species or marine mammals within the action area nor provide details on status, trends in abundance and distribution, threats, etc. It is not practical to estimate whether, or which, species may be affected by MDP projects at this stage. MDP activities are not generally expected to result in takes of marine mammals or ESA-listed species, or otherwise adversely affect them. Except in emergency situations, many MDP projects will be conducted in a time and manner that avoids

interactions with protected species. When projects unavoidably overlap in time or space with protected species and sensitive habitats (e.g., because of where the debris is located), marine debris actions are not directed at plants and wildlife, and personnel will adhere to “best practices” mitigation measures that minimize or avoid potential for interactions.

Whether a marine mammal or ESA-listed species would be affected by the proposed action is dependent on many variables, starting with whether a site-specific action would overlap in time or space with the species. Prior to undertaking or funding a site-specific action, MDP staff would review the lists of threatened and endangered species to determine whether any co-occur with the action, and initiate consultations with NMFS or FWS if the action "may affect"<sup>2</sup> such species or their designated critical habitat (i.e., an individual or a habitat "constituent element"<sup>3</sup> may be exposed and may respond upon exposure, including when the effect is beneficial). Section 5.2.3 discusses the potential effects of this action on the biological environment including endangered species and marine mammals. Section 6.3 provides more information on compliance with the consultation requirements of the ESA.

### Threats

Marine debris poses a threat to ESA-listed species and marine mammals world-wide. Death, sickness or injury from entanglement or ingestion of debris is a real danger to these species. Habitat loss or degradation from human activity or climate change is a common threat across many species. Where marine mammals and ESA-listed animals overlap with areas of high human traffic (e.g., highways, shipping lanes, ports and harbors), land development, or commercial activities such as fishing, logging, and tourism, wildlife are also adversely impacted by disturbance. Chronic disturbance threatens the survival of animals when it leads to stress-related illness or disrupts important life-history or biological functions such as feeding, breeding, and rearing young.

ESA-listed plants are often threatened by habitat loss or degradation from the same types of human activities that threaten wildlife. Climate change threatens the survival and recovery of listed plants in numerous ways, including through sea level rise, and by altering the temperature and moisture conditions during critical growth periods.

### **4.3.3 LIVING MARINE RESOURCES AND ESSENTIAL FISH HABITAT**

A primary mission of NOAA is the stewardship of living marine resources through science-based conservation and management, and the promotion of healthy ecosystems. Living marine resources refer to the organisms that utilize, or otherwise rely upon, marine, estuarine, and riverine (tidal and non-tidal) resources during all or part of their life cycles. This includes

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<sup>2</sup> "May affect" is the appropriate conclusion when the species or critical habitat may, based on the available information, be exposed and may respond upon exposure. This analysis occurs at the individual level. The appropriate conclusion for an action that may not affect the species as a whole but will impact individuals in some manner is "may affect." (FWS 2012).

<sup>3</sup> "Constituent elements" are the physical and biological features of designated or proposed critical habitat essential to the conservation of the species, including, but not limited to: (1) space for individual and population growth, and for normal behavior; (2) food, water, air, light, minerals, or other nutritional or physiological requirements; (3) cover or shelter; (4) sites for breeding, reproduction, rearing of offspring, germination, or seed dispersal; (5) habitats that are protected from disturbance or are representative of the historic geographic and ecological distributions of a species (FWS 2012).

numerous species of aquatic plants, marine and anadromous fish, invertebrates, seabirds, shorebirds, sea turtles, and marine mammals. The life-history and survival of some terrestrial plants and animals are also linked to aquatic habitat and resources, such as river otters, migratory waterfowl, birds of prey, and beach grasses.

The passage of the Magnuson-Stevens Fishery Conservation and Management Act (MSFCMA) in 1976 and the SFA of 1996 (SFA; reauthorization of the MSFCMA) authorized NMFS to manage fisheries within the 200-mile wide EEZ along the coasts of the U.S. to address human impacts on the marine environment and to prioritize identification and management of EFH (NOAA 2005).

EFH is defined in the Magnuson-Stevens Fishery Conservation and Management Act (MSFCMA) as "those waters and substrate necessary to fish for spawning, breeding, feeding, or growth to maturity" (NMFS 2007a). Under the MSFCMA, EFH must be identified and conserved. Section 303(a)(7) of the Act requires the eight Regional Fishery Management Councils to identify and describe EFH for each life stage of the managed species within their jurisdiction. Under Section 305(b)(2) of the MSFCMA, federal agencies are required to consult with the Secretary of Commerce on any action that may adversely affect EFH. If a project falls beyond the scope of this PEA and is thought to cause adverse impacts to EFH, consultation would occur with Office of Habitat Conservation, Habitat Protection division and the appropriate NOAA NMFS Regional Officer (e.g., Pacific Islands Regional Office, Northeast Regional Office, Northwest Regional Office, Southeast Regional Office, etc.) (NMFS 2005).

### Threats

Threats to marine mammals and plants and animals listed under the ESA are discussed in Section 4.3.2. In general, other living marine resources are threatened by the same or similar things, including habitat degradation or loss, rising sea level, and human disturbance.

Threats to seabirds include disturbance, mortality, and contamination from oil and gas exploration, coastal development and transportation, dock construction, marine pollution, dredging, underwater explosions, offshore wind power developments, offshore artificial lighting, entanglement in debris, ingestion of marine debris, fishery interactions, hunting, and power plant entrainment (NMFS OPR 2011).

The waters and substrate that comprise EFH as defined by the MSFCMA are diverse, widely distributed and related to other aquatic and terrestrial environments, making them susceptible to many human activities. Threats may be from actions that physically alter structural components or substrate, e.g., dredging, filling, excavations, water diversions, impoundments and other hydrologic modifications; or actions that result in changes in habitat quality, e.g., point source discharges, activities that contribute to non-point-source pollution and increased sedimentation, introduction of potentially hazardous materials, or activities that diminish or disrupt the functions of EFH. Adverse effects from fishing may include physical, chemical, or biological alterations of the substrate, and loss or injury to benthic organisms, prey species and their habitat, and other components of the ecosystem. If these actions are persistent or intense enough they may result in major changes in habitat quantity, as well as quality, conversion of habitats, or in complete abandonment of habitats by some species (NMFS 1999)

## 4.4 Social and Economic Environment

Although economic and social factors are listed in the definition of effects in the NEPA regulations, the “human environment” shall be interpreted comprehensively to include the natural and physical environment and the relationship of people with that environment. This means that economic or social effects are not intended by themselves to require preparation of an EIS or EA. However, an EA must include a discussion of a proposed action’s economic and social effects when these effects are related to effects on the natural or physical environment. The social and economic environment includes aesthetic, historic, cultural, economic, social, and health aspects.

The majority of the projects funded by MDP are located in or directly adjacent to coasts, estuaries, marshes, rivers, streams, and adjacent riparian habitat, banks, and bluffs. Project sites may occur in urban, suburban, or rural areas and a variety of land uses such as residential, recreational, and industrial. In 2010, 163.8 million people or fifty-two percent of the nation’s total population lived in coastal watershed counties (which account for less than 20% of the total land area, excluding Alaska), and this population is expected to increase by another 9 percent or 14.9 million individuals by the year 2020 (NOAA 2011a).

People enjoy coastal areas for their beauty and depend on them for recreational and commercial uses. As the nation’s coastal population grows, so does the demand for localized infrastructure, such as transfer stations and parking lots, which may directly or indirectly contribute to the introduction of debris into the marine environment. The nation’s beaches provide a wealth of recreational activities for residents and visitors, and clean sand and water are critical for the overall tourism industry. Commercial and recreational fishing activities play an important role in the coastal human environment. In 2011, 69 million marine recreational fishing trips were taken in the United States and \$19.5 billion was spent by saltwater anglers in 2009 (NOAA 2011b) while the commercial seafood industry generated over USD \$45 billion in income in 2008 (NMFS 2010a).

Community educational institutions and other groups are increasing their public outreach and involvement through activities like those conducted by the MDP, to help to reverse the trend in marine debris introduction. Past MDP projects generally involved local community individuals and groups, schools, and industry, who worked together to prevent and mitigate the impacts of marine debris.

The aesthetic and economic value of marine, estuarine, and coastal resources is degraded by marine debris. Marine debris also impacts public health and human safety when it poses hazards to navigation or interferes with fisheries or other commercial activities. As mentioned in chapter 2, marine debris may cause substantial economic impacts on tourism, human health and navigation safety. Beachgoers may be injured by stepping on broken glass, cans, needles or other items. Aesthetic degradation of shoreline may cause reduction in tourism value. Direct economic losses from marine debris include impacts on tourism, losses in catch revenues, loss of fishing gear, damaged vessels, and human injuries.

In general, MDP activities improve the quality of the human environment by removing or preventing accumulation of debris that interfere with public use and enjoyment of lands and waterways. These projects do not generate toxic or hazardous materials, discharges, or radiation; alter land use patterns; or affect traffic and transportation patterns, or water and air quality standards. MDP projects do not alter the built environment or affect population growth. While some MDP projects would occur in response to marine debris generated by natural disasters, such as tsunamis and hurricanes, no MDP project would alter the environment in a manner that could increase a population's or community's risk of damages from natural disasters.

Some MDP projects may result in short-term increases in local noise levels where operation of heavy machinery is required. The increase would be limited to the site of the debris removal and the duration of the project. Projects would not result in long-term or permanent increases in noise levels for any community.

Marine debris is infrequently contaminated with hazardous substances associated with public health and safety effects. Projects that could expose workers removing or disposing of marine debris contaminated with hazardous or radioactive substances would be conducted in compliance with applicable federal, state, and local laws and ordinances for safety of the workers and the environment. MDP projects would not establish new or alter existing facilities for waste management.

There are no substantial social or economic impacts related to the proposed action, nor any social or economic impacts related to potential biological or physical environmental impacts. Therefore, impacts on the social and economic environment are not considered further.

## **5. Environmental Consequences**

*This section of the PEA presents an evaluation of the anticipated environmental impacts, both direct and indirect, that could result from the No Action and Proposed Action alternatives. Impacts are either beneficial or adverse, and both were considered here.*

### **5.1 Environmental Consequences of the No Action Alternative**

The No Action alternative is possible, especially if there are no annual appropriations. However, since the passage of the MDRPRA and amendments in the MDA, and because funds are available to implement and support marine debris activities, selecting the No Action alternative would put NOAA in noncompliance with a congressionally-mandated and supported program, and deny numerous stakeholders the financial, scientific, and technical resources needed to address marine debris issues. The inability of the MDP to undertake activities, award grants, or enter into contracts would also severely limit the MDP's ability to meet other requirements. If there were no MDP projects, there would be severe impacts to the coastal and marine habitats and living marine resources.

The impact of the No Action alternative is that adverse effects of marine debris on the human environment (which includes the physical, biological, and social/ economic environments) as



described in section 2.2.2 - impacts of marine debris, would continue to accumulate unabated by implementation of MDP activities. In summary, the impacts of the No Action alternative would all be negative, and include, but are not be limited to:

1. Continued pollution to water resources: increased amounts of trash and debris present in the ocean and coastal areas, including areas of accumulated marine debris.
2. Higher amounts of mortality, stress, and harm to living marine resources including threatened and endangered species (e.g., sea turtles, marine mammals, etc.) due to lack of prime habitat, ingestion, and entanglement in marine debris.
3. Degradation of coastal and marine ecosystems including water quality and sensitive habitats such as coral reefs and wetlands.
4. More risks to people from increased amounts of marine debris through dangerous navigation conditions and exposure to more hazards in waters, beaches, and shorelines.
5. Decreased economic benefits, including those derived from tourism, recreational activities, fishing, and loss of aesthetics of affected coastal areas.
6. Failure to advance understanding of the problems and challenges in the marine and coastal environment as a result of marine debris.
7. Curtailed application of improved management principles, coordination and communications, education and outreach on marine debris, leading to increased degradation of the marine environment.
8. Increased risk of introduction or spread of non-indigenous aquatic species from bio-fouled marine debris such as the dock that washed ashore in Oregon after the Japan 2011 tsunami.

All of the above impacts would be anticipated as habitat degradation and destruction from marine debris would continue into the foreseeable future. One of the most detrimental effects of the No Action alternative would be the inability of NOAA to comprehensively address marine debris reduction. If MDP funds are not made available, it is likely that marine debris partners and stakeholders would have to continue to search for funding from other sources to carry out this work as the needs and tasks would remain. As a result, the MDP would not completely fulfill its purpose, and partners would need to find other funding sources. It is unlikely that the No Action alternative would be selected since the Program has been designated through legislation and is supported through Congressional appropriations.

## **5.2 Environmental Consequences of the Proposed Action/ Preferred Alternative**

The potential impacts of the *Preferred Alternative to Undertake and Fund Marine Debris Activities to Reduce the Impacts of Marine Debris* are described by type, duration, and significance. Implementation of marine debris activities under the Preferred Alternative may have very localized and temporary adverse impacts over the short-term, but these impacts would not be significant and would provide benefits in the long-term.

### Types of Potential Impacts

Impacts may vary depending on the particular habitat-type and condition of the resources, threats, and existing management measures in place at the local project-level site. A qualitative

assessment of the level of significance of potential impacts is included, in terms of minor or moderate positive and/or negative short-term and long-term impacts. Direct, indirect, and cumulative impacts are defined as follows:

**Direct Impacts** – a potential impact caused by the Proposed Action or No Action that occur at the time and place of the action.

**Indirect Impacts** – a potential impact caused or induced by the Proposed Action or No Action alternative that occurs later than the action or are removed in distance from the time and location of the Proposed Action, but is still reasonably foreseeable.

**Cumulative Impacts** – a potential impact resulting from the incremental effect of the Proposed Action, added to other past, present, or reasonably foreseeable future actions.

#### Duration of Potential Impacts

The duration of the potential impact may be defined as either short-term or long-term and indicates the period of time during which the environmental resource would be impacted. The potential impact is defined as:

**Short-Term Impact:** A potential impact of short duration, relative to the proposed project and the environmental resource. Short-term impacts occur while the activity is underway, and do not persist once the activity ends. For example, there would be a short-term increase in overall noise levels in an area resulting from operating heavy machinery to remove debris. Once the debris is removed, the operation of the machinery ceases, as does the associated increase in noise.

**Long-Term Impact:** A potential impact of long duration, relative to the proposed project and the environmental resource. Long-term impacts continue for a period of time after the project has ceased. For example, the decreased risk of a marine animal becoming entangled in marine debris persists after the debris has been removed.

#### Extent of Potential Impacts

The extent of a potential impact is defined on a scale ranging from minor to substantial. The extent encompasses where the effects would occur relative to the resource, and the intensity of the impact.

**Minor Impact:** Minor degradation or improvement of the existing quality of the environmental resource or a minor disruption to the resource. The scale of a minor impact is small relative to the geographic extent or range of the resource, impacting only a small fraction. Impacts of short temporal scope, lasting no longer than the duration of the project, are considered minor. Minor impacts are transient and recoverable within hours to days following the disruption.

**Moderate Impact:** Moderate degradation or improvement of the existing quality of the environmental resource or a moderate disruption to the resource. The temporal and geographic scale of moderate impacts are greater than minor impacts, but less than major impacts. Moderate impacts are generally transient and recoverable, but recovery usually takes longer (weeks rather than days) following disruption compared to minor impacts.

**Major Impact:** A major adverse impact is an undesirable outcome in terms of degrading the existing quality of the environmental resource or an undesirable disruption to that resource. A

major beneficial impact is a desirable outcome in terms of improving the quality of the resource or the environment upon which it depends. Major impacts typically affect a large portion of the geographic extent of the resource. Recovery from major impacts is generally possible, but may require months or longer.

**Substantial Impact:** A substantially adverse impact is a highly undesirable outcome in terms of degrading the existing quality of the environmental resource or an undesirable disruption to that resource. A substantially beneficial impact is a highly desirable outcome in terms of improving the quality of the resource or the environment upon which it depends, such as a permanent decrease in the amount of debris causing fatal entanglements of ESA-listed animals. Substantial impacts occur over a majority of the geographic extent of the resource, and may persist for extended time periods or be permanent.

This section focuses on impacts of “Research and Assessment” and “Prevention, Reduction, and Removal” projects to the physical and biological environment. The beneficial impacts of “Outreach and Education” and “Collaboration and Tools” projects are outlined in Sections 3.2.3 and 3.2.4, respectively, and these projects have no potential to adversely affect the biological or physical environment. As noted in section 4.4, there are no significantly adverse social or economic impacts related to the proposed action, nor any social or economic impacts related to potential biological or physical environmental impacts.

### **5.2.1 BENEFITS OF IMPLEMENTING THE PROPOSED ACTION**

All MDP projects would have at least minor to moderate long-term beneficial impacts including enhancing the natural recovery processes of living resources or systems affected by anthropogenic impacts.

There are many substantial benefits and positive environmental consequences of the implementation of MDP activities which include, but are not limited to:

1. Healthier coastal and marine ecosystems and living marine resources, which are critical habitats for threatened or endangered species. Better quality of life of organisms.
2. Less debris in the oceans and coastal areas including improved water quality, reduced amount of plastics, and decreased amounts of accumulated marine debris.
3. Safer conditions for human users of the ocean including reduced threats to navigation and public health.
4. Improved aesthetics and economic benefits, including those derived from tourism, recreational activities, and fishing.
5. Advanced understanding of the problems and challenges in the marine and coastal environment as a result of marine debris research, including scope of problem, targets for prevention, effectiveness of measures, and assessing socio-economic and ecological impacts.
6. Enhanced conservation measures and management principles intended to protect living marine resources from marine debris, and better coordination and communication.
7. Improved education and outreach about marine debris issues resulting in changes to awareness and behavior.

Beneficial impacts, especially of “Research and Assessment” projects, may result from identifying sources of marine debris origination, providing quantitative estimates of the impact of marine debris on affected populations, on the marine environment, to navigation, and other human uses, exploring natural processes that influence debris dispersion and movement, and locating marine debris in often remote locations. In addition, removing damaging marine debris near coral reefs has direct benefits to the sensitive reefs (NMFS PIFSC 2010).

### **5.2.2 EFFECTS ON PHYSICAL ENVIRONMENT**

“Research and Assessment” and “Prevention, Reduction, and Removal” activities involving operation of vessels in water and motor vehicles on land (e.g., front-end tractor loaders, cranes, light trucks), or presence of personnel in the field, may lead to direct, yet temporary and insignificant, disturbance of the physical environment substrate (including coral, mangroves, seagrass beds, kelp, water resources, wetlands, and sediments and soils) in the immediate vicinity and an indirect effect on the biological environment. This includes direct damage of coral and hard-bottom through anchoring boats, accidental contact by SCUBA divers or snorkelers, and unintentional contact by equipment. In soft-bottom aquatic habitat, operation of vessels and equipment, and actions of divers may disturb sediment and temporarily increase turbidity.

Operation of machinery and heavy pedestrian traffic on sandy beaches and dunes may compact substrate, or loosen it. Compaction adversely affects the survival and viability of biota dependent on the interstitial spaces. Compaction may break the underground rhizomes of plants, crush seedlings of annuals and young plants of perennials, and decrease the rate of decay of organic material. Burrowing invertebrates may be crushed in their dens. Beach-nesting and migratory shorebirds may be adversely impacted by destruction of nesting and sheltering sites. Tracks left in the sand from vehicle passage may present insurmountable obstacles to sea turtle hatchlings attempting to make their way to the water.

Substrate in the intertidal areas may recover more quickly from compaction than backshore areas due to effects of tides and wave energy that re-suspend sediment and restore interstitial spaces necessary for biota to survive and function. When disturbance loosens the surface sand on a beach, it may make it more susceptible to removal or transport by wind or swash action leading to erosion.

Operation of machinery, and to a lesser extent foot traffic, on rocky shores may overturn rocks, trample macrofauna and otherwise deplete floral and faunal populations, reduce biodiversity, and alter trophic and community structures. Trampling may crush or dislodge many species of invertebrates. Dislodgment often leads to death from exposure. If trampling does not immediately dislodge organisms, it may weaken attachment strengths making them more susceptible to loss from subsequent wave activity. Even if disturbance does not dislodge or weaken attachments, trampled organisms may sustain morphological damage that may have an effect on physiological or reproductive processes. Overturning rocks may cause damage by crushing those organisms hidden under the rock, crushing organisms attached to the top of the rock after overturning it, exposing hidden fauna to predation, wave action, and desiccation, and preventing algae from getting sunlight for production by turning the top of the rock face down (USC 2012).

MDP actions do not contribute to the general environmental threats listed in Chapter 4 for each type of habitat or interact synergistically to result in significant adverse impacts. However, by reducing pollution, growth and survival of critical species such as coral may be enhanced.

MDP projects would **not**:

- result in extensive soil erosion, sedimentation, or contamination;
- conflict with existing land uses or recreational opportunities;
- violate any air quality standards;
- contribute to existing air quality violations;
- expose sensitive receptors to substantial pollutant concentrations;
- result in increases of criteria pollutants for designated nonattainment areas;
- affect existing drainage patterns, including by alteration of washes, streams, or rivers;
- impact availability of water, violate water quality standards, or result in waste discharge that could affect water quality; nor
- alter or damage cultural resources or disturb or destroy historic or archeological sites.

### 5.2.3 EFFECTS ON BIOLOGICAL ENVIRONMENT

The effects of disturbance on animals would not vary by the purpose of the project, and would be similar for research and removal efforts. “Research and Assessment” and “Prevention, Reduction, and Removal” activities involving operation of aircraft, vessels, and motor vehicles (e.g., front-end tractor loaders, cranes, light trucks), or the presence of personnel in the field, may lead to disturbance of wildlife in the immediate vicinity via exposure to the sights, sounds, and smells associated with the equipment and people. Such disturbance, however, is not expected to result in significant adverse effects because these activities are not expected to result in more than short-term displacement or disruptions of feeding, breeding, and other behavioral patterns. The short extent of the activities relative to the animals’ activity budget and life history stages is expected to be sufficient to allow animals to recover.

The response of animals to this exposure varies depending on numerous factors including degree of acclimation versus susceptibility to human activity. There may be species-, sex-, and age-specific, as well as life history dependent responses. Animal responses may be influenced by the activity in which they were engaged at the time of exposure to the disturbance. The impact of the animal’s response to the disturbance may be influenced by these parameters as well as the animal’s health status, such as whether it has a weakened immunity due to pre-existing disease conditions.

There is mounting evidence that wild animals respond to human disturbance in the same way that they respond to predators (Beale and Monaghan 2004; Frid 2003; Frid and Dill 2002; Gill et al. 2001; Harrington and Veitch 1992; Lima 1998; Romero 2004). These responses manifest themselves as stress responses (in which an animal perceives human activity as a potential threat and undergoes physiological changes to prepare for a flight-or-fight response or more serious physiological changes with chronic exposure to stressors), and may include interruptions of essential behavioral or physiological events, alteration of an animal’s time budget, or some combinations of these responses (Frid and Dill 2002; Romero 2004; Sapolsky et al. 2000; Walker et al. 2005).

Animals belonging to species listed as threatened or endangered under the ESA may be more susceptible to adverse impacts of disturbance than those from robust species. Disturbances of ESA-listed animals that may result in “take”<sup>4</sup> are generally prohibited. Except in emergencies, many MDP research and removal projects will be conducted in a manner that avoids interactions with and potential for impacts on such species.

Marine debris activities would typically be conducted in a manner that avoids or minimizes the potential for disturbance and other adverse impacts, via the best practices discussed in chapter 3 section 3.3, Table 2. Where take or other adverse impacts are possible, consultations with the applicable federal management authority and special authorizations are required. A condition of these authorizations is that the take not operate to the disadvantage of the species or jeopardize its continued existence in the wild. Actions that are in compliance with these authorizations are not likely to result in significant adverse impacts on the listed species. Chapter 6 outlines compliance with permitting and consultation requirements of applicable laws.

There is federal legislation specific to protection of marine mammals: the MMPA. As with ESA-listed species, “taking”<sup>5</sup> a marine mammal in the wild is generally prohibited and the best practices discussed in chapter 3 section 3.3, Table 2. would avoid or minimize the potential for take. Where take is unavoidable, federal permits and authorizations are required. A condition of issuance of these permits and authorizations is that the action not have significant adverse impacts on the species or “stock”<sup>6</sup> of marine mammals. Actions that are in compliance with these authorizations are not likely to result in significant adverse impacts on marine mammal stocks or species.

NMFS has evaluated the impacts on marine mammals and ESA-listed species of harassment resulting from issuance of hundreds of permits and authorizations for research projects under section 10(a)(1)(A) of the ESA and section 104 of the MMPA. Environmental Assessments prepared for issuance of individual permits have consistently resulted in Findings of No Significant Impact. The analysis in a programmatic environmental impact statement for issuance

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<sup>4</sup> The ESA defines “take” as “to harass, harm, pursue, hunt, shoot, wound, kill, trap, capture, or collect, or to attempt to engage in any such conduct” (16 U.S.C. §§ 1532). The term “harm” in this definition is further defined by regulations (50 C.F.R. § 17.3) as “an intentional or negligent act or omission which creates the likelihood of injury to wildlife by annoying it to such an extent as to significantly disrupt normal behavior patterns which include, but are not limited to, breeding, feeding, or sheltering.”

<sup>5</sup> The MMPA defines “take” as to “harass, hunt, capture, kill or collect, or attempt to harass, hunt, capture, kill or collect.” The term “harass” is further defined in the statute as “any act of pursuit, torment, or annoyance which has the potential to injure a marine mammal or marine mammal population in the wild or has the potential to disturb a marine mammal or marine mammal population in the wild by causing disruption of behavioral patterns, including, but not limited to, migration, breathing, nursing, breeding, feeding, or sheltering (16 U.S.C. §§ 1362 (13)).

<sup>6</sup> As defined by the MMPA, the term “stock” means a group of marine mammals of the same species or smaller taxa in a common spatial arrangement, that interbreed when mature. Multiple stocks have been designated for some species of marine mammals. In some cases, the entire species is designated as the stock. A stock can further be designated as “strategic” under the MMPA when (1) the level of direct human-caused mortality exceeds the potential biological removal level; the best available scientific information suggests it is declining and is likely to be listed as a threatened species under the ESA within the foreseeable future; or it is listed as a threatened or endangered species under the ESA, or is designated as depleted under the MMPA.

of permits and grants for research on Steller sea lions and northern fur seals demonstrated that activities conducted consistent with statutory permit issuance criteria do not result in significant adverse impacts on marine mammal stocks or species (NMFS 2007b). Similarly, Biological Opinions prepared pursuant to a consultation under the ESA for these permits consistently conclude that issuance of permits under the ESA for actions deemed in compliance with statutory issuance criteria would not jeopardize the continued existence of listed species.

The Biological Opinions, EAs, and EISs summarize available literature on the impacts of operating aircraft and vessels in close proximity to animals and of close approach by humans on land. The analyses led NMFS to conclude that the effect of animals' reactions to disturbance that may result from these types of human activities is generally short-term and minor. For example, reactions of marine mammals in water range from little to no observable change in behavior to momentary changes in swimming speed, pattern, orientation; diving; time spent submerged; foraging; and respiratory patterns (NMFS 2010b). These are transitory and recoverable impacts.

In general, animals, whether they are mammals, birds, fish, reptiles, or invertebrates, may respond to human disturbance by moving away or otherwise altering their behavior. If they are acclimated to human disturbance, they may show no behavioral responses. Significant long-term impacts could result if the disruption results in failure to breed or feed successfully or to complete their life history. Marine debris activities described in the Proposed Action alternative are not expected to result in more than short-term displacement of animals from habitat or disruptions of feeding, breeding, and other behavioral patterns that are essential to the animal's life history or its contribution to the population the animal represents. The short duration of the activities relative to the animals' activity budget and life history stages is expected to be sufficient to allow animals to recover from disturbances. Similarly, the temporal frequency and geographic distribution of activities makes it unlikely disturbances would repeatedly affect the same animals in a manner that could cause more than transitory and recoverable impacts.

Beneficial impacts of marine debris activities in the Proposed Action alternative are described in detail above in section 5.2.1, and focus on reducing the potential for entanglement in debris that may lead to mortality, lowering the presence of debris consumed by animals, and the risk of introduction and spread of invasive species.

#### *5.2.3.1 Research and Assessment Projects*

Overall, some marine debris research and assessment efforts may have short-term minor, direct and indirect impacts on the physical and biological environments related to the field and laboratory research techniques described in chapter 3. This could include short-term effects when conducting marine debris impact research, including but not limited to: minor environmental disturbances; temporary and minor acoustic noise increase due to research activities on a vessel; or potential minor impacts to non-target species or habitat from research activities. The negative yet minor impacts that may result from measuring the quantity of debris in a specific geographic area, whether on the beach or in the marine environment, include: moving, sifting, or temporarily displacing shoreline habitat (e.g., sand) to scientifically measure the types and density of debris present; temporarily using stakes, buoys, or other means to clearly demark specific areas under investigation; and providing quantitative estimates of re-accumulation rates of marine debris on a specific geographic area, whether on the beach or in the marine environment, as well as any

associated habitat recovery of the same area. Impacts may also include short-term and minor effects on shorelines when conducting physical marine debris monitoring and assessment activities; or temporary and minor acoustic noise increase due to monitoring activities on a vessel.

Impacts are the same for these types of projects as described in the effects on the physical and biological environments above. Specific examples of negative environmental effects for the main categories of research and assessment techniques are described below:

- **Field Research:** Potential effects of field surveys and monitoring include those associated with disturbance of substrate and animals caused by equipment and personnel in the field. Potential effects of debris characterization tests are also associated with use of equipment for the removal of debris from the environment (water or shoreline) and include disturbance of animals and substrate. Debris deployed into the environment for in-water debris detection tests or characteristic tests could result in minor adverse effects associated with marine debris may impact the biological environment if it is lost through operations, although tests are designed to avoid such impact. Testing fishing gear may impact target and localized species through entanglement, ingestion, or death. SCUBA and snorkeling may have an impact on coral if a diver accidentally kicks, touches, or breaks a coral. The potential for incidental take would be minimized through application of best practices discussed in chapter 3 section 3.3, Table 2. Any unavoidable take of marine mammals or ESA-listed species would be in compliance with terms and conditions of consultations and permits for site-specific projects.
- **Laboratory Research:** Field-based studies that deploy debris into the environment or lab studies that use living marine species may result in incidental “take” of marine mammals or ESA-listed species or damage to habitats. None of these studies, however, would be conducted on threatened or endangered species or in designated critical habitats. The potential for incidental take would be minimized through application of best practices discussed in chapter 3 section 3.3, Table 2. Any unavoidable take of marine mammals or ESA-listed species would be in compliance with terms and conditions of consultations and permits for site-specific projects.
- **Computer-based Research & Assessments:** Computer analysis and/or literature reviews and synthesis during assessments, modeling or mapping would have no associated environmental effects.

In general, research projects result in direct, indirect, and cumulatively positive impacts ranging from minor to substantial short- and long-term beneficial impacts to marine resources.

#### *5.2.3.2 Prevention, Reduction, and Removal Projects*

Overall, some marine debris removal projects may have minor to moderate short-term impacts on the physical and biological environments related to the type of technique described in chapter 3. These impacts may result from the use of marine vessels to survey for, collect, and transport marine debris; the introduction of divers to physically remove marine debris through the use of lift bags, cutting tools, or physical retrieval; the use of shoreline means to remove debris, such as sifting, digging, manual collection, or raking for debris; and the use of mechanical means for underwater debris removal, including grappling, trawling, or single-point removal by crane or



wench of marine debris. This could include short-term effects on shorelines when conducting marine debris removal activities by hand or mechanical means; or potentially to benthic habitat due to the method employed for physical removal of marine debris.

In addition, the marine debris removal operations in the Northwest Hawaiian Islands 2008-2010 biological evaluation stated that marine debris removal operations would have no effect on listed marine species, including cetaceans and sea turtles, and would impose no incidental take on any listed species. However, they may affect, but are not likely to adversely affect the endangered Hawaiian monk seal and its designated critical habitat. NMFS concurred that there is potential for some temporary disturbance to listed species, such as the Hawaiian monk seal or green sea turtle, from activities of removing derelict fishing gear and marine debris, but any disturbances are considered insignificant, discountable, or beneficial within the Hawaiian Archipelago.

Impacts could be the same for these types of projects as described in the effects on the physical and biological environments above. Specific examples of negative environmental effects for the main category of “Prevention, Reduction, and Removal” techniques are described below:

- **Shoreline debris removal by mechanical means:** Minor effects may result from trucks on beaches disturbing substrate and altering the stabilizing capability of dune systems. This technique has the potential to disrupt nesting and feeding habitats of rare and protected shore birds and sea turtles, etc. if any are within the project area. However, the best practices measures outlined in chapter 3 section 3.3 Table 2, and compliance with terms and conditions of project-specific consultations and permits would ensure such impacts are avoided or minimized.
- **Underwater debris removal by mechanical means:** The techniques of grappling (pulling a hook and chain along bottom), trawling, or single-point removal by crane or wench of marine debris could result in disturbance of coral, seagrass, and general benthic habitat and fauna, including increased turbidity, decreased photosynthesis, and reduced water quality. These disturbances, however, would primarily occur on a small scale, and the effects would be limited to minor and short-term because of the application of best practices and implementation of terms and conditions of project-specific consultations and permits.
- **Surface water debris removal by mechanical means:** Skimmers may be used to remove trash from docks or marinas. The nets may scoop up plankton, phytoplankton, and small fish. The amount of such organisms removed, however, would be small and would not impact predator-prey relationships or disrupt ecosystem function.

### 5.3 Controversy

CEQ regulations require agencies to consider the “degree to which the effects on the quality of the human environment are likely to be highly controversial” (40 C.F.R. § 1508.2(b)(4)). This is generally interpreted as the existence of a substantial dispute about the size, nature, or effect of the federal action, rather than opposition to the use of a resource. Mere opposition to a project does not necessarily constitute controversy in the NEPA sense of the term.

MDP projects would not be resource extractive nor do they result in consumptive uses of resources. They do not make resources unavailable for use by any group or purpose. The size,

nature, and manner in which MDP projects may affect the environment are not the subject of dispute. The available literature on how human disturbance, such as may result from MDP activities, may affect the environment is not the subject of scientific debate. There is no known opposition to the objectives of the MDP program or the methods commonly used to address marine debris.

## 5.4 Cumulative Impacts

The CEQ defines cumulative impacts as “the impact on the environment which results from the incremental impact of the action when added to other past, present, and reasonably foreseeable future actions regardless of what agency (federal or non-federal) or person undertakes such other actions” (CEQ 1997a). Therefore, analyzing cumulative effects is more challenging, primarily because of the difficulty of defining the geographic (spatial) and time (temporal) boundaries of such analyses. The spatial boundaries of the cumulative effects analysis in this PEA are marine ecosystems of the United States, and potentially international waters. This would include, but not be limited to the following regions:

- Northeast;
- Mid-Atlantic;
- South Atlantic;
- Great Lakes;
- Caribbean;
- Gulf of Mexico;
- West Coast;
- Pacific Islands; and
- Alaska/Arctic.

The action area is degraded by accumulating marine debris. Biological and physical resources within the action area are adversely impacted to varying degrees by numerous past and ongoing activities including development, commercial and recreational fisheries, vessel traffic, tourism, and climate change. These threats are likely to continue, and their impacts accrue, into the future, especially as the human population continues to grow.

MDP projects would be conducted in a manner that is minimally invasive, according to best practices, and many do not involve interactions with or manipulations of the physical or biological environment. The adverse impacts of disturbance associated with project implementation typically disappear once personnel and equipment leave the vicinity.

In some cases, multiple projects may be funded within the same geographic area over the life of this PEA. This is likely to be the case where more than one type of MDP activity is implemented or where there is a recurring (e.g., annual) activity. For example, a removal project may be conducted at the same time and for the same location as an outreach project. The outreach project has no adverse impacts but is complementary to the removal project. Another example is an annual community-based beach clean-up event in a given neighborhood.

While the proposed action may result in minor short-term adverse impacts during implementation of site-specific projects, these impacts would not be individually or cumulatively significant. The scale of most MDP projects is small relative to the range or extent of affected resources. Resources adversely impacted during implementation of MDP projects are expected to recover quickly and fully within hours to days of disturbance. The interval between projects

overlapping in space is expected to be sufficient to allow full recovery between disturbances and avoid potential for cumulative impacts to accrue.

Further, every marine debris project would have at least minor short-term beneficial impacts, and some may result in moderate to substantial long-term positive effects. Implementing site-specific marine debris projects would have an additive positive impact on the environment by ameliorating the adverse impacts of marine debris.

There are no interrelated or interdependent actions under the MDP program. Although every project implemented under the MDP shares a common goal, and cumulatively they contribute to reducing the impacts of marine debris, each site-specific action is evaluated on its own merits and implemented independently. Decisions to fund or undertake site-specific projects do not establish decisions in principal about future actions or otherwise guarantee that similar actions would be funded or undertaken in the future. Awarding funds as outlined under the Proposed Action has not been and is not likely to be a triggering action for connected or related actions with potentially adverse impacts. MDP projects are typically small scale, local or community-based, limited in time and geographic extent. They do not derive from or cause other federal actions with potential environmental impacts.

## 5.5 Mitigation Measures

CEQ regulations (40 C.F.R. § 1508.20) define mitigation measures as:

- (a) avoiding the impact altogether by not taking a certain action or parts of an action.
- (b) minimizing impacts by limiting the degree or magnitude of the action and its implementation.
- (c) rectifying the impact by repairing, rehabilitating, or restoring the affected environment.
- (d) reducing or eliminating the impact over time by preservation and maintenance operations during the life of the action.
- (e) compensating for the impact by replacing or providing substitute resources or environments.

The MDP would incorporate “best practices” in implementing activities under the Proposed Action alternative. The measures that would generally be applicable to a category of activity or method are discussed in chapter 3 section 3.3, Table 2. Additional mitigation measures may be incorporated into site-specific projects as dictated by the terms of consultations, permits, and authorizations necessary to the implementation of the project.

The best practices measures avoid or minimize potentially adverse impacts of project implementation. MDP projects do not typically occur on geographic or temporal scales that would warrant preservation and maintenance measures. They also do not result in losses or degradations of resources that would warrant compensatory actions or repair, rehabilitation and restoration measures.

The MDP would monitor the effectiveness of mitigation measures – those incorporated as best practices and those required by permits and consultations – through review of periodic reports

from funded entities and observations made by MDP staff when undertaking projects. If impacts are not consistent with those predicted and evaluated in this PEA, the MDP would consider modifications to the project to bring impacts to the lowest practical level. If modifications are not practical and the level of adverse impact exceeds what is evaluated in this PEA, the MDP may discontinue the activity or prepare additional NEPA analysis and decision documents prior to further implementation.

## 5.6 Comparison of Alternatives

Table 4 below summarizes environmental consequences of the No Action and Proposed Action alternatives on the biological and physical environments.

**Table 4. Comparison of Impacts on Biological and Physical Environment**

	<b>No Action</b>	<b>Proposed Action</b>
<b>Type of Impact</b>	Direct, Indirect and Cumulatively Negative	Direct and Indirect Negative Direct, Indirect, and Cumulatively Positive
<b>Duration of Impact</b>	Short- and Long-term Negative	Short-term Negative Short- and Long-term Positive
<b>Extent of Impact</b>	Minor to Substantial Negative	Minor to Moderate Negative Minor to Substantial Positive

In general, the impacts of the no action are negative in the short- and long-term on a global scale, due to the incremental adverse impacts of allowing marine debris to continue to accumulate. In contrast, while the Proposed Action may result in minor short-term negative impacts of small scope, implementation of the MDP is likely to result in substantial net positive impacts by ameliorating the adverse impacts of marine debris.

## 5.7 Conclusion

This PEA considers the potential environmental impacts of funding and undertaking projects for various MDP project categories that would benefit marine resources and improve the quality of the human environment. Implementation of site-specific marine debris activities under the Preferred Alternative may have very localized and temporary adverse impacts over the short-term and on a small scale, and would provide benefits in the long-term on a larger scale.

The Proposed Action would not result in significant adverse impacts on any component of the environment. Some site-specific projects may result in short-term adverse impacts that are minor and from which the affected resources are expected to recover fully and quickly. Many projects involve no interaction with the environment and have no potential for adverse impacts. No projects are likely to result in long-term adverse impacts. All projects are expected to result in at least minor short-term benefits to the environment. Some projects may have long-term positive impacts, and the cumulative impact of implementing the proposed action is likely to be a long-term substantial improvement in the quality of the human environment on a global scale.

## **6. Compliance with Environmental Laws and Regulations**

*This section describes federal environmental regulations that are likely to apply to proposed projects, as well as a description of compliance by the MDP with applicable regulations. Other federal or state-level regulations may apply on a project-specific basis, and the MDP and its partners would consider compliance with all other applicable regulations for specific projects as well.*

NOAA is responsible for ensuring that projects comply with all relevant authorities. Compliance with these authorities would result in few, if any, negative environmental, social, and/or economic impacts. Consultation, permits, authorities, and actions relative to endangered, threatened, and protected species, critical habitat, Essential Fish Habitat, marine protected areas, refuges and sanctuaries, and historic and cultural resources are described in Section 6 below, and would be required as applicable.

### **6.1 Clean Water Act (CWA)**

The objective of the CWA is to restore and maintain the chemical, physical, and biological integrity of the nation's water. In 1989, the U.S. Army Corps of Engineers (USACE) and EPA reached a memorandum of agreement (MOA) on federal enforcement of Section 404 of the CWA. The MOA stipulates that a permit is required for the removal of less than one-third acre of wetlands and that mitigation measures may be required for removal or disturbance of more than one-third acre of wetlands.

Many activities under the MDP require consultation with the USACE and a Section 404 permit and undergo an extra level of regulatory review. All regions examine each project for compliance with the CWA and incorporate the information into the NEPA compliance documentation and decision-making.

### **6.2 Coastal Zone Management Act (CZMA)**

The Coastal Zone Management Act encourages coastal states, Great Lake states, and U.S. Territories and Commonwealths (collectively referred to as "coastal states" or "states") to be proactive in managing natural resources for their benefit and the benefit of the Nation. The CZMA federal consistency provision (16 U.S.C. § 1456 and 15 C.F.R. part 930) provides states with an important tool to manage coastal uses and resources and to facilitate cooperation and coordination with Federal agencies. Under the CZMA, federal agency activities that have coastal effects must be consistent to the maximum extent practicable with federally approved enforceable policies of a state's NOAA-approved coastal management program. In addition, the CZMA requires non-federal applicants for federal authorizations and funding to be consistent with enforceable policies of state coastal management programs.

Authorization for undertaking and funding marine debris research, removal, and prevention projects to reduce the adverse impacts of marine debris and benefit the marine environment and navigation safety is mandated by the MDA. This PEA has no additional information about how

the program or activities would be implemented. Future activities taken pursuant to the MDA may be subject to federal consistency on a case-by-case basis.

### **6.3 Endangered Species Act (ESA)**

Section 9 of the ESA, as amended, and federal regulations pursuant to section 4(d) of the ESA prohibit the take of endangered and threatened species, respectively, without special exemption such as by a permit.

Section 7 requires federal agencies to use their authorities in furtherance of the purposes of the ESA by carrying out programs for the conservation of endangered and threatened species. Agencies are further required to ensure that any action authorized, funded, or carried out is not likely to jeopardize the continued existence of any threatened or endangered species or result in destruction or adverse modification of habitat for such species. If the MDP proposes to fund or undertake an action that may affect ESA-listed species, it must initiate a Section 7 consultation with the Department of the Interior (US Fish and Wildlife Service – FWS) or Commerce (NOAA National Marine Fisheries Service - NMFS). Regulations specify the procedural requirements for these consultations (50 Part C.F.R. 402).

A formal section 7 consultation results in a Biological Opinion prepared by the NMFS or FWS. If unintentional but not unexpected take of ESA-listed species may result from the MDP action, and it is determined that the take would not jeopardize the continued existence of the species, the Biological Opinion may include an incidental take statement.

The incidental take statement specifies the amount or extent of anticipated take that is allowable due to the Federal action. It also outlines reasonable and prudent measures to minimize the take, and terms and conditions that must be observed when implementing those measures.

The MDP has not initiated formal consultation with NMFS or the FWS on the Proposed Action in this PEA. It is impractical to predict which listed species may be affected, or the manner in which they may be affected, until site-specific actions are identified by the MDP or proposed by grant applicants. The action area for the PEA is too broad, and the geographic and temporal parameters of actions that may affect listed species is too speculative, to enable meaningful consultations. Therefore, consultations would be initiated at the earliest planning stage for site-specific actions when the MDP determines the action may affect listed species.

When an activity conducted by a non-federal partner funded by the MDP would result in take of ESA-listed species, an incidental take permit is required. An incidental take permit is issued under Section 10(a)(1)(B) of the ESA to non-federal entities undertaking otherwise lawful projects that might result in the take of an endangered or threatened species. Habitat Conservation Plans (HCPs) are planning documents required as part of an application for an incidental take permit. They describe the anticipated effects of the proposed taking; how those impacts would be minimized, or mitigated; and how the HCP is to be funded. HCPs may apply to both listed and nonlisted species, including those that are candidates or have been proposed for listing. HCPs provide for partnerships with non-federal parties to conserve the ecosystems upon which listed species depend, ultimately contributing to their recovery. Preparing an HCP and

securing an ITS is the responsibility of the award recipient, however MDP staff may provide technical assistance in preparing the application.

In addition, NMFS proposed listing 66 reef-building coral species under the ESA: 59 in the Pacific and seven in the Caribbean and to reclassify Elkhorn and Staghorn corals as endangered instead of threatened as of November 2012. More species may be listed in the near future and the MDP will take the necessary steps to ensure that the program meets any new or additional requirements when working in areas with listed species. More information can be found at: <http://www.nmfs.noaa.gov/stories/2012/11/82corals.html>.

#### **6.4 Magnuson-Stevens Fishery Conservation and Management Act (MSFCMA), Reauthorized by the Sustainable Fisheries Act of 1996**

The MSFCMA encourages the conservation and restoration of essential fish habitat (EFH) and resources. The act authorized NOAA NMFS to manage fisheries within the 200-mile wide Exclusive Economic Zones along the coasts of the United States, and to address human impacts on the marine environment and prioritize identification and management of EFH. Activities under the program would support the goals of this legislation (NMFS 2006).

Under the MSFCMA Congress defined Essential Fish Habitat (EFH) as “those waters and substrate necessary to fish for spawning, breeding, feeding, or growth to maturity” (16 U.S.C. 1802(10)). The EFH provisions of the MSFCMA offer resource managers means to accomplish the goal of giving heightened consideration to fish habitat in resource management. The MDP is required to consult with NMFS Office of Habitat Conservation (including those within the appropriate NMFS regional offices) for any action it authorizes, funds, or undertakes, or proposes to authorize, fund, or undertake that may adversely affect EFH. This includes renewals, reviews or substantial revisions of actions.

Each region successfully employs programmatic EFH consultations or a regional Biological Opinion to achieve compliance with applicable EFH regulations. The MDP would follow any necessary consultation procedures outlined at 50 C.F.R. 600.920. Should any funded activity propose to adversely affect EFH and be outside the scopes of Biological Opinions, appropriate consultations between the MDP and NOAA Office of Habitat Conservation would be undertaken to avoid, minimize, or offset any adverse impacts associated with the activity ensuring no reduction in the quality of quantity of EFH occurs as a result.

#### **6.5 Marine Mammal Protection Act (MMPA)**

The MMPA of 1972 was enacted in response to increasing concerns among scientists and the public that significant declines in some species of marine mammals were caused by human activities. The Act established a national policy to prevent marine mammal species and population stocks from declining beyond the point where they ceased to be significant functioning elements of the ecosystems of which they are a part. Nowhere else in the world had a government made the conservation of healthy and stable ecosystems as important as the conservation of individual species.

The MMPA established a moratorium on the taking of marine mammals in U.S. waters. It defines “take” to mean “to hunt, harass, capture, or kill” any marine mammal or attempt to do so. Exceptions to the moratorium can be made through authorizations for take incidental to commercial activities; permits for scientific research, commercial and educational photography, and for import or removal from the wild for public display at licensed institutions such as aquaria and science centers.

Section 101(a)(5) of the MMPA provides a mechanism for allowing the “incidental” taking of small numbers of marine mammals by U.S. citizens engaged in an activity other than commercial fishing. For an activity to qualify for an incidental take authorization, the taking of marine mammals must not be intentional and cannot have an unmitigable adverse impact on the availability of marine mammals for subsistence uses. Such authorizations require NMFS or FWS to make a finding that the taking would have a negligible impact on the affected marine mammal species or stocks.

In the rare instance that marine debris activities undertaken by the MDP would result in unavoidable taking of marine mammals, MDP would obtain an incidental take authorization from NMFS or FWS, depending on the species affected, prior to project implementation. When the activity is funded by the MDP, but undertaken by an award recipient, securing such authorizations is the responsibility of the award recipient. The MDP would not fund projects that could not reasonably qualify for such authorizations.

## **6.6 Migratory Bird Treaty Act (MBTA)**

The MBTA protects over 800 species of migratory bird species from any attempt at hunting, pursuing, wounding, killing, possessing, or transporting any migratory bird, nest, egg, or part thereof, unless permitted by regulations (i.e. for hunting and subsistence activities). Additional protection is allotted under the Bald and Golden Eagle Protection Act for the identified species. Compliance with the MBTA does not usually require a permit or authorization; however, the FWS often requests that other agencies address impacts to migratory birds in NEPA documents and incorporate applicable MBTA mitigation measures as stipulations in their permits.

Generally, activities under the MDP have no adverse impacts on migratory bird species and would typically benefit them as a result of project implementation. Seabirds and their nesting colonies would be avoided in MDP projects.

## **6.7 National Historic Preservation Act (NHPA)**

The NHPA of 1966, amended in 1992, requires that responsible agencies taking action that may potentially affect any property with historic, architectural, archeological, or cultural value that is listed on or eligible for listing on the National Register of Historic Places (NRHP) comply with the procedures for consultation and comment issued by the Advisory Council on Historic Preservation. The responsible agency also must identify properties affected by the action that are listed on or potentially eligible for listing on the NRHP, usually through consultation with the state historic preservation officer.



Under the provisions of Section 106 of the NHPA, the Secretary of the Interior has compiled a national register of sites and buildings of significant importance to United States history. The MDP is not likely to impact registered sites or buildings on shore or any such submerged site that might alter or deface such a site.

Most U.S. island and coastal communities are intimately connected with surrounding ecosystems that hold strong historical and cultural value. Federal agencies are directed under NHPA Section 106 to maintain historic properties in ways that consider the preservation of historic, archeological, architectural, and cultural values. The MDP must comply with the NHPA by coordinating with the State Historic Preservation Officer, when necessary. The MDP would conduct the appropriate consultations if the project is determined to be an undertaking.

## **6.8 National Marine Sanctuaries Act (NMSA)**

The NMSA (16 U.S.C. § 1431 et seq.) authorizes the Secretary of Commerce to designate and manage areas of the marine environment with special national significance due to their conservation, recreational, ecological, historical, scientific, cultural, archeological, educational, or esthetic qualities as National Marine Sanctuaries. The NMSA provides the NOAA Office of National Marine Sanctuaries (ONMS) with authority to comprehensively manage uses of the National Marine Sanctuary System and protect its resources through regulations, permitting, enforcement, research, monitoring, education and outreach.

ONMS has the authority to issue permits for any activity conducted in a National Marine Sanctuary that is otherwise prohibited by sanctuary regulations. Several of the proposed activities described in this PEA would require authorization by ONMS to be conducted in a National Marine Sanctuary. If any MDP activity that is otherwise prohibited by sanctuary regulations is proposed to occur, the MDP would be required to submit an application for a sanctuary permit to the appropriate sanctuary superintendent.

Under the National Marine Sanctuaries Act Section 304(d), federal agency actions internal or external to a national marine sanctuary, including private activities authorized by licenses, leases, or permits, that are likely to destroy, cause the loss of, or injure any sanctuary resource are subject to consultation with the Secretary. Each federal agency proposing such an action must provide a written statement describing the action and its potential effects on sanctuary resources no later than 45 days before the final approval of the action. In addition, sanctuary permits may be required for certain actions that would otherwise be prohibited. Federal actions subject to the consultation requirements of Section 304(d) include actions inside or outside the boundary of a national marine sanctuary, including private activities authorized by licenses, leases, or permits. The Federal action agency must review any such action to determine whether it is likely to injure sanctuary resources.

The purpose of NMSA consultation is to protect sanctuary resources by requiring federal agencies to consider alternatives to proposed actions that might otherwise destroy, cause the loss of, or injure these resources. The staff of the ONMS works with federal agencies to assist them in achieving full compliance with NMSA consultation. The ONMS encourages federal agencies

to work proactively with office staff to identify actions that may require NMSA consultation and to complete this consultation at the earliest practicable time.

Activities under the MDP do not typically have an adverse impact on sanctuary resources, and usually result in beneficial impacts as individual projects remove debris and help restore habitats. MDP staff consider potential adverse impacts on a project-level basis and would coordinate with ONMS to ensure damage would be avoided. If any MDP activity were likely to injure a sanctuary resource, the MDP would be required to submit a “sanctuary resource statement” to ONMS describing the proposed action and the potential effects of the activity on sanctuary resources. If ONMS finds that the proposed action is likely to injure sanctuary resources, it must develop “recommended alternatives” for the agency to implement to protect sanctuary resources. Upon receipt of the recommended alternatives, the agency is required to consult with ONMS regarding plans for incorporating these recommendations.

## **6.9 Pollution Prevention Act (PPA)**

The PPA of 1990 (42 U.S.C. §13101 et seq.) established national policy to prevent and reduce pollution at its source when feasible, through the use of material, processes, and practices that reduce use of hazardous materials, energy, water, or other resources and through practices that protect natural resources through conservation or more efficient use. The PPA also specifies that when pollution cannot be prevented or reduced at its source, it should be recycled, treated, or disposed of in an environmentally safe manner. A major provision of the PPA is for federal agencies to provide matching funds for state and local pollution prevention programs through a grant program that promotes use of pollution prevention techniques by businesses.

The MDP does not generate waste; it results in removal and safe disposal or waste generated from various sources, including through awarding grants to state and local partners for removal and disposal of marine debris. It also promotes prevention and reduction of pollution at the source, such as through funding education and outreach efforts such as the Fishing for Energy project.

## **6.10 Executive Order 11990: Protection of Wetlands**

The purpose of this order is to minimize the destruction, loss or degradation of wetlands and to preserve and enhance the natural and beneficial values of wetlands. To meet these objectives, the order requires federal agencies, in planning their actions, to consider alternatives to wetland sites and limit potential damage if an activity affecting a wetland cannot be avoided.

When the MDP activity involves removal or assessment of marine debris impacting a wetland, alternative sites are not feasible. However, activities under the MDP do not typically have more than short-term minor adverse impacts on wetlands, and usually result in longer term beneficial impacts as individual projects remove debris and help restore habitats within wetlands. MDP staff consider potential adverse impacts to wetlands on a project-level basis and implement best practices to ensure permanent damage is avoided.

## **6.11 Executive Order 11998: Floodplain Management**

The purpose of Executive Order 11998 is to avoid the long and short term adverse impacts associated with the occupancy and modification of floodplains and to avoid direct or indirect support of floodplain development wherever there is a practicable alternative. It requires each federal agency (including military departments) to take action to reduce the risk of flood loss, to minimize the impact of floods on human safety, health and welfare, and to restore and preserve the natural and beneficial values served by floodplains. Each agency should determine if any actions undertaken would occur in a floodplain and evaluate the potential effects of any actions. If an agency has determined to, or proposes to, conduct, support, or allow an action to be located in a floodplain, the agency shall consider alternatives to avoid adverse effects and incompatible development in the floodplains.

Generally, activities under the MDP have no adverse impacts on floodplains. When conducted within floodplains, they do not involve development and intentionally result in beneficial impacts that help to restore and improve habitats within floodplains. Consequently, no review for compliance with this legislation is needed.

## **6.12 Executive Order 12898: Federal Actions to Address Environmental Justice in Minority Populations and Low-Income Populations**

Consistent with the President's Executive Order on Environmental Justice (Feb. 11, 1994) and the DOC's Environmental Justice Strategy, projects undertaken by the MDP or applicants for federal funds shall ensure that their MDP projects would not have disproportionately high and adverse human health or environmental effects on minority or low income populations.

As defined by the U.S. EPA, environmental justice is the fair treatment and meaningful involvement of all people regardless of race, color, national origin, or income with respect to the development, implementation, and enforcement of environmental laws, regulations, and policies (EPA 2012). There is much socioeconomic diversity (race, age, income) in coastal regions due to such a large population living there. MDP projects tend to benefit all populations equally (including those with environmental justice issues), and all communities would typically benefit as a result of project implementation. MDP projects tend to increase public access and environmental quality wherever implemented.

## **6.13 Executive Order 13089: Coral Reef Protection**

Executive Order 13089 mandates that all federal agencies whose actions may affect U.S. coral reef ecosystems shall: (a) identify their actions that may affect U.S. coral reef ecosystems; (b) utilize their programs and authorities to protect and enhance the conditions of such ecosystems; and (c) to the extent permitted by law, ensure that any actions they authorize, fund, or carry out would not degrade the conditions of such ecosystems. In addition, these federal agencies shall, subject to the availability of appropriations, provide for the implementation of measures needed to research, monitor, manage, and restore affected ecosystems, including measures reducing impacts from pollution, sedimentation, and fishing. These measures shall be developed in cooperation with the U.S. Coral Reef Task Force and Fishery Management Councils and in

consultation with affected states, territorial, commonwealth, tribal, and local government agencies, non-governmental organizations, the scientific community, and commercial interests.

MDP staff consider potential adverse impacts to coral on a project-level basis and implement best practices to ensure permanent damage is avoided.

#### **6.14 Executive Order 13112 - Invasive Species**

Executive Order 13112 requires federal agencies to use authorities to prevent introduction of invasive species, respond to and control invasions in a cost effective and environmentally sound manner, and to provide for restoration of native species and habitat conditions in ecosystems that have been invaded.

The MDP is consistent with the stewardship principles and national priority objectives as set forth under EO 13112. MDP follows best practices and ensures that approved protocols such as the “Response Protocols for Biofouled Debris and Invasive Species Generated by the 2011 Japan Tsunami” are followed when dealing with debris contaminated with invasive species (NOAA et al. 2012).

#### **6.15 Executive Order 13158: Marine Protected Areas**

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

MDP staff consider potential adverse impacts within MPAs on a project-level basis and implement best practices to ensure permanent damage is avoided. Removing marine debris is consistent with the policy of this Executive Order.

#### **6.16 Executive Orders 13178 & 13196: NWHI Coral Reef Ecosystem Reserve**

The purposes of these Executive Orders are to ensure the comprehensive, strong, and lasting protection of the coral reef ecosystem and related marine resources and species of the Northwestern Hawaiian Islands. As part of the establishment of the Reserve, EO 13178 contains conservation measures that restrict some activities throughout the Reserve, and establishes Reserve Preservation Areas around certain islands, atolls, and banks where all consumptive or extractive uses are prohibited. EO 13196 modified EO 13178 and completed the establishment of the Reserve, including conservation measures and permanent Reserve Preservation Areas.

Section 5 of the EO requires the development of a reserve operation plan by the NMFS, in consultation with the Secretary of the Interior and the Governor of Hawaii. That plan governs the management of the reserve and is directed at priority issues and actions that provide for, among other things, cleanup and prevention of marine debris in the Reserve.

MDP staff consider potential adverse impacts within the NWHI Coral Reserve on a project-level basis and implement best practices to ensure permanent damage is avoided. Removing marine debris is consistent with the policies of these Executive Orders.

## **6.17 Executive Order 13547: Stewardship of the Ocean, Our Coasts, and the Great Lakes**

This Executive Order establishes a national policy to ensure the protection, maintenance, and restoration of the health of ocean, coastal, and Great Lakes ecosystems and resources, enhance the sustainability of ocean and coastal economies, preserve our maritime heritage, support sustainable uses and access, provide for adaptive management to enhance our understanding of and capacity to respond to climate change and ocean acidification, and coordinate with our national security and foreign policy interests.

The MDP is consistent with the stewardship principles and national priority objectives as set forth under EO 13547. MDP staff consider potential adverse impacts on a project-level basis and implement best practices to ensure permanent damage is avoided.

## **7. Implementation**

*This chapter outlines how the MDP would use this PEA for “site-specific” actions and monitor the program for compliance over time.*

### **7.1 General**

Site-specific actions are projects undertaken or funded by the MDP that are consistent with the categories identified in Section 1.2.2 and the Proposed Action Alternative. The MDP anticipates using this PEA to guide decision-making for site-specific actions over the next ten years. The MDP would review the PEA, and relevant environmental concerns, five years and ten years after the date of this PEA to determine whether its scope and analysis remain applicable to the program. If the program’s mandate or focus shifts substantially during that time a new PEA may be prepared or this PEA may be supplemented.

As site-specific actions are being considered by the MDP, this PEA would be reviewed to determine whether they are within the scope of its analysis. If additional NEPA analysis is warranted for a specific decision, it may be tiered from this PEA as appropriate. Consistent with CEQ regulations at 40 C.F.R. 1508.28, the tiered NEPA documents would incorporate by

reference the applicable general discussions in this PEA and concentrate solely on the issues specific to the analysis being prepared.

Supplemental EAs would be prepared consistent with CEQ regulations at 40 C.F.R. 1502(c) if:

- the MDP is considering an action that is substantially different from the proposed action and the changes are relevant to environmental concerns, or
- there are significant new circumstances or information relevant to environmental concerns and bearing on the proposed action or its impacts.

## **7.2 Process for Screening Site-Specific Projects**

Evaluation of project-specific impacts would be addressed by MDP staff during the planning process for each marine debris project at the earliest possible time to ensure that any significant environmental issues are identified; that consultation among agencies, other area programs, and the public occurs; and that a decision may be made on whether the PEA appropriately addresses all components of the MDP activity or whether a more detailed analysis of the project is required.

A step-wise approach would be used to evaluate each project, as outlined below in Figure 2, the MDP NEPA Decision Tree Process. The first step is to determine whether the project is consistent with one or more of the four overarching categories identified in the Proposed Action. If the project does not clearly fall within a category, it is not covered by this PEA. However, it may be considered for approval to the extent that it is consistent with the MDP. In such case, a separate NEPA analysis would be prepared, which may tier from this PEA where there is overlap in resources affected or potential impacts.

### **7.2.1. CATEGORICAL EXCLUSIONS**

If the project is consistent with a category of action identified in section 6.03 of NAO 216-6 as eligible for categorical exclusion, the next step is to use a worksheet similar to the one in Appendix E to assist in screening for extraordinary circumstances that would preclude applicability of the CE. The worksheet directs reviewers to consider the factors listed in section 5.05 of NAO 216-6 and the best available information.

Activities funded by MDP may qualify for a CE under Section 6.03c.3(b) of the NAO for “Financial and Planning Grants.” This class of CE is for financial support services where the environmental effects are minor or negligible. In some cases, awards for basic and applied research may qualify for a CE under Section 6.03c.3(d) of the NAO for “Administrative and Routine Program Functions.”

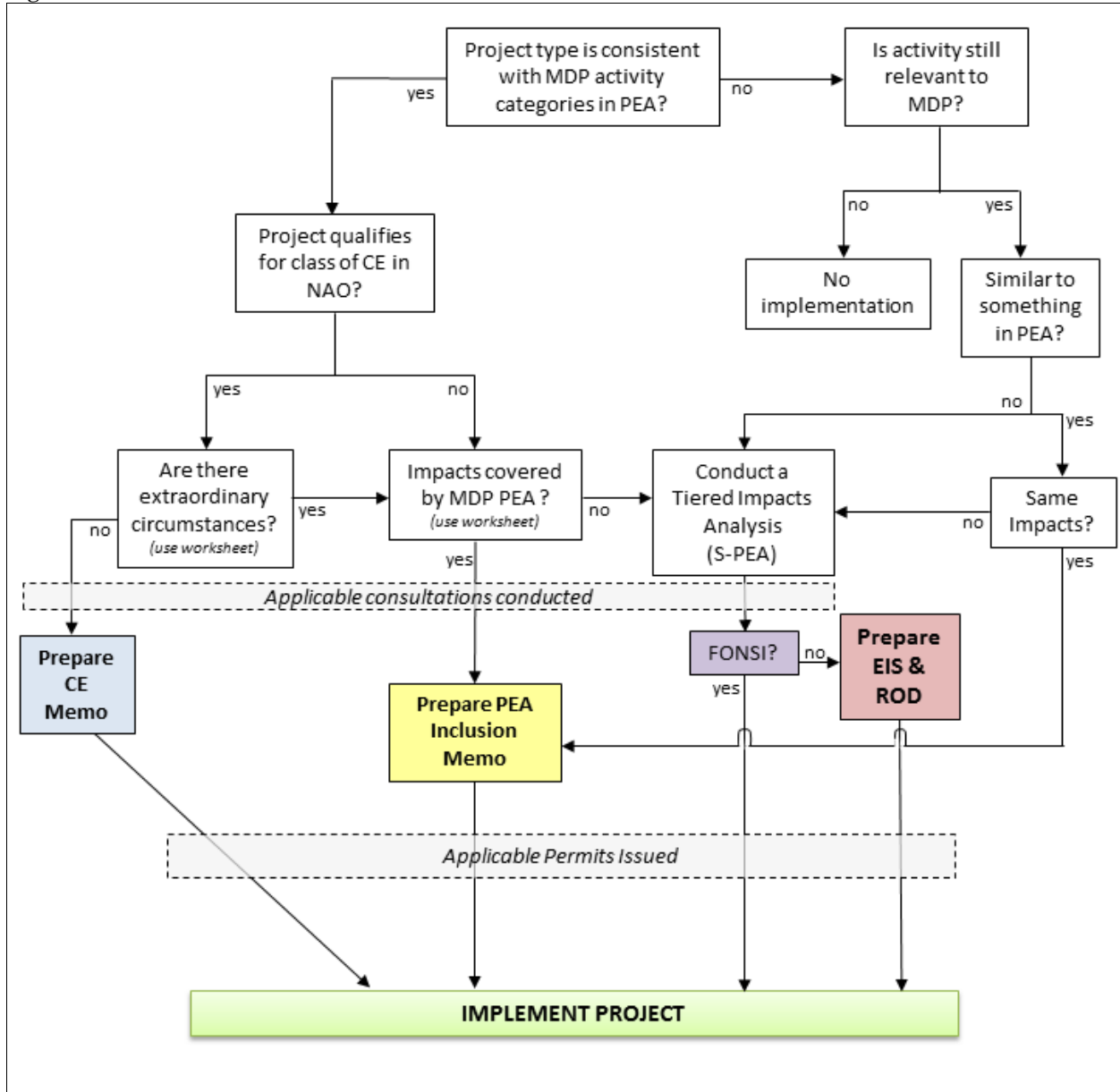
Many activities undertaken by the MDP, as opposed to by award recipients, may qualify for a CE under various sections of the NAO including, but not limited to, those outlined in Table 5 below.

If no extraordinary circumstances apply, the MDP would prepare a memorandum documenting applicability of the CE. The MDP may decide to prepare an EA (including one tiered from this PEA) in cases where it enhances the decision making process. An example is where the action is the subject of substantial public opposition or related to an action that is the subject of litigation

(not related to the potential impacts of the action), in which case an EA may be prepared to document additional factors that should be considered by the decision maker.

It is important to note that a project may qualify for a CE, but still require additional environmental compliance under other laws such as the ESA or MMPA. Where such compliance is the responsibility of the MDP, applicable permits and consultations would be completed prior to project implementation. Where compliance is the responsibility of an award recipient, the Special Award Conditions outlined under Section 7.5 would be applied.

**Figure 2. MDP NEPA Decision Tree Process**



**Table 5. Applicable CE Classifications Under the NAO for Activities Undertaken by MDP**

CE Number	Title	Example of MDP Activity
6.03b.3(c)	<u>Restoration Actions:</u> Actions to enhance the natural recovery processes of living resources or systems affected by anthropogenic impacts. Such actions include: 6.03b.3(c)(1) use of exclusion methods (e.g., fencing) to protect stream corridors, riparian areas or other sensitive habitats; and 6.03b.3(c)(2) actions to stabilize dunes, marsh-edges, or other mobile shoreline features (e.g., fencing dunes, use of oyster reefs or geotextiles to stabilize marsh-edges).	Derelict fishing gear removal
6.03c.3(a)	<u>Research Programs.</u> Programs or projects of limited size and magnitude or with only short-term effects on the environment and for which any cumulative effects are negligible. Examples include natural resource inventories and environmental monitoring programs conducted with a variety of gear in water, air or land environs.	Individual, small scale research projects
6.03c.3(c)	<u>Minor Project Activities.</u> Projects where the proposal is for a minor amelioration action such as plating dune grass or for minor project changes or minor improvements to an existing site.	Trash removal, beach cleanups
6.03.c3(d)	<u>Administrative or Routine Program Functions.</u> Program planning and budgeting including strategic planning and operational planning; mapping, charting, and surveying services; basic and applied research and research grants, except as provided in Section 6.03b. of this Order; basic environmental services and monitoring, such as weather observations, communications, analyses, and predictions; environmental satellite services; environmental data and information services; air quality observations and analysis; support of national and international atmospheric and Great Lakes research programs; executive direction; administrative services; and administrative support advisory bodies.	Purchasing trash bags, renting solid waste containers, and surveying or monitoring work
6.03.c3(i)	<u>Other Categories of Actions Not Having Significant Environmental Impacts.</u> Routine operations and routine maintenance, preparation of regulations, Orders manuals, or other guidance that implement, but do not substantially change these documents, or other guidance; policy directives, regulations and guidelines of an administrative, financial, legal, technical or procedural nature, or the environmental effects of which are too broad, speculative or conjectural to lend themselves to meaningful analysis and will be subject later to the NEPA process, either collectively or case-by-case; activities which are educational, informational, advisory or consultative to other agencies, public and private entities, visitors, individuals or the general public; actions with short term effects, or actions of limited size or magnitude.	Preparing educational or outreach information, regional plans, workshops

### 7.2.2 INCLUSION MEMORANDA

If the project does not qualify for a CE, the next step is to use the NOAA MDP PEA Inclusion Memo Worksheet (see Appendix F) to determine whether the effects are consistent with the analysis in this PEA. This determination requires consideration of what resources may be affected, the status of those resources, and the effects on the resources.

Because the effective period of this PEA is greater than the duration of any individual project, and projects may be proposed many years after this PEA was completed, MDP staff must consider whether baseline conditions have changed in a manner that would alter the way in



which the project could impact the environment. Examples are whether the status of affected resources within the action area have deteriorated or new information suggests resources may be impacted by the action in a manner not considered in this PEA.

If there are no new circumstances or information that indicate the project would impact the environment in a manner not considered in this PEA, including affecting different resources, then a memorandum would be prepared documenting that appropriate consideration of the potential environmental impacts of the action were included in this PEA. Preparation of a new FONSI is not necessary.

A project's impacts may be consistent with the PEA but still require compliance with other applicable laws for environmental protection, such as the ESA and MMPA. Where such compliance is the responsibility of the MDP, applicable permits and consultations would be completed prior to project implementation. Where compliance is the responsibility of an award recipient, the Special Award Conditions outlined under Section 7.5 would be applied.

### **7.2.3 ENVIRONMENTAL ASSESSMENTS**

If the project or its impacts were not adequately described in this PEA, the next step is to determine whether supplemental NEPA analysis is warranted. Supplemental EAs would require new FONSI determinations prior to project implementation. Similarly, compliance with other applicable laws for environmental protection, such as the ESA and MMPA, would be required. Where such compliance is the responsibility of the MDP, applicable permits and consultations would be completed prior to project implementation. Where compliance is the responsibility of an award recipient, the Special Award Conditions outlined under Section 7.5 would be applied.

Conditions that would require a supplemental EA include:

- New information that suggests the way in which the action may affect the environment is significantly different from that discussed in Chapter 5. Supplementing the effects analysis would be necessary.
- The status of resources in the Action Area has changed in a manner that would affect the way in which the action would impact them. Supplementing the description of the resource and analysis of impacts would be necessary.
- A new category of actions is proposed or a new technique is being considered. Supplementing the Proposed Action description would be necessary. The description of the action area, affected resources, or potential impacts may also require supplementing.

Staff would also consult Section 6.03 of NAO 216-6 to determine whether an action is listed as requiring preparation of an EA but not necessarily an EIS. Examples include development of restoration plans (6.03b); financial assistance awards for land acquisition, construction or vessel capacity reduction (6.03c.1(b)(1)); major relocations of NOAA personnel for programmatic reasons (6.03c.1(b)(4)); and research that may have significant impacts (6.03c.1(b)(5)).

### **7.2.4 ENVIRONMENTAL IMPACT STATEMENTS**

If a project or technique is so new or unique that the effects are truly unknown and likely to be significantly adverse, an EIS may be warranted. Another circumstance in which an EIS would be applicable is when there is potential for cumulatively significant adverse impacts resulting from

implementation of the MDP. Circumstances warranting an EIS are not anticipated or likely given the nature of MDP projects and what is known about potential impacts.

Staff would also consult section 6.03 of NAO 216-6 to determine whether an action is listed as requiring preparation of an EIS. Examples of actions that require preparation of an EIS include:

- “Major new projects or programmatic actions” that may significantly affect the quality of the human environment (6.03c.2(a))
- Research conducted in the natural environment on a scale at which substantial air masses are manipulated, substantial amounts of mineral resources are disturbed, substantial volumes of water are moved, or substantial amounts of habitats are disturbed (e.g., habitat restoration) (6.03c.2(c)(1))
- Research intended to form a major basis for development of future projects that could be considered major actions significantly affecting the environment (6.03c.2(c)(3))
- Research involving the use of highly toxic agents, pathogens, or non-native species in open systems (6.03c.2(c)(4))
- Development of plans, studies, or reports that could determine the nature of future major federal actions to be undertaken by NOAA or other federal agencies that would significantly affect the quality of the human environment (6.03c.2(d))

### 7.3 Emergency Response

There are provisions under NEPA and the ESA for taking emergency actions. These provisions do not exempt the agency from compliance with these statutes. They are alternatives to the standard compliance procedures.

CEQ NEPA Regulations: 40 C.F.R. section 1506.11 Emergencies:

“Where emergency circumstances make it necessary to take an action with significant environmental impact without observing the provisions of these regulations, the federal agency taking the action should consult with the Council about alternative arrangements. Agencies and the Council would limit such arrangements to actions necessary to control the immediate impacts of the emergency. Other actions remain subject to NEPA review.”

The NEPA “alternative arrangements” take the place of an Environmental Impact Statement (EIS) and only apply to federal actions with “significant environmental impacts.” Alternative arrangements are limited to “the actions necessary to control the immediate impacts of the emergency.” Factors to address when crafting “alternative arrangements” include: nature and scope of the emergency; actions necessary to control the immediate impacts of the emergency; potential adverse effects of the proposed action; components of the NEPA process that may be followed and provide value to decision-making (e.g., coordination with affected agencies and the public); duration of the emergency; and potential mitigation measures.

If the “emergency” action could qualify for a CE identified in NAO 216-6, the MDP program staff would complete a workshop similar to the one in Appendix E to screen for extraordinary circumstances and prepare a memo documenting applicability of the CE before disbursing funds or initiating a project.

If the action does not qualify for a CE because it triggers an exception in Section 5.05c of NAO 216-6, but the impacts are not likely to be significant such that an EIS is warranted, the MDP program staff would review the action against this PEA to determine whether it is consistent with the proposed action and analysis of effects. If the activity and effects have been adequately described by the PEA, a memorandum for the record would be prepared documenting the review and factors considered.

If a supplemental EA is required pursuant to CEQ regulations, the MDP would complete the analysis and review according to agency procedures and prepare a FONSI prior to project implementation.

Under the ESA emergency provisions, an emergency is a situation involving an “act of God,” disasters, casualties, national defense or security emergencies, etc., and includes response activities that must be taken to prevent imminent loss of human life or property.

An “emergency” does not exempt the agency from compliance with section 7 of the ESA. Where emergency actions are required that may affect listed species and/or critical habitats, and there is not time for a formal consultation prior to responding, MDP program staff would contact the Services immediately to inform them of the emergency response being taken.

50 C.F.R. 402.05(a) Where emergency circumstances mandate the need to consult in an expedited manner, consultation may be conducted informally through alternative procedures that the Director determines to be consistent with the requirements of sections 7(a)–(d) of the Act. This provision applies to situations involving acts of God, disasters, casualties, national defense or security emergencies, etc.

The MDP would initiate formal consultation after the emergency response, if listed species or critical habitat have been adversely affected by the actions.

50 C.F.R. 402.05(b) Formal consultation shall be initiated as soon as practicable after the emergency is under control. The federal agency shall submit information on the nature of the emergency action(s), the justification for the expedited consultation, and the impacts to endangered or threatened species and their habitats. The Service would evaluate such information and issue a biological opinion including the information and recommendations given during the emergency consultation.

## **7.4 Monitoring for Compliance**

Monitoring implementation of the Proposed Action is necessary to ensure environmental predictions in this PEA are not exceeded. This involves ensuring (1) mitigation measures are adequately implemented and are effective; (2) environmental standards in applicable laws are met; (3) no impacts are encountered that are substantially different from those predicted.

For projects implemented by award recipients, monitoring involves review of periodic (e.g., quarterly, annual) reports required under the terms of the award. Projects undertaken by the MDP are monitored in real-time as they are underway.

If monitoring suggests specific projects or techniques are resulting in impacts not anticipated in this PEA, the MDP would evaluate whether the project or technique may be modified to bring impacts in line with the PEA. If modification of the action is not sufficient, implementation may be halted while supplemental NEPA analyses, and applicable consultations, are completed.

## **7.5 Special Award Conditions and Conditional Approval of Specific Projects**

Conditional approval is a mechanism whereby an applicant is provided an opportunity to make necessary changes to a plan, a funding application, or to satisfy additional NEPA or other environmental compliance requirements before an action may occur. The award or expenditure under the award may be delayed via a Special Award Condition until the environmental compliance requirements are satisfied.

An example is when a project deemed to have merit could result in takes of ESA-listed species. If the applicant cannot modify their action to avoid take or other adverse impacts, and a federal permit is therefore required for implementation, the award may stipulate that expenditure of funds is not authorized prior to the applicant securing the permit. Conditional approval may be warranted where the time required to secure a permit exceeds the decision timeline for the award cycle and when delaying the award decision pending the permit decision would preclude funding a highly desirable project.

Special award conditions for prior approvals have included requirements that award recipients demonstrate compliance with applicable laws for environmental protection by providing proof of permits, licenses and authorizations prior to implementing the project.

A standard condition of awards is that recipients comply with applicable federal, state, and local laws during project implementation. It may not be practical or possible for applicants for awards to have secured all applicable permits at the time the grant proposal is due for review. In those cases, the project is reviewed to determine whether it would threaten violation of such laws, and the analysis of impacts assumes the grantee would operate in compliance. If monitoring of the activity suggests the grantee has not complied, or is not capable of complying, the award may be rescinded or future awards withheld.

## **8. List of Preparers**

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### Fish and Wildlife Service

#### *Endangered Species Act Section 7 Consultations:*

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## Appendix A: Marine Debris Act Amendments

### Coast Guard and Maritime Transportation Act of 2012 TITLE VI—MARINE DEBRIS

#### SEC. 601. SHORT TITLE.

This title may be cited as the ‘‘Marine Debris Act Amendments of 2012’’.

#### SEC. 602. SHORT TITLE AMENDMENT; REFERENCES.

(a) SHORT TITLE AMENDMENT.—Section 1 of the Marine Debris Research, Prevention, and Reduction Act (33 U.S.C. 1951 note) is amended by striking ‘‘Research, Prevention, and Reduction’’.

(b) REFERENCES.—Except as otherwise expressly provided, whenever in this title an amendment is expressed as an amendment to a section or other provision, the reference shall be considered to be made to a section or other provision of the Marine Debris Act (33 U.S.C. 1951 et seq.), as so retitled by subsection (a) of this section.

#### SEC. 603. PURPOSE.

Section 2 (33 U.S.C. 1951) is amended to read as follows:

##### ‘‘SEC. 2. PURPOSE.

‘‘The purpose of this Act is to address the adverse impacts of marine debris on the United States economy, the marine environment, and navigation safety through the identification, determination of sources, assessment, prevention, reduction, and removal of marine debris.’’

#### SEC. 604. NOAA MARINE DEBRIS PROGRAM.

(a) NAME OF PROGRAM.—Section 3 (33 U.S.C. 1952) is amended—

(1) in the section heading by striking ‘‘PREVENTION AND REMOVAL’’; and

(2) in subsection (a)—

(A) by striking ‘‘Prevention and Removal Program to reduce and prevent the occurrence and’’ and inserting ‘‘Program to identify, determine sources of, assess, prevent, reduce, and remove marine debris and address the’’;

(B) by inserting ‘‘the economy of the United States,’’ after ‘‘marine debris on’’; and

(C) by inserting a comma after ‘‘environment’’.

(b) PROGRAM COMPONENTS.—Section 3(b) (33 U.S.C. 1952(b)) is amended to read as follows:

‘‘(b) PROGRAM COMPONENTS.—The Administrator, acting through the Program and subject to the availability of appropriations, shall—

‘‘(1) identify, determine sources of, assess, prevent, reduce, and remove marine debris, with a focus on marine debris posing a threat to living marine resources and navigation safety;

‘‘(2) provide national and regional coordination to assist States, Indian tribes, and regional organizations in the identification, determination of sources, assessment, prevention, reduction, and removal of marine debris;

‘‘(3) undertake efforts to reduce the adverse impacts of lost and discarded fishing gear on living marine resources and navigation safety, including—

‘‘(A) research and development of alternatives to gear



posing threats to the marine environment and methods for marking gear used in certain fisheries to enhance the tracking, recovery, and identification of lost and discarded gear; and

“(B) the development of effective nonregulatory measures and incentives to cooperatively reduce the volume of lost and discarded fishing gear and to aid in gear recovery;

“(4) undertake outreach and education activities for the public and other stakeholders on sources of marine debris, threats associated with marine debris, and approaches to identifying, determining sources of, assessing, preventing, reducing, and removing marine debris and its adverse impacts on the United States economy, the marine environment, and navigation safety, including outreach and education activities through public-private initiatives; and

“(5) develop, in consultation with the Interagency Committee, interagency plans for the timely response to events determined by the Administrator to be severe marine debris events, including plans to—

“(A) coordinate across agencies and with relevant State, tribal, and local governments to ensure adequate, timely, and efficient response;

“(B) assess the composition, volume, and trajectory of marine debris associated with a severe marine debris event; and

“(C) estimate the potential impacts of a severe marine debris event, including economic impacts on human health, navigation safety, natural resources, tourism, and livestock, including aquaculture.”

(c) GRANT CRITERIA AND GUIDELINES.—Section 3(c) (33 U.S.C. 1952(c)) is amended—

(1) in paragraph (1), by striking “section 2(1)” and inserting “section 2”;

(2) by striking paragraph (5); and

(3) by redesignating paragraphs (6) and (7) as paragraphs (5) and (6), respectively.

(d) REPEAL.—Section 2204 of the Marine Plastic Pollution Research and Control Act of 1987 (33 U.S.C. 1915), and the item relating to that section in the table of contents contained in section 2 of the United States-Japan Fishery Agreement Approval Act of 1987, are repealed.

**SEC. 605. REPEAL OF OBSOLETE PROVISIONS.**

Section 4 (33 U.S.C. 1953) is amended—

(1) by striking “(a) STRATEGY.—”; and

(2) by striking subsections (b) and (c).

**SEC. 606. COORDINATION.**

(a) INTERAGENCY MARINE DEBRIS COORDINATING COMMITTEE.—

(1) IN GENERAL.—Section 2203 of the Marine Plastic Pollution Research and Control Act of 1987 (33 U.S.C. 1914) is redesignated and moved to replace and appear as section 5 of the Marine Debris Act (33 U.S.C. 1954), as so retitled by section 602(a) of this title.

(2) CONFORMING AMENDMENT.—Section 5 of the Marine Debris Act (33 U.S.C. 1954), as amended by paragraph (1) of this subsection, is further amended in subsection (d)(2)—

(A) by striking “this Act” and inserting “the Marine Plastic Pollution Research and Control Act of 1987”; and

(B) by inserting “of the Marine Plastic Pollution Research and Control Act of 1987” after “section 2201”.

(3) CLERICAL AMENDMENT.—The item relating to section 2203 in the table of contents contained in section 2 of the United States-Japan Fishery Agreement Approval Act of 1987 is repealed.

(b) BIENNIAL PROGRESS REPORTS.—Section 5(c)(2) of the Marine Debris Research, Prevention, and Reduction Act (33 U.S.C. 1954(c)(2)), as in effect immediately before the enactment of this Act—

(1) is redesignated and moved to appear as subsection

(e) at the end of section 5 of the Marine Debris Act, as amended by subsection (a) of this section; and

(2) is amended—

(A) by striking “ANNUAL PROGRESS REPORTS.—” and all that follows through “thereafter” and inserting “BIENNIAL PROGRESS REPORTS.—Biennially”;

(B) by striking “Interagency” each place it appears;

(C) by striking “chairperson” and inserting “Chairperson”;

(D) by inserting “Natural” before “Resources”;

(E) by redesignating subparagraphs (A) through (E) as paragraphs (1) through (5), respectively; and

(F) by moving all text 2 ems to the left.

**SEC. 607. CONFIDENTIALITY OF SUBMITTED INFORMATION.**

Section 6(2) (33 U.S.C. 1955(2)) is amended by striking “by the fishing industry”.

**SEC. 608. DEFINITIONS.**

Section 7 (33 U.S.C. 1956) is amended—

(1) in paragraph (2), by striking “2203 of the Marine Plastic Pollution Research and Control Act of 1987 (33 U.S.C. 1914)” and inserting “5 of this Act”;

(2) by striking paragraph (3) and inserting the following: “(3) MARINE DEBRIS.—The term ‘marine debris’ means any persistent solid material that is manufactured or processed and directly or indirectly, intentionally or unintentionally, disposed of or abandoned into the marine environment or the Great Lakes.”;

(3) by striking paragraph (5);

(4) by redesignating paragraph (7) as paragraph (5);

(5) in paragraph (5), as redesignated by paragraph (4) of this section, by striking “Prevention and Removal”;

(6) by striking paragraph (6) and inserting the following:

“(6) SEVERE MARINE DEBRIS EVENT.—The term ‘severe marine debris event’ means atypically large amounts of marine debris caused by a natural disaster, including a tsunami, flood, landslide, or hurricane, or other source.”; and

(7) by redesignating paragraph (8) as paragraph (7).

**SEC. 609. SEVERE MARINE DEBRIS EVENT DETERMINATION.**

(a) IN GENERAL.—The Administrator of the National Oceanic and Atmospheric Administration shall determine whether the March 2011, Tohoku earthquake and subsequent tsunami and the October 2012, hurricane Sandy each caused a severe marine debris event (as that term is defined in section 7(6) of the Marine Debris Act (33 U.S.C. 1956(6)), as amended by this Act).

(b) DEADLINE.—Not later than 30 days after the date of enactment of this Act, the Administrator shall provide the determination required under subsection (a) to the Committee on Commerce, Science, and Transportation of the Senate and the Committee on Transportation and Infrastructure and the Committee on Natural Resources of the House of Representatives.

## Appendix B: Marine Debris Research, Prevention, and Reduction Act

# One Hundred Ninth Congress of the United States of America

### AT THE SECOND SESSION

*Begun and held at the City of Washington on  
Tuesday, the third day of January, two thousand and  
six*

## An Act

To establish a program within the National Oceanic and Atmospheric Administration and the United States Coast Guard to help identify, determine sources of, assess, reduce, and prevent marine debris and its adverse impacts on the marine environment and navigation safety, in coordination with non-Federal entities, and for other purposes.

*Be it enacted by the Senate and House of Representatives of the United States of America in Congress assembled,*

#### SECTION 1. SHORT TITLE.

This Act may be cited as the “Marine Debris Research, Prevention, and Reduction Act”.

#### SEC. 2. PURPOSES.

The purposes of this Act are—

- (1) to help identify, determine sources of, assess, reduce, and prevent marine debris and its adverse impacts on the marine environment and navigation safety;
- (2) to reactivate the Interagency Marine Debris Coordinating Committee; and
- (3) to develop a Federal marine debris information clearing-

house.

#### SEC. 3. NOAA MARINE DEBRIS PREVENTION AND REMOVAL PROGRAM.

(a) ESTABLISHMENT OF PROGRAM.—There is established, within the National Oceanic and Atmospheric Administration, a Marine Debris Prevention and Removal Program to reduce and prevent the occurrence and adverse impacts of marine debris on the marine environment and navigation safety.

(b) PROGRAM COMPONENTS.—The Administrator, acting through the Program and subject to the availability of appropriations, shall carry out the following activities:

- (1) MAPPING, IDENTIFICATION, IMPACT ASSESSMENT, REMOVAL, AND PREVENTION.—The Administrator shall, in consultation with relevant

Federal agencies, undertake marine debris mapping, identification, impact assessment, prevention, and removal efforts, with a focus on marine debris posing a threat to living marine resources and navigation safety, including—

(A) the establishment of a process, building on existing information sources maintained by Federal agencies such as the Environmental Protection Agency and the Coast Guard, for cataloguing and maintaining an inventory of marine debris and its impacts found in the navigable waters of the United States and the United States exclusive economic zone, including location, material, size, age, and origin, and impacts on habitat, living marine resources, human health, and navigation safety;

(B) measures to identify the origin, location, and projected movement of marine debris within United States navigable waters, the United States exclusive economic zone, and the high seas, including the use of oceanographic, atmospheric, satellite, and remote sensing data; and

(C) development and implementation of strategies, methods, priorities, and a plan for preventing and removing marine debris from United States navigable waters and within the United States exclusive economic zone, including development of local or regional protocols for removal of derelict fishing gear and other marine debris.

(2) **REDUCING AND PREVENTING LOSS OF GEAR.**—The Administrator shall improve efforts to reduce adverse impacts of lost and discarded fishing gear on living marine resources and navigation safety, including—

(A) research and development of alternatives to gear posing threats to the marine environment, and methods for marking gear used in specific fisheries to enhance the tracking, recovery, and identification of lost and discarded gear; and

(B) development of effective nonregulatory measures and incentives to cooperatively reduce the volume of lost and discarded fishing gear and to aid in its recovery.

(3) **OUTREACH.**—The Administrator shall undertake out-reach and education of the public and other stakeholders, such as the fishing industry, fishing gear manufacturers, and other marine-dependent industries, and the plastic and waste management industries, on sources of marine debris, threats associated with marine debris and approaches to identify, determine sources of, assess, reduce, and prevent marine debris and its adverse impacts on the marine environment and navigational safety, including outreach and education activities through public-private initiatives. The Administrator shall coordinate outreach and education activities under this paragraph with any outreach programs conducted under section 2204 of the Marine Plastic Pollution Research and Control Act of 1987 (33 U.S.C. 1915).

(c) **GRANTS, COOPERATIVE AGREEMENTS, AND CONTRACTS.**—

(1) **IN GENERAL.**—The Administrator, acting through the Program, shall enter into cooperative agreements and contracts and provide financial assistance in the form of grants for projects to accomplish the purpose set forth in section 2(1).

(2) **GRANT COST SHARING REQUIREMENT.**—

(A) IN GENERAL.—Except as provided in subparagraph (B), Federal funds for any grant under this section may not exceed 50 percent of the total cost of such project. For purposes of this subparagraph, the non-Federal share of project costs may be provided by in-kind contributions and other noncash support.

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

(3) AMOUNTS PAID AND SERVICES RENDERED UNDER CONSENT.—

(A) CONSENT DECREES AND ORDERS.—If authorized by the Administrator or the Attorney General, as appropriate, the non-Federal share of the cost of a project carried out under this Act may include money paid pursuant to, or the value of any in-kind service performed under, an administrative order on consent or judicial consent decree that will remove or prevent marine debris.

(B) OTHER DECREES AND ORDERS.—The non-Federal share of the cost of a project carried out under this Act may not include any money paid pursuant to, or the value of any in-kind service performed under, any other administrative order or court order.

(4) ELIGIBILITY.—Any State, local, or tribal government whose activities affect research or regulation of marine debris, and any institution of higher education, nonprofit organization, or commercial organization with expertise in a field related to marine debris, is eligible to submit to the Administrator a marine debris proposal under the grant program.

(5) GRANT CRITERIA AND GUIDELINES.—Within 180 days after the date of the enactment of this Act, the Administrator shall promulgate necessary guidelines for implementation of the grant program, including development of criteria and priorities for grants. In developing those guidelines, the Administrator shall consult with—

(A) the Interagency Committee;

(B) regional fishery management councils established under the Magnuson-Stevens Fishery Conservation and Management Act (16 U.S.C. 1801 et seq.);

(C) State, regional, and local governmental entities with marine debris experience;

(D) marine-dependent industries; and

(E) nongovernmental organizations involved in marine debris research, prevention, or removal activities.

(6) PROJECT REVIEW AND APPROVAL.—The Administrator shall—

(A) review each marine debris project proposal to determine if it meets the grant criteria and supports the goals of this Act;

(B) after considering any written comments and recommendations based on the review, approve or disapprove the proposal; and

(C) provide notification of that approval or disapproval to the person who submitted the proposal.

(7) PROJECT REPORTING.—Each grantee under this section shall provide periodic reports as required by the Administrator. Each report shall include all information required by the Administrator for evaluating the progress and success in meeting its stated goals, and impact of the grant activities on the marine debris problem.

**SEC. 4. COAST GUARD PROGRAM.**

(a) STRATEGY.—The Commandant of the Coast Guard, in consultation with the Interagency Committee, shall—

(1) take actions to reduce violations of and improve implementation of MARPOL Annex V and the Act to Prevent Pollution from Ships (33 U.S.C. 1901 et seq.) with respect to the discard of plastics and other garbage from vessels;

(2) take actions to cost-effectively monitor and enforce compliance with MARPOL Annex V and the Act to Prevent Pollution from Ships (33 U.S.C. 1901 et seq.), including through cooperation and coordination with other Federal and State enforcement programs;

(3) take actions to improve compliance with requirements under MARPOL Annex V and section 6 of the Act to Prevent Pollution from Ships (33 U.S.C. 1905) that all United States ports and terminals maintain and monitor the adequacy of receptacles for the disposal of plastics and other garbage, including through promoting voluntary government-industry partnerships;

(4) develop and implement a plan, in coordination with industry and recreational boaters, to improve ship-board waste management, including recordkeeping, and access to waste reception facilities for ship-board waste;

(5) take actions to improve international cooperation to reduce marine debris; and

(6) establish a voluntary reporting program for commercial vessel operators and recreational boaters to report incidents of damage to vessels and disruption of navigation caused by marine debris, and observed violations of laws and regulations relating to the disposal of plastics and other marine debris. (b) REPORT.—Not later than 180 days after the date of enactment of this Act, the Commandant of the Coast Guard shall submit to the Committee on Commerce, Science, and Transportation of the Senate and the Committee on Transportation and Infrastructure of the House of Representatives a report evaluating the Coast Guard's progress in implementing subsection (a).

(c) EXTERNAL EVALUATION AND RECOMMENDATIONS ON ANNEX V

(1) IN GENERAL.—The Commandant of the Coast Guard shall enter into an arrangement with the National Research Council under which the National Research Council shall submit, by not later than 18 months after the date of the enactment of this Act and in consultation with the Commandant and the Interagency Committee, to the Committee on Commerce, Science, and Transportation of the Senate and the Committee on Transportation and Infrastructure of the House of Representatives a comprehensive report on the effectiveness of international and national measures to prevent and reduce marine debris and its impact.

(2) CONTENTS.—The report required under paragraph (1) shall include—

(A) an evaluation of international and domestic implementation of MARPOL Annex V and the Act to Prevent Pollution from Ships (33 U.S.C. 1901 et seq.) and recommendations of cost-effective actions to improve implementation and compliance with such measures to reduce impacts of marine debris;

(B) recommendation of additional Federal or international actions, including changes to international and domestic law or regulations, needed to further reduce the impacts of marine debris; and

(C) evaluation of the role of floating fish aggregation devices in the generation of marine debris and existing legal mechanisms to reduce impacts of such debris, focusing on impacts in the Western Pacific and Central Pacific regions.

#### SEC. 5. INTERAGENCY COORDINATION.

(a) INTERAGENCY MARINE DEBRIS COORDINATING COMMITTEE.—Section 2203 of the Marine Plastic Pollution Research and Control Act of 1987 (33 U.S.C. 1914) is amended—

(1) by striking subsection (a) and inserting the following:

“(a) ESTABLISHMENT OF INTERAGENCY MARINE DEBRIS COORDINATING COMMITTEE.—There is established an Interagency Marine Debris Coordinating Committee to coordinate a comprehensive program of marine debris research and activities among Federal agencies, in cooperation and coordination with non-governmental organizations, industry, universities, and research institutions, States, Indian tribes, and other nations, as appropriate.”; and

(2) in subsection (c), by inserting “public, interagency” before “forum”.

(b) DEFINITION OF MARINE DEBRIS.—The Administrator and the Commandant of the Coast Guard, in consultation with the Interagency Committee established under subsection (a), shall jointly develop and promulgate through regulations a definition of the term “marine debris” for purposes of this Act.

(c) REPORTS.—

(1) INTERAGENCY REPORT ON MARINE DEBRIS IMPACTS AND STRATEGIES.—

(A) IN GENERAL.—Not later than 12 months after the date of the enactment of this Act, the Interagency Committee, through the chairperson, shall complete and submit to the Committee on Commerce, Science, and Transportation of the Senate and the Committee on Transportation and Infrastructure and the Committee on Resources of the House of Representatives a report that—

(i) identifies sources of marine debris;

(ii) the ecological and economic impact of marine debris;

(iii) alternatives for reducing, mitigating, preventing, and controlling the harmful affects of marine debris;

(iv) the social and economic costs and benefits of such alternatives; and

(v) recommendations to reduce marine debris both domestically and internationally.

(B) RECOMMENDATIONS.—The report shall provide strategies and recommendations on—

(i) establishing priority areas for action to address leading problems relating to marine debris;

(ii) developing strategies and approaches to prevent, reduce, remove, and dispose of marine debris, including through private-public partnerships;

(iii) establishing effective and coordinated education and outreach activities; and

(iv) ensuring Federal cooperation with, and assistance to, the coastal States (as that term is defined in section 304 of the Coastal Zone Management Act of 1972 (16 U.S.C. 1453)), Indian tribes, and local governments in the identification, determination of sources,



prevention, reduction, management, mitigation, and control of marine debris and its adverse impacts.

(2) ANNUAL PROGRESS REPORTS.—Not later than 3 years after the date of the enactment of this Act, and biennially thereafter, the Interagency Committee, through the chairperson, shall submit to the Committee on Commerce, Science, and Transportation of the Senate and the Committee on Resources of the House of Representatives a report that evaluates United States and international progress in meeting the purpose of this Act. The report shall include—

(A) the status of implementation of any recommendations and strategies of the Interagency Committee and analysis of their effectiveness;

(B) a summary of the marine debris inventory to be maintained by the National Oceanic and Atmospheric Administration;

(C) a review of the National Oceanic and Atmospheric Administration program authorized by section 3, including projects funded and accomplishments relating to reduction and prevention of marine debris;

(D) a review of Coast Guard programs and accomplishments relating to marine debris removal, including enforcement and compliance with MARPOL requirements; and

(E) estimated Federal and non-Federal funding provided for marine debris and recommendations for priority funding needs.

#### SEC. 6. FEDERAL INFORMATION CLEARINGHOUSE.

The Administrator, in coordination with the Interagency Committee, shall—

(1) maintain a Federal information clearinghouse on marine debris that will be available to researchers and other interested persons to improve marine debris source identification, data sharing, and monitoring efforts through collaborative research and open sharing of data; and

(2) take the necessary steps to ensure the confidentiality of such information (especially proprietary information), for any information required by the Administrator to be submitted by the fishing industry under this section.

#### SEC. 7. DEFINITIONS.

In this Act:

(1) ADMINISTRATOR.—The term “Administrator” means the Administrator of the National Oceanic and Atmospheric Administration.

(2) INTERAGENCY COMMITTEE.—The term “Interagency Committee” means the Interagency Marine Debris Coordinating Committee established under section 2203 of the Marine Plastic Pollution Research and Control Act of 1987 (33 U.S.C. 1914).

(3) UNITED STATES EXCLUSIVE ECONOMIC ZONE.—The term “United States exclusive economic zone” means the zone established by Presidential Proclamation Numbered 5030, dated March 10, 1983, including the ocean waters of the areas referred to as “eastern special areas” in article 3(1) of the Agreement between the United States of America and the Union of Soviet Socialist Republics on the Maritime Boundary, signed June 1, 1990.

(4) MARPOL; ANNEX V; CONVENTION.—The terms

“MARPOL”, “Annex V”, and “Convention” have the meaning given those terms under section 2(a) of the Act to Prevent Pollution from Ships (33 U.S.C. 1901(a)).

(5) NAVIGABLE WATERS.—The term “navigable waters” means waters of the United States, including the territorial sea.

(6) TERRITORIAL SEA.—The term “territorial sea” means the waters of the United States referred to in Presidential Proclamation No. 5928, dated December 27, 1988.

(7) PROGRAM.—The term “Program” means the Marine Debris Prevention and Removal Program established under section 3.

(8) STATE.—The term “State” means—

(A) any State of the United States that is impacted by marine debris within its seaward or Great Lakes boundaries;

(B) the District of Columbia;

(C) American Samoa, Guam, the Northern Mariana Islands, Puerto Rico, and the Virgin Islands; and

(D) any other territory or possession of the United States, or separate sovereign in free association with the United States, that is impacted by marine debris within its seaward boundaries.

#### **SEC. 8. RELATIONSHIP TO OUTER CONTINENTAL SHELF LANDS ACT.**

Nothing in this Act supersedes, or limits the authority of the Secretary of the Interior under, the Outer Continental Shelf Lands Act (43 U.S.C. 1331 et seq.).

#### **SEC. 9. AUTHORIZATION OF APPROPRIATIONS.**

There are authorized to be appropriated for each fiscal year 2006 through 2010—

(1) to the Administrator for carrying out sections 3 and 6, \$10,000,000, of which no more than 10 percent may be for administrative costs; and

(2) to the Secretary of the Department in which the Coast Guard is operating, for the use of the Commandant of the Coast Guard in carrying out section 4, \$2,000,000, of which no more than 10 percent may be used for administrative costs.

*Speaker of the House of Representatives.*

*Vice President of the United States and  
President of the Senate.*

## **Appendix C: MDP Grant Guidelines**

### **DEPARTMENT OF COMMERCE**

#### **National Oceanic and Atmospheric Administration**

**Docket No.:** 071213835-91361-02

**RIN:** 0648-ZB84

#### **Guidelines for the Marine Debris Program Grant Program**

**AGENCY:** National Ocean Service (NOS), National Oceanic and Atmospheric Administration (NOAA), Department of Commerce.

**ACTION:** Notice of Final Guidelines for NOAA's Marine Debris Program Grant Program.

**SUMMARY:** The NOAA Marine Debris Division, Office of Response and Restoration, National Ocean Service, is issuing guidelines to implement the Marine Debris Program (MDP) grant program. The MDP was created by the Marine Debris Research, Prevention, and Reduction Act (33 U.S.C. 1951 et seq.) to coordinate, strengthen, and enhance the awareness of marine debris efforts within the agency, and to work with external partners to support research, prevention, and reduction activities related to the issue of marine debris. The NOAA MDP mission is to investigate and solve the problems that stem from marine debris through research, prevention, and reduction activities, in order to protect and conserve our nation's living marine resources and ensure navigation safety. Within the Act, the MDP is directed to develop formal guidelines for the implementation of a grant program. This notice identifies those guidelines.

**ADDRESSES:** Comments received may be viewed by contacting Sarah E. Morison, NOAA Marine Debris Program Coordinator, Office of Response and Restoration, N/ORR, 1305 East-West Highway, Silver Spring, MD, 20910

**FOR FURTHER INFORMATION CONTACT:** Sarah E. Morison,  
Tel: 301-713-2989 x120 or by email at Sarah.Morison@NOAA.gov

#### **SUPPLEMENTARY INFORMATION:**

NOAA's Marine Debris Program (MDP) serves as a centralized marine debris capability within NOAA in order to coordinate, strengthen, and increase the visibility of marine debris issues and efforts within the agency, its partners, and the public. The mission of the NOAA Marine Debris Program is to investigate and solve the problems that stem from marine debris through research, prevention, and reduction activities, in order to protect and conserve our nation's living marine resources and ensure navigation safety.

Additionally, the MDP supports and works closely with various partners across the U.S. to fulfill the Program's mission. The guidelines implementing the MDP's grant program are set forth below.

## Electronic Access

Information on the MDP can be found on the World Wide Web at:  
<http://marinedebris.noaa.gov>

### DISCUSSION OF COMMENTS:

Only one comment was received in response to the solicitation for comment on the NOAA Marine Debris Program Grant Program Guidelines published in the Federal Register on March 20, 2008. This comment referenced a 1951 Act and outlined enforcement actions that should be taken to address pollution from commercial shipping. The comment was not applicable to the Guidelines and therefore NOAA is not providing a response to the comment.

The guidelines implementing the MDP grant program are set forth below.

## NOAA MARINE DEBRIS PROGRAM GRANT PROGRAM GUIDELINES

### Section 1. Goals and Objectives

The Marine Debris Research, Prevention, and Reduction Act (the Act) (33 U.S.C. 1951 et seq.) establishes a marine debris program within the National Oceanic and Atmospheric Administration (NOAA) to reduce and prevent the occurrence and adverse impacts of marine debris on the marine environment, and navigation safety through activities such as:

- Mapping, identification, impact assessment, removal, and prevention;
- Reducing and preventing loss of fishing gear; and
- Outreach.

The Act also directs the Administrator to provide financial assistance in the form of grants to accomplish the Act's purpose of identifying, determining sources of, assessing, reducing, and preventing marine debris and its adverse impacts on the marine environment, living marine resources, and navigation safety.

The Act further directs the Administrator to issue guidelines for the implementation of the grant program, including development of criteria and priorities for grants, in consultation with the Interagency Marine Debris Coordinating Committee; regional fishery management councils established under the Magnuson-Stevens Fishery Conservation and Management Act; state, regional, and local governmental entities with marine debris experience; marine-dependent industries; and nongovernmental organizations involved in marine debris research, prevention, and removal activities.

The grant program's objective is to bring together groups, public and non-profit organizations, industry, academia, commercial organizations, corporations and businesses, youth conservation corps, students, landowners, and local governments, and state and Federal agencies to implement marine debris-related projects to support NOAA's mission, "to understand and predict changes in Earth's environment and conserve and manage coastal and marine resources to meet our Nation's economic, social, and environmental needs." These diverse entities will be sought at the national,

state, and local level to contribute funding, technical assistance, workforce support or other in-kind services to allow citizens to take responsibility for the improvement of important living marine resources, their habitats and other uses of the ocean that are impacted by marine debris.

## **Section 2. Purpose of the Guidelines**

These guidelines provide information for potential applicants to the NOAA Marine Debris Program's (MDP) grant program. In regard to MDP grants that may be awarded by NOAA through competitive solicitations, the guidelines explain the grant program goals and objectives, and the implementation of the competitive grant program.

In order to accomplish its comprehensive mission, the MDP anticipates using two different approaches in designing its grant program. First, the MDP will solicit recipients who will work directly on individual projects related to relevant marine debris issues. Second, the MDP will solicit diverse entities which will be funded to engage actively in establishing partnership arrangements with other organizations with the purpose of cooperatively implementing marine debris-related projects to benefit NOAA trust resources. The entities selected to establish these partnerships will assume the administrative responsibilities, such as letting contracts and managing progress and financial reports, for making subawards to accomplish individual projects.

## **Section 3. Definition of Terms**

Act - Marine Debris Research, Prevention, and Reduction Act (P.L. 109-449, 33 USC 1951 *et seq.*)

Administrator – The Administrator of the National Oceanic and Atmospheric Administration

Marine Debris – For the purposes of the Marine Debris Research, Prevention, and Reduction Act only, marine debris is defined as any persistent solid material that is manufactured or processed and directly or indirectly, intentionally or unintentionally, disposed of or abandoned into the marine environment or the Great Lakes.

MDP – Marine Debris Program, within the NOAA National Ocean Service, Office of Response and Restoration, Marine Debris Division

NOAA – The National Oceanic and Atmospheric Administration, within the U.S. Department of Commerce

State – State means any State of the United States, American Samoa, Guam, the Commonwealth of the Northern Mariana Islands, the Commonwealth of Puerto Rico, and the U.S. Virgin Islands, and any other territory or possession of the United States, or separate sovereign in free association with the United States.

## **Section 4. Eligible Participants**

In accordance with section 3(c)(4) of the Act, any state, local or tribal government whose activities affect research or regulation of marine debris and any institution of higher education, nonprofit organization, Regional Fishery Management Council, or commercial organization with expertise in a field related to marine debris, is eligible to submit a marine debris proposal under this grant

program. Individuals may also apply. Federal agencies are not eligible to apply for funding through any opportunity covered by these guidelines; however, they are encouraged to work in partnership with state agencies, municipalities, and community groups who may apply.

### **Section 5. Activities to Address Marine Debris**

Generally, the MDP grant program is interested in funding projects that address one or more activities specified in the Act, including:

- Mapping, identification, impact assessment, removal and prevention of marine debris;
- Reducing and preventing the loss of fishing gear;
- Outreach and education; and
- Assisting in maintaining an up-to-date Federal marine debris information clearinghouse.

The MDP anticipates that proposed projects, either funded directly through NOAA or through entities selected to leverage funding through partnership arrangements with other organizations, should clearly demonstrate anticipated benefits to:

- Aquatic habitats, including but not limited to, salt marshes, seagrass beds, coral reefs, mangrove forests, or other sensitive aquatic habitats;
- Species, including marine mammals, commercial and non-commercial fishery resources; endangered and threatened marine species, seabirds, other NOAA trust resources, or other living marine resources;
- Navigation Safety; or
- Other aspects of the marine environment.

Research-focused projects should explicitly state the hypothesis or purpose of the research, the methods that will be used, and how the results may be used and analyzed to better understand or decrease the impacts or amount of marine debris in the environment. Research projects are not required to have an outreach component; however, they should include a method for sharing project results with other researchers and relevant parties.

Prevention-focused projects should have a component that is able to measure the success of the activity within a target audience or debris type.

Reduction-focused projects should emphasize reduction and prevention within local, state or regional plans. Removal of debris should result in benefits to the species and habitats listed in this section of these guidelines, and respond to a local, state or regional prioritization method. Projects that make debris less harmful while in the environment are also considered reduction-focused. Examples of this type of project are modifications to fishing gear so that, if lost, there is a mechanism for trapped animals to escape or a way to reduce the gear's fishing efficiency.

Outreach projects should be focused enough to achieve results within a target audience, be able to measure the attitudes and behaviors of the target audience before and after the project, convey the importance of marine debris issues, and have tangible products.

The Federal marine debris information clearinghouse, as of September 2009, has not yet been organized. Its status will be updated and provided in any funding opportunity announcement that lists maintaining the clearinghouse as a priority, to focus project proposals.

The MDP anticipates that funding opportunities will note the priorities for the selection of applications in the competitive announcements. Such priorities may note that applications would be more likely to be successful if they demonstrated a clear need for the proposed action(s), assisted the nation in gaining a better understanding of, or addressing, marine debris, and have clear results within the priorities of the applicable funding opportunity. Monitoring or performance evaluation components to address the long-term success of the project are also encouraged. As is warranted, the MDP may develop other selection priorities for inclusion in the funding opportunities.

The MDP anticipates that non-research projects requesting funds predominantly for administration, salaries, and overhead may be discouraged in light of the fact that the majority of funds should be used for activities that would otherwise not be undertaken. Actual uses of the funds would depend on the type and focus of the project.

## **Section 6. Cost-sharing Requirement**

Section 3(c)(2) of the Act states Federal funds may not exceed 50 percent of the total cost of a project under this Program. The competitive funding opportunities will set out how the match requirement may be met, such as through volunteer hours, and will vary depending on the entities selected for funding. The Act indicates that a waiver of the match may be allowed if the Administrator determines the project meets the following two requirements:

- (1) no reasonable means are available through which applicants can meet the matching requirement, and
- (2) the probable benefit of such project outweighs the public interest in the matching requirement.

Any applicant interested in requesting a waiver would have to provide a detailed justification explaining the need for the waiver including attempts to obtain sources of matching funds, how the benefit of the project outweighs the public interest in providing match, and any other extenuating circumstances preventing the availability of match.

In addition, the Act provides, in section 3(c)(3)(A), that if authorized by the Administrator or the Attorney General, the non-Federal share of the cost of a project may include money or the value of any in-kind service performed under an administrative order on consent or judicial consent decree that will remove or prevent marine debris.

## **Section 7. Funding Mechanisms**

The MDP grant program may use new or existing NOAA grant programs as vehicles to fund projects related to the purposes of the Act. The MDP anticipates that competitive funding opportunities will be announced entailing marine debris funding and including funding priorities for that opportunity each year. There may be more than one opportunity each year. Opportunities will be made public through a Notice of Funding Availability (NOFA) published in the Federal Register and posted on [www.grants.gov](http://www.grants.gov). The availability of funding to be awarded through

subgrants from NOAA grant recipients, including applicable selection priorities, will be announced through email, Web sites, and press releases.

### **Section 8. NOAA Funding Sources and Dispersal Mechanisms**

The MDP grant program envisions funding projects through cooperative agreements and grants, as appropriate.

A cooperative agreement is a legal instrument reflecting a relationship between NOAA and a recipient whenever (1) the principal purpose of the relationship is to provide financial assistance to the recipient and (2) substantial involvement is anticipated between NOAA and the recipient during performance of the contemplated activity.

A grant is similar to a cooperative agreement, except that in the case of grants, substantial involvement between NOAA and the recipient is not anticipated during the performance of the contemplated activity. Financial assistance is the transfer of money, property, services or anything of value to a recipient in order to accomplish a public purpose of support or stimulation that is authorized by Federal statute.

Each year, the NOAA Marine Debris Division Chief will determine the proportion of Program funds that will be allocated to direct project funding through grants and to organizations that will leverage NOAA dollars through partnership arrangements. The proportion of funding to be allocated to these organizations may depend upon the amount of funds available from partnering organizations to leverage NOAA dollars and the ability of partners to help NOAA fund a broad array of projects over a wide geographic distribution.

### **Section 9. NOAA Selection Guidelines**

NOAA's Notice of Funding Availability (NOFA) and accompanying Federal Funding Opportunity (FFO) announcement will contain funding opportunity descriptions, award information, eligibility information, application and submission information, priority funding areas for the year, application review and selection criteria, award administration information, Administrative and National Environmental Policy Act requirements, agency contacts, and other information for potential applicants. In 2000, NOAA adopted five standard evaluation criteria for all its competitive grant programs, as follows:

- Importance and Applicability of Proposal - This criterion ascertains whether there is intrinsic value in the proposed work and/or relevance to NOAA, Federal, regional, state or local activities.
- Technical/Scientific Merit - This criterion assesses whether the approach is technically sound and/or innovative, if the methods are appropriate, and whether there are clear project goals and objectives.
- Overall Qualifications of Applicants - This criterion ascertains whether the applicant possesses the necessary education, experience, training, facilities, and administrative resources to accomplish the project.
- Project Costs - This criterion evaluates the budget to determine if it is realistic and commensurate with the project needs and time-frame.



- Outreach, Education, and Community Involvement - NOAA assesses whether the project provides a focused and effective education and outreach strategy regarding NOAA's mission.

Information on how these criteria are specifically applied in the context of the NOAA Marine Debris Program will be described each year in the NOFAs and FFOs for NOAA-funded project awards and for awards to organizations that will issue subawards to fund projects related to marine debris issues.

## **Section 10. Partnerships with Other Federal Agencies**

Should other Federal agencies partner with NOAA to award funding, opportunities will be published in [www.grants.gov](http://www.grants.gov) and through such other vehicles as may be appropriate for the particular agency making the solicitation announcement. Examples would be the Federal Register or the particular agencies' websites. Application requirements may vary by partner agency and will be specified in the relevant solicitations.

## **Section 11. Environmental Compliance and Safety**

It is the applicant's responsibility to obtain all necessary Federal, state, and local government permits and approvals for the proposed work. Applicants are expected to design their projects so that they minimize the potential for adverse impacts to the environment. NOAA must analyze the potential environmental impacts, as required by the National Environmental Policy Act (NEPA), for applications that seek NOAA funding and which are subject to NOAA control and discretion. Proposals should provide enough detail for NOAA to make a NEPA determination. Successful applications cannot be forwarded to the NOAA Grants Management Division with recommendations for funding until NOAA completes necessary NEPA documentation or determines it does not apply.

Consequently, as part of an applicant's package, and under the description of proposed activities, applicants will be required to provide detailed information on the activities to be conducted, such as site locations, species and habitat(s) to be affected, possible construction activities, and any environmental concerns that may exist (e.g., the use of and/or disposal of hazardous or toxic substances, introduction of non-indigenous species, impacts to endangered and threatened species, impacts to coral reef systems). For partnerships, where project-specific details may not be available at the time an award is made, partners must meet the same environmental compliance requirements on subsequent sub-awards.

In addition to providing specific information that will serve as the basis for any required impact analyses, applicants may also be required to assist NOAA in the drafting of an environmental assessment if NOAA determines an assessment is necessary and that one does not already exist for the activities proposed in the application. Applicants will also be required to cooperate with NOAA in identifying and implementing feasible measures to reduce or avoid any identified adverse environmental impacts of their proposal. The selecting official may decide, at the time of proposal review, to recommend funding a project in phases to enable an applicant to provide information needed for an environmental assessment, feasibility analysis or similar activity if a NEPA determination cannot be made for all activities in a particular application. The selecting official may also impose special award conditions that limit the use of funds for activities that have outstanding environmental compliance requirements. Special award conditions may also be

imposed, for example, to ensure that grantees consider and plan for the safety of volunteers, and provide appropriate credit for NOAA and other contributors.

Activities that address marine debris, particularly removal actions, can be dangerous and may require additional safety consideration. The applicant may be requested to submit safety information for activities being considered, to ensure full review and understanding. The selecting official may also impose special award conditions that limit the use of funds for activities that have outstanding safety issues.

## **Section 12. Funding Ranges**

The funding opportunities, number of awards, and funding ranges to be made in future years will depend on the amount of funds appropriated to the MDP annually by Congress. Such information will be published in the NOFA and FFO for each funding opportunity.

### **STATUTORY AUTHORITY**

Marine Debris Research, Prevention, and Reduction Act (33 U.S.C. 1951 et seq.)

Dated:

John H. Dunnigan  
Assistant Administrator  
NOAA's National Ocean Service

## Appendix D: Federal Funding Opportunity Announcement

### ANNOUNCEMENT OF FEDERAL FUNDING OPPORTUNITY

#### EXECUTIVE SUMMARY

Federal Agency Name(s): National Marine Fisheries Service (NMFS), National Oceanic and Atmospheric Administration (NOAA), Department of Commerce

Funding Opportunity Title: FY2013 Community-based Marine Debris Removal

Announcement Type: Initial

Funding Opportunity Number: NOAA-NMFS-HCPO-2013-2003477

Catalog of Federal Domestic Assistance (CFDA) Number: 11.463, Habitat Conservation

Dates: Full proposals must be received and validated by Grants.gov, postmarked, or provided to a delivery service on or before 11:59 p.m. EDT, November 1, 2012. Please note: Validation or rejection of your application by Grants.gov may take up to 2 business days after submission. Please keep this in mind when developing your submission timeline. No fax or email applications will be accepted. Use of U.S. mail or another delivery service must be documented with a receipt. Applications not adhering to postmark or submission deadlines will be rejected without further consideration.

Funding Opportunity Description: The NOAA Marine Debris Program, authorized in the Marine Debris Research, Prevention, and Reduction Act (MDRPR Act, 33 U.S.C. 1951 et seq.), provides funding to catalyze the implementation of locally driven, community-based marine debris prevention, assessment, and removal projects that will benefit coastal habitat, waterways, and NOAA trust resources. Funding for this purpose comes through the NOAA Marine Debris Program as appropriations to the Office of Response and Restoration, National Ocean Service. The funding is, in part, administered through a grant competition with the NOAA Restoration Center's Community-based Restoration Program. Projects awarded through this grant competition have strong on-the-ground habitat restoration components involving the removal of marine debris, including derelict fishing gear. Projects also provide social benefits for people and their communities, and create long-term ecological habitat improvements for NOAA trust resources. Through this solicitation NOAA identifies marine debris removal projects, strengthens the development and implementation of habitat restoration through community-based marine debris removal, and fosters awareness of the effects of marine debris to further the conservation of living marine resource habitats, as well as contribute to the understanding of debris types and impacts. Successful proposals through this solicitation will be funded through a cooperative agreement. Funding of up to \$2,000,000 is expected to be available for Community-based Marine Debris Removal Project Grants in FY2013. Typical awards will range from \$15,000 to \$150,000.

## FULL ANNOUNCEMENT TEXT

### I. Funding Opportunity Description

#### A. Program Objective

A principal objective of the NOAA Marine Debris Program is to provide federal financial and technical assistance to grass-roots, community-based activities that improve living marine resource habitats through the removal of marine debris and promote stewardship and a conservation ethic for NOAA trust resources. NOAA trust resources include living marine resources and their habitats, including commercial and recreational fishery resources (marine fish and shellfish); coastal habitats; diadromous fish species; endangered and threatened marine species; marine mammals and marine turtles; marshes, mangroves, seagrass beds, coral reefs, other coastal habitats; areas identified by NOAA Fisheries as essential fish habitat (EFH); and areas within EFH identified as Habitat Areas of Particular Concern (HAPC). NOAA trust resources can also include marine habitats and resources associated with National Marine Sanctuaries, National Estuarine Research Reserves, and areas under state coastal management programs, including areas within the Great Lakes.

The program aims to foster collaboration among diverse entities and groups (e.g., public and nonprofit organizations, citizen and watershed groups, anglers, boaters, industry, corporations and businesses, youth conservation corps, students, landowners, academics, and local, state, and federal government agencies) in order to cooperatively implement safe, impactful, and cost-effective marine debris removal projects. In order to track project success, funded projects will need to be able to report the total amount of debris removed (metric tons), total area cleaned or restored (acres), types of debris encountered, and volunteer hours involved.

#### B. Program Priorities

NOAA is interested in improving marine and coastal habitat through on-the-ground removal of marine debris. Marine debris is defined as "any persistent solid material that is manufactured or processed and directly or indirectly, intentionally or unintentionally, disposed of or abandoned into the marine environment or the Great Lakes" (15 C.F.R. Part 909). The highest program priorities for this solicitation are the removal of 1) derelict fishing gear and 2) medium- to large-scale, non-re-accumulating (i.e., debris which is no longer being introduced into the marine environment) marine debris that have a negative impact on important habitat areas.

The program priorities for this opportunity support NOAA's "Ecosystems" mission support goal of "Protect, Restore, and Manage Use of Coastal and Ocean Resources through Ecosystem-Based Management."

Successful proposals will assist NOAA in implementing the MDRPR Act, particularly sections 3(b)(1)(C) and 3(b)(3). Activities may include but are not limited to the following:

- Detection and removal of derelict fishing gear, such as abandoned crab or lobster pots, fish nets, and synthetic (e.g., monofilament, polypropylene) line;

- Detection and removal of medium- and large-scale, non-re-accumulating debris (i.e., debris items that cannot be manually removed by an individual) from coastal habitats including marshes, bays, mangroves, and coral reefs. This includes activities such as removal of large material washed up on shorelines. Vessel, associated vessel debris, and derelict piling removal will only be considered if there is a direct debris impact-related reason to remove them (e.g., derelict pilings that snag marine debris and add to the impact of this debris in that area). Furthermore, vessel removal and derelict piling removal will be considered only if any single vessel or piling area removal is just one component of a greater marine debris removal proposal;

- Detection and removal from marine, estuarine, or beach environments of debris resulting from hurricanes or other natural disasters. A certain portion of available funds may be dedicated to projects in Hawaii, Alaska, California, Oregon, or Washington for the removal of debris generated by the March 2011 tsunami in Japan. Funds from this competition will only be provided for direct removal of non-hazmat related debris, and will not be used for preparatory, survey or other non-removal projects related to tsunami debris;

- Prevention, outreach, education, and/or volunteer activities. Proposals are encouraged to include such activities as project components, and these activities should be tied to the public and other stakeholders, such as the fishing industry, fishing gear manufacturers, other marine-dependent industries, and the plastic and waste management industries.

Applications proposing solely to conduct regular 'maintenance' activities, such as volunteer cleanups of shoreline litter or the installation of debris catchment devices will be a lower priority. Such projects would be considered only if the project is (a) coupled with a significant, high-quality outreach program that will reduce or prevent future accumulation of marine debris or (b) consists of a one-time cleanup event of debris that is not likely to rapidly re-accumulate, such as debris removal related to natural disasters or similar point-in-time events. Furthermore, proposals emphasizing general program coordination are discouraged, as are applications that propose to expand an organization's day-to-day activities or that primarily seek support for administration, salaries, overhead, and travel. Because funds are limited, proposals that request funds for large equipment purchases such as vehicles, boats, and similar items will be a low priority.

Proposals must have a primary emphasis on debris removal to benefit NOAA trust resources. Those projects with a primary emphasis on removing debris that represents a hazard to navigation or human health or removal for aesthetic purposes, while eligible to be sub-components of a removal project, are not a focus of this grant competition.

NOAA recognizes that the removal of marine debris can be a multi-faceted effort that may involve project design, engineering services, permitting, and oversight. The focus of the program, however, is to provide funding and technical expertise to support on-the-ground implementation of habitat restoration through marine debris removal that involves significant community support and involvement. To that end, projects may include limited pre-implementation activities, such as engineering, design, and short-term baseline studies. Proposals with an abandoned vessel removal component should indicate that a search for responsible parties, such as the vessel's owner, has been conducted and that no identifiable responsible party exists. If a project is removing derelict fishing gear, the application must address applicable federal and state laws regarding handling and ownership.

Projects should have broad, clearly identified goals and at least two specific, measurable objectives. Evaluating these objectives should involve an assessment of effectiveness (i.e., comparing initial targets set for each objective to post-removal results). The assessment should be conducted in a timely fashion with a frequency and length of time appropriate to each parameter in the context of the project objectives and status. NOAA has developed standardized marine debris shoreline survey protocols to facilitate regional and site-specific comparisons of debris loads. NOAA encourages applicants to contact NOAA and incorporate these protocols into shoreline clean-up projects proposed under this competition.

If a proposal has a prevention component, there should be a targeted user community and substantial interaction and outreach with that community. For outreach activities in general, applicants are encouraged to incorporate existing outreach materials, including those available for download at <http://www.marinedebris.noaa.gov/>. These projects should also include measures to determine effectiveness of activities. If a project involves collection facilities or other long-term operations, the application should identify how the project will continue beyond the award period.

Safety is a critical consideration for project implementation. All funded projects must have a written safety plan for all project-related activities, especially regarding the safety and management of volunteers. The safety plan should consider safety at the site during and after project implementation and take into account potential safety concerns with regard to the current and future use of the site. For tsunami related debris, debris handling protocols and guidance have been developed at the state-level with NOAA assistance. These protocols can be found at: <http://marinedebris.noaa.gov/tsunamidebris/>

If a proposal includes diving activities that use Self-Contained Underwater Breathing Apparatus (SCUBA) and/or other use of compressed gas as a breathing medium (e.g., surface supplied air), it is the responsibility of the recipient organization to ensure that divers are trained to a level commensurate with the type and conditions of the diving activity being undertaken. The organization must have the capacity (appropriate insurance, safety policies, etc.) to oversee all proposed diving activities. All diving activities must meet, or be specifically exempted from, OSHA guidelines.

Assuming all other relevant safety conditions are satisfied, divers that are not advanced divers may perform simple activities, such as underwater surveys and removal of light objects. Advanced divers are divers with advanced diving training for the proposed tasks and in compliance with OSHA guidelines.

Activities that should be performed only by advanced divers include but are not limited to the following:

- Moving or lifting heavy objects, or using hand tools, weighing more than 25 pounds underwater

- Performance of underwater tasks requiring substantial physical exertion

- Use of lift bags

- Underwater removal of potentially entangling debris, such as nets, crab or lobster pots, or fishing line

Furthermore, it is the responsibility of the recipient to ensure that any diving activities under this award meet, at a minimum, all applicable federal, state, and local laws and regulations pertaining to the type of diving being undertaken.

Snorkeling activities are similarly restricted, in that snorkelers should complete only simple activities such as surveys and removal of light, non-entangling objects.

NOAA will consider funding more than one project under a single award. All projects should be sufficiently detailed in accordance with the guidelines and information requirements listed in this document for an application to be competitive, and all projects should be able to be completed within the award period specified below.

Applicants should also note that the following activities, in general, will not be considered for use of federal dollars under project awards: (1) activities that constitute legally required mitigation for the adverse effects of an activity regulated or otherwise governed by local, state, or federal law; (2) activities that constitute restoration for natural resource damages under federal, state, or local law; and (3) activities that are required by a separate consent decree, court order, statute, or regulation.

### C. Program Authority

33 U.S.C. 1951 et. seq.

## II. Award Information

### A. Funding Availability

This solicitation announces that funding of up to \$2,000,000 is expected to be available for Community-based Marine Removal Project Grants in FY2013. Actual funding availability for this program is contingent upon FY2013 Congressional appropriations. Typical project awards will range from \$15,000 to \$150,000; NOAA will not accept proposals for less than \$15,000 or proposals for more than \$250,000 under this solicitation. There is no guarantee that sufficient funds will be available to make awards for all proposals. The number of awards to be made as a result of this solicitation will depend on the number of eligible applications received, the amount of funds requested for initiating marine debris removal projects by the applicants, the merit and ranking of the proposals, and the amount of funds made available to NOAA by Congress.

NOAA anticipates that between 8 and 15 awards will be made as a result of this solicitation. In FY 2011, the latest year for which information is available, 10 applications were funded, ranging from \$35,000 to \$215,000. The total grant funding level was nearly \$1,000,000, which was matched by over \$1,008,000 of matching contributions. The exact amount of funds that may be awarded will be determined in pre-award negotiations between the applicant and NOAA. Publication of this document does not obligate NOAA to award any specific project or obligate all or any part of any available funds.

### B. Project/Award Period

Applicants should plan the restoration and monitoring activities proposed for this funding to be completed within 24 months of the start date of the award. The earliest anticipated start date for projects will be June 1, 2013; applicants should consider this when developing plans for marine debris removal activities. If an application is selected for funding, NOAA has no obligation to provide any additional prospective funding in connection with that award in subsequent years. Any subsequent proposal to continue work on an existing project should be submitted to the competitive process for consideration and will not receive preferential treatment. Permission to extend the period of performance beyond the 24 month award period is at the sole discretion of NOAA and should be requested in writing at least 60 days in advance of an award's expiration date.



### C. Type of Funding Instrument

Selected applications will be funded through a cooperative agreement since NOAA staff will be substantially involved in aspects of the project. Substantial involvement may include, but is not limited to, activities such as hands-on technical or permitting assistance, support in developing protocols (e.g., for data collection or monitoring), tracking the progress of removal efforts through site visits and progress report evaluation, discussing development of meaningful performance measures to assess project outcomes, and involvement in public meetings and events to highlight marine debris removal activities. These cooperative agreements may be single or multi-year awards, and may include funding from other programs or agencies.

## III. Eligibility Information

### A. Eligible Applicants

Eligible applicants are institutions of higher education, non-profit organizations, commercial (for-profit) organizations, and state, local and tribal governments whose projects have the potential to benefit NOAA trust resources within the United States and Territories. Applications from federal agencies or employees of federal agencies will not be considered. Interested federal agencies are strongly encouraged to work with states, non-governmental organizations, national service clubs or youth corps organizations, and others that are eligible to apply. Similarly, applications from organizations conducting work in international areas will not be considered.

NOAA is strongly committed to broadening the participation of veterans, historically black colleges and universities, Hispanic-serving institutions, tribal colleges and universities, and institutions that work in under-served areas. NOAA encourages proposals involving any of the above institutions.

### B. Cost Sharing or Matching Requirement

A major goal of the NOAA Marine Debris Program is to provide seed money to projects that leverage funds and other contributions from a broad public and private sector to implement locally important marine debris removal activities to benefit living marine resources. To this end, the MDRPR Act requires applicants to provide a minimum 1:1 ratio of non-federal matching contributions to NOAA funds requested to conduct the proposed project. In addition to formal match, NOAA strongly encourages applicants to leverage as much additional investment as possible.

Match can come from a variety of public and private sources and can include in-kind goods and services such as private boat use and volunteer labor. To meet the 1:1 match requirement, applicants are permitted to combine contributions from non-federal partners, as long as such contributions are not being used to match any other funds and are available within the project period stated in the application. Federal sources cannot be considered for matching funds, but can be described in the budget narrative to demonstrate additional leverage. Applicants are also permitted to apply federally negotiated indirect costs in excess of federal share limits as described in Section IV. E. 2. "Indirect Costs"

However, if the match requirement cannot be met, the MDRPR Act allows the Administrator to waive all or part of the matching requirement if the applicant can demonstrate the following:

- 1) no reasonable means are available through which applicants can meet the matching requirement and
- 2) the probable benefit of such project outweighs the public interest in such matching requirement.

The MDRPR Act also allows the Administrator to authorize, as appropriate, the non-federal share of the cost of a project to include money paid pursuant to, or the value of any in-kind service performed under, an administrative order on consent or judicial consent decree that will remove or prevent marine debris.

In addition, under 48 U.S.C. 1469a(d), any department or agency may waive any requirement for matching funds otherwise required by law to be provided by an Insular Area (defined here as the U.S. Virgin Islands, Guam, American Samoa, and the Commonwealth of the Northern Mariana Islands). Notwithstanding any other provisions herein, and in accordance with 48 U.S.C. 1469a(d), the Marine Debris Program may waive any requirement for local matching funds to Insular Areas. Eligible applicants choosing to apply 48 U.S.C. 1469a(d) must include a letter or provide other language in the required budget narrative requesting a waiver that demonstrates that their project meets the requirements of 48 U.S.C. 1469a(d) as described in the following paragraph. However, if available, the inclusion of matching contributions is encouraged.

Any applicant wishing to request a match waiver must provide a match waiver request letter or provide other language in the required budget narrative as a part of the application package being submitted. The request must contain a detailed justification explaining the need for the waiver, descriptions of attempts to obtain sources of matching funds, how the benefit of the project outweighs the public interest in providing match, and any other extenuating circumstances preventing the incorporation or local availability of matching contributions.

All applicants should note that cost sharing is an element considered in Evaluation Criterion #4. "Project Costs."

Applicants whose proposals are selected for funding will be bound by the percentage of cost sharing reflected in the award document signed by the NOAA Grants Officer. Successful applicants should be prepared to carefully document matching contributions, including the names of participating volunteers and the overall number of volunteer or community participation hours devoted to individual marine debris removal projects. Letters of commitment for any secured resources expected to be used as match for an award should be submitted as an attachment to the application.

#### C. Other Criteria that Affect Eligibility

Not applicable.

### IV. Application and Submission Information

#### A. Address to Request Application Package

Complete application packages, including required federal forms, general instructions, and supplementary instructions specific to the NOAA Community-based Marine Debris Removal Project Grants competition, can be found on Grants.gov (<http://www.grants.gov>). If the application forms and instructions for applicants cannot be downloaded from Grants.gov, please contact Tom Barry (Tom.Barry@noaa.gov, 301-427-8653).

#### B. Content and Form of Application

Applicants are strongly encouraged to apply through the Grants.gov website, which is the clearinghouse for federal financial assistance. A complete standard NOAA grant application package should be submitted in accordance with the guidelines in this document.

Each application should contain the following required Federal Application Forms, including the following:

- Application for Federal Assistance: SF-424 (7/03 version or newer)
- Budget Information, Non-construction Programs: SF-424A
- Assurances, Non-construction Programs: SF-424B
- Certifications Regarding Lobbying: CD-511
- Disclosure of Lobbying Activities: SF-LLL (if applicable)

Each application must also contain:

- a project summary (described below, 2 pages);
- a project narrative (described below, 10 pages);
- a detailed, narrative budget justification (described below, 4 pages);
- the curriculum vitae or resume of each of the primary project personnel;
- a site location map such as a USGS topographic quadrangle map with site location(s) highlighted;
- a letter documenting private landowner or public land manager support;
- other letters of support; and
- other relevant attachments the applicant deems important to the overall understanding and evaluation of the proposed project, such as summaries of regional restoration plans, project site photographs, or design plans (20 pages).

Applications submitted through the Grants.gov website should include only three files in addition to the Federal Application Forms: 1) the project summary and project narrative, 2) the budget justification, and 3) all other attachments combined, including resumes, maps, and support letters. PDF files are the preferred format; information about converting documents to PDF files is available on the Grants.gov website (click on the 'Help' link on the left hand navigation bar, and then click the 'Download Software' link).

If Grants.gov cannot reasonably be used, or internet access is not available to the applicant, a hard-copy application with the SF-424, SF-424B, and CD-511 signed in ink (blue ink is preferred) must be mailed to the NOAA Restoration Center (see Section IV. F. "Other Submission Requirements" for complete mailing information). No fax or e-mail applications will be accepted. Paper applications should be printed on one side only, on 8.5" x 11" paper, and should not be bound or stapled in any manner.

1. Project Summary (2 pages):

A brief project summary must include the following:

- Applicant Organization
- Project Title
- Site Location (nearest town or watershed, and geographic coordinates if known)

- On-the-ground Activity Start Date (not proposed award start date)
- NOAA Trust Resources to benefit from the project (habitats and organisms (species) currently using the project area or expected to benefit, and any listed threatened or endangered species in the project area or in the vicinity)
- Project Scope (briefly list specific tasks to be accomplished with requested funds and proposed techniques that will be used)
- Area to Be Improved (tons of debris to be removed from the marine environment, acreage restored, and other measurable outcome)
- Project Timeline
- Permits (identify permits expected to be necessary for this project and current status of applications or consultations)
- Federal Funds Requested and Non-federal Match Anticipated
- Overall Project Cost
- Partner and Volunteer Support Anticipated (hours/tasks)
- Letters of Support (list those included with the application, particularly those from public agency resource personnel familiar with the issue or project area)

## 2. Project Narrative (10 pages)

The project narrative should closely follow the organization of the evaluation criteria (see Section V. A. "Evaluation Criteria") for the application to receive a consistent review against competing applications. The body of this narrative description should be no more than 10 pages long (in 12-point font with 1" margins) and should give a clear presentation of the proposed work. In general, proposals should clearly demonstrate anticipated benefits to specific NOAA trust resource habitats (such as marshes, seagrass beds, coral reefs, mangrove forests, and riparian habitat near rivers, streams, and creeks used by diadromous fish) and/or navigable waterways; describe how these benefits will be achieved through marine debris detection, assessment, and removal; and identify the range of species and/or resources expected to benefit. Applications should list the trust resources currently found in the project site, describe short- and long-term objectives and goals, including specific performance measures, detail the methods for carrying out and monitoring the project, and clearly explain the project's significance to enhancing habitat to benefit living marine resources with specific examples.

The applicant should indicate whether the proposed project is part of a larger, ongoing effort or is otherwise prioritized in a publicly vetted, published restoration or planning

document. Projects taking place in marine protected areas such as National Marine Sanctuaries, National Estuarine Research Reserves, or in special management areas such as those under state coastal management, in National Estuary Program sites, in Essential Fish Habitat (EFH) or areas within EFH identified as Habitat Areas of Particular Concern may receive greater consideration.

To protect the federal investment, a letter of commitment is required from relevant landowners for projects on private land or from relevant resource agency personnel for projects on public, permanently protected land. The letter of commitment should provide assurance that the project will be maintained for its intended purpose. Documentation of plans for long-term project management should also be included.

To ensure a basic level of assessment of project success, implementation of marine debris removal projects should have broad, clearly identified goals and specific, measurable objectives. Results that are measured and reported must include the following:

- Expected weight of debris removed, in metric tons.
- Expected footprint of the medium- and large-scale debris proposed to be removed, in acres or square feet.
- Expected volunteer participation, in terms of number of volunteers as well as total volunteer hours.

Proposals with a monitoring component should describe how monitoring or post-removal evaluations will be conducted by comparing pre-implementation targets to post-removal results for each parameter in the context of the project objectives. A description of the anticipated long-term ecological and socio-economic outcomes should also be included.

Proposals must indicate the project's readiness and should ensure that on-the-ground debris removal activities will begin no later than 6 months after the project's start date. To provide assurance that the project will expeditiously meet environmental compliance and permitting requirements, projects that would require permits and consultations should list all necessary permits required to complete the project. This should include the appropriate contact information for each permitting agency and documentation of all permits already secured for the project. Applicants proposing to conduct specific marine debris removal activities, such as removal of derelict fishing gear, should demonstrate that they have the legal authority to conduct the stated activities within the proposed project area.

NOAA must analyze the potential environmental impacts, as required by the National Environmental Policy Act (NEPA), for applicants that are seeking NOAA federal funding. Proposals should provide enough detail for NOAA to make a NEPA determination (see Section VI. B. "Administrative and National Policy Requirements"). Successful applications

cannot be forwarded to the NOAA Grants Management Division with recommendations for funding until NOAA completes necessary NEPA documentation (see Section I.B. "Program Priorities" Consequently, as part of an applicant's package, and under the description of proposed activities, applicants are required to provide detailed information on the activities to be conducted, such as site locations, species and habitat(s) to be affected, possible construction activities, and any environmental concerns that may exist (e.g., the use of and/or disposal of hazardous or toxic substances, introduction of non-indigenous species, impacts to endangered and threatened species, impacts to coral reef systems).

In addition to providing specific information that will serve as the basis for any required impact analyses, applicants may also be requested to assist NOAA in drafting an environmental assessment if NOAA determines an assessment is required and one does not already exist for the activities proposed in the application. Applicants will also be required to cooperate with NOAA in identifying and implementing feasible measures to reduce or avoid any identified adverse environmental impacts of their proposal. Failure to do so will result in denial of an award.

Applicants are encouraged to consult with NOAA as early as possible to obtain guidance on the level and scope of information needed by NOAA to comply with NEPA. A phased approach to funding project activities may be recommended or special award conditions may be imposed limiting the use of funds for activities that have outstanding environmental compliance requirements to fulfill. The type of detailed information described above is critical to evaluating the significance of a project and its readiness to use available funding.

The project narrative should describe the organizational structure of the applicant group, identify proposed project staff, and detail their experience and qualifications in managing grants and implementing marine debris removal projects. If known, the applicant should state the level of NOAA involvement in and/or support for the project and include contact information of relevant NOAA staff.

The project narrative should also describe community involvement in the project, such as contributions from community partners, volunteer opportunities, citizen participation, education/outreach/stewardship plans, and efforts to disseminate information on project goals, results, and/or the sources of project funding and support. If applicable, the narrative should explain how the proposed project would complement or encourage other local marine debris prevention or removal, or restoration or conservation activities.

### 3. Budget Justification (4 pages)

The narrative budget justification should include a detailed breakdown by category of cost (object class) separated into federal and non-federal shares as they relate to specific aspects of the project, with appropriate narrative justification for both the federal and non-federal shares. The object classes should match those found on the SF-424A. Applications

will be evaluated for cost-effectiveness by examining the proportion of funds directed to marine debris removal activities compared with that to be used for general program support.

The narrative budget justification should also indicate if the project has been submitted for funding consideration elsewhere, what amount has been requested or secured from other sources, and whether the funds requested/secured are federal or non-federal. The source of any matching funds or in-kind contributions should be explained. If funding will be used to complete part of a larger project, a summary budget for the entire project should be provided; any funding other than the proposal request and match should be considered additional leverage.

The narrative budget justification should also indicate if the applicant is requesting a waiver of all match requirements, as outlined above in Section III. B. "Cost Sharing or Matching Requirement"

Notwithstanding any other provisions herein, and in accordance with 48 U.S.C. 1469a(d), the Marine Debris Program may waive any requirement for local matching funds to Insular Areas, as defined and outlined above in Section III. B. "Cost Sharing or Matching Requirement"

The NOAA Grants Management Division will review budget information for recommended applications to determine if costs are allowable, allocable, reasonable, and realistic.

#### 4. Other Application Submission Information

Applicants should not assume prior knowledge on the part of NOAA as to the relative merits of the project described in the application. Inclusion of supplementary materials (e.g., photographs, summaries of project designs, key diagrams, copies of secured permits) are strongly encouraged and do not count toward the project narrative page limit, although it is suggested that supplementary materials do not exceed 20 pages. Letters of support from partners, local and state governments, and Congressional representatives are also helpful in demonstrating support for the project. Such supplementary information should be combined and submitted as a single file in the Grants.gov application.

#### C. Submission Dates and Times

Full proposals must be received and validated by Grants.gov, postmarked, or provided to a delivery service on or before 11:59 p.m. EDT, November 1, 2012. Please note: Validation or rejection of your application by Grants.gov may take up to 2 business days after submission. Please consider this process in developing your submission timeline. Applications postmarked or provided to a delivery service after that time will not be



considered for funding. Applications submitted via the U.S. Postal Service must have an official postmark; private metered postmarks are not acceptable. In any event, applications received later than 15 business days following the postmark closing date will not be accepted. No fax or email applications will be accepted.

Applications that have been submitted to other NOAA grants programs or as part of another NOAA grant may be considered under this solicitation.

#### D. Intergovernmental Review

Applications for federal financial assistance are subject to the provisions of Executive Order 12372, "Intergovernmental Review of Federal Programs." All applications for funding under this competition are required to complete item 16 on SF-424 regarding clearance by the State Single Point of Contact (SPOC) established as a result of EO 12372. To find out about and comply with a State's process under EO 12372, the names, addresses, and phone numbers of participating SPOC's are listed in the Office of Management and Budget's home page at [http://www.whitehouse.gov/omb/grants\\_spoc](http://www.whitehouse.gov/omb/grants_spoc).

#### E. Funding Restrictions

##### 1. Allowable Costs

Funds awarded cannot necessarily pay for all the costs that the recipient might incur in the course of carrying out the project. Generally, costs that are allowable include salaries, equipment, and supplies, as long as these are "necessary and reasonable" specifically for the purpose of the award. Allowable costs are determined by reference to the OMB Circulars A-122, "Cost Principles for Non-profit Organizations" (2 C.F.R., Part 230); A-21, "Cost Principles for Education Institutions" (2 C.F.R., Part 220); A-87, "Cost Principles for State, Local, and Indian Tribal Governments" (2 C.F.R., Part 225); and Federal Acquisition Regulation, codified at 48 C.F.R., Subpart 31.2 "Contracts with Commercial Organizations." All cost reimbursement sub-awards (subgrants, subcontracts, etc.) are subject to those federal cost principles applicable to the particular type of organization concerned.

Pre-award costs are generally unallowable. A pre-award cost incurred before the NOAA Grants Office provides a notice of award is at the applicant's own risk. Typically, the earliest date for receipt of awards will be June 1, 2013. Applicants should consider this award timing when developing plans for proposed restoration activities.

##### 2. Indirect Costs

The budget may include an amount for indirect costs if the applicant has an established indirect cost rate with the federal government. Indirect costs are essentially overhead costs

for basic operational functions (e.g., lights, rent, water, insurance) that are incurred for common or joint objectives and therefore cannot be identified specifically within a particular project. For this solicitation, the federal share of the indirect costs must not exceed the lesser of either the indirect costs the applicant would be entitled to if the negotiated federal indirect cost rate were used or 25 percent of the federal direct costs proposed. For those situations in which the use of the applicant's indirect cost rate would result in indirect costs greater than 25 percent of the federal direct costs, the difference may be counted as part of the non-federal share.

A copy of the current, approved negotiated indirect cost agreement with the federal government should be included with the application. If the applicant does not have a current negotiated rate and plans to seek reimbursement for indirect costs, documentation necessary to establish a rate should be submitted prior to receiving an award.

#### F. Other Submission Requirements

Applications should be submitted through Grants.gov (<http://www.grants.gov>). Applicants should note that it takes approximately 3 weeks to register with Grants.gov, and registration is required only once. Applicants should consider the time needed to register with Grants.gov and should begin the registration process well in advance of the application due date.

If Grants.gov cannot reasonably be used, or internet access is not available to the applicant, a hard-copy application package (as outlined in Section IV. B. "Content and Form of Application") must be postmarked, or provided to a delivery service and documented with a receipt, by 11:59 p.m. EDT, November 1, 2012, and sent to:

Tom Barry, NOAA Restoration Center (F/HC3), ATTN: MDP Project Applications,  
1315 East West Highway, Rm. 15864, Silver Spring, MD 20910

#### V. Application Review Information

##### A. Evaluation Criteria

Reviewers will assign scores to proposals ranging from 0 to 100 points based on the following five standard NOAA evaluation criteria and respective weights specified below. Applications that address the issues contained in these criteria are likely to be more competitive.

##### 1. Importance and Applicability of Proposal (25 points)

This criterion ascertains whether there is intrinsic value in the proposed work and/or relevance to NOAA, federal, regional, state, or local activities. For the Community-based Marine Debris Removal Project Grants competition, NOAA will evaluate applications based on the following:

The potential of the marine debris removal activity to restore, protect, conserve, or enhance coastal and marine habitats and ecosystems vital to self-sustaining populations of living marine resources under NOAA stewardship (including commercial, recreational, threatened, or endangered species) through the removal of high-priority, non-re-accumulating marine debris. (10 points)

The project's significance with respect to project area, amount of debris removed, or potential to reduce marine debris, considered in the context of the local environment. (5 points)

The likelihood that the project will deliver tangible, specific results that are measurable, including expected weight of debris removed, in metric tons; expected footprint of the debris proposed to be removed, in acres or square feet; and numbers of volunteers as well as total volunteer hours. Other examples of measurable results, such as decreased re-accumulation rates or material prevented from entering marine environment, may also be included. Those applications that identify parameters and targets and use data to estimate degree to which NOAA trust resources will no longer be impacted (e.g., number of crabs and fish saved, number of acres restored) are likely to score higher on this criterion. (5 points)

Whether the proposal addresses a marine debris problem area and/or priority habitat, as evidenced by reference to a regional or national publicly vetted, published planning document. (5 points)

## 2. Technical/Scientific Merit (25 points)

This criterion assesses whether the approach is technically sound and/or innovative, if the methods are appropriate, and whether there are clear project goals and objectives. For the Community-based Marine Debris Removal Project Grants competition, NOAA will evaluate applications based on the following:

For assurance that implementation will meet all federal, state, and local environmental laws, projects that would require such permits and consultations should list all necessary permits required to complete the project. This should include the appropriate contact information for each permitting agency, documentation of all permits already secured for the project, and an expected timeline for those permits not yet acquired. Applications submitted with evidence of completed environmental assessments, completed consultations and/or secured permits, and that demonstrate that proposed debris removal activities are legally permissible in the project area, if applicable, are likely to score higher on this criterion. See

Section VI. B. 'Administrative and National Policy Requirements' for more information. (5 points)

The extent to which the applicant has described a realistic implementation plan achievable within 24 months, including whether the landowner has provided assurance of support and dedication to completing the project in a timely manner (letter of support, conservation easement, or significant financial investment). (5 points)

The extent to which the applicant has described the ability to report measurable results. Such results should include the following:

1. expected weight of debris removed, in metric tons.
2. expected footprint of the medium- and large-scale debris proposed to be removed, in acres or square-feet.
3. expected volunteer participation, in terms of numbers of volunteers as well as total volunteer hours.

Other examples of measurable results may include number of removal operations; number of discrete items removed (e.g., crab pots, gill nets, pilings); square feet/acres cleared of small debris; percent of identified problem areas (for derelict gear or debris) addressed by removal activities; re-accumulation rate per unit area; number of fishers who receive training on the safe removal of derelict gear or specific debris types; expected weight of material prevented from entering the marine environment, in metric tons; change in volume of recycled gear as a result of a corporate recycling initiative, etc. (5 points)

The overall technical feasibility of the project from a biological, ecological, and safety perspective, including whether the proposed approach is technically sound, likely to achieve project goals and objectives, and able to be conducted safely. Any activity proposing diving or snorkeling activities of any kind should follow the guidance provided in Section 1. B. 'Program Priorities' (5 points)

The likelihood of long-term success, as indicated by the degree to which the applicant has chosen the most self-sustaining restoration technique that accomplishes the project's goals. For projects requiring maintenance to assure success/proper function, the adequacy of the long-term operation and/or maintenance plan will be considered. For proposed shoreline cleanup activities, projects should be either a) coupled with a significant outreach or other component that will reduce or prevent future accumulation of marine debris or b) consist of a one-time cleanup event of debris that is not likely to re-accumulate, such as debris removal related to natural disasters or similar point-in-time events. (5 points)

3. Overall Qualifications of Applicants (10 points)

This criterion ascertains whether the applicant possesses the necessary education, experience, training, facilities, and administrative resources to accomplish the project. For the Community-based Marine Debris Removal Project Grants competition, NOAA will evaluate applications based on the following:

The capacity of the applicant and associated project personnel to conduct the scope and scale of the proposed work, as indicated by the qualifications and past experience of the project leaders and/or partners in designing, implementing, and effectively managing and overseeing projects that benefit living marine resources. Examples of projects similar in scope and nature that have been successfully completed by the implementation team are encouraged. Communities and/or organizations developing their first locally driven marine debris removal project may not be able to document past experience and therefore will be evaluated on their potential to effectively manage and oversee all project phases, as evidenced by the explanation of characteristics such as education, training, and/or experience of primary project participants. (5 points)

The facilities and/or administrative resources and capabilities available to the applicant to support and successfully manage marine debris removal work and grant responsibilities. (5 points)

#### 4. Project Costs (25 points)

This criterion evaluates the budget to determine if it is realistic and commensurate with the project needs and time frame. If funds are requested for partial support of a project, the budget will be examined with respect to the overall project budget to allow an informed determination of a project's readiness and cost-benefit ratio. For the Community-based Marine Debris Removal Project Grants competition, NOAA will evaluate applications based on the following:

The percentage of funds that will be dedicated to all phases of project implementation, including physical, on-the-ground assessment or removal efforts and, if applicable, science-based monitoring, compared to the percentage for general program support such as administration, salaries, overhead, and travel. Applications proposing to use NOAA funds to expand an organization's day-to-day activities are unlikely to obtain a high score under this criterion. To encourage on-the-ground efforts and tangible results, funding for salaries should be used to support staff directly involved in accomplishing the debris removal work and should contain a detailed breakdown of personnel hours and costs by task. (5 points)

Whether the proposed budget is realistic, reasonable, based on the applicant's stated objectives and time frame, and sufficiently detailed, with appropriate budget breakdown and justification of both federal and non-federal shares by object class as listed on form SF-424A. Requests for equipment (any single piece of equipment costing \$5,000 or more) should be strongly tied to achieving on-the-ground habitat improvements, and a comparison

with rental costs should be used to justify the need to purchase. In general, funding requests for equipment purchases such as vehicles, boats, and similar items will be a low priority. (5 points)

The demonstrated need for NOAA funding and whether NOAA support is critical. (10 points)

The overall leverage of other funds anticipated, including the amount of match. Other than those proposals eligible for a waiver according to Section III. B. "Cost Sharing or Matching Requirements" (above), NOAA will expect non-federal cost-sharing at a minimum 1:1 ratio of formal matching contributions to federal funds. These funds or other resources should improve cost-effectiveness and further encourage partnerships among government, industry, and academia. Applicants that provide documentation that acceptable secured match is available within the proposed project period are likely to score higher on this criterion. (5 points)

#### 5. Outreach, Education, and Community Involvement (15 points)

NOAA assesses whether the project provides a focused and effective education and outreach strategy regarding NOAA's mission, and for the Marine Debris Program, such activities specifically include education and outreach to the public and other stakeholders, such as the fishing industry, fishing gear manufacturers, other marine-dependent industries, and the plastic and waste management industries. For the Community-based Marine Debris Removal Project Grants competition, NOAA will evaluate applications based on the following:

Whether the activities proposed will involve citizens, broaden their participation in coastal marine debris prevention or removal activities, and lead to achievement of long-term stewardship for restored living marine resources and a heightened community conservation ethic. Community participation may include hands-on training, involvement in marine debris prevention and education activities, physical debris removal, and monitoring activities undertaken by volunteers or work crews. (5 points)

Public outreach as it relates to the proposed project, including plans to disseminate information on project goals, results, project partners and their roles, sources of funding and other support provided; and the potential for the proposed project to encourage future restoration, conservation, and protection of living marine resources or complement other local restoration or conservation activities. (5 points)

The depth and breadth of community support, as reflected by the diversity and strength of project partners and sponsorship by local entities (through cash contributions or in-kind goods and services such as boat use time and technical expertise). This may also include demonstration of support, in written form, from state and local governments, members of

Congress, or relevant resource agency personnel familiar with the issue. If the project takes place within a protected or otherwise managed public area, a letter of commitment from the appropriate resource management agency is required. Similarly, if the project takes place on private property, a letter of commitment from the appropriate landowner is required. (5 points)

## B. Review and Selection Process

Applications will be screened by NOAA staff to determine if they are eligible and complete. Eligible marine debris removal proposals will then undergo a technical review, ranking, and selection process. As appropriate during this process, NOAA will solicit individual technical evaluations of each project proposal to determine how well it meets program goals. Proposal evaluations may be requested from NOAA offices and staff, the Regional Fishery Management Councils, other federal and state agencies (e.g., state coastal management agencies and state fish and wildlife agencies), and private and public sector experts who have knowledge of a specific applicant, program, or its subject matter.

Applications for marine debris removal projects will be evaluated by at least three individual technical reviewers, including those mentioned in the above paragraph, according to the criteria and weights described in this solicitation. Reviewer comments, composite project scores, and a rank order will be presented to the NOAA Restoration Center Selecting Official. The Selecting Official, in consultation with the NOAA Marine Debris Program, will identify the proposals to be recommended to the NOAA Grants Management Division for funding and determine the amount of funds available for each approved proposal.

## C. Selection Factors

The proposals shall be recommended in the rank order unless the selection of a proposal out of rank order is justified based on one or more of the following factors:

1. The availability of funding
2. The balance/distribution of funds
  - a. Geographically
  - b. By institution type
  - c. By partner type
  - d. By habitat type

3. Duplication of other projects funded or considered for funding by NOAA, partner organizations, and/or other federal agencies
4. Program priorities and policy factors as set out in sections I.A and B
5. The applicant's prior award performance
6. Partnerships and/or participation of targeted groups
7. Adequacy of information necessary for NOAA staff to make a NEPA determination and draft necessary documentation before recommendations for funding are made to the NOAA Grants Management Division.

Hence, awards may not necessarily be made to the highest-scored proposals. Unsuccessful applicants will be notified that their proposal was not among those recommended for funding. Unsuccessful applications submitted in hard copy will be kept on file until the close of the following fiscal year then destroyed.

#### D. Anticipated Announcement and Award Dates

Successful applications generally will be identified by May 1, 2013. Typically, the earliest start date for projects will be June 1, 2013, dependent on the completion of all NOAA/applicant negotiations and NEPA analysis and documentation supporting cooperative agreement activities. Applicants should consider this timeline when developing requested start dates for proposed restoration activities.

## VI. Award Administration Information

### A. Award Notices

Successful applicants may be asked to modify objectives, work plans, and/or budgets prior to final approval of an award. The exact amount of funds to be awarded, final scope of activities, project duration, and specific NOAA cooperative involvement with the activities of each project will be determined in pre-award negotiations between the applicant, the NOAA Grants Management Division, and NOAA program staff. Projects should not be initiated in expectation of federal funding until a notice of award is received from the NOAA Grants Office. Award notification will be made electronically from the NOAA Grants Management Division via Grants Online, NOAA's online grants management program.

To enable the use of a universal identifier and to enhance the quality of information available to the public as required by the Federal Funding Accountability and Transparency Act of 2006, to the extent applicable, any proposal awarded in response to this announcement will be required to use the Central Contractor Registration and Dun and



Bradstreet Universal Numbering System and be subject to reporting requirements, as identified in OMB guidance published at 2 C.F.R. Parts 25, 170 (2010), [http://ectr.gpoaccess.gov/cgi/t/text/text-idx?c=ecfr&tpi=/ecfrbrowse/Title02/2cfr25\\_main\\_02.tpl](http://ectr.gpoaccess.gov/cgi/t/text/text-idx?c=ecfr&tpi=/ecfrbrowse/Title02/2cfr25_main_02.tpl) and [http://ecfr.gpoaccess.gov/cgi/t/text/text-idx?c=ecfr&tpl=/ecfrbrowse/Title02/2cfr170\\_main\\_02.tpl](http://ecfr.gpoaccess.gov/cgi/t/text/text-idx?c=ecfr&tpl=/ecfrbrowse/Title02/2cfr170_main_02.tpl).

## B. Administrative and National Policy Requirements

### 1. Administrative Requirements

Successful applicants who accept a NOAA award under this solicitation will be bound by Department of Commerce standard terms and conditions. This document will be provided in the award package in Grants Online, NOAA's online grants management program, and can be found at <http://www.ago.noaa.gov/ago/grants/policy.cfm>.

In addition, award documents provided by the NOAA Grants Management Division in the Grants Online award package may contain special award conditions limiting the use of funds for activities that have outstanding environmental compliance requirements and/or stating other compliance requirements for the award as applicable, such as the required use of the NOAA Restoration Center data form and narrative format approved by OMB under control number 0648-0472 for submitting semi-annual progress reports.

The Department of Commerce Pre-Award Notification Requirements for Grants and Cooperative Agreements contained in the Federal Register notice of February 11, 2008 (73 FR 7696) are applicable to this solicitation via: <http://www.gpo.gov/fdsys/>.

### 2. NEPA Requirements

NOAA must analyze the potential environmental impacts, as required by the National Environmental Policy Act (NEPA), for applicant projects or proposals seeking NOAA funding. Detailed information on NOAA compliance with NEPA can be found at the NOAA NEPA website: <http://www.nepa.noaa.gov>, including NOAA Administrative Order 216-6 for NEPA and the Council on Environmental Quality implementation regulations. Consequently, as part of an applicant's award package, and under their description of program activities, applicants are required to provide detailed information on the activities to be conducted, locations, sites, species and habitat to be affected, possible construction activities, and any environmental concerns that may exist (e.g., the use and disposal of hazardous or toxic chemicals, introduction of non-indigenous species, impacts to endangered and threatened species, aquaculture projects, and impacts to coral reef systems).

In addition to providing specific information that will serve as the basis for any required impact analyses, applicants may also be requested to assist NOAA in drafting an environmental assessment, if NOAA determines an assessment is required. Applicants will also be required to cooperate with NOAA in identifying and implementing feasible measures to reduce or avoid any identified adverse environmental impacts of their proposal. Failure to do so will result in denial of an application.

Applicants proposing marine debris removal activities that cannot be categorically excluded from further NEPA analysis or that are not covered by the NOAA Fisheries Community-based Restoration Program Programmatic Environmental Assessment (PEA) and Finding of No Significant Impact (FONSI) or Supplemental PEA and FONSI will be informed after the peer review stage and may be asked to help prepare an EA prior to an award being made or provide for NOAA review a copy of an EA that covers proposed activities, if one exists. The Community-based Restoration Program PEA and FONSI can be found on the Restoration Center website: <http://www.restoration.noaa.gov>.

It is the applicant's responsibility to obtain all necessary federal, state, and local government permits and approvals for the proposed work to be conducted. Applicants are expected to design their proposed activities to minimize the potential for adverse impacts to the environment. If applicable, documentation of requests for or approvals of required environmental permits should be included in the application package. Applications will be reviewed to ensure that they contain sufficient information to allow Community-based Restoration Program staff to conduct a NEPA analysis so that appropriate NEPA documentation, required as part of the application package, can be submitted to the NOAA Grants Management Division along with the recommendation for funding for selected applications.

### C. Reporting

Progress reports are due semi-annually and cover 6 month periods. Progress reports are to be submitted to NOAA via NOAA's Grants Online system and are due no later than 30 days after each 6 month project period ends. A final report is due no later than 90 days after the expiration date of an award.

Progress reports may be required to be submitted using a specific format for narrative information. A project progress report template can be found in the Toolkit folder of the Publications & Resources section of the NOAA Restoration Center website at <http://www.restoration.noaa.gov>.

Financial reports cover the periods from October 1 to March 31 (due by April 30) and April 1 to September 30 (due by October 30) throughout the award period and are submitted to the NOAA Grants Management Division via NOAA Grants Online system.

Complete details on reporting requirements will be provided to successful applicants in the award documentation provided by the NOAA Grants Management Division in the Grants Online award package.

The Federal Funding Accountability and Transparency Act of 2006 includes a requirement for awardees of applicable Federal grants to report information about first-tier sub-awards and executive compensation under Federal assistance awards issued in FY 2011 or later. All awardees of applicable grants and cooperative agreements are required to report to the Federal Sub-award Reporting System (FSRS) available at [www.FSRS.gov](http://www.FSRS.gov) on all sub-awards over \$25,000.

#### D. Data Sharing Plan

Environmental data and information, collected and/or created under NOAA grants/cooperative agreements must be made visible, accessible, and independently understandable to general users, free of charge or at minimal cost, in a timely manner (typically no later than two (2) years after the data are collected or created), except where limited by law, regulation, policy or by security requirements.

1. Unless otherwise noted in this federal funding announcement, a Data/Information Sharing Plan of no more than two pages shall be required as part of the Project Narrative. A typical plan may include the types of environmental data and information to be created during the course of the project; the tentative date by which data will be shared; the standards to be used for data/metadata format and content; policies addressing data stewardship and preservation; procedures for providing access, data, and security; and prior experience in publishing such data. The Data/Information Sharing Plan will be reviewed as part of the NOAA Standard Evaluation Criteria, Item 1 -- Importance and/or Relevance and Applicability of Proposed Project to the Mission Goals.
2. The Data/Information Sharing Plan (and any subsequent revisions or updates) will be made publicly available at time of award and, thereafter, will be posted with the published data.
3. Failing to share environmental data and information in accordance with the submitted Data/Information Sharing Plan may lead to disallowed costs and be considered by NOAA when making future award decisions.

## VII. Agency Contacts

For further information contact Tom Barry (Tom.Barry@noaa.gov, 301-427-8653).

## VIII. Other Information

In no event will NOAA or the Department of Commerce be responsible for proposal preparation costs if programs fail to receive funding or are canceled because of other agency priorities. Publication of this announcement does not oblige NOAA to award any specific project or to obligate any available funds.

Prior notice and an opportunity for public comment are not required by the Administrative Procedure Act [5 U.S.C. 553 (a) (2)] or by any other law for this document concerning grants, benefits, and contracts. Accordingly, a regulatory flexibility analysis is not required by the Regulatory Flexibility Act (5 U.S.C. 601 et seq.).

This action has been determined to be not significant for purposes of Executive Order 12866.

The use of the standard NOAA grant application package referred to in this notice involves collection-of-information requirements subject to the Paperwork Reduction Act. The use of Standard Forms 424, 424A, 424B, SF-LLL, and CD-346 have been approved by OMB under the respective control numbers 0348-0043, 0348-0044, 0348-0040, 0348-0046, and 0605-0001.

Notwithstanding any other provision of law, no person is required to respond to, nor shall any person be subject to a penalty for failure to comply with, a collection of information subject to the Paperwork Reduction Act, unless that collection displays a currently valid OMB control number.

## Appendix E: NOAA Marine Debris Program Categorical Exclusion (CE) Applicability Screening Worksheet and Guidance

Screening for “extraordinary circumstances” as listed in section 5.05c of NAO 216-6  
(version 1.0 – March 2013)

<b>Date completed:</b>	
<b>Project Description/ Title:</b>	
<b>Location:</b>	
<b>Timing:</b>	

### Step 1. Review for consistency with PEA

#### 1. Is the proposed project consistent with the Proposed Action’s four overarching categories of MDP activities listed in Section 3.2 of the PEA?

Project Category	Yes	No
1. Research and Assessments		
2. Prevention, Reduction, and Removal		
3. Outreach and Education		
4. Collaboration and Tools		

### Step 2. NEPA – Categorical Exclusion Screening

Based on review of the proposal and relevant information about the action area, do any of the following exceptions (from NAO 216-6 § 5.05c) to use of a categorical exclusion apply and require further analysis (e.g., an Environmental Assessment)? Explain your answers, with reference to the proposal or other documents/sources as applicable.

**NOTE:** *If a sensitive resource or special area is merely present in or near the action area but will not be affected by the project, briefly describe the mitigation measures that would be required to avoid impacts.*

#### 1. Would the activities adversely impact geographic areas with unique characteristics?

For example:

- park lands
- prime farmlands
- wetlands
- coral reefs
- wild and scenic rivers
- MSFCMA Essential Fish Habitat
- National Marine Sanctuaries
- State or National Parks and Wildlife Refuges
- archeological or historical resources listed in or eligible for listing in the National Register of Historic Places
- other “ecologically critical” areas

<b>Response:</b>	
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**2. Are the potential environmental effects the subject of controversy?**

*For example, is there a substantive dispute about the manner in which the action would affect the environment, the geographic or temporal scope of the impacts, or which resources could be impacted?*

**Response:**

**3. Are the effects uncertain or are there unique or unknown risks associated with the project?**

*For example, is the technique new? If so, is it analogous to something for which we have information about effects from published literature, tech memos, monitoring reports, etc., such that we are reasonable certain about the effects and risks?*

**Response:**

**4. Does this decision establish a precedent or decision in principle about (define the parameters of) future proposals with a potential for significant adverse impacts?**

**Response:**

**5. Could the action result in cumulatively significant impacts when combined with past, present, and reasonably foreseeable future impacts, regardless of what entity (federal, non-federal, or private) is taking the actions?**

**Response:**

**6. Are endangered or threatened species or their habitats within or near the action area?**

- *If so, what measures will be taken to avoid taking or adverse modification?*
- *If take is unavoidable, would the action qualify for an ESA Section 10 permit?*
  - *If a permit is already issued, provide permit number, name of permit holder, and permit expiration date.*

**Response:**

**Other Applicable Laws****7. Are federal, state, and local permits and consultations necessary to implementation of the action? Did the applicant provide copies of those that are their responsibility with their proposal or otherwise indicate which are being sought and anticipated completion dates? Where NOS is the action agency, what was the outcome of the consultation and the date completed?**

*Examples: MMPA 101(a)(5) authorization for incidental disturbance of marine mammals (applicant responsibility); ESA section 7 consultation for incidental take of listed species (NOS consultation); NMS, National Wildlife Refuge or state park special use permits (applicant responsibility); CZMA consistency determination (NOS consultation).*

**Response:**

## Guidance for NOS MDP Staff Using the NOAA MDP Categorical Exclusion (CE) Applicability Screening Worksheet

Fill out the associated CE Applicability Worksheet based on details about the activity (e.g., as provided in a grant proposal) and review of the best available information on the action area, affected resources, and potential impacts. This guidance is to assist you in completing that Worksheet.

Some resources for verifying information:

List of federally protected species managed by NMFS <http://www.nmfs.noaa.gov/pr/species/>

Links to critical habitat maps for ESA species managed by NMFS <http://www.nmfs.noaa.gov/pr/species/criticalhabitat.htm>

Searchable database for FWS - managed species <http://www.fws.gov/endangered/species/us-species.html>

Essential Fish Habitat map tool <http://www.habitat.noaa.gov/protection/efh/habitatmapper.html>

National Marine Sanctuary permits <http://sanctuaries.noaa.gov/management/permits/welcome.html>

Marine mammal incidental take authorizations <http://www.nmfs.noaa.gov/pr/permits/incidental.htm>

National Marine Protected Areas inventory <http://www.mpa.gov/nationalsystem/nationalsystemlist/>

CZMA Federal Consistency Requirements <http://coastalmanagement.noaa.gov/consistency/fcstatel.html>  
*MDP regional coordinators should check each state's federal consistency list*

### Question 1: Unique Characteristics

The proposal/project description should indicate whether the activities will or could occur within or near geographic areas with unique characteristics, which are generally understood to be those with special designations such as park lands, prime farmlands, wetlands, essential fish habitat, etc.

If the activity is in or adjacent to such “unique” areas, consider

- why the area is “unique” (what constituent elements warrant special protection or designation)
- how the activity might impact the unique elements or the area overall
- how the spatial scale of the impacts compares to the size of the “unique” area

- how the temporal duration of the activity and its impacts compare to the time needed for the area to recover to pre-disturbance state (note that some impacts only occur during the activity and others may happen after it concludes but as a direct or indirect result of it)
- what mitigation measures are proposed or could be implemented to minimize or avoid impacts

Example:

*There is designated Steller Sea Lion critical habitat in the action area, a haul-out site at Point Eleanor (60 35.0N, 147 34.0W), on Eleanor Island. Workers will avoid this haul out area during monitoring surveys.*

### Question 2: Controversy

Note that mere opposition is not necessarily controversy in a NEPA context. Generally, controversy exists if there is a substantive dispute about what resources could be impacted, or the severity of the impacts, that cannot be resolved based on best available information.

For example, opposition to the project for purely aesthetic reasons does not necessarily warrant preparing an EA, whereas, opposition to the anticipated environmental impacts of the project may.

In the latter case, if the best available information (including the best professional judgment of agency experts) supports a determination that the impacts are not “significant” as defined in CEQ regulations, then the CE may still be applicable despite public opposition. If we can demonstrate that the effects are well-known and documented (in scientific literature, other NEPA documents, etc.), then this exception is addressed.

### Question 3: Uncertainty & Risk

The proposal/project description should contain sufficient details about how the removal, detection, disposal, monitoring or other activities would be conducted to evaluate the probable impacts (when, where, and how much).

If the methods are commonly employed, is there sufficient information on the effects from past projects such that we can reasonably predict what the impacts of this activity would be? (Note that “commonly used” does not necessarily equal a lack of uncertainty about effects if those effects were never monitored or documented.)

If the methods are new, are they similar enough to other methods about which we have such information to make a reasoned assumption about impacts?

### Question 4: Precedent setting

Another way to look at this is, does this award establish “bureaucratic momentum” such that subsequent decisions about related actions with potentially adverse impacts are inevitable or any real choice is removed by virtue of this “triggering” or “enabling” action on our part?



To address this, you need to know what other actions are likely to be connected to this project, directly or indirectly, and assess the role of this award in tipping the balance on those future decisions.

#### Question 5: Cumulative Effects

Consider the current status of the action area (baseline) when assessing probable impacts of this project in combination with those of projects or activities undertaken previously or that are likely to occur in the future.

“Reasonably foreseeable” means effects that are likely, predictable, or expected to result from future actions. If the future action itself is highly speculative, then its effects are not reasonably foreseeable. If a future action is reasonably certain, note whether it would be subject to NEPA analysis prior to implementation, is not ripe for evaluation, and is not the result of “bureaucratic momentum” generated by this award.

#### Question 6: Endangered or Threatened Species and Critical Habitats

The proposal/project description should contain sufficient detail about the location, timing, duration, and frequency of the activity for us to conclude that there are no threatened and endangered species or designated critical habitat in the action area at all, or at least not when the activity would occur.

*E.g., Removal operations will be conducted over a six-week period between September and November, weather permitting. No species listed as threatened or endangered under the Endangered Species Act would be present at the project sites during this time.*

In the absence of such details, it would be prudent to secure assurances from the applicant in their proposal that they will observe all applicable federal, state, and local laws related to such resources and have or will obtain necessary permissions, permits, and consultations prior to conduct of the activity.

It is not our responsibility to ensure that applicants comply with these laws, but we do have an obligation to be reasonably certain the action we fund is not likely to result in a violation of such laws.

Also, it is our obligation to engage in interagency consultation with the National Marine Fisheries Service and U.S. Fish and Wildlife Service pursuant to section 7 of the ESA if our action of undertaking or approving a project (e.g., through awarding of funds) may adversely affect ESA-listed species.

- The trigger for such consultation is if the action may have any effects on listed species or CH.
- Alternatively, we may seek written concurrence from the Services that our action "is not likely to adversely affect" listed species or CH if we can demonstrate that the effects are expected to be discountable, insignificant, or completely beneficial.
  - Beneficial effects are “contemporaneous positive effects without any adverse effects to the species.

- Insignificant effects relate to the size of the impact and should never reach the scale where take<sup>7</sup> occurs.
- Discountable effects are those extremely unlikely to occur.

## Other Applicable Laws

### **Coastal Zone Management Act (CZMA) Federal Consistency Requirements**

For each MDP activity including funding awards, MDP regional coordinators would determine if **coastal effects** are reasonably foreseeable and check each state's federal consistency list at:

<http://coastalmanagement.noaa.gov/consistency/fcstatel.html>

Whether or not an activity is listed, federal agencies provide state Coastal Management Programs (CMP) with Consistency Determinations (CDs) for federal agency activities affecting any coastal use or resource, whether proposed inside or outside the coastal zone.

A federal action is subject to CZMA federal consistency requirements if the action will affect a coastal use or resource, in accordance with NOAA's regulations. NOAA's regulations, 15 C.F.R. § 930.11(g), define **coastal effects** as:

The term "**effect on any coastal use or resource**" means any reasonably foreseeable effect on any coastal use or resource resulting from a federal agency activity or federal license or permit activity (including all types of activities subject to the federal consistency requirement under subparts C, D, E, F and I of this part.) Effects are not just environmental effects, but include effects on coastal uses. Effects include both direct effects which result from the activity and occur at the same time and place as the activity, and indirect (cumulative and secondary) effects which result from the activity and are later in time or farther removed in distance, but are still reasonably foreseeable. Indirect effects are effects resulting from the incremental impact of the federal action when added to other past, present, and reasonably foreseeable actions, regardless of what person(s) undertake(s) such actions.

**Federal Assistance Activities:** A state agency or local government applying for federal financial assistance follows the requirements of CZMA § 307(d)(16 U.S.C. § 1456(d)) and 15 C.F.R. part 930, subparts A, B and F:

1. States list in their CMPs the federal assistance activities subject to review. The state CMP may also notify an applicant agency and federal agency that it will review an unlisted activity. OCRM approval is not required for the review of unlisted federal assistance activities.

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<sup>7</sup> Take is defined under the ESA as to "harass, harm, pursue, hunt, shoot, wound, kill, trap, capture, or collect, or to attempt to engage in any such conduct." The term "harm" is defined by regulation to include habitat alteration: Harm in the definition of "take" in the Act means an act which actually kills or injures wildlife. Such act may include significant habitat modification or degradation where it actually kills or injures wildlife by significantly impacting essential behavioral patterns, including breeding, feeding, or sheltering.

2. NOAA regulations allow state CMPs to develop flexible procedures for reviewing and concurring with federal assistance activities. State CMP review of the activities is normally conducted through procedures established by states pursuant to Executive Order 12372 -- intergovernmental review of federal programs, or through state clearinghouse procedures.
3. Federal agency does not authorize the use of federal funds until state CMP has concurred.
4. State or local government applicant agency may appeal a state objection to the Secretary of Commerce who may override the state's objection.

**Contacts for more information about CZMA federal consistency:**

Patmarie.Nedelka@noaa.gov, NOS OCRM  
 Kerry.Kehoe@noaa.gov, NOS OCRM  
 David.Kaiser@noaa.gov, NOS OCRM

**National Marine Sanctuaries Act (NMSA) Compliance Requirements**

MDP has described several activities in the draft PEA that would require an ONMS permit pursuant to sanctuary regulations (15 C.F.R. Part 922) should the activity be proposed to be conducted in a sanctuary that otherwise prohibits it. ONMS suggests adding a paragraph in section 6.6 National Marine Sanctuaries Act to describe that the MDP will apply for an ONMS permit as needed should it propose to conduct activities in a national marine sanctuary that are otherwise prohibited by sanctuary regulations. Proposed activities analyzed in the draft PEA and their relevance to site-specific sanctuary regulations are generally identified below in our comments. Further information on sanctuary permitting can be found on the ONMS website at <http://sanctuaries.noaa.gov/management/permits/welcome.html>.

Additionally, National Marine Sanctuaries Act (NMSA) section 304(d) requires that federal agencies consult with ONMS on activities that are likely to injure, cause the loss of, or destroy any sanctuary resources. Should the MDP propose to engage in any activity that is likely to injure sanctuary resources, but does not also require an ONMS permit, the program should contact ONMS directly to initiate sanctuary consultation.

**Proposed Activities and Sanctuary Prohibitions**

- **Surface water trawls, sub-surface trawls for debris-** section 3.2.1 Because “trawling” is a prohibited or regulated activity, a permit is needed to engage in the activity.
  - o “Trawling” is stated as a “prohibited or otherwise regulated activity” in 922.61(h) (Monitor).
- **Research projects involving coral environments-** section 3.2.1. Because corals are protected under ONMS regulations, a permit is needed to conduct an activity that injures or removes coral.
  - o 922.104 (American Samoa), 922.122 (Flower Garden Banks), 922.163-4 (Florida Keys) prohibits damaging coral

- 922.104 (American Samoa), 922.122 (Flower Garden Banks), 922.163-4 (Florida Keys) prohibits possession of coral
- **Aerial surveys of 500-100ft** – section 3.2.1 Because some sanctuaries have overflight restrictions, a permit is needed to conduct an aerial survey at an altitude below 1,000 or 2,000 feet in certain sanctuaries.
  - 922.71 (Channel Islands) prohibits aircraft at less than 1,000 ft over the waters within one NM of any island, except to engage in kelp bed surveys or to transport persons/supplies to or from an island.
  - 922.82 (Gulf of Farallones) prohibits aircraft at less than 1,000 ft over the waters within one NM of Farallon Islands, Bolinas Lagoon or any ASBS except to transport people/supplies and for law enforcement purposes.
  - 922.132 (Monterey Bay) prohibits aircraft at less than 1,000 ft except for law enforcement purposes.
  - 922.152 (Olympic Coast) prohibits aircraft at less than 2,000 ft within one NM of the Flattery Rocks, Quillayute Needles, or Copalis National Wildlife Refuges or within one nautical mile seaward from the coastal boundary of the Sanctuary, except for activities related to tribal timber operations conducted on reservation lands, or to transport persons or supplies to or from reservation lands as authorized by a governing body of an Indian tribe.
- **Underwater removal of debris by hand-** section 3.2.2. Because some sanctuaries restrict the activity of diving, a permit is necessary to conduct this type of activity.
  - 922.61 (Monitor) prohibits diving of any type (individual or submersible)
  - 922.94 (Gray’s Reef) prohibits diving in the “Research Area” of the sanctuary.
- **Underwater removal by mechanical means, use of grappling hook-** section 3.2.2. Because the use of any grappling device is prohibited at the Monitor sanctuary and in certain cases at the Thunder Bay sanctuary, a permit will be needed.
  - 922.61 (Monitor) prohibits lowering below the surface of the water any grappling device.
  - 922.193 (Thunder Bay) prohibits grappling hooks on underwater cultural resource sites that are marked with a mooring buoy.

Additionally, the use of such a device in the way described by the PEA (dragging on the floor) could damage the seafloor of any sanctuary resulting in an injury. Because of this, a permit is likely needed in any sanctuary.
- **Training to conduct activities in sensitive areas-** section 3.3.
  - While the activities conducted within sanctuaries may be permissible, those conducting the training should have adequate qualifications and conduct training in such a manner that promotes the protected status of sanctuaries.
- **“Research & Assessment” and “Prevention, Reduction & Removal” activities leading to direct disturbance of the physical substrate and have an effect of the biological environment-** section 5.2.2. Most sanctuary regulations prohibit disturbances

to the seabed. Because of this a permit is likely needed for the activity to occur within a sanctuary.

- **Marine debris activities may effect/ disturb animals which may result in a “take”- section 5.2.3.** The injury of sanctuary resources, which include animals protected under the MMPA and ESA, is prohibited and would require NMSA consultation. In some sanctuaries, an exception for “take” may be allowed when accompanied by an appropriate NMFS authorization.
- **Field research’s testing of fishing gear- section 5.2.3.1**
  - o While fishing in sanctuaries is generally allowed, certain methods and fishing within certain areas may be prohibited. (See 922.73, 922.92, 922.94, 922.105, 922.122, 922.164)
  - o “Trawling” is stated as a “prohibited or otherwise regulated activity” in 922.61(h) (NMS-Monitor).
  - o 922.61 (Monitor) prohibits diving of any type (individual or submersible)
  - o 922.94 (Gray’s Reef) prohibits diving in the “Research area” of the sanctuary.
- **Field research’s potential to lose equipment while conducting tests - section 5.2.3.1**
  - o Loss of equipment is considered a “discharge of material” and is therefore prohibited from being released into the sanctuary in most sanctuaries. See 922.81, .82, .102, .103, .111, .121, .131, .132, .151.
- **Prevention, Reduction and Removal activities use of grappling, trawling, diving- section 5.2.3.1**
  - o 922.61 (Monitor) prohibits lowering below the surface of the water any grappling device.
  - o 922.193 (Thunder Bay) prohibits grappling hooks on underwater cultural resource sites that are marked with a mooring buoy.
  - o “Bottom trawling” is stated as a “prohibited or otherwise regulated activity” in regulation §922.104 (Prohibited activity of NMS-American Samoa)
  - o As it relates to fishing, “bottom trawls” are prohibited by §922.122(a)(8) (Prohibited activity of NMS-Flower Garden Banks) and §922.164(b)(iii) (Prohibited activity of NMS-Florida Keys)
- **Potential for “harmful matter” to be introduced to sanctuaries via shoreside mechanical devices.** Because trucks, cranes, ATV’s accessing adjacent beaches have the potential to release “harmful matter”, substances such as motor oil, etc. released from those devices may enter a sanctuary.
- **Potential for vessels to discharge waste within a sanctuary.** Because the MDP PEA states vessels will be used for many activities, there is a potential for those vessels to discharge waste into sanctuaries. While there are many exceptions regarding vessel discharge, the vessels used in activities involving sanctuaries should be capable of adhering to the discharge regulations that do exist.

**Contacts for more information about NMSA requirements:**

Vicki.Wedell@noaa.gov, NOS ONMS

**What if “Emergency” response is needed?**

There are provisions under NEPA and the ESA for taking emergency actions. These provisions do not exempt the agency from compliance with these statutes. They are alternatives to the standard compliance procedures.

NEPA’s Alternative Arrangements for Emergencies

Do not delay immediate actions necessary to secure lives and safety of citizens to consult, but consult with CEQ and NOAA’s PPI as soon as feasible.

CEQ NEPA Regulations: 40 C.F.R. section 1506.11 Emergencies:

“Where emergency circumstances make it necessary to take an action with significant environmental impact without observing the provisions of these regulations, the Federal agency taking the action should consult with the Council about alternative arrangements. Agencies and the Council will limit such arrangements to actions necessary to control the immediate impacts of the emergency. Other actions remain subject to NEPA review.”

**NOTE!** The “alternative arrangements” take the place of an Environmental Impact Statement (EIS) and only apply to Federal actions with “significant environmental impacts.” You only need to engage in alternative arrangements for NEPA compliance when the impacts are likely to be significant such that an EIS would be required.

If the action would qualify for a CE, you should complete the worksheet and CE memo before disbursing the funds.

If the action does not qualify for a CE because it triggers an exception in Section 5.05c of NAO 216-6, but the impacts are not likely to be significant such that an EIS is warranted, you must prepare an EA with a Finding of No Significant Impact prior to disbursing funds.

Alternative arrangements are limited to “the actions necessary to control the immediate impacts of the emergency.” They should be developed, based upon your specific facts and circumstances, during the consultation with CEQ.

Factors to address when crafting “alternative arrangements” include: nature and scope of the emergency; actions necessary to control the immediate impacts of the emergency; potential adverse effects of the proposed action; components of the NEPA process that can be followed and provide value to decision-making (e.g., coordination with affected agencies and the public); duration of the emergency; and potential mitigation measures.

Who do I contact at CEQ to initiate emergency alternative arrangements under NEPA?

- Horst Greczmiel, Associate Director, 202-395-0827, [Horst\\_Greczmiel@ceq.eop.gov](mailto:Horst_Greczmiel@ceq.eop.gov)
- Ted Boling, Deputy General Counsel, 202-395-3449, [Edward\\_A.\\_Boling@ceq.eop.gov](mailto:Edward_A._Boling@ceq.eop.gov)
- Dinah Bear, General Counsel, 202-395-7421, [Dinah\\_Bear@ceq.eop.gov](mailto:Dinah_Bear@ceq.eop.gov)

Who do I contact in NOAA's Office of Program Planning and Integration (PPI) about expedited an EA process for emergencies?

- Jay Nunenkamp, NEPA Specialist, 301-713-1632, [jay.nunenkamp@noaa.gov](mailto:jay.nunenkamp@noaa.gov)

### ESA Emergency Consultations

Under the ESA emergency provisions, an emergency is a situation involving an “act of God,” disasters, casualties, national defense or security emergencies, etc., and includes response activities that must be taken to prevent imminent loss of human life or property.

An “emergency” does not exempt the agency from compliance with section 7 of the ESA. Where emergency actions are required that may affect listed species and/or critical habitats, and there is not time for a formal consultation prior to responding, we should contact the Services immediately to inform them of the response.

50 C.F.R. 402.05(a) Where emergency circumstances mandate the need to consult in an expedited manner, consultation may be conducted informally through alternative procedures that the Director determines to be consistent with the requirements of sections 7(a)–(d) of the Act. This provision applies to situations involving acts of God, disasters, casualties, national defense or security emergencies, etc.

We must initiate formal consultation after the emergency response, if listed species or critical habitat have been adversely affected by our actions.

50 C.F.R. 402.05(b) Formal consultation shall be initiated as soon as practicable after the emergency is under control. The Federal agency shall submit information on the nature of the emergency action(s), the justification for the expedited consultation, and the impacts to endangered or threatened species and their habitats. The Service will evaluate such information and issue a biological opinion including the information and recommendations given during the emergency consultation.

Who do I contact at NMFS for an ESA section 7 consultation?

- Gina Shultz, Chief, Endangered Species Act Interagency Cooperation Division, 301-427-8405, [Gina.Shultz@noaa.gov](mailto:Gina.Shultz@noaa.gov)

Who do I contact at FWS for ESA section 7 consultation?

<b>Region</b>	<b>Contact</b>	<b>Position</b>	<b>Phone</b>
(1) Pacific- ID, OR, WA, HI and the	Larry Salata (in Portland, OR)	Consultations	503-231-2350

Pacific Islands	Marilet Zablan (in Portland, OR)	Chief, Division of Endangered Species:	503-231-6158
(2) Southwest (AZ, NM, OK, and TX)	Susan Jacobsen	Chief, Division of Endangered Species	505-248-6641
	Delfinia Montano	Consultations	505-248-6401
(3) Great Lakes, Big Rivers (IL, IN, IA, OH, MI, MN, MO, and WI)	T.J. Miller	Chief, Division of Endangered Species	612-713-5334
	Jennifer Szymanski	Consultations	612-713-5341
(4) Southeast (AL, AR, FL, GA, KY, LA, MS, NC, SC, TN, PR, and, the U.S. VI)	Leopoldo Miranda	Assistant Regional Director for Ecological Services	404-679-7085
	Ken Graham	Consultations	404-679-7358
(5) Northeast (CT, DE, DC, ME, MD, MA, NH, NJ, NY, PA, RI, VT, VA, and WV)	Marty Miller	Chief, Division of Endangered Species	413-253-8615
	Glenn Smith	Consultations	413-253-8627
(6) Mountain Prairie (CO, KS, MT, NE, ND, SD, UT, and WY)	Bridget Fahey	Chief, Endangered Species	303-236-4258
(7) Alaska	Sonja Jahrsdoerfer	Endangered Species Coordinator	907-786-3323
(8) Pacific Southwest (CA, NV, plus the Klamath Basin area of OR)	Mike Fris (in Sacramento, CA)	Assistant Regional Director for Ecological Services	916-414-6464
	Jana Affonso (in Sacramento, CA)	consultations	916-414-6593
(9) Headquarters (DC)	Rick Sayers	Chief, Division of Consultation, HCPs, Recovery, and State Grants	703-358-2171

The names provided above are only points of contact and not necessarily who would do the consultations. This link provides contact information for FWS regional offices nationwide: <http://www.fws.gov/angered/regions/index.html>.

### Special notes about marine mammals

Although not a specific exception in NAO 216-6 Section 5.05c to the use of a CE, impacts on marine mammals that are in violation of the Marine Mammal Protection Act (MMPA) could preclude use of the CE.



NMFS recommends people observe the regional approach guidelines to minimize the potential for taking marine mammals. However, disturbance may occur even when following these guidelines. Disturbance of a marine mammal without a permit or other exception is a violation of the MMPA. Links to the regional guidelines can be found at this page:

<http://www.nmfs.noaa.gov/pr/education/viewing.htm>

MMPA exception for taking by State or local government officials (50 C.F.R. § 216.22)

NMFS regulations provide an exception to the MMPA take<sup>8</sup> prohibition for actions by State and local governments.

- It is not intended to be used in place of an incidental take authorization (issued under section 101(a)(5)) and is applicable when immediate action is *necessary* to protect the animal or the public. If a State or local government applicant proposes to use the exception, such as in an emergency, they should consult the NMFS regional protected resources staff.
- For recurring actions and projects that do not require immediate response to protect the animal or the public, the applicant should contact NMFS about an incidental take authorization.

(a) A State or local government official or employee may take a marine mammal in the normal course of his duties as an official or employee, and no permit shall be required, if such taking:

- (1) Is accomplished in a humane manner;
- (2) Is for the protection or welfare of such mammal or for the protection of the public health or welfare; and
- (3) Includes steps designed to insure return of such mammal, if not killed in the course of such taking, to its natural habitat. In addition, any such official or employee may, incidental to such taking, possess and transport, but not sell or offer for sale, such mammal and use any port, harbor, or other place under the jurisdiction of the United States. All steps reasonably practicable under the circumstances shall be taken by any such employee or official to prevent injury or death to the marine mammal as the result of such taking. Where the marine mammal in question is injured or sick, it shall be permissible to place it in temporary captivity until such time as it is able to be returned to its natural habitat. It shall be permissible to dispose of a carcass of a marine mammal taken in accordance with this subsection whether the animal is dead at the time of taking or dies subsequent thereto.

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<sup>8</sup> For marine mammals, “take” is defined (50 C.F.R. 216.3) as to harass, hunt, capture, collect, or kill, or attempt to harass, hunt, capture, collect, or kill any marine mammal. This includes, without limitation, any of the following: The collection of dead animals, or parts thereof; the restraint or detention of a marine mammal, no matter how temporary; tagging a marine mammal; the negligent or intentional operation of an aircraft or vessel, or the doing of any other negligent or intentional act which results in disturbing or molesting a marine mammal; and feeding or attempting to feed a marine mammal in the wild.

“Harass” is further defined as: Level A Harassment means any act of pursuit, torment, or annoyance which has the *potential* to injure a marine mammal or marine mammal stock in the wild. Level B Harassment means any act of pursuit, torment, or annoyance which has the *potential* to disturb a marine mammal or marine mammal stock in the wild by causing disruption of behavioral patterns, including, but not limited to, migration, breathing, nursing, breeding, feeding, or sheltering but which does not have the potential to injure a marine mammal or marine mammal stock in the wild.

(b) Each taking permitted under this section shall be included in a written report to be submitted to the Secretary every six months beginning December 31, 1973. Unless otherwise permitted by the Secretary, the report shall contain a description of:

- (1) The animal involved;
- (2) The circumstances requiring the taking;
- (3) The method of taking;
- (4) The name and official position of the State official or employee involved;
- (5) The disposition of the animal, including in cases where the animal has been retained in captivity, a description of the place and means of confinement and the measures taken for its maintenance and care; and
- (6) Such other information as the Secretary may require.

Who do I contact in NMFS about taking marine mammals incidental to marine debris activities?

NMFS Region	Position	Phone	Email
Headquarters (all MMPA authorizations are issued by HQ)			
Jolie Harrison	Incidental Take Supervisory Team Lead	301-427-8401	<a href="mailto:jolie.harrison@noaa.gov">jolie.harrison@noaa.gov</a>
Northeast			
Amanda Johnson	Fishery Biologist	978-282-8463	<a href="mailto:amanda.johnson@noaa.gov">amanda.johnson@noaa.gov</a>
Southeast			
David Bernhart	ARA for Protected Resources	727-824-5312	<a href="mailto:david.bernhart@noaa.gov">david.bernhart@noaa.gov</a>
Kyle Baker	Fishery Biologist	727-824-5312	<a href="mailto:kyle.baker@noaa.gov">kyle.baker@noaa.gov</a>
Northwest			
Lynne Barre	Marine Species Branch Chief	206-526-4745	<a href="mailto:lynne.barre@noaa.gov">lynne.barre@noaa.gov</a>
Brent Norberg	Marine Mammal Coordinator	206-526-6550	<a href="mailto:brent.norberg@noaa.gov">brent.norberg@noaa.gov</a>
Alison Agness	Fishery Biologist	206-526-6152	<a href="mailto:alison.agness@noaa.gov">alison.agness@noaa.gov</a>
Southwest			
Monica DeAngelis	Marine Mammal Biologist	562-980-3232	<a href="mailto:monica.deangelis@noaa.gov">monica.deangelis@noaa.gov</a>
Alaska			
Brad Smith	Marine Mammal Supervisor	907-271 3023	<a href="mailto:brad.smith@noaa.gov">brad.smith@noaa.gov</a>
Mandy Migura	Biologist	907-271-1332	<a href="mailto:mandy.migura@noaa.gov">mandy.migura@noaa.gov</a>
Barbara Mahoney	Biologist	907-271-3448	<a href="mailto:barbara.mahoney@noaa.gov">barbara.mahoney@noaa.gov</a>
Pacific Islands			
Patrick Opay	ESA Branch Chief	808-944-2242	<a href="mailto:patrick.opay@noaa.gov">patrick.opay@noaa.gov</a>
Don Hubner	ESA Biologist	808-944-2233	<a href="mailto:donald.hubner@noaa.gov">donald.hubner@noaa.gov</a>
Nancy Young	Marine Mammal Biologist	808-944-2282	<a href="mailto:nancy.young@noaa.gov">nancy.young@noaa.gov</a>

Federal regulations limiting approach distances and other interactions with some marine mammals listed as threatened/endangered.

- For humpback whales in HI, pursuant to 50 C.F.R. 224.103(a), it is illegal to operate any aircraft within 1,000 feet (300 m) of any humpback whale; (2) approach, by any means, within 100 yard (90 m) of any humpback whale; (3) Cause a vessel or other object to approach within 100 yd (90 m) of a humpback whale; or (4) Disrupt the normal behavior or prior activity of a whale by any other act or omission.
- For humpback whales in AK, pursuant to 50 C.F.R. 224.103(b), it is illegal to approach, by any means, within 100 yards (91.4 m) of the vessel), (ii) cause a vessel or other object to approach within 100 yards (91.4 m) of a humpback whale; or (iii) disrupt the normal behavior or prior activity of a whale by any other act or omission.
- For Steller sea lions, pursuant to 50 C.F.R. 223.202(b), it is illegal to enter the critical habitat “buffer zones” extending 3 nautical miles (5.5 km) at sea and 0.5 miles (0.8 km) on land, or within sight of a listed rookery, whichever is greater. Currently, all listed rookeries are roughly west of 140° West longitude. An exception is provided for the performance of “legitimate governmental activities.” However, if the entry and subsequent activity may result in the taking (by disturbance or otherwise) of a Steller sea lion, the NMFS Alaska Region should be consulted in advance as there are limits on the exception regarding the manner of taking.

Federal Regulations for Northern fur seals on the Pribilofs, AK

Pursuant to 50 C.F.R. § 216.81, no person, except those authorized by a representative of the National Marine Fisheries Service, or accompanied by an authorized employee of the National Marine Fisheries Service, shall approach any fur seal rookery or hauling grounds nor pass beyond any posted sign forbidding passage, from June 1 to October 15 of each year.

## Appendix F: NOAA Marine Debris Program Programmatic Environmental Assessment Inclusion Memo Worksheet

(version 1.0 – March 2013)

<b>Date completed:</b>	
<b>Project Description/ Title:</b>	
<b>Location:</b>	
<b>Timing:</b>	

### Step 1. Review for Consistency with PEA

**A. Is the proposed project consistent with the Proposed Action's four overarching categories of MDP activities listed in Section 3.2 of the PEA? (check all that apply)**

Project Category	
5. Research and Assessments	
6. Prevention, Reduction, and Removal	
7. Outreach and Education	
8. Collaboration and Tools	

*If not, and the project is still being considered, the Proposed Action section of the PEA will need to be supplemented to include the new category and explain how the project fits within the scope of the MDP. Other sections of the PEA may need to be supplemented including the descriptions of affected resources and environmental consequences.*

**B. Are the techniques the same as those listed in Table 1 and described in Section 3.2 of the PEA? Or, are they similar enough to support a conclusion that the effects will be no different from those evaluated in the PEA?**

- 3.2.1 Research and Assessments
- 3.2.2 Prevention, Reduction, and Removal
- 3.2.3 Outreach and Education
- 3.2.4 Collaboration and Tools

<b>Response:</b>	
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*If not, the applicable techniques section of the PEA, and associated impacts analysis, will need to be supplemented.*

**C. Are the “best practices” measures in Section 3.3 Table 2 of the PEA likely to be adequate to ensure impacts are not significant? If not, are additional mitigation measures practicable that could ensure impacts are within those evaluated in the PEA?**

<b>Response:</b>	
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**D. Are the affected resources in the project area, and potential impacts of the action, adequately described in Sections 4 and 5, respectively, of the PEA?**

- 4.2 Physical Environment
- 4.3 Biological Environment
- 4.4 Social and Economic Environment
- 5.2.2 Effects on Physical Environment
- 5.2.3 Effects on Biological Environment
- 5.4 Cumulative Impacts

*If a resource is not discussed, or impacts are not covered, the description of the action area and environmental consequences sections of the PEA will need to be supplemented.*

<b>Response:</b>	
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### Step 2. Review for Significance

If supplemental analysis is warranted based on the evaluation in Step 1, MDP staff should review the action relative to the significance criteria in Section 6.01b of NAO 216-6 (mirroring the CEQ regulations defining “significance” (40 C.F.R. 1508.27)) to determine whether a new FONSI is supported or an EIS is warranted.

**A. Would the impacts be significantly beneficial or adverse? Note that a significant effect may exist even if the MDP believes that on balance the effect will be beneficial (6.01b.1)**

<b>Response:</b>	
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**B. Would public health or safety be significantly affected? (6.01b.2)**

<b>Response:</b>	
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**C. Would unique characteristics of the geographic area be significantly altered? (6.01b.3)**

<b>Response:</b>	
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**D. How likely are the effects on the human environment to be highly controversial? (6.01b.4) (See Section 5.3 of PEA for discussion of controversy)**

<b>Response:</b>	
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**E. How likely are the effects to be highly uncertain or involve unique or unknown risks? (6.01b.5)**

<b>Response:</b>	
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**F. Would taking the action establish a precedent for future actions with significant effects or represent a decision in principle about a future consideration? (6.01b.6)**

<b>Response:</b>	
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**G. Are there individually insignificant but cumulatively significant impacts? (6.01b.7)**

<b>Response:</b>	
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**H. Would the action significantly adversely affect entities listed in or eligible for listing in the National Register of Historic Places, or cause loss or destruction of significant scientific, cultural, or historic resources? (6.01b.8)**

<b>Response:</b>	
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**I. Would the action significantly adversely affect endangered or threatened species, or their critical habitat as defined under the Endangered Species Act of 1973? (6.01b.9)**  
*(See Section 4.3.2 of PEA for discussion of threshold for affect and 6.3 for consultation and permit requirements.)*

<b>Response:</b>	
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**J. Would taking the action result in a violation of Federal, state, or local law for environmental protection? (6.01b.10) (see Section 6 of PEA for list of laws to consider)**

<b>Response:</b>	
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**K. Would taking the action result in the introduction or spread of a nonindigenous species? (6.01b.11)**

<b>Response:</b>	
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**Other Applicable Laws – consultations and permits necessary for implementation**

**A. Does the action comply with applicable federal, state, and local laws as described in Section 6 of PEA? If not, what modifications of the project, such as additional mitigation measures, would result in compliance?**

<b>Response:</b>	
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**B. What other permits and consultations are necessary for MDP to implement? Has MDP completed the necessary consultations and permit processes?**

<b>Response:</b>	
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**C. What other permits and consultations are necessary for an awardee to implement their project?**

Has the applicant demonstrated compliance (provided copies of permits, etc.)? If not, is the action reasonably likely to comply with permit issuance criteria and other enforceable policies?

Is conditional approval or a special award condition warranted (per Section 7.5 of the PEA)?  
If so, what is the condition?

<b>Response:</b>	
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## FINDING OF NO SIGNIFICANT IMPACT

The Marine Debris Program (MDP), a division within the Office of Response and Restoration (ORR), National Ocean Service (NOS), National Oceanic and Atmospheric Administration (NOAA) prepared a Programmatic Environmental Assessment (PEA) evaluating the potential environmental impacts of undertaking and funding activities to reduce the adverse impacts of marine debris to benefit the marine environment and navigation safety as mandated by the Marine Debris Research, Prevention, and Reduction Act (MDRPRA - 33 U.S.C. §§ 1951 et seq.), renamed the Marine Debris Act (MDA - P.L. 112-213, Title VI, § 603, 126 Stat. 1576, December 20, 2012).

The MDP's preferred alternative is the Proposed Action alternative, to undertake activities through direct action by division staff, and by awarding funds, primarily on a competitive and interagency basis (e.g., grants and contracts), to external entities to address one or more of the following categories of activities (described in more detail below):

- 1) Research and Assessments
- 2) Prevention, Reduction, and Removal
- 3) Outreach and Education
- 4) Collaboration and Tools

The Council on Environmental Quality (CEQ) Regulations state that the determination of significance using an analysis of effects requires examination of both context and intensity, and lists ten criteria for intensity (40 C.F.R. § 1508.27). In addition, the NOAA Administrative Order (NAO) 216-6 Section 6.01b.1 - 11 provides eleven criteria—the same ten as the CEQ Regulations and one additional, for determining whether the impacts of a proposed action are significant. Each criterion is discussed below with respect to the proposed action and considered individually as well as in combination with the others. The analysis in the PEA supports the following findings and determinations.

*1. Can the proposed action reasonably be expected to cause both beneficial and adverse impacts that overall may result in a significant effect, even if the effect will be beneficial?*

Implementing a MDP as described in the proposed action alternative cannot reasonably be expected to result in adverse or beneficial impacts that overall could result in a significant effect. Some projects, especially those in the "Outreach and Education" and "Collaboration and Tools" categories, are not expected to have any adverse impacts. The potential adverse impacts of implementing site-specific "Research and Assessments" and "Prevention, Reduction, and Removal" activities are likely to be minor short-term disruptions of physical and biological resources, and the affected resources are expected to recover fully and quickly. All projects are likely to result in at least minor short-term improvements in the quality of the environment, and cumulatively long-term substantial beneficial impacts as adverse effects of marine debris on the environment are mitigated on a larger scale.

*2. Can the proposed action reasonably be expected to significantly affect public health or safety?*



Implementing a MDP program as described in the proposed action alternative cannot reasonably be expected to significantly affect public health or safety. Overall, MDP activities improve public health and navigation safety by removing and preventing marine debris. The degree to which health and safety are improved will vary by site-specific projects. No adverse impacts on public health or safety concerns are likely to result from the proposed action. Site-specific projects do not adversely impact air and water quality or food safety nor do they affect traffic and transportation patterns; risk of exposure to hazardous materials, wastes; risk of contracting disease; risk of damages from natural disasters; or other public health and safety concerns.

*3. Can the proposed action reasonably be expected to result in significant impacts to unique characteristics of the geographic area, such as proximity to historic or cultural resources, park lands, prime farmlands, wetlands, wild and scenic rivers, or ecologically critical areas?*

Implementing a MDP program cannot be reasonably expected to result in significant impacts to unique characteristics of the action area. Conducting site-specific MDP projects is likely to improve the quality of the action area overall. The degree to which it is improved is dependent on the extent to which the presence and accumulation of marine debris in park lands, wetlands and other ecologically critical or historically and culturally significant areas degrades those areas and adversely impacts resources within them. Some “Research and Assessments” and “Prevention, Reduction, and Removal” activities are likely to result in minor short-term disruptions of physical and biological resources, and the affected resources are expected to recover fully and quickly.

*4. Are the proposed action’s effects on the quality of the human environment likely to be highly controversial?*

The effects of implementing a MDP as described in the proposed action alternative are not likely to be highly controversial. The size, nature, and manner in which MDP projects may affect the environment are not the subject of dispute. The available literature on how human disturbance, such as may result from MDP activities, may affect the environment is not the subject of scientific debate. There is no known opposition to the objectives of the MDP program or the methods commonly used to address marine debris.

*5. Are the proposed action’s effects on the human environment likely to be highly uncertain or involve unique or unknown risks?*

The effects of implementing a MDP as described in the Proposed Action alternative are not likely to be highly uncertain or involve unique or unknown risks. While the exact location, timing, and techniques to be used for potential site-specific projects is not known until proposals are submitted or actions considered, the likely impacts of commonly used techniques and nature of affected resources are known and have been considered in the PEA analysis. The MDP does not anticipate using experimental techniques with impacts that are unknown and unpredictable. If such techniques are being considered, they would warrant supplemental analysis prior to implementation.

*6. Can the proposed action reasonably be expected to establish a precedent for future actions with significant effects or represent a decision in principle about a future consideration?*

Decisions to fund or undertake site-specific MDP projects do not establish a precedent for future actions with significant effects or represent decisions in principle about future actions. Awarding funds as outlined under the Proposed Action has not been and is not likely to be a triggering action for connected or related actions with potentially adverse impacts. MDP projects are typically small scale, local or community-based, limited in time and geographic extent. They do not derive from or cause other federal actions with potential environmental impacts.

*7. Is the proposed action related to other actions that when considered together will have individually insignificant but cumulatively significant impacts?*

Implementing a MDP is not related to other actions that will have cumulatively significant impacts. There are no interrelated or interdependent actions under the MDP program. Although every project implemented under the MDP shares a common goal, and cumulatively they contribute to reducing the adverse impacts of marine debris throughout the action area, the effects are not likely to be significant.

*8. Can the proposed action reasonably be expected to adversely affect districts, sites, highways, structures, or objects listed in or eligible for listing in the National Register of Historic Places or may cause loss or destruction of significant scientific, cultural, or historical resources?*

Implementing a MDP is not reasonably expected to adversely affect such sites, structures, and objects, or cause loss or destruction of such resources. Site-specific MDP projects would be conducted in compliance with applicable laws for the protection and preservation of such resources, and would improve the quality of these resources by mitigating the adverse impacts of marine debris on the environment.

*9. Can the proposed action reasonably be expected to have a significant impact on endangered or threatened species, or their critical habitat as defined under the Endangered Species Act of 1973?*

Implementing a MDP is not reasonably expected to have a significant impact on endangered and threatened species or their designated critical habitat. Site-specific projects that overlap in time or space with listed species and habitats would be conducted in compliance with best-practices that minimize or avoid potential impacts to sensitive resources, and where applicable, with terms and conditions of permits and consultations. Many projects will have no intersection with or impacts on listed species and habitats, and no project is expected to result in more than minor short-term disturbances.

*10. Can the proposed action reasonably be expected to threaten a violation of Federal, state, or local law or requirements imposed for environmental protection?*



Implementing a MDP cannot reasonably be expected to threaten a violation of Federal, state, or local laws or requirements imposed for environmental protection. The program goals of reducing marine debris and its impacts on the environment are consistent with the purposes and policies of numerous statutes and executive orders for environmental protection. The PEA describes the best practices and other measures the program would comply with, including monitoring of implementation to ensure environmental standards in applicable laws are met and no impacts are encountered that are substantially different from those predicted.

11. *Can the proposed action reasonably be expected to result in the introduction or spread of a nonindigenous species?*

Implementing a MDP cannot reasonably be expected to result in introduction or spread of nonindigenous species. In fact, one objective of marine debris removal projects is to minimize the transport and introduction of invasive species on debris. Debris contaminated with invasive species is treated according to safe removal processes and protocols that were developed in partnership with the MDP as an outcome of the *Regional Preparedness and Response Workshop to Address Biofouling and Aquatic Invasive Species on Japan Tsunami Marine Debris* as outlined in the “Response Protocols for Biofouled Debris and Invasive Species Generated by the 2011 Japan Tsunami” (NOAA et al 2012).

#### DETERMINATION

In view of the information presented in this document and the analysis contained in the supporting PEA prepared for the NOAA Marine Debris Program, it is hereby determined that the Proposed Action – Undertake and Fund Activities to Reduce the Impacts of Marine Debris – will not significantly impact the quality of the human environment as described above and in the supporting PEA. In addition, all beneficial and adverse impacts of the proposed action have been addressed to reach the conclusion of no significant impacts. Accordingly, preparation of an environmental impact statement for this action is not necessary.

f.a



Holly A. Bamford, Ph.D.  
Assistant Administrator  
National Ocean Service, NOAA

April 1, 2013

Date