Programmatic Environmental Assessment

for

Species Recovery and Species of Concern Grant Programs

by the

NMFS

Office of Protected Resources

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EXECUTIVE SUMMARY

The National Marine Fisheries Service (NMFS) proposes to continue funding management, research, monitoring, and outreach through the Species Recovery Grants to States, Species Recovery Grants to Tribes, and Species of Concern Proactive Species Conservation Grants programs. These Federal programs are necessary to fulfill NMFS' mission to help recover and improve the status of at-risk species under NMFS jurisdiction.

This Programmatic Environmental Assessment (PEA) analyzes the environmental consequences of two Alternatives. Under the No Action Alternative, these programs would no longer conduct activities that recover or monitor at-risk species. The No Action Alternative would not comply with statutory requirements of the Endangered Species Act and the intent of appropriated funds or other legislation but is required to be analyzed by the National Environmental Policy Act (NEPA) to provide a baseline against which the proposed action can be compared.

The Preferred Alternative is to continue funding projects consistent with the programs ongoing approach for reviewing, approving, and funding projects without any substantial change in approach (e.g. substantial changes in the agencies review and approval process, types of projects eligible for funding, and general impacts on the human environment). The Preferred Alternative would allow the continuation of program activities from these three grant programs. This PEA also identifies and discloses reasonable mitigation measures that NMFS is using at a programmatic level in relation to the Preferred Alternative to continue administering the foregoing grant program. This PEA analysis indicates that no significant adverse environmental impacts would result from implementing the proposed action. The analysis therefore preliminarily supports a "Finding of No Significant Impact" (FONSI) for the Preferred Alternative.

LIST OF ACROYNMS

BMP	Best Management Practice
BiOp	Biological Opinion
CE	Categorical Exclusion
CEQ	Council on Environmental Quality
EA	Environmental Assessment
EFH	Essential Fish Habitat
EIS	Environmental Impact Assessment
ESA	Endangered Species Act
FONSI	Finding of No Significant Impact
FFO	Federal Funding Opportunity
FY	Fiscal Year
MSA	Magnuson-Stevens Fisheries Conservation and Management Act
NMFS	National Marine Fisheries Service
NAO	NOAA Administrative Order
NEPA	National Environmental Policy Act
NOAA	National Oceanic and Atmospheric Administration
PEA	Programmatic Environmental Assessment
PSCGP	Proactive Species Conservation Grant Program
SAC	Special Award Conditions
SOC	Species of Concern
SRGSP	Species Recovery Grants to States Program
SRGTP	Species Recovery Grants to Tribes Program
U.S.	United States
USFWS	U.S. Fish and Wildlife Service

1.0 INTRODUCTION

This Programmatic Environmental Assessment (PEA) describes and evaluates three discretionary grant programs administered by NOAA's National Marine Fisheries Service's (NMFS) Office of Protected Resources, Endangered Species Division: the Species Recovery Grants to States Program, the Species Recovery Grants to Tribes Program, and the Proactive Species Conservation Grant Program. Federal assistance provided through these programs is used to conserve and improve the status of particular at-risk species that are NOAA trust resources; and activities selected for funding under these programs are designed to have beneficial effects and potentially no, minimal or short-term, negative environmental impacts. Issuance of financial assistance awards through these grant programs constitutes a major Federal action and is subject to the requirements set forth under the National Environmental Policy Act (NEPA).

NOAA's National Marine Fisheries Service (NMFS) has, through NOAA Administrative Order (NAO) 216-6, established agency procedures for complying with NEPA and the implementing regulations issued by CEQ. The proposed Federal action of continuing to provide financial assistance through these grant programs is likely to have some environmental impact; however, it is uncertain whether these impacts will be significant. Therefore, in accordance with NAO 216-6, this environmental assessment was prepared. NMFS has also undertaken this assessment to support and streamline the decision-making and NEPA processes for these programs.

1.1 NMFS Endangered Species Division's Grant Programs

The NMFS Endangered Species Division is charged with implementing provisions of the Endangered Species Act of 1973 (16 U.S.C. 1531 *et seq.*; ESA) to monitor, conserve and recover species that are candidate[1,] proposed[2], listed and recently delisted under the ESA. In part, this is accomplished through the Species Recovery Grants to States[3] Program (SRGSP), which is authorized under section 6 of the ESA (16 U.S.C. 1535) and the Species Recovery Grants to Tribes Program (SRGTP), which is authorized under the Fish and Wildlife Coordination Act (16 U.S.C. 661 *et seq.*). The Species Recovery Grants programs support activities addressing threatened, endangered, candidate, recently de-listed, and proposed species. However, neither

1 NMFS defines candidate species as 1) those species that are the subject of a listing petition and for which NMFS has determined listing may be warranted pursuant to section 4(b)(3)(a), and 2) those species that are not the subject of a petition, but for which NMFS has announced initiation of a status review of the species (71 FR 61022; 10/17/2006). A complete list of current candidate species can be found at: www.nmfs.noaa.gov/pr/species/esa/other.htm.

2 Proposed species are those candidate species that were found to warrant listing as either threatened or endangered and were officially proposed as such in a *Federal Register* notice after the completion of a status review and consideration of other protective conservation measures. Public comment is always sought on a proposal to list species under the ESA. NMFS generally has one year after a species is proposed for listing under the ESA to make a final determination whether to list a species as threatened or endangered.

3 "State" is used here as defined in section 3(17) of the ESA to include U.S. territories.

grant program supports activities directed towards conservation of listed Pacific salmonids; such work may be funded by NMFS under the Pacific Coastal Salmon Recovery Fund.

The NMFS Endangered Species Division is also charged by NMFS leadership with coordinating implementation of a proactive conservation program designed to prevent identified species from reaching the point where they require the protections of the ESA. The Proactive Species Conservation Grant Program (PSCGP) provides states, territories, tribal entities, and NOAA staff funds to partner in conserving these "species of concern"[4].

1.1.1 Species Recovery Grants to States Program

States play an essential role in conserving and recovering species that have been or may be listed under the ESA. In recognition of the importance of the States' role, Congress, when passing the ESA in 1973, included section 6, titled "Cooperation with the States," to provide a mechanism for establishing federal-State conservation partnerships. Specifically, section 6 of the ESA authorizes NMFS to form cooperative agreements with State natural resources agencies and to provide financial assistance to those agencies in developing programs for the conservation of threatened and endangered, marine and anadromous species. Since first receiving almost $1 million in funding in 2003, NMFS has greatly expanded its ESA section 6 program: the number of State partners has more than tripled from 6 in 2003 to a current total of 23 States and now includes States in all of the NMFS Regions (see Table 1.1-1).

Using the section 6 funding, NMFS instituted and continues to administer the SRGSP (formerly called the Protected Species Cooperative Conservation Grant Program). Grants provided through the SRGSP can be used to support conservation of endangered and threatened species, and the monitoring of candidate or proposed species, as well as species that have recovered and been de-listed. Funded activities may include development and implementation of management plans, scientific research, and public education and outreach. Any State agency that has entered into or applied for an agreement with the NMFS pursuant to section 6(c) of the ESA is eligible to apply. Proposals focusing on listed Pacific salmon are not considered for funding under this grant program; such projects may instead be considered through the NMFS Pacific Coastal Salmon Recovery Fund. Selected projects are provided funds on an annual basis and can receive up to three years of support.

The annual solicitation for proposals provides detailed information regarding funding priorities for the program; this information informs both the application and review processes. Applicants are instructed to submit proposals that address priority recovery actions identified in an ESA Recovery Plan, a State's ESA Section 6 Program, or a State Wildlife Action Plan where applicable. The announcement states that priority will be given to those projects that are

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4 Species of concern are those species about which NMFS has some concerns regarding status. and threats, but for which insufficient information is available to indicate a need to list the species under the ESA. This may include species for which NMFS has determined, following a biological status review, that listing under the ESA is "not warranted," pursuant to ESA section 4(b)(3)(B)(i), but for which significant concerns or uncertainties remain regarding their status and/or threats. Species can qualify as both "species of concern" and "candidate species." A complete list of current species of concern is can be found at: http://www.nmfs.noaa.gov/pr/species/concern/#list.

designed to have a direct impact on species recovery as a result of implementation of management actions (e.g. habitat restoration activities or mitigation of existing threats to the species). Such proposals receive higher priority than those projects that involve data collection or monitoring activities only or merely respond to existing threats. Higher priority is also given to proposals addressing listed species as opposed to those that only address proposed, candidate, or recently de-listed species. More details on the review and selection process are discussed below in section 1.1.4 ("Framework for solicitation and selection of proposals").
Since its initiation in 2003, the SRGSP has provided a total of $17.5 million in federal funding to support recovery of eligible species. These projects have benefited almost 2 dozen marine and anadromous, endangered, threatened, and candidate species, including Hawaiian monk seals (*Monachus schauinslandi)*, elkhorn coral (*Acropora palmate)*, sea turtles, smalltooth sawfish (*Pristis pectinata)*, and shortnose (*Acipenser brevirostrum)* and Atlantic sturgeons (*Acipenser oxyrinchus oxyrinchus)*. During the first seven years of this grant program, annual federal funding amounts were less than $100,000 per award, and projects were typically small in scale in terms of the number of recovery actions or species addressed. However, following a significant funding increase to $15.6 million in FY 2010, the SRGSP began supporting larger, more complex projects that addressed multiple recovery objectives and/ or multiple species. The average annual funding amount per award in FY 2010 rose to $650,000. Details on prior awards for the SRGSP program are available on the program web page (http://www.nmfs.noaa.gov/pr/conservation/states/funded.htm).

With increased funding and expansion to 23 States, the SRGSP is a vital component of the broader NMFS recovery program and is poised to make significant contributions to species recovery in all NMFS Regions. Ultimately, these efforts will help in bringing species to the point where protections under the ESA are no longer necessary.

Table 1.1-1. States currently holding ESA Section 6 agreements with NMFS with year the agreement became effective noted in parentheses.

1. Alabama (2010)
2. Alaska (2009)
3. California (2009)
4. Commonwealth of the Northern Mariana Islands (2009)
5. Delaware (2007)
6. Florida (2003)
7. Georgia (1990)
8. Hawaii (2006)
9. Louisiana (2009)
10. Maine (2005)
11. Maryland (1998)
12. Massachusetts (1996)
13. Mississippi (2009)
14. New Jersey (2004)
15. New York (1992)
16. North Carolina (2000)
17. Oregon (2009)

18. Puerto Rico (2003)
19. South Carolina (1984)
20. Texas (2009)
21. U.S. Virgin Islands (2003)
22. Virginia (2009)
23. Washington (2008)

1.1.2 Species Recovery Grants to Tribes Program

Tribal governments are important stewards of marine resources and are critical partners in the implementation of recovery actions for species that have been or may be listed under the ESA. In recognition of this essential role, NMFS initiated the SRGTP in FY 2010. This program was modeled after the SRGSP and shares the same eligible species, funding priorities, and selection criteria (see above). Only federally recognized tribes are eligible to apply. Selected projects are provided funds on an annual basis and can receive up to three years of support. In the programs first year, the SRGTP funded 5 projects to help recover and monitor species in need (see Table 1.1-2). In combination with the SRGSP, these efforts will help in bringing species to the point where protections under the ESA are no longer necessary.

Table 1.1-2. Tribal awards and target species in FY10. All awards are for 3 year periods.

Tribe (State)	**Species**	**FY10 Funding**
Makah Tribe (WA)	humpback, gray and Southern resident killer whales; Steller sea lion	$190,653
Cowlitz Tribe (WA)	Pacific eulachon/smelt	$304,272
Aleut Community of St Paul (AK)	Steller sea lion	$158,085
Yurok Tribe (CA)	Pacific eulachon/smelt	$193,975
Penobscot Indian Nation (ME)	Atlantic salmon	$100,000
	Total FY10 Funding	**$946,985**

1.1.3 Proactive Species Conservation Grant Program

In 2004, NMFS established the “Species of Concern Program” specifically to: (1) identify species potentially at risk; (2) identify data deficiencies and uncertainties in species’ status and threats; (3) increase public awareness about these species; (4) stimulate cooperative research efforts to obtain the information necessary to evaluate species status and threats; and (5) foster voluntary efforts to conserve these species before listing becomes warranted. Species of Concern are defined as those species about which NMFS has some concerns regarding status and threats, but for which insufficient information is available to indicate a need to list the species under the ESA (69 FR 19975; April 15, 2004).

Before establishing this species of concern program, NMFS maintained many of these species on its list of candidate species. However, most of these species did not fit NMFS’ definition of a “candidate species,” and a species of concern list was considered a better way of highlighting these species for conservation purposes. Neither "candidate species" nor "species of concern"

carries any procedural or substantive protections under the ESA.

NMFS funds conservation efforts for species of concern through one of two mechanisms: (1) an annual internal allocation among NMFS regions and science centers for research and outreach projects; and (2) a separate allocation of funds to the external PSCGP, which funds States and other nonfederal management entities for on-the-ground conservation efforts. The information gained and conservation actions taken through these projects are designed to benefit the species by addressing known threats to their existence. Details on prior awards for both parts of the PSCGP program are available on the Species of Concern grant program web page (http://www.nmfs.noaa.gov/pr/species/concern/grant.htm).

1.1.4 Framework for solicitation and selection of proposals

All three of these grant programs are implemented in accordance with NOAA's Acquisition and Grants Office, Grants Management Division procedures; Department of Commerce (DOC) guidance on grant administration (Grants and Cooperative Agreements Manuel, June 21, 2007); and Office of Management and Budget policies. Each of these programs solicit proposals on an annual basis by posting a detailed Federal Funding Opportunity (FFO) announcement on www.Grants.gov, which is the central, web-based portal to all federal grant opportunities.

Applications received by the deadline for each program undergo eligibility screening, technical ("mail") review, subsequent review by a non-consensus panel, and final selection by the Selecting Official (i.e., the Assistant Administrator for NMFS for the Species Recovery Grants programs, and the Director of the Office of Protected Resources for the Proactive Species Conservation Grant program).

Each application is reviewed by a minimum of four reviewers, who evaluate and score proposals using the following **evaluation criteria**:

1. *Importance/Relevance and Applicability of the Proposal to the Program Goals.* This criterion addresses whether there is intrinsic value in the proposed work and/or relevance to NOAA, Federal, regional, State, or local activities. Reviewers score the proposal based on their consideration of the contribution of potential outcomes, results, or products to species conservation and management goals; whether milestones and products are clearly identified; and whether performance measures for evaluating effectiveness of the completed project were clearly identified.

2. *Technical/ Scientific Merit.* This criterion addresses whether the proposed approach is appropriate and technically and/or scientifically sound for achieving the stated goals and objectives, including successful and timely execution of the project. Reviews consider the sufficiency of the information provided as well as relevant quality assurance considerations and whether the proposal includes an effective mechanism for evaluating the project's success in meeting the stated goals and objectives.

3. *Overall Qualification of Applicants.* This criterion addresses whether the applicant possesses the necessary expertise, experience, facilities, and administrative resources to accomplish the project.

4. *Project Costs.* This criterion evaluates the budget to determine if it is sufficiently detailed, realistic and commensurate with the project needs and time-frame. The itemized costs and the overall budget must be justified and allocated appropriately. Appropriate matching funds must meet program criteria.

5. *Outreach and Education.* This criterion assesses whether the project provides a focused and effective education and outreach strategy regarding NOAA's mission to protect the Nation's natural resources.

Reviewers are individuals with appropriate subject-matter expertise and may be from Federal or State agencies, academic institutions, or non-profit organizations. The reviewers' ratings are used to produce a rank order of the proposals. After all applications under a given competition have been reviewed, a funding recommendation is made to the Selecting Official, who makes the final decision. The Selecting Official selects awards based on the rank order of the applications unless a proposal is justified to be selected out of rank order based upon any of NOAA's standardized selection factors: 1) availability of funding; 2) balance/distribution of funds (geographically, by type of institutions, by type of partners, by research areas, by project types, by species or species groups); 3) whether a project duplicates other projects funded or considered for funding by NOAA or other federal agencies; 4) program priorities and policy factors as set out in the FFO; 5) applicant's prior award performance; 6) partnerships with and/or participation of targeted groups; and, 7) adequacy of information necessary for NOAA staff to make a NEPA determination and draft necessary documentation before recommendations for funding are made.

As part of an applicant's proposal submission, and under their description of their 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, and impacts to coral reef systems). In addition to providing specific information that will serve as the basis for any required impact analyses, applicants are also required to cooperate with NOAA in identifying feasible measures to reduce or avoid any identified adverse environmental impacts of their proposed project. The failure to do so is grounds for not selecting an application. In some cases, if additional information is required after an application is selected, funds can be withheld by the Grants Officer under a special award condition (SOC) requiring the recipient to submit additional environmental compliance information sufficient to enable NOAA to make an assessment on any impacts that a project may have on the environment.

Under the current process, once projects are selected for funding by the Selecting Official, program staff work with selected applicants to negotiate the final content of the award agreement and to initiate NEPA analyses where appropriate. Once negotiations and NEPA reviews are complete, the award "package" is transmitted to NOAA's Grants Management Division and DOC's Financial Assistance Law Division for final review and approval. Only after these reviews are completed can an award be issued by NOAA. The process for awarding the internal allocation of funds for the PSCGP program are similar except the services of the Grants management Division are not needed and funds are transferred through existing internal financial

mechanisms.

1.2 Purpose and Need

The primary purpose of the proposed action, continued implementation of the specified Federal assistance programs, is to engage co-managers and other partners in conserving and recovering at-risk species for which NOAA has jurisdiction. Section 6(a) of the ESA states that, "In carrying out the programs of the ESA, the Secretary [of Commerce] shall cooperate to the maximum extent practicable with the states." Section 6(d) of the ESA authorizes NMFS to provide financial assistance to states to further their conservation programs for threatened, endangered, candidate and recently de-listed species. The tribal grant program is modeled after the section 6 grant program in its purpose and goals, and recognizes the role of tribal entities in protecting and conserving marine and anadromous species. The Proactive Species Conservation Grant Program complements these two conservation programs by providing financial assistance to NOAA staff and other co-managers and partners to support proactive conservation efforts for species that are at-risk but not yet subject to protections of the ESA. The need for the proposed action is established by the ESA as well as NMFS's underlying mission to provide for the conservation of listed marine and anadromous species and species of concern throughout the United States. In order to achieve its conservation goals, NMFS must have in place programs and procedures to efficiently and effectively administer these three grant programs, which are the largest source of Federal funding for the stated purposes, as such funding is appropriated and authorized by Congress each fiscal year.

1.3 Scope and Organization of this PEA

This PEA provides an assessment of the potential impacts on the human environment, including physical, biological, and socioeconomic environment impacts associated with the anticipated activities in the three grant programs. The chapters that follow describe the proposed activities and alternatives to not fund this work or continue the current process for project selection (Chapter 2), the affected environment as it currently exists (Chapter 3), the probable consequences on the human environment that may result from the implementation of the proposed activities (Chapter 4), and the potential cumulative impacts from the proposed activities (Chapter 5).

NEPA requires documented, formal consideration of major federal actions, as well as analyses of the potential impacts associated with the action and reasonable alternatives, before a federal agency approves or implements policies, programs, plans, and projects. The vast majority of 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).

Programmatic NEPA analyses and subsequent tiered analyses can reduce or eliminate redundant and duplicative analyses and effectively address cumulative effects. Programmatic NEPA documents can 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 (developing focused, more narrowly scoped supplemental NEPA analyses to address specific issues) allows an agency to rely largely on the analysis of the programmatic NEPA document to address the majority of impacts (Canter 1996). Trends indicate that federal agencies are expanding their use of programmatic NEPA documents (CEQ 1997; NEPA Task Force 2003).

In developing this PEA, NMFS adhered to the procedural requirements of NEPA; the Council on Environmental Quality (CEQ) regulations for implementing NEPA (40 Code of Federal Regulations (CFR) 1500-1508)[5], and NOAA's procedures for implementing NEPA[6].
The following definitions will be used to characterize the nature of the various impacts evaluated with this EA:

- *Short-term or long-term impacts.* These characteristics are determined on a case-by-case basis and do not refer to any rigid time period. In general, short-term impacts are those that would occur only with respect to a particular activity or for a finite period. Long-term impacts are those that are more likely to be persistent and chronic.

- *Direct or indirect impacts.* A direct impact is caused by a proposed action and occurs contemporaneously at or near the location of the action. An indirect impact is caused by a proposed action and might occur later in time or be farther removed in distance but still be a reasonably foreseeable outcome of the action. For example, a direct impact of erosion on a stream might include sediment-laden waters in the vicinity of the action, whereas an indirect impact of the same erosion might lead to lack of spawning and result in lowered reproduction rates of listed salmon downstream.

- *Minor, moderate, or major impacts.* These relative terms are used to characterize the magnitude of an impact. Minor impacts are generally those that might be perceptible but, in their context, are not amenable to measurement because of their relatively minor character. Moderate impacts are those that are more perceptible and, typically, more amenable to quantification or measurement. Major impacts are those that, in their context and due to their intensity (severity), have the potential to meet the thresholds for significance set forth in CEQ regulations (40 CFR 1508.27) and, thus, warrant heightened attention and examination for potential means for mitigation to fulfill the requirements of NEPA.

- *Adverse or beneficial impacts.* An adverse impact is one having adverse, unfavorable, or undesirable outcomes on the man-made or natural environment. A beneficial impact is one having positive outcomes on the man-made or natural environment. A single act might result in adverse impacts on one environmental resource and beneficial impacts on another resource.

- *Cumulative impacts.* CEQ regulations implementing NEPA define cumulative impacts as the "impacts on the environment which result from the incremental impact of the action when added to other past, present, and reasonably foreseeable future actions regardless of

5 See Reference (CEQ 1969).
6 NOAA Administrative Order 216-6, Environmental Review Procedures for Implementing the National Environmental Policy Act.

> what agency (Federal or non-Federal) or person undertakes such other actions" (40 CFR 1508.7). Cumulative impacts can result from individually minor but collectively significant actions taking place over a period of time within a geographic area.

This PEA is not designed to cover all issues or activities that may arise through these three programs. The main scope of this PEA is confined to situations where activities to conserve a particular at risk species may have negative indirect or cumulative effects on that species or other at-risk species or their habitat. In the future, new activities may exist that were not considered in the evaluation of impacts in this EA. Some of these proposed projects may require further environmental impact assessment or satisfaction of other consultation, approval, or permitting requirements before being allowed to proceed. As the details of these activities are presently unavailable, they cannot be assessed here. After new project types are sufficiently well defined and their potential environmental consequences are better understood, specific impacts will be evaluated as necessary. Additional analysis through supplemental or tiered NEPA analysis may also be necessary when the funding of a particular project may be the subject of public controversy based on potential environmental consequences, has uncertain environmental impacts or unknown risks, establishes a precedent with environmental consequences, or may result in a type or intensity of impact not fully evaluated in the PEA.

1.4 Public Review and Comment

Agency and public participation in the NEPA process promotes open communication between the public and the government and enhances decision making. All persons and organizations that may have had an interest in the proposed action were invited to submit comments on the draft PEA for a 30 day period from April 12th to May 13th. Persons and organizations that have been involved in these programs were contacted via email and a website was developed to encourage public participation. Only one comment was received during this time period. This comment was complimentary of the approach taken in developing this PEA. Given this input, no substantive changes were made.

1.5 Regulatory Requirements

NMFS is the lead Federal agency for the proposed actions evaluated in this PEA. A range of statutory requirements are involved in the development and implementation of these grant programs. The actions involved in the proposed grant activities could trigger the requirements under numerous other Federal environmental laws concerning specific environmental resources and must be factored in to any final decision made by the agency. Examples of such requirements include section 7 of the ESA, the Magnuson-Stevens Fishery Conservation and Management Act (MSA), and the Marine Mammal Protection Act (MMPA). These requirements are discussed in detail in Chapter 6, "*Applicable Laws*."

2.0 PROPOSED ACTION AND ALTERNATIVES

The following sections provide a detailed description of the proposed action and alternatives considered in this PEA.

2.1 Introduction

NOAA's Administrative Order (NAO 216-6) procedures for NEPA at section 5.03b states: "An Environmental Assessment [EA] must consider all reasonable alternatives, including the preferred action and the no action alternative."

To warrant detailed evaluation by NMFS under NEPA, an alternative must be reasonable[7] and meet the agency's purpose and need. Screening criteria are used to determine whether an alternative is reasonable. The following discussion identifies the screening criteria used in this EA to evaluate whether an alternative is reasonable; evaluates various alternatives against the screening criteria (including the proposed measures) and identifies those alternatives found to be reasonable. Alternatives considered but found not to be reasonable are not evaluated in this EA.

Screening Criteria – To be considered "reasonable" for purposes of this EA, an alternative must meet the following criteria:

1. The action must not violate any Federal statute or regulation.
2. The action must be practical or feasible from a technical and economic standpoint.
3. The action must be consistent with long-term conservation commitments and goals to meet the requirements and goals of the ESA and protected species programs.

Each potential alternative was evaluated against these criteria. Based on this evaluation, one alternative has been identified as reasonable and, along with the No Action Alternative, is being carried forward for more detailed evaluation in this PEA. The alternatives are described below.

Given that the nature of the proposed action is largely to benefit marine listed species and species of concern, and its historical knowledge of the limited intensity of impacts to the human environment and the lack of conflict over associated environmental resources, NMFS has determined that it is appropriate to analyze two Alternatives, the No Action and Preferred Alternative.

2.2 No Action Alternative

Under the No Action Alternative, no awards through these programs would be selected or approved. Under this scenario, third-party organizations may be able to initiate or continue their conservation efforts.

7 "Section 1502.14 (of NEPA) requires the EIS to examine all reasonable alternatives to the proposal. In determining the scope of alternatives to be considered, the emphasis is on what is "reasonable" rather than on whether the proponent or applicant likes or is itself capable of carrying out a particular alternative. Reasonable alternatives include those that are *practical or feasible from the technical and economic standpoint and using common sense*, rather than simply desirable from the standpoint of the applicant." (40 Questions) (emphasis added)

2.3 Preferred Alternative

This alternative includes project solicitation, review, selection, and funding with tiered environmental review using the programmatic approach described and proposed in this document. These grant programs are necessary to achieve NMFS conservation obligations and goals (see Sections 1.1 and 1.2). Under this alternative, the review and selection processes described in Section 1.1.4 would be followed. This alternative, implementing the grant programs using the existing procedures for project solicitation, review, selection and funding and plus applying a programmatic and corresponding tiered NEPA approach , is preferred because it would best meet the purpose and need for the proposed action and satisfy all three screening criteria set forth above.

As discussed in Section 1.3, the scope of this PEA is largely confined to situations where activities to conserve a particular species at risk may have negative indirect or cumulative effects on that species or other at-risk species or their habitat. An overview of the process that would be used to analyze and mitigate potential impacts of proposed projects under this alternative is as follows:

Program staff would begin their review by consulting comments from the peer review process to identify potential interactions with other ESA listed species (both NMFS and USFWS managed) or habitat impacts and any other potential negative impacts. NMFS staff would consult with peer reviewers and other NOAA or USFWS staff who have technical expertise relevant to any of the potentially interacting species or habitats. These experts come from NMFS/USFWS headquarters, regions, or NMFS science centers as well as other relevant NOAA programs (e.g. Coral Reef Conservation Program, National Marine Sanctuaries Program, etc). NMFS also solicits additional information from the applicant.

If the proposed action may directly or indirectly take[8] an ESA or MMPA listed species, an ESA section 10 permit and/or MMPA authorization is generally required. These permits are handled through the NMFS Permit Division and are either acquired previous to project selection or permit applications are submitted post project selection. As part of the permitting process the NMFS Permit Division prepares a NEPA document, most likely an EA, which would address the impacts on protected resources associated with issuing the permit. In most cases where the proposed activity requires a permit or authorization, the NEPA analysis (conducted by the NMFS Permit Division) from the permitted or authorized activities is documented in a memo to the file by the NMFS Endangered Species Division staff and incorporated by reference with no further analysis (to prevent duplication of effort since there are two federal actions: 1) granting a permit or authorization and 2) providing financial assistance for those activities). Project activities that require a permit cannot be conducted until the NEPA and ESA section 7 consultation on that proposed permit is completed and the permit is issued to the applicant. More information on the permitting process can be found at http://www.nmfs.noaa.gov/pr/permits/ and http://www.fws.gov/permits/.

If no moderate or major direct or indirect negative effects are indentified by the NMFS staff

8 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." Take is defined under the MMPA as "harass, hunt, capture, kill or collect, or attempt to harass, hunt, capture, kill or collect."

experts (and the proposed work does not require an ESA Section 10 permit or authorization for take under the MMPA), the NEPA analysis for the review of that project would be completed.

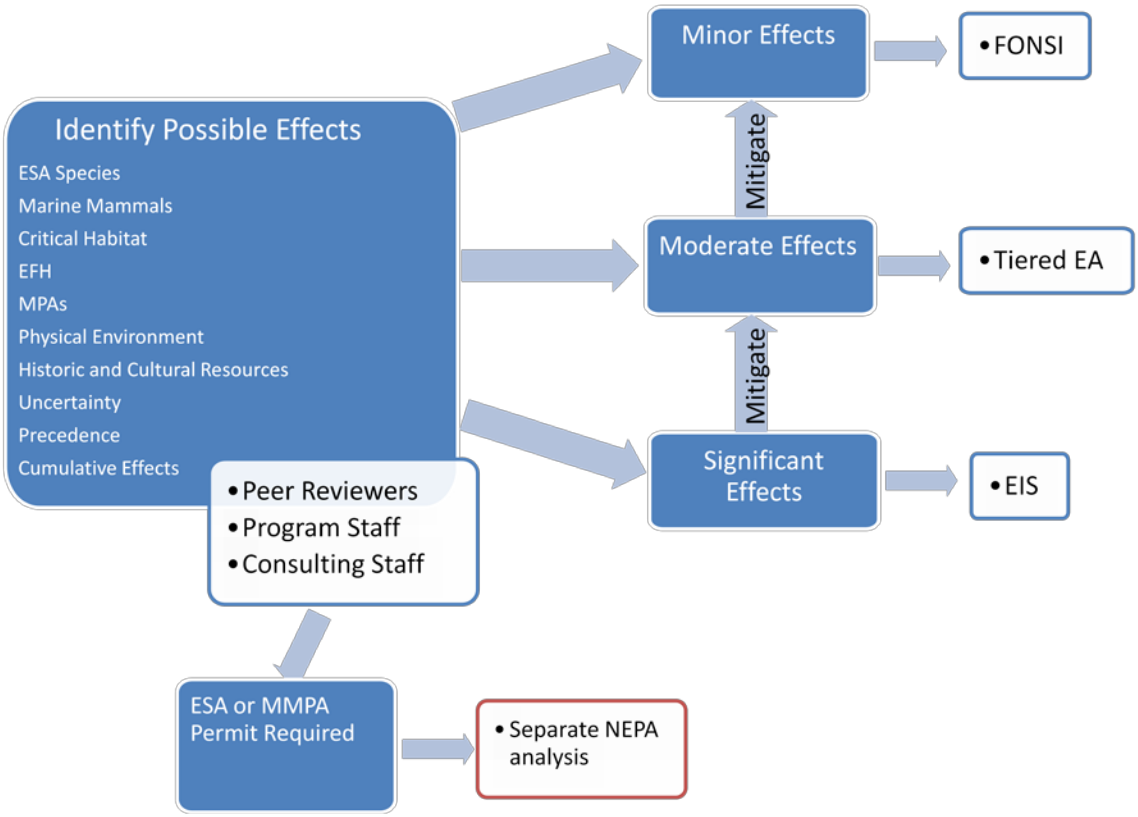
If moderate or major negative effects are identified then staff would collaborate to identify possibly project alternatives, mitigation measures, or other options that would reduce or eliminate the negative effects. If those negative effects can be mitigated, and the project applicant agrees to do so, the project proposal is modified.

If moderate negative effects are identified, and NMFS staff cannot come to agreement on mitigation measures then a tiered EA document would be completed to analyze the issues and determine overall adverse or beneficial effects. That tiered document would then be used to inform the final NEPA analysis and decision-making.

If major effects are identified and staff would like to fund the proposed project, an Environmental Impact Statement (EIS) would be developed to inform the decision-making process.

Further details of this process with regards to the evaluation and identification of other effects are discussed in Chapters 4 and 5. A flow chart of the process is below (Figure 2.4-1).

Figure 2.4-1. Flow chart of Alternative 3 NEPA process for Adverse Impacts.



3.0 AFFECTED ENVIRONMENT

This chapter describes the resources that may be affected by the three grant programs under the alternatives described in Sections 2.2 and 2.3. Subsequent chapters will discuss how these resource components are impacted by program activities (Chapter 4) and the overall incremental impacts given cumulative effects (Chapter 5).

3.1 Physical Environment

Because of the variability of target species and types of recovery efforts that receive funding through these grant programs, a wide range of coastal regions and riparian systems along streams and rivers that support anadromous fish must be considered as habitat for species potentially affected by the proposed action. Under the three programs, these regions primarily include the coastal continental United States, Alaska, Hawaii, and U. S. territories, including state waters, the territorial seas and the U.S. Exclusive Economic Zone (EEZ) (hereinafter the "territorial United States"). While most program activities will occur within the territorial United States, some funded activities may affect physical, biological, or social and economic environments on the high seas or within the EEZ's or territorial waters of foreign sovereign nations. The following sections describe the physical environment of the proposed action area.

3.1.1 Marine

Marine ecosystems are a part of the largest aquatic system on the planet, covering over 70% of the Earth's surface. One system to classify marine ecosystems is in Large Marine Ecosystems (LMEs) units. These are relatively large areas of ocean space of approximately 200,000 km² or greater, adjacent to the continents in coastal waters where primary productivity is generally higher than in open ocean areas. LME physical boundaries are based on four ecological criteria: bathymetry, hydrography, productivity, and trophic relationships. Figure 3.1-1 shows the Large Marine Ecosystems off the coast of North America. More detailed descriptions of each ecosystem are available at www.lme.noaa.gov.

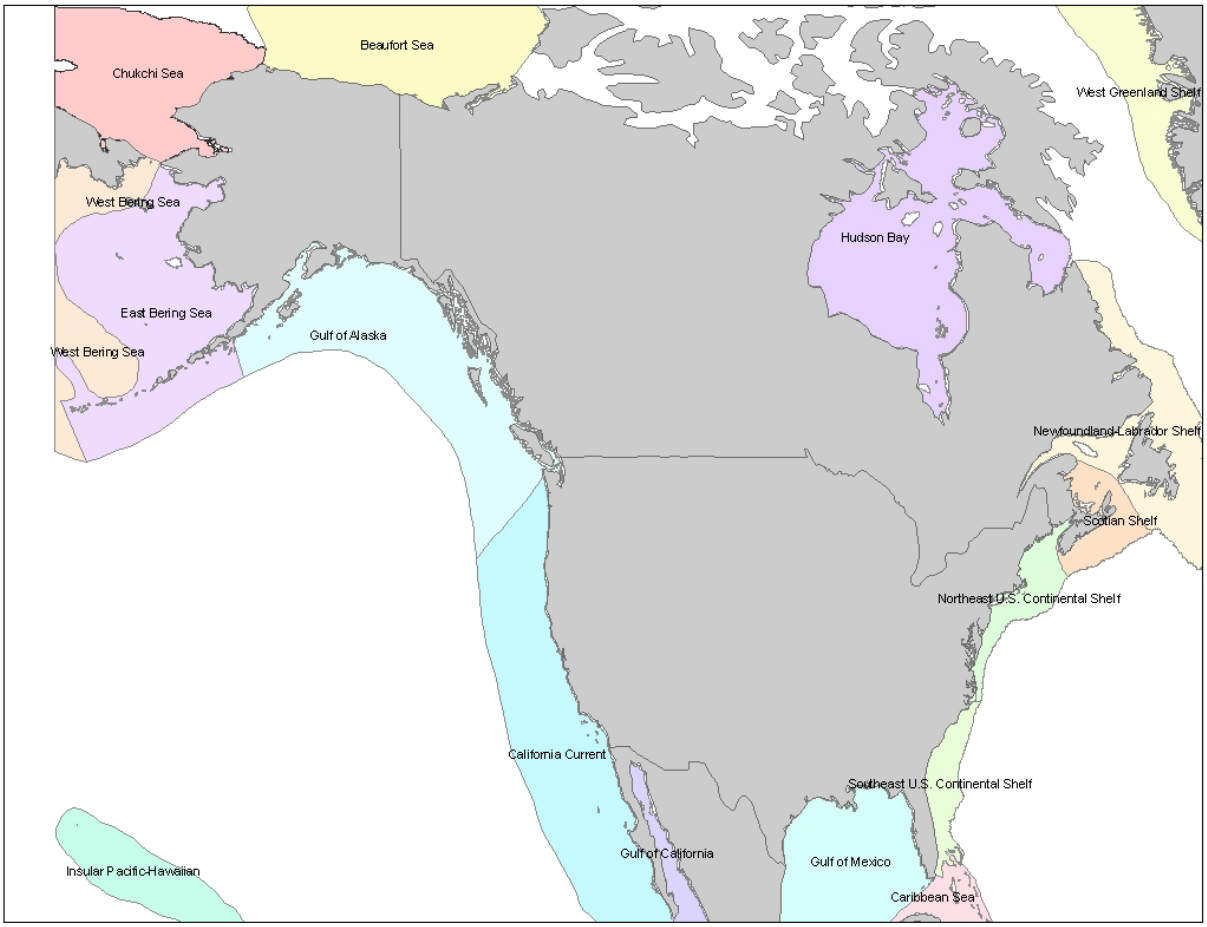


Figure 3.1-1. Large Marine Ecosystems off the coast of North America.

3.1.2 Shoreline

Shore environments are widely varying in nature, from low-energy sheltered environments to more exposed coastline, subjected to high-energy wave and tidal action. Low-energy shorelines may be characterized by finer-grained, muddier sediments, which tend to accrete in depositional zones. Sandy beaches, characterized by sand, coarse sand and cobbles, and that have few fine-grained silts and clays, are formed by waves and tides sufficient to winnow away the finer particles. The sand also typically "migrates" off- and onshore seasonally. Rocky coasts are characterized by fewer fine sediments, more bare rock and irregularities of rock surfaces.

3.1.3 Estuaries

An estuary is a partially enclosed body of water where saltwater from the ocean mixes with freshwater from rivers, streams, and creeks. Estuaries vary in character in and along different coastlines. On the East coast, most estuaries are drowned river valleys. Estuaries in the Pacific Northwest include examples of all of the various estuarine classes: drowned river valleys, fjords, bar-built, and tectonic (Pritchard 1967). Unlike most East coast estuaries, expansive areas of emergent marsh are not characteristic of the broad estuaries of the West coast, and more "fringing" marshes are found out west (Simenstad and Thom 1992). To see more information

and biogeographic regional classifications, see http://www.nerrs.noaa.gov/BGDefault.aspx?ID=65.

3.1.4 Rivers

Rivers are defined as freshwater that moves towards the ocean or other large body of water, generally fed by smaller streams as it moves along a course. A river and tributaries form a watershed that collects runoff throughout the region. Rivers vary significantly based on age, surrounding rock structures, biota, and water sources. Sediments are typically deposited most heavily along a river's lower course, often forming floodplains along the banks and a delta at the mouth.

3.1.5 Riparian Zones

Riparian zones are defined as the land immediately adjacent to a stream or a river. Riparian areas are commonly characterized by bottomland hardwood and floodplain forests in the East and as bosque (dense growth of trees and underbrush) or streambank vegetation in the West (Mitsch and Gosselink 1993). They 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.

3.2 Protected Areas

3.2.1 Designated Critical Habitat

The Endangered Species Act (ESA) requires the Federal government to designate critical habitat for any species listed as Threatened or Endangered. Critical habitat can be either occupied or unoccupied. Occupied critical habitat comprises those specific areas within the geographic area occupied by a federally listed species on which are found physical and biological features essential to the conservation of the species, and that may require special management. Unoccupied critical habitat, which is less commonly designated, includes areas which the Secretary has determined to be essential to the conservation of the species. Lists of proposed and designated critical habitat can be found at http://www.nmfs.noaa.gov/pr/species/criticalhabitat.htm and http://ecos.fws.gov/tess_public/. Maps of both critical habitat and Essential Fish Habitat (see below) can also be found at http://csc-s-web-p.csc.noaa.gov/MMC. Specific critical habitat relevant to a specific project (if present) would be presented in any project-specific NEPA documents.

3.2.2 Essential Fish Habitat

Essential Fish Habitat (EFH) is defined as those waters and substrates necessary to fish for spawning, breeding, feeding, or growth to maturity under the Magnuson-Stevens Fishery Conservation and Management Reauthorization Act (MSA) of 2006. EFH applies to federally managed species in both State and Federal jurisdictional waters throughout the range of the species. Federal agencies must consult with NMFS regarding any of their actions authorized, funded, or undertaken, or proposed to be authorized, funded, or undertaken that may adversely

affect EFH. Electronic maps of the location and identity of EFH can be found on NMFS Office of Habitat Conservation EFH mapper website at http://www.habitat.noaa.gov/protection/efh/habitatmapper.html. Specific essential fish habitat relevant to a specific project (if present) would be presented in any project-specific NEPA documents.

3.2.3 Marine Protected Areas

A Marine Protected Areas (MPA) is defined by Executive Order (EO) 13158 as "any area of the marine environment that has been reserved by federal, state, tribal, territorial, or local laws or regulations to provide lasting protection for part or all of the natural and cultural resources therein." MPAs are a group of sites, networks, and systems established and managed by Federal, State, Tribal, and local governments. Most MPAs have legally established goals, conservation objectives, and intended purposes. MPAs generally address one or more of three areas of conservation focus:

1. Natural Heritage: established and managed wholly or in part to sustain, conserve, restore, and understand the protected area's natural biodiversity, populations, communities, habitats, and ecosystems; the ecological and physical processes upon which they depend; and, the ecological services, human uses and values they provide to this and future generations.
2. Cultural Heritage: established and managed wholly or in part to protect and understand submerged cultural resources that reflect the nation's maritime history and traditional cultural connections to the sea.
3. Sustainable Production: established and managed wholly or in part with the explicit purpose of supporting the continued extraction of renewable living resources (such as fish, shellfish, plants, birds, or mammals) that live within the MPA, or that are exploited elsewhere but depend upon the protected area's habitat for essential aspects of their ecology or life history.

MPAs encompass almost the entire area where projects are conducted. They include state MPAs, National Wildlife Refuges (http://www.fws.gov/refuges/), National Park Service MPAs (http://www.nps.gov/gate/marine-protected-area.htm), National Estuarine Research Reserves (http://www.nerrs.noaa.gov/) and National Marine Sanctuaries (http://sanctuaries.noaa.gov/). MPAs vary widely in the level and type of legal protection afforded to the site's natural and cultural resources and ecological processes. Details of MPAs occurring in the action area along with the level of protection afforded and fishing restrictions can be found on the List of National System Marine Protected Areas (http://www.mpa.gov/nationalsystem/nationalsystemlist/). This list also includes some Habitat Closed Areas and designated critical habitats.

3.2.4 Historic and Cultural Resources

The National Historic Preservation Act (NHPA) section 106 establishes preservation as a national policy and directs the Federal government to provide leadership in preserving, restoring and maintaining the historic and cultural environment of the Nation [see 36 CFR part 800].

Preservation is defined as the protection, rehabilitation, restoration, and reconstruction of districts, sites, buildings, structures, and objects significant in American history, architecture, archaeology, or engineering. This includes Native American and Native Hawaiian tribal properties and values. Federal agencies are directed under the NHPA to maintain historic properties in ways that consider the preservation of historic, archaeological, architectural, and cultural values.

3.3 Biological Environment

3.3.1 NMFS Endangered Species Act Species

The Endangered Species Act (ESA) provides for the conservation of species that are in danger of extinction (or likely to become so in the foreseeable future) throughout all or a significant portion of their range, as well as designation of critical habitat for these species. Listed species under the ESA that are not the target of funding through these grant programs may benefit from or be negatively affected by projects funded by these grants.

NMFS is responsible for ESA listing for most marine species and some anadromous species that spend significant amounts of time in the ocean including many salmon, sturgeon, and Pacific smelt/eulachon. Current information on each species listed under the ESA or identified as Species of Concern by NMFS can be found on their webpage at http://www.nmfs.noaa.gov/pr/species/. Appendix A and B list all NMFS ESA listed species and candidate/proposed/delisted species eligible for funding under the Species Recovery Grants programs as of the finalization of this PEA. Appendix C lists all of the Species of Concern as of the finalization of this PEA. The Species of Concern Proactive Species Conservation Grants can also fund "candidate species" if they were petitioned for ESA listing or if a status review was initiated after they became a Species of Concern. Appendix D lists all the ESA listed Pacific salmonids (which may be impacted but are not directly eligible for funding under these three grant programs).

3.3.2 USFWS Endangered Species Act Species

The U.S. Fish and Wildlife Service is responsible for threatened and endangered species in terrestrial habitats as well as freshwater lakes and streams and sea turtles when they are on land. In addition they are responsible for a number of marine mammals (including manatees, polar bears, walrus, and sea otters), fish (including tidewater goby, bull trout, delta smelt) and seabirds (including albatrosses, marbled murrelet, Hawaiian dark-rumped petrel, shearwaters, and terns) that have the potential to be affected by program projects. The USFWS web site has up-to-date listings and information on each listed or candidate species (http://www.fws.gov/endangered/species/). NMFS compiles lists of all co-occurring ESA species as part of our initial evaluation of proposed projects to identify species which could potentially be affected by one of these grant program projects.

3.3.3 Marine Mammal Protection Act Species

The Marine Mammal Protection Act (MMPA) provides protections for all marine mammals. Besides the species mentioned above that are under FWS jurisdiction, all of the remaining

marine mammals are under the jurisdiction of NMFS. The MMPA prohibits, with certain exceptions, the "take" of marine mammals in U.S. waters and by U.S. citizens on the high seas. NMFS can authorize take for some activities including a couple relevant to these grant programs (e.g. scientific research, enhancing the survival or recovery of a marine mammal species or stock, or incidental take during non-fishery activities). Our website provides detailed information on each species, its threats, and other relevant information (see http://www.nmfs.noaa.gov/pr/species/). NMFS compiles lists of all co-occurring MMPA protected species as part of our initial evaluation of proposed projects to identify species which could be impacted.

3.3.4 Non-ESA Listed Fish, Birds, and Invertebrate Species

There are tens of thousands of species of fish, birds, and invertebrates that occur within the proposed action area. NMFS manages fisheries within federal waters as authorized under the Magnuson-Stevens Fisheries Conservation and Management Act (MSA) (see the list of NMFS managed stocks here https://www.st.nmfs.noaa.gov/sisPortal/sisPortalMain.jsp) while States and Tribes manage fisheries within their respective jurisdictions. The majority of bird species within the action area are protected by the Migratory Bird Treaty Act (16 USC 703 *et.seq.*). Additional information on bird resources can be found at http://www.fws.gov/birds/.

3.4 Social and Economic Environment

Although economic and social factors are listed in the definition of effects in the CEQ regulations and NAO 216-6, the definition of human environment states that “economic and social effects are not intended by themselves to require preparation of an EIS.” However, an EIS or EA must include a discussion of a proposed action’s economic and social effects when these effects are interrelated with effects on the natural or physical environment. These effects are identified through NOAA staff review. The social and economic environment is not described in detail here because the effects from projects funded under these grant programs are generally minor or non-existent. There are also no significant social or economic impacts of the proposed action interrelated with natural or physical environmental effects. If moderate or major social or economic effects were identified for a particular project, a separate or tiered EA or EIS would be prepared.

4.0 ENVIRONMENTAL CONSEQUENCES

This chapter will analyze the potential direct and indirect impacts of the two alternatives on the resource components described in Chapter 3. The objective of this chapter is to determine if significant impacts would likely occur if NMFS implemented one of these alternatives. Cumulative impacts are discussed in Chapter 5.

4.1 Assessment Uncertainty and Methodology

In order to assess the effects of various program activities on the environment, it is necessary to attempt to anticipate the types and levels of activities into the future. Given that priorities and subsequent management, research, outreach, and monitoring needs can change over time, it is difficult to know exactly what projects will be selected through the competitive process (see Section 1.1.4 for a description of the process). There is also uncertainty regarding overall funding levels given annual variation in appropriations from Congress. While these uncertainties exist, there have been relatively consistent project types and associated environmental effects throughout the history of these three grant programs (see Appendix F for previous awards requiring NEPA analysis outside of the ESA permitting process). These previous impacts are therefore used as a proxy for future impacts. New anticipated program activities (e.g. habitat improvement projects) and associated impacts are also incorporated into this analysis where relevant.

The impact assessment methodology used in this section involves identifying and describing the general direct and indirect impacts that would be consequences of the Preferred Alternative and No Action Alternative (40 CFR 1508.8).

4.2 No Action Alternative

An alternative to the proposed action is no action, i.e., not approving new awards. This alternative would eliminate any potential risk to the environment from the proposed activities. However, the no action alternative would not allow current management, research, outreach and monitoring to be conducted and would deny the opportunity to benefit from any proposed funded activities. This alternative would also prevent the NMFS Endangered Species Division from carrying out its mandate under the ESA to implement a cooperative grant program with States and territories under Section 6 of the ESA and its general ESA obligations relevant to all of the grant programs to assist in the conservation and recovery of at-risk species. There would be less financial and human resources available for sensitive marine species conservation which could result in indirect impacts to species recovery.

4.3 Preferred Alternative

This alternative, preferred by NMFS, includes project selection, funding, and environmental compliance review that follows the programmatic approach detailed in Section 2. Any impacts of the proposed action would most likely be limited to the physical and biological environment. The type of activities proposed in these grant programs would be unlikely to adversely affect the socioeconomic or physical environment or pose a risk to individual and/or public health or

safety. Based on prior experience with projects funded through these grant programs, there are not likely to be significant social or economic impacts of funded activities interrelated with significant natural or physical environmental effects.

The programmatic process (described in Chapter 2) seeks to identify the potential for effects, and if such effects were identified for specific projects, supplemental or tiered NEPA analyses would be conducted. Likewise, if specific projects were controversial, if the possible effects of implementing a project were determined to be highly uncertain or involve unknown risks, or if funding a project would set precedents on future actions that may significantly affect the human environment, then supplemental or tiered NEPA analyses would be conducted. If future research projects are not consistent with the type or scope of activities analyzed in this EA, they will be subject to additional NEPA evaluations.

The major distinction between the Preferred Alternative and No Action Alternative, in terms of environmental impacts, is that, while the Preferred Alternative could result in short-term adverse impacts to certain species, it is likely to provide long-term direct and indirect benefit to sensitive species conservation and recovery. Short-term adverse impacts would be avoided with the No Action Alternative. But species conservation and recovery as noted above would likely be diminished.

4.4 Direct and Indirect Effects on the Physical Environment

4.4.1 Physical damage to marine, estuarine, and shoreline habitat

Activities that result in contacting the seafloor (e.g. trawling, permanently marking sites, anchoring) can alter and/or physically damage seafloor habitat. Physical damage includes furrowing and smoothing of the seafloor as well as the displacement of rocks and boulders as gear is dragged or towed across the bottom (Morgan and Chuenpagdee 2003). 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 (Freiwald et al. 2004). Derelict research gear may negatively alter the structure of marine, estuarine, and shoreline habitat in limited areas. Activities resulting in trampling of coastal habitats (e.g. use of heavy machinery in habitat restoration projects) can impact nesting habitat for a variety of organisms including shorebirds and sea turtles.

4.4.2 Physical damage to river and riparian habitat

Activities that result in changing flow regimes or contacting the river bottom can alter and/or physically damage those habitats. Physical damage includes temporary turbidity plumes, alteration of water temperature, riparian disturbance, or movement of woody debris or other biotic or abiotic habitat structure. Derelict research gear may negatively alter the structure of river or riparian habitat. Trampling of riparian habitat may result in loss of vegetation, soil compaction, and increased sedimentation and water delivery speed to rivers.

4.4.3 No Action Alternative

The No Action Alternative would mean that these grant programs would not fund any activities

and would therefore have no direct or indirect effects on the physical habitat in marine, estuarine, shoreline, river, or riparian habitat.

4.4.4 Preferred Alternative

Some funded activities may impact the physical habitat of marine, estuarine, and shoreline habitat. Historically these impacts have been limited in spatial and temporal extent, and magnitude of impact (see Appendix F). It is not anticipated that future selected projects would change in scope or magnitude so impacts are expected to be minor. Impacts to the seafloor from previously funded activities include boat anchoring and experimental bottom trawls. The recovery time for damage to the seafloor varies based on the type of gear used, the type of seafloor surface (i.e. mud, sand, gravel, mixed substrate), and the level of repeated disturbances. Most physical damage to the seafloor recovers within 1.5 years (except displaced rocks or boulders) (Stevenson et al. 2004). However, the removal of structural organisms such as corals may only be reversible over hundreds of years (Freiwald et al. 2004). While the potential impacts to corals may be great, there have been no records of coral damage in any previously funded projects and the Federal Program Officer would evaluate projects based on their potential impacts to corals, therefore the magnitude of this potential effect is likely minor. The limited amount of anticipated derelict gear from research activities and use of Best Management Practices (BMPs) to reduce trampling important shoreline habitat make the potential effects of these activities minor.

Some activities funded through these programs may impact the physical habitat of rivers and riparian habitat. Historically these impacts have been limited in spatial and temporal extent, and magnitude of impact (see Appendix F). Funded work has resulted in alterations of habitat while sampling (e.g. setting gillnets for sturgeon telemetry research) but this has been temporary and minor.

It is anticipated that funding for future work may result in habitat restoration activities which may have more considerable impacts. These activities would be similar to activities assessed through the original (NOAA Restoration Center PEA 2002) and supplemental (NOAA Restoration Center Supplemental PEA 2006) PEAs for the NMFS Community-based Restoration Program. This program awards community-based grant funds to undertake a variety of coastal and marine habitat restoration activities, including habitat restoration, land and easement acquisition, erosion control, and restoration research. The analysis consisted of evaluating general project types to determine potential impacts to the human and natural environments with those impacts described by type (direct, indirect, or cumulative), duration (short- or long-term), and significance. The preponderance of actions assessed were determined to have minor impacts (see pages ES2 to ES8 in the NOAA Restoration Center Supplemental PEA 2006 for summary analysis) and those analyses are hereby incorporated by reference. Given the impacts of previously funded work and analysis in the Community-based Restoration program PEAs for habitat restoration, it is anticipated that the potential effects of these activities would be minor. Full scale large dam removal or other large scale habitat modifications would likely require separate NEPA analysis. The limited amount of anticipated derelict gear and riparian trampling from research activities make the potential effects of these activities minor.

4.4.5 Conclusion

The direct and indirect adverse impacts of the Preferred Alternative on the physical environment are likely short-term, minor in magnitude, minor in geographic extent, and minor in duration and frequency. The direct and indirect beneficial impacts are expected to be short to long-term, minor to moderate in magnitude, minor in geographic extent, and minor to moderate in duration and frequency.

4.5 Direct and Indirect Effects on Protected Areas

4.5.1 Designated Critical Habitat

Proposed activities could potentially impact essential features or primary constituent elements of designated critical habitat. If the proposed activities have the potential to impact designated critical habitat (e.g. by impacting passage or prey base), an ESA Section 7 consultation would be initiated and further NEPA analysis could be necessary depending on the type, scope and intensity of impact.

4.5.2 Essential Fish Habitat (EFH)

The potential effects of program activities on EFH are the same as those for the physical environment described in Section 4.5.1.

4.5.3 Marine Protected Areas (MPAs)

The potential effects of program activities on MPAs vary depending on the conservation objectives and purpose of the protected area. As described in Section 3.2, MPAs generally address one or more of three areas of conservation focus: 1) natural heritage, 2) cultural heritage, and 3) sustainable production. Impacts if any would likely be the same as those for the physical environment described in Section 4.5.1.

4.5.4 Historic and Cultural Resources

The potential effects of program activities on historic and culture resources are limited to areas near or in bodies of water. The Species Recovery Grants to Tribes program funds a significant amount of work on tribal lands which may increase the exposure of historic and culture resources to impacts. To the extent that projects might result in adverse effects to properties determined to be historic, including cultural resources important to tribes, Section 106 consultation would occur under the NHPA and additional NEPA analysis could be necessary depending on the type, scope and intensity of impact.

4.5.5 No Action Alternative

The No Action Alternative would mean that these grant programs would not fund any activities and would therefore have no direct or indirect effects on protected areas.

4.5.6 Preferred Alternative

While much of the funded work for the Species Recovery Grants programs would be conducted in ESA designated critical habitat, the funded activities are unlikely to adversely impact the physical features or primary constituent elements (such as prey resources) of critical habitat. If either the USFWS or NMFS issue a Biological Opinion (BiOp), and recommend any reasonable and prudent alternatives for protecting specific critical habitat, these programs must ensure that the effects are appropriately avoided, minimized, or mitigated for with the use of Special Award Conditions (SACs). No prior project funded by these programs has resulted in the destruction or adverse modification of critical habitat. Activities that resulted in destruction or adverse modification of critical habitat could not be funded unless reasonable or prudent alternatives were incorporated into the project to avoid the destruction or adverse modification.

No prior projects funded by these programs have had moderate or major impacts to EFH, MPAs, or historic or cultural resources. For EFH, consultations ensure that there will be no or minor adverse impacts. For MPAs, funded parties would need to comply with any existing laws regarding MPA management at individual MPAs where they may be conducting activities. If historic or culture resources might be impacted, the Federal Program Officer would consult with the State Historic Preservation Officer (SHPO) and/or Tribal Historic Preservation Officer (THPO) to ensure that impacts were minimized.

4.5.7 Conclusion

The direct and indirect adverse impacts of the Preferred Alternative on Protected Areas are likely short-term, minor in magnitude, minor in geographic extent, and minor in duration and frequency. The direct and indirect beneficial impacts are expected to be short to long-term, minor to moderate in magnitude, minor in geographic extent, and minor to moderate in duration and frequency.

4.6 Direct and Indirect Effects on the Biological Environment

4.6.1 ESA Listed Species

Species Recovery Grants fund activities that focus on recovering ESA listed species under NMFS or joint NMFS-USFWS jurisdiction. While this funding generally provides a net benefit to the conservation and recovery of ESA listed species, there are some direct and indirect impacts to ESA listed species (see Appendix F). The most common negative impact from previously funded projects is direct target animal stress due to capture, handling, and tagging procedures (these effects are generally analyzed under NEPA conducted during application review for ESA section 10 permits). These activities can sometimes lead to severe injury or mortality in a small number of sampled animals. Some funded activities allow direct take of listed species if there are potentially large conservation benefits (e.g. allowing some direct bycatch of listed species in order to test bycatch reduction devices that may reduce take in legal fisheries). Other expected negative impacts to ESA listed species from all three programs include incidental harassment, short term habitat disturbance, and marine noise.

4.6.2 Marine Mammals

Direct and indirect effects of program activities on marine mammals protected under the Marine

Mammal Protection Act include disturbance/behavioral changes due to vessel and equipment noise and injury or mortality due to ship strikes or entanglement in gear. The most common impact from grant program activities (not already analyzed under NEPA for an ESA Section 10 permit) would be disturbance from equipment noise, including the physical presence of marine vessels and gear combined with operational sounds from engines, hydraulic gear, and acoustical devices used for navigation and research. Disturbance could cause displacement from preferred habitats or require an animal to use energy necessary for other functions. Entanglements with research gear or ship strikes are highly unlikely but are possible and could result in serious injury or death to the marine mammal. No marine mammals have been entangled in gear or struck by a ship through activities funded by these grant programs to date.

4.6.3 Non-ESA Listed Fish, Birds, and Invertebrates

Direct and indirect effects of program activities to fish, birds, and invertebrate species include possible bycatch and disturbance/behavior changes. Bycatch during fisheries research operations is the most severe impacts to fish and invertebrate species, potentially causing injury or mortality. Bycatch is also possible with bird species causing injury or mortality. Disturbance associated with program activities can cause flushing, habitat avoidance, or other behavioral changes that stress these species.

4.6.4 No Action Alternative

The No Action Alternative would mean that these grant programs would not fund any activities and would therefore have no direct or indirect effects on ESA listed species or marine mammals.

4.6.5 Preferred Alternative

While these activities have the potential to negatively impact ESA listed species, the impacts are expected to be primarily short term and minor in intensity and magnitude. No prior projects funded by these programs have presented appreciable risks to jeopardizing the continued existence of a listed species (see Appendix F). Given the selection criteria and recovery focused priorities of these three programs, activities that would adversely impact the target ESA listed species without providing an overall conservation benefit to the species would not be selected or funded. Likewise, activities funded through all three grant programs require formal ESA section 7 consultations if they may impact ESA listed species. A series of conversations occur with the Program Officer and ESA section 7 and ESA section 10 (permits) staff before projects are funded to ensure minimal impacts to the species and that BMPs are used. If either the USFWS or NMFS issues a BiOp, and established any reasonable and prudent measures or terms and conditions for minimizing take and avoiding jeopardy thus protecting the listed species, these programs must ensure that such measures are implemented through the use of SACs. Activities would not be funded through these programs if the BiOp found that they would jeopardize the continued existence of the species unless reasonable or prudent alternatives were incorporated into the project and therefore jeopardy was subsequently avoided. The majority of program activities funded by Species Recovery Grants already require an ESA section 10 permit and are already analyzed under NEPA and have permit conditions that minimize impacts.

The impacts to marine mammals from activities funded through these programs are expected to be primarily short term and minor in intensity and magnitude. No prior projects funded by these programs have resulted in significant impacts (including serious injury or mortality) to marine mammals (see Appendix F). Most harassment is covered through permits or authorizations and thus the initial NEPA analysis is conducted through the NMFS Permit Division (see http://www.nmfs.noaa.gov/pr/permits/) or USFWS and is not directly analyzed in this PEA. If program activities were to expect to adversely affect marine mammals, the grantee would need to have or obtain an ESA permit (if the marine mammal is ESA listed-see above), incidental harassment authorization (IHA) or be covered under a Letter of Authorization (LOA) pursuant to an incidental take regulation (ITR) under Section 101(a)(5)(A) or (D) of the MMPA. Activities authorized under LOAs and IHAs must adopt mitigation and monitoring measures to minimize any adverse impacts to marine mammals; their habitat, and their availability for Alaska Native subsistence use. In addition, all three programs use SACs that include BMPs to avoid undue stress to marine mammals during program activities in areas where those interactions may occur.

No prior projects funded by these programs have had major impacts to fish, birds, or invertebrates (see Appendix F). All three programs use SACs that include BMPs to avoid capture or mortalities during program activities in areas where interactions may occur.

4.6.6 Conclusion

The direct and indirect adverse impacts of the Preferred Alternative on the Biological Environment are likely short-term, minor to moderate in magnitude, minor to moderate in geographic extent, and minor to moderate in duration and frequency. The direct and indirect beneficial impacts are expected to be short to long-term, minor to moderate in magnitude, minor to moderate in geographic extent, and minor to moderate in duration and frequency.

4.7 Direct and Indirect Effects on the Social and Economic Environment

Although economic and social factors are listed in the definition of effects in the CEQ regulations and NAO 216-6, the definition of human environment states that "economic and social effects are not intended by themselves to require preparation of an EIS." However, an EIS or EA must include a discussion of a proposed action's economic and social effects when these effects are interrelated with effects on the natural or physical environment. The social and economic environmental consequences are not described in detail here because there have been generally minor social and economic effects from projects funded under these grant programs. There are also not expected to be significant social or economic impacts of the proposed action interrelated with significant natural or physical environmental effects. If moderate or major social or economic effects were identified for a particular project a separate or tiered EA or EIS would be prepared.

5.0 CUMULATIVE EFFECTS

This chapter discusses the incremental impacts of the preferred and other alternatives when added to other past, present, and reasonably foreseeable future actions that have affected, are affecting, or will affect the environment described in Chapter 3.

5.1 Analysis methodology

The cumulative effects analysis methodology consists of the following steps:

1. Define the geographic area and timeframe.
2. Identify other human activities and natural phenomena that have resulted or will result in effects to the resource components that comprise the affected environment. This includes past, present, and reasonably foreseeable future actions (RFFAs).
3. Evaluate the direct and indirect adverse and beneficial cumulative effects of external actions on the affected environment and assess the relative contribution of the proposed actions and alternatives to the cumulative effects.

Analysis of the cumulative effects is always less certain than an analysis of impacts for an individual action because of the larger geographic area, timeframe, and uncertainty about impacts from other present and future actions, which may be poorly-defined. As a result, cumulative effects analyses are often qualitative rather than quantitative especially when addressed in a programmatic level NEPA analysis such as this PEA. This analysis is qualitative.

5.2 Geographic area and timeframe

The cumulative effects analysis includes the entire geographic area in which these awards operate, including the territorial seas of the United States and the U.S. EEZ, the high seas, and potentially the territorial seas and EEZs of foreign sovereign nations. While many previous actions or natural phenomenon have contributed to the current state of the affected environment, this analysis focuses on actions that continue to impact these resources. Table 5.3-1 is limited to describing past actions that have impacted the affected environment from 2003 to anticipated impacts from RFFAs into 2016.

5.3 Past, Current, and Reasonably Foreseeable Future Actions

Activities affecting the physical, biological, and social and economic environment include the past and present impacts of State, Federal, or private actions and other human activities; the anticipated impacts of all proposed Federal projects; and the impact of contemporaneous and proposed State or private actions. The details of the wide variety of human activities and natural phenomena that impact the affected environment are discussed in a variety of NMFS documents including previous NEPA documents, ESA status reviews, recovery plans, and ESA section 7 consultations. These analyses directly relate to the similar impacts expected to occur as a result of the proposed actions in the Preferred Alternative. NEPA analysis for past and ongoing of projects funded through these programs is described in Appendix F. Cumulative effects of specific actions were analyzed within the affected environment within each EA referenced in Appendix F. These documents will be made available by request (contact Sean Ledwin at 301-

427-8465 or Sean.Ledwin@noaa.gov) and are hereby incorporated by reference. The CEQ regulations direct agencies to incorporate materials by reference "when the effect will be to cut down on bulk without impeding agency and public review of the action." (40 CFR 1502.21). In preparing this PEA NMFS generally reviewed the analyses in the foregoing documents and determined that they were relevant to environmental resources and impacts addressed in this document. Inclusion of those documents would substantially increase the size and complexity of this document and reduce its effectiveness at presenting the specific issues of environmental relevance at the programmatic level. NMFS has, therefore, incorporated these documents by reference, relied on their analyses, and included contact information or links to provide for ready accessibility by the public.

Status reviews (see http://www.nmfs.noaa.gov/pr/species/statusreviews.htm) are comprehensive assessments of a species' biological status and its threats, and are the basis for making determinations as to whether a species warrants listing under the ESA. NMFS conducts status reviews for the following: 1) Any species which it believes may warrant a listing under the ESA; 2) Species of Concern for which enough information has been gathered; 3) Species that have been petitioned for listing under the ESA by any citizen, provided that the petition presents substantial information indicating that listing may be warranted; 4) Species already listed under the ESA on a periodic basis to ensure that the listing status is appropriate, usually done through 5-Year Reviews (see http://www.nmfs.noaa.gov/pr/listing/reviews.htm). The cumulative effects analyses within these reviews present broad information on the impacts to the focal species and the affected environment are hereby incorporated by reference.

Recovery plans (see http://www.nmfs.noaa.gov/pr/recovery/plans.htm) are the central organizing tool for guiding the recovery process for each species and for implementing the ESA as a whole. Recovery plans characterize the suite of activities that impact the affected environment for listed species in order to describe site specific management actions to recover those species and provide criteria which, when met, would result in delisting. The descriptions of the cumulative effects provide relevant information on both the stressors and conservation benefits of particular actions and are hereby incorporated by reference.

Biological opinions (BiOps) (see http://www.nmfs.noaa.gov/pr/consultation/opinions.htm) document NMFS' opinion as to whether a Federal action is likely to jeopardize the continued existence of an ESA-listed species, or result in the destruction or adverse modification of species' critical habitat. BiOps often include analysis of cumulative stressors either in the baseline, cumulative impacts, cumulative effects[9], or integration and synthesis sections. The analyses for BiOps conducted for previous awards (see Appendix F and link above) are hereby incorporated by reference.

Impacts of past, current, and RFFAs between 2003 and 2016 are shown below in Table 5.3-1. Additional past actions that had substantive impacts (e.g. commercial exploitation of species) are also summarized where relevant in the following sections.

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9 Cumulative Effects for ESA section 7 consultations are defined as effects resulting from future State or private activities, not involving Federal activities, that are reasonably certain to occur within the action area of the Federal action subject to consultation. This definition differs from the NEPA in that cumulative effects under NEPA includes the effects of reasonably foreseeable future Federal actions. The NEPA definition is utilized in this document.

Table 5.3-1. Summary of past, present, and RFFAs that are likely to occur in the next five years and the resources that are likely to be affected.

Action	Impact on Physical Environment	Impact on Protected Areas	Impact on Endangered Species/Marine Mammals	Impact on Fish, Bird, and Invertebrates
Marine, Estuarine, and Shoreline				
Fisheries (Commercial and Recreational)	Substrate disturbance	Substrate disturbance	Bycatch, Habitat disturbance, Behavioral displacement, Ship strikes, Noise	Bycatch, Behavioral displacement, Habitat disturbance Noise
Climate Change	Thermal impacts, Water chemistry change, Substrate disturbance	Altered hydrology, Thermal impacts, Water chemistry change, Substrate disturbance	Habitat disturbance, Invasive species, Noise	Habitat disturbance, Invasive species, Noise
Military Operations	Contamination, Marine debris	Contamination, Marine debris	Noise, Habitat disturbance, Ship strikes	Noise, Habitat disturbance, Ship strikes
LNG Terminals	Contamination, Turbidity	Contamination, Turbidity	Contamination, Ship strikes, Noise, Habitat disturbance	Contamination, Habitat disturbance,
Vessel Traffic	Contamination	Invasive species, Contamination	Invasive species, Contamination, Noise, Ship strikes, Behavioral disturbance	Contamination, Noise, Behavioral disturbance, Habitat disturbance
Dredging	Substrate disturbance, Turbidity	Substrate disturbance, turbidity	Entrainment, Noise, Habitat disturbance, Ship strikes	Noise, Habitat disturbance
Waste Disposal and Run-off	Substrate disturbance, Contamination, Eutrophication, Sedimentation, Marine Debris	Contamination, Benthos disturbance, Marine debris	Contamination, Noise, Behavioral displacement, Ship strikes	Contamination, Noise, Behavioral disturbance, Habitat disturbance
Mining/Oil and Gas Development	Substrate disturbance, Contamination, Sedimentation	Substrate disturbance, Contamination, Sedimentation	Contamination, Noise, Ship strikes	Contamination, Noise,

Research	Substrate disturbance	Substrate disturbance	Bycatch, Habitat disturbance, Behavioral displacement, Ship strikes, Noise	Bycatch, Habitat disturbance, Behavioral displacement, Ship, Noise
Geophysical/Geotechnical Activities	Substrate disturbance	Substrate disturbance	Ship strikes, Behavioral disturbance, Habitat disturbance, Noise	Behavioral disturbance, Habitat disturbance, Noise
Aquaculture	Substrate disturbance, Contamination, Eutrophication, Sedimentation, Altered water flow	Substrate disturbance, Contamination, Eutrophication, Sedimentation	Invasive species, Contamination, Ship strikes, Behavioral displacement, Disease	Behavioral disturbance, Contamination, Disease, Invasive species
Offshore Energy Projects	Substrate disturbance, Altered water flow	Substrate disturbance	Behavioral displacement, Habitat disturbance, Ship strikes, Entrainment, Noise	Behavior displacement, Habitat disturbance, Entrainment, Noise
Shoreline Development/Use	Trampling, Habitat destruction, Turbidity, Sedimentation	Trampling, Habitat destruction, Turbidity, Sedimentation	Behavior displacement, Invasive species, Habitat displacement	Behavior disturbance, Habitat disturbance, Invasive species
Conservation/Restoration/Recovery	Turbidity reduced Sedimentation reduced, Contamination reduced	Turbidity reduced, Sedimentation reduced, Contamination reduced	Decreased take, Improved habitat, Reduced noise	Reduced bycatch, Improved habitat, Reduced noise
Rivers and Riparian Zone				
Culverts	Riverive structure damage, Turbidity, Sedimentation, Riparian disturbance	Riverive structure damage, turbidity/sedimentation, riparian disturbance	Entrainment, Noise, Habitat displacement, Behavior disturbance, Invasive species	Habitat disturbance, Behavior displacement, Invasive species, Entrainment, noise
Dams	Riverive structure damage, Altered hydrology, Turbidity, Sedimentation, Riparian disturbance	Riverive structure damage, Altered hydrology, Turbidity, Sedimentation, Riparian disturbance	Entrainment, Noise, Habitat disturbance, Behavior disturbance, Invasive species	Entrainment, Habitat disturbance, Behavior displacement, Invasive species, Noise
Waste Disposal and Run-Off	Turbidity, Sedimentation, Contamination	Turbidity, Sedimentation, Contamination	Contamination, Habitat disturbance, Ship strikes	Habitat disturbance, Conamination

Climate Change	Altered hydrology, Thermal impacts	Altered hydrology, Thermal impacts	Habitat disturbance, Invasive species	Habitat disturbance, Invasive species
Development	Riverine structure damage, Turbidity, Sedimentation, Riparian disturbance	Riverine structure damage, Turbidity, Sedimentation, Riparian disturbance	Invasive species, Contamination, Ship strikes, Behavioral displacement, Habitat disturbance, Noise	Contamination, Behavioral displacement, Habitat disturbance, Noise
Fisheries (Commercial and Recreational)	Riverine structure damage	Riverine structure damage	Bycatch, Habitat disturbance, Behavioral displacement, Ship strikes	Bycatch, Behavioral displacement, Noise
Dredging/Mining	Riverine structure damage, Turbidity, Sedimentation	Riverine structure damage, Turbidity, Sedimentation	Habitat disturbance, Behavioral displacement, Ship strikes	Habitat disturbance, Behavioral displacement
Research	Riverive structure damage, Trampling	Riverive structure damage, Trampling	Bycatch, Habitat disturbance, Behavioral displacement, Ship strikes	Habitat disturbance, Behavioral displacement
Vessel Traffic	Riverine structure damage, Turbidity	Riverine structure damage, Turbidity	Behavioral displacement, Ship strikes	Behavioral displacement, Habitat disturbance
Conservation/Restoration/Recovery	Riverine structure improvement, Turbidity Reduction, Sedimentation reduction, Riparian improvement, Contamination reduced	Riverine structure improvement, Turbidity Reduction, Sedimentation reduction, Riparian improvement	Reduced bycatch, Improved habitat, Reduced noise	Reduced bycatch, Improved habitat, Reduced noise
Water withdrawal projects	Riverive structure damage, Altered hydrology, Turbidity, Sedimentation, Riparian disturbance		Entrainment, Habitat disturbance	Entrainment, Habitat disturbance

5.4 Cumulative Effects on the Physical Environment

5.4.1 No Action Alternative

With no direct or indirect effects on the physical environment under the No Action Alternative, there would be no contribution to cumulative impacts to the affected environment.

5.4.2 Preferred Alternative

Under the Preferred Alternative, these grant programs would continue funding research, management, outreach, and monitoring projects that benefit ESA listed, candidate, proposed, and recently delisted species and Species of Concern. The physical environment would continue to be susceptible to impacts from threats external to these grant programs. The primary threats that have or will continue to impact the physical environment are summarized below.

Climate change has a broad number of impacts to the physical environment of both marine and riverine habitats and is therefore discussed here first. Climate change impacts include rising sea levels, changes in water temperatures, extreme weather events, altering ocean currents, and altered riverine flow regimes. A related effect of climate change is increased acidification in the ocean caused by increased dissolved CO_2. Ocean acidification can harm ocean plants and animals that build shells of calcium carbonate, including corals, mollusks and crustaceans, which add to the physical structure of the ocean floor and serve as food for animals higher up the food chain (NEA 2010).

In the marine, estuarine, and shoreline habitats, activities that may have and/or will continue to have large negative impacts include commercial fishing (mainly trawling and dredging), channel dredging, aquaculture, construction, mining, oil and gas development, contamination/pollution, and shoreline development and use. Large areas of the sea floor in many areas are subject to repeated physical disruption from commercial fishing. Other types of disturbance such as off-shore developments tend to also have long-term impacts but cover small areas. Contamination and pollution from tankers and other marine vessels spills, military operations, ocean dumping, airborne deposition, and runoff from industrial and agricultural sources can impact water resources and modify physical features. While contamination/pollution from these and other sources is a long-term and widespread issue in the marine environment, it varies in intensity on a local and regional basis. Development and use of shoreline habitats (e.g., shoreline construction, erosion control, sand mining, trampling) can potentially have long-term impacts, although most impacts are localized. In the future expansion of nearshore and offshore aquaculture and alternative energy projects (e.g. offshore wind, wave energy, etc) may increase impacts to proximate physical structures (e.g. seafloor disturbance) and water quality.

In river and riparian zone habitats, activities that may have had or continue to impact the physical environment include construction and operation of culverts and dams, pollution, riparian development, channelization, and dredging. Dams can have profound effects on the physical environment by modifying free-flowing rivers to reservoirs and altering downstream flows and sediment loads (and subsequent riparian zone substrate/vegetation), water

temperatures and flow timing. The quality of water in river/estuary systems is affected by human activities conducted directly in the riparian zone and those conducted upland. Industrial activities can result in discharges of pollutants, changes in water temperature and levels of DO, and the addition of nutrients. Forestry and agricultural practices can result in erosion, run-off of fertilizers, herbicides, insecticides or other chemicals, nutrient enrichment and alteration of water flow. Riparian areas can be heavily impacted by real estate development and urbanization that results in storm water discharges, non-point source pollution, and erosion. Dredging for navigation impacts river bottom habitat, sediment placement, and flow regimes in localized places.

For any project proposed through the these grant programs that will potentially impact the physical environment, the Federal Program Officer and local expert staff would evaluate the number and type of other projects that have occurred in the same location and whether the cumulative negative impacts associated with the proposed activity, as a result of previous and ongoing impacts, are likely to be significant. If a project is identified that could contribute to significant cumulative impacts to the physical environment, the Program Officer will work with the Principal Investigator (PI) of the project, and other federal agencies or offices to conduct additional NEPA analysis prior to approval of that project. If after this review the project is found to have the potential to cause cumulative impacts and it is a priority of the program, the Program Officer will work with the applicant and experts to modify the project such that these impacts are minimized or avoided.

5.4.3 Conclusion

The cumulative impact from all sources of disturbance on the physical environment is expected to be minor to moderate in magnitude and duration. Cumulative impacts are being reduced or minimized (including significant impacts mitigated to insignificant levels) through existing actions including the implementation of the new MSA mandate to end overfishing, marine spatial planning processes, more ESA section 7 and EFH consultations, NOAA Restoration Center funded projects (see http://www.habitat.noaa.gov/restoration/), and funding through these grant programs. The implementation of the Preferred Alternative would result in minor incremental disturbance and is therefore likely to negligibly contribute to the overall cumulative impact. The programmatic processes described above would ensure that any additional funded action would not significantly impact the physical environment.

5.5 Cumulative Effects on Protected Areas

5.5.1 No Action Alternative

With no direct or indirect effects on protected areas under the No Action Alternative, there would be no contribution to cumulative impacts to the affected environment.

5.5.2 Preferred Alternative

Under the Preferred Alternative, these grant programs would continue funding research, management, outreach, and monitoring projects that benefit ESA listed, candidate, proposed, and

recently delisted species and Species of Concern. Protected areas would continue to be susceptible to impacts from threats external to these programs. The cumulative effects of other activities that impact protected areas are generally identical to those discussed for the physical environment in Section 5.4. Although the effects are by and large similar, protected resources often have higher priority resources so may be particularly sensitive to particular activities. Likewise, protected areas often have regulations that govern certain activities, thereby minimizing or eliminating impacts from those activities.

For any project proposed through these programs that will potentially impact protected areas, the Federal Program Officer and local expert staff would evaluate the number and type of other projects that have occurred in the same location and whether the cumulative negative impacts associated with the proposed activity, as a result of previous and ongoing impacts, are likely to be significant. If a project is identified that could contribute to significant cumulative impacts to protected areas, the Program Officer will work with the PI of the project, and other federal agencies or offices to conduct additional NEPA analysis prior to approval of that project. If critical habitat or EFH may be impacted, the action would undergo a consultation with NMFS (or USFWS) to ensure that action would not result in destruction or adverse modification of critical habitat or adversely affect EFH. An evaluation by respective managers of marine protected areas (e.g. to ensure compliance with any NOAA marine sanctuaries regulations) would also occur if appropriate. If after this review the project is found to have the potential to cause adverse cumulative impacts to protected areas and it is a priority of the program, the Program Officer will work with the applicant and consulted agencies to modify the project such that these impacts to protected areas are minimized.

5.5.3 Conclusion

The cumulative impact of the Preferred Alternative when added incrementally to those caused by all sources of disturbance to protected areas is expected to be minor to moderate in magnitude and duration. Cumulative impacts are being reduced or minimized through existing actions including the implementation of the new MSA mandate to end overfishing, marine spatial planning processes, more ESA section 7 and EFH consultations, NOAA Restoration Center funded projects (see http://www.habitat.noaa.gov/restoration/), and funding through these grant programs. The implementation of the Preferred Alternative would result in minimal disturbance and is therefore likely to negligibly contribute to the overall cumulative impact. The programmatic processes described above would ensure that any additional funded action would not significantly impact protected areas.

5.6 Cumulative Effects on ESA Listed Species

5.6.1 Alternative 1 - No Action

With no direct or indirect effects to endangered species under the No Action Alternative, there would be no contribution to cumulative impacts to the affected environment. Although ceasing the funding and implementation of associated actions would likely result in a net reduction in the conservation and recovery benefit to listed species.

5.6.2 Alternatives 2 and 3 – Continue Funding Projects

Under these alternatives, these programs would continue funding research, management, outreach, and monitoring projects that benefit ESA listed, candidate, proposed, and recently delisted species and Species of Concern. In order for a species to be listed under the ESA, the species must have been affected by one or more of the following threats: 1) the present or threatened destruction, modification, or curtailment of its habitat or range; 2) overutilization for commercial, recreational, scientific, or educational purposes; 3) disease or predation; 4) the inadequacy of existing regulatory mechanisms; or 5) other natural or manmade factors affecting its continued existence. The hosts of threats that fall within these categories have been summarized in various USFWS and NMFS ESA listing rules, recovery plans, BiOps, NEPA analyses, and international assessments such as the IUCN Red List (http://www.iucnredlist.org/) and are hereby incorporated by reference (see links above). Given that Species Recovery Grants select projects based on the potential recovery benefits to ESA species, projects that increase adverse cumulative impacts on these species are generally avoided. Indirect effects, adverse and beneficial, on other non-target listed species are sometimes possible for all three grant programs. The requirement to complete NEPA analysis when issuing an ESA Section 10 permit and/or initiate an ESA section 7 consultation for actions that might jeopardize listed species or adversely modify their designated critical habitat ensures that adverse cumulative impacts are determined and mitigated if necessary. Additional project review (potentially including further NEPA analysis) and consequent recommendations of SACs and use of BMPs (often from NMFS technical memos and consultation with experts) fill in remaining gaps to ensure no significant additional cumulative impacts occur.

5.6.3 Conclusion

The cumulative impact from all threats to ESA listed species is expected to be moderate in magnitude and duration. Cumulative impacts are or will be reduced or minimized through actions including the implementation of the recovery actions through these and similar USFWS grant programs, increased projected use of Habitat Conservation Plans (HCPs), and various other programs that protect or enhance ESA listed species populations. The implementation of the Preferred Alternative would result in minor incremental impacts to the affected environment and is therefore likely to negligibly contribute to the overall cumulative impact. The programmatic processes described above would ensure that any additional funded action would not significantly impact ESA listed species.

5.7 Cumulative Effects on Marine Mammals

5.7.1 No Action Alternative

With no direct or indirect effects to marine mammals under the No Action Alternative, there would be no contribution to cumulative impacts to the affected environment. Although, as noted, ceasing funding and associated actions would likely result in a net decrease in the conservation and recovery benefit to listed marine mammals species.

5.7.2 Preferred Alternative

Marine mammals, whether listed or not under the ESA, are protected under the MMPA. Such species receive additional protections if their status declines to the point at which they are listed as threatened or endangered under the ESA. Under the Preferred Alternative, these grant programs would continue funding research, management, outreach, and monitoring projects that benefit ESA listed, candidate, proposed, and delisted marine mammal species and marine mammal Species of Concern. Hosts of threats to marine mammals have been documented in various USFWS and NMFS ESA listing rules, recovery plans, ESA and MMPA permits, biological opinions, NEPA analyses, and international reviews such as the IUCN Red List and are hereby incorporated by reference (see links above). The primary threats that have or will continue to impact marine mammals are summarized below.

Most species or stocks of marine mammals experienced population declines as a result of commercial exploitation. Although some species or stocks continue to have depressed populations due to the legacy of exploitation, others are now recovering and have stable or increasing populations (see http://www.nmfs.noaa.gov/pr/species/mammals/#status) given the general prohibition on harvesting marine mammals (particularly whales). While subsistence hunting (e.g. Steller sea lions and bowhead whales in Alaska) and limited commercial/scientific whaling still occurs, the impact to animals is generally minimal.

Although the future consequences of climate and ecosystem change are not fully understood, it is likely that marine mammals will be affected. Changes in climate and oceanic processes (e.g. shifts in long standing ocean current patterns or short term variations) may lead to decreased productivity in certain areas, differing patterns or prey distribution, and changes in prey availability (see http://www.nmfs.noaa.gov/pr/recovery/plans.htm#mammals). Other possible impacts from climate change include habitat modification due to rising sea levels or accelerated melting of sea ice and the impacts of ocean acidification discussed above.

Collisions with vessels threaten numerous marine mammals and are of great concern for some endangered large whales. Ship strikes with marine mammals can lead to death by massive trauma, hemorrhaging, broken bones, or propeller wounds (Knowlton and Kraus 2001). Massive propeller wounds can be immediately fatal. If injuries are more superficial, the whales may survive the collisions (Silber et al. 2009), but can have reduced fitness. Vessels also contribute to noise in the marine environment through engines, props, and sonar equipment which may cause changes in whale behavior or interfere with their communication or in severe cases cause physical injury.

Anthropogenic noise and acoustic disturbance from other sources are also threats to marine mammals. A bibliography of literature on marine mammal hearing and noise impacts is available at http://www.nmfs.noaa.gov/pr/acoustics/bibliography.htm.

Entrapment and entanglement in fishing gear is one of the most frequently documented sources of human-caused mortality in marine mammals (Read 2008). Although not always as immediately fatal as ship strikes (see above), entanglements can lead to prolonged weakening or

deterioration of an animal (Knowlton and Kraus 2001). This is particularly true for large whales; small whales, dolphins, porpoises, and seals are more likely to die when entangled.

Fisheries may also affect marine mammals indirectly by altering the quality and reducing the quantity of their prey species. The removal of large numbers of fish (both target and non-target or bycatch species) from a marine ecosystem can change the composition of the fish community, altering the abundance and distribution of prey available. In addition, by removing large amounts of biomass, commercial fisheries compete with other consumers that depend on the target species for food, which can, in turn, increases competition between different piscivorous predators. Changes in the abundance and distribution of prey can then have cascading effects on predators, including increased susceptibility to predation and reduced productivity.

Research activities permitted under the MMPA and ESA are highly regulated and closely monitored, and may include the incidental taking (including take by behavioral disturbance or harassment) of marine mammals in the course of research activities. Mortalities may occasionally take place incidental to marine mammal research activities authorized under MMPA permits issued to a variety of government, academic, and other research organizations as such permits may authorize direct interactions with such species.

Marine mammals are exposed to contaminants via the food they consume, the water in which they swim, and the air they breathe. Point and non-point source pollutants from coastal runoff, offshore mineral and gravel mining, at-sea disposal of dredged materials and sewage effluent, marine debris, and organic compounds from aquaculture are all lasting threats to marine mammals. The impacts of these pollutants are difficult to measure. The persistent organic pollutants (POPs) tend to bioaccumulate through the food chain; therefore, the chronic exposure of POPs in the environment is perhaps of the most concern to high trophic level predators such as marine mammals.

For any project proposed through the these programs that will potential impact marine mammals, the Federal Program Officer and local expert staff would evaluate the number and type of other projects that have occurred in the same location and whether the cumulative negative impacts associated the proposed activity, as a result of previous and ongoing impacts, are likely to be significant. The requirement to conduct NEPA analysis during any ESA section 10 permitting, letters of authorization/incidental harassment authorizations (LOA/IHA), and/or initiate an ESA section 7 consultation for actions that might jeopardize listed species or adversely modify their designated critical habitat ensures that adverse cumulative impacts are determined and mitigated if necessary. Additional project review (potentially including further NEPA analysis) and subsequent recommendations of needed SACs and use of BMPs fill in remaining gaps to insure cumulative impacts are minimized.

5.7.3 Conclusion

The cumulative impact from all sources of disturbance to marine mammals is expected to be minor to moderate in magnitude and duration. Cumulative impacts are being reduced or minimized through existing actions including the implementation of take reduction team recommendations (see http://www.nmfs.noaa.gov/pr/interactions/trt/teams.htm), marine mammal

stranding response (see http://www.nmfs.noaa.gov/pr/health/), funding through the John H. Prescott Grant Program (http://www.nmfs.noaa.gov/pr/health/prescott/), and funding through these grant programs. The implementation of the Preferred Alternative would result in minimal incremental impacts to the affected environment and is therefore likely to negligibly contribute to the overall cumulative impacts to marine mammals. The programmatic processes described above would ensure that any additional funded action would not significantly impact marine mammals.

5.8 Cumulative Effects on Non-Listed Fish, Birds, and Invertebrate Species

5.8.1 No Action Alternative

With no direct or indirect effects to non-listed fish, bird, and invertebrate species under Alternative 1, there would be no contribution to cumulative impacts to the affected environment.

5.8.2 Preferred Alternative

Under the Preferred Alternative, these grant programs would continue funding research, management, outreach, and monitoring projects that benefit ESA listed, candidate, proposed, and recently delisted species and Species of Concern. The primary threats that have or will continue to impact these organisms are summarized below.

Fish

Overfishing has severely impacted some fisheries resulting in fisheries collapse, decreased average fish size, and an increasing reliance on new fish species and stocks (see Pauly et al. 1998). This trend may be reversing in some fisheries as more efforts are put into rebuilding and sustaining fish stocks (see Worm et. al 2009). Non-fishing impacts from marine pollution, vessel noise, coastal development, habitat loss, nutrient enrichment, increased turbidity and substrate disturbance, and invasive species result in adverse impacts to fish stocks.

Birds

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. Climate change is also likely having effects on seabirds through changes in their prey abundance and distribution, although it is difficult to characterize such changes as having net adverse or beneficial effects on particular species. Seabird mortalities have been documented within the commercial fishing industry.

Invertebrates

Marine invertebrates are susceptible to natural and anthropogenic impacts including climate change, habitat degradation, pollution and over-exploitation through commercial and recreational fishing.

Because marine invertebrates do not regulate their body temperature (poikilotherms), changes in water temperature may impact the distribution of certain species as well as affect growth rates,

reproductive ability and survival (Harley et al. 2006, Fogarty et al. 2007). In addition, warmer water temperatures affect pH, dissolved oxygen and conductivity of sea water, all of which may have adverse effects on invertebrate species. Because many invertebrates are filter-feeders, there is an increased risk of adverse effects from pollution compared to non-filter feeders. Impacts include decreased foraging ability and reproductive success and increased mortality (Milligan et al. 2009). However, these impacts are expected to be localized to small geographic areas surrounding any chemical release.

Overexploitation of undersized or immature individuals can have serious implications for the sustainability of stocks, and the overall body size of individuals in a fished population may also change with intense fishing pressure on a single size (Donaldson et al. 2010).

For any project proposed through the these programs that will potential impact non-listed fish, birds, or invertebrate species, the Federal Program Officer and local expert staff would evaluate the number and type of other projects that have occurred in the same location and whether the cumulative negative impacts associated the proposed activity, as a result of previous and ongoing impacts, are likely to be significant. Additional project review (potentially including further NEPA analysis) and subsequent recommendations of needed SACs and use of BMPs fill in remaining gaps to insure cumulative impacts are minimized.

5.8.3 Conclusion

The cumulative impact to the non-listed fish, birds, and invertebrates is expected to be minor in magnitude and duration. The implementation of the Preferred Alternative would result in minimal incremental impacts and is therefore likely to make a negligible contribution to the overall cumulative impact. The programmatic processes described above would ensure that any additional funded action would not significantly impact these species.

5.9 Cumulative Effects on the Social and Economic Environment

5.9.1 No Action Alternative

With no direct or indirect effects on the social and economic environment under the No Action Alternative, there would be no contribution to cumulative impacts to the affected environment.

5.9.2 Preferred Alternative

Under the Preferred Alternative, these programs would continue funding research, management, outreach, and monitoring projects that benefit ESA listed, candidate, proposed, and recently delisted species and Species of Concern. While there are cumulative effects on the social and economic environment, cumulative impacts are not described here because there have been and will likely continue to be minor additive social and economic effects from projects funded through these grant programs. If project activities were identified as potentially having moderate or major social or economic impacts by the Federal Program Officer, a separate or tiered EA or EIS would be prepared.

5.9.3 Conclusion

The cumulative impact to the social and economic environment is expected to be minor in magnitude and duration. The implementation of the Preferred Alternative would result in minimal incremental impacts and is therefore likely to make a negligible contribution to the overall cumulative impact. The programmatic processes described above would ensure that any additional funded action would not significantly impact the social and economic environment.

6.0 MITIGATION

6.1. Mitigation Measures

NEPA requires Federal agencies to develop and consider reasonable measures to mitigate the potential adverse effects of proposed actions and reasonable alternatives. This PEA is being conducted at the programmatic level, and mitigation measures are therefore focused on approaches and procedures that have been built into program administration in order to avoid, minimize or otherwise mitigate adverse effects of concern at the project level. Site-specific mitigation measures are developed using these procedures. This section provides examples of the types of mitigation measures that would be imposed to mitigate adverse impacts for projects selected for funding and implementation.

Project Review Procedures

Programmatic mitigation measures have also been incorporated into the Proposed Action. They have been discussed throughout this document, and are briefly described again here. NMFS has found that implementation of these approaches and procedures have been extremely effective in avoiding adverse impacts to sensitive resources or minimizing adverse impacts to acceptable levels. Prior to selection and funding, projects are reviewed in consultation with species experts, other agencies, and affected parties to ensure that appropriate emphasis is placed on mitigation. In instances where mitigation is necessary or desirable, the Federal Program Officer will negotiate a revised project narrative that will avoid, minimize, or mitigate impacts to the affected environment. For projects that require either an ESA or MMPA permit, additional NEPA analysis, an ESA section 7 consultation, or other authorizations or permits (e.g. state collection permit, EFH consultation), it is generally required that grant applicants follow any mitigation measures or conditions prescribed within those documents. In many instances, the Federal Program Officer will place SACs on projects to ensure avoidance of any adverse impacts. While not exhaustive, a few examples of SACs used for mitigation are provided below.

Permit minimization and mitigation measures

The activities authorized under this award will follow any minimization and mitigation measures detailed in the Recipient's ESA section 10(a)(1)(A) scientific research permit issued by NMFS; these measures are incorporated by reference into this award.

Avoiding further take of ESA listed species

Should a federally listed endangered or threatened species be taken incidentally during the course of netting, researchers will suspend operations and notify and consult with either USFWS or NOAA Fisheries within 24 hours of any capture.

Avoiding Harm to NMFS Species

In all boating and research activities within the study area, a close watch will be made for marine mammals and sea turtles to avoid interaction and harassment. In areas where marine mammals

may be present, nets will not be deployed when animals are observed within the vicinity of the research; nets will be monitored in areas where marine mammals are known to occur; and animals will be allowed to either leave or pass through the area safely before net setting is initiated. Researchers will adhere to the marine mammal approach and viewing guidelines online at http://www.nero.noaa.gov/prot_res/mmv/. All sampling and boating activities will also comply, as applicable, with the relevant Take Reduction Plans. In the unlikely event a marine mammal or sea turtle is captured, the animal will be assessed and, if possible, and if safe for the researchers and animal, the animal must be supported to prevent it from drowning. The NMFS Regional Office, Protected Resources Division must be immediately contacted as well as the appropriate local stranding partner, listed at http://www.nmfs.noaa.gov/pr/health/networks.htm. In the unlikely event a captured marine mammal or sea turtle dies, or is severely injured, all activities will cease and researchers will contact the NMFS Office of Protected Resources.

Avoiding Harm to USFWS Listed Species

(The following conditions were provided by the USFWS to limit interactions and avoid injury to endangered Florida manatee)

Methods provided to avoid capture of Florida manatee

1) Personnel must be informed that it is illegal to harm, harass, or otherwise "take" manatees, and to obey posted manatee protection speed zone, Federal manatee sanctuary and refuge restrictions, and other similar state and local regulations while conducting in-water activities. Such information shall be provided in writing to all vessel personnel.
2) Crew involved in research activities must wear polarized sunglasses to reduce glare while on the water and keep a look out for manatee. The crew shall include at least one member dedicated to watching for manatee during all in-water activities.
3) All vessels engaged in netting and trapping shall operate at the slowest speed consistent with those activities. All netting and trapping shall be restricted to the hours between one-half hour after sunrise to one-half hour before sunset.
4) Rope attaching floats to nets will not have kinks or contain slack to entangle manatee.
5) All nets must be continuously monitored. Netting activities must cease if a manatee is sighted within a 100-foot radius of the research vessel or net, and may resume only when the animal is no longer within this safety zone, or 30 minutes has elapsed since the manatee was observed.

Methods provided to avoid injury if manatee are accidentally captured

1) Devote all research staff efforts to freeing the animal. Remember that a manatee must breathe and surface approximately every 4 minutes. The PI must brief all research participants to ensure that they understand that freeing a manatee can be dangerous. This briefing would caution people to keep fingers out of the nets, that no jewelry should be worn, that they be careful to stay away from the manatee's paddle, and that they give the animal adequate time and room to breathe as they are freeing it. 2) As appropriate, turn off vessel or put engine in neutral to avoid injury. 3) Release tension on the net allowing the animal to free itself. Exercise caution when attempting to assist the animal. Manatees are docile animals but can thrash violently if captured or become entangled. A 1,200 to 3,500 pound manatee can cause extensive damage to nets while trying to escape or breathe, so quick action is essential to protect both the manatee and the net. Ensure that the animal does not escape with net still attached to it. 4) Report any gear or vessel interactions

with manatees and immediately contact employee X of the U.S. Fish and Wildlife Service; OR contact the Georgia Department of Natural Resources, Wildlife Res. Div., Non-game & Endangered Wildlife Program**,** and NMFS, Chief, Permits, Conservation and Education Division as soon as possible. Interactions with manatees should also be documented with location, date, estimated size, water & air temp, any scar patterns and photos if possible, using the Manatee Sighting Report published by the Georgia DNR.

Using BMPs

The applicants must use BMPs described in the NMFS Technical Memorandum "Protocols for Use of Shortnose, Atlantic, Gulf, and Green Sturgeons" (Kahn and Mohead 2010; see http://www.cio.noaa.gov/Policy_Programs/prplans/ID150_KahnandMohead2010.pdf).

Preventing the Spread of Aquatic Nuisance Species

To prevent potential spread of aquatic nuisance species identified in the watershed, all equipment assigned to the research will not be reassigned to other watersheds until the research is completed or is suspended. If the research has been completed or is suspended, all gear and equipment used will be bleached, washed and air dried before being redeployed to another location. All research must comply with State aquatic nuisance regulations.

6.2 Adaptive Management

After the initial development of mitigation measures, projects are then monitored, evaluated, and adapted to improve mitigation effectiveness as part of an adaptive management framework. This iterative adaptive management process has been recognized by NMFS as important (see NEPA Task Force 2003) given possible unanticipated changes in environmental conditions and inaccurate predictions. As new information comes in or conditions change, this management approach allows these programs and partner organizations to implement lessons learned during the execution of various projects to improve mitigation effectiveness. These three grant programs strive to make information available to all interested parties in order to capture and share learning to improve projects in real time while also providing information that will inform future mitigation and BMPs.

7.0 APPLICABLE LAWS

7.1 National Environmental Policy Act (NEPA)

The National Environmental Policy Act (NEPA) is the primary law directing the preparation of this PEA. Other Federal laws and policies require environmental, economic, and socioeconomic analysis of proposed Federal actions. Given the programmatic nature of the Preferred Alternative, compliance with additional statutory processes is not required. The summary of applicable laws is provided here as one or more of these laws will likely apply to review and approval of individual projects for funding during project-level decisionmaking. NEPA (42 United States Code [USC] 4331, et seq.) establishes the U.S. national environmental policy and provides an interdisciplinary framework for environmental planning and decision-making by Federal agencies, and contains action-forcing procedures to ensure that Federal decision-makers take environmental factors into account prior to making decisions that impact the human environment. NEPA does not require that the most environmentally desirable alternative be chosen, but does require that the environmental effects of all the alternatives be analyzed equally for the benefit of decision makers and the public. NEPA has two principal purposes:

1) To require Federal agencies to evaluate the potential environmental effects of any major proposed Federal action to ensure that public officials make well-informed decisions about the potential impacts.

2) To promote public awareness of potential impacts at the earliest planning stages of proposed major Federal actions by requiring Federal agencies to prepare a detailed environmental evaluation for any major Federal action significantly affecting the quality of the human environment.

EAs are prepared to assist in making a determination as to whether impacts are potentially significant when it is not apparent that an Environmental Impact Statement (EIS) is required from the outset. NEPA requires an assessment of both the biological and the social and economic consequences of the proposed action and reasonable alternatives. It also requires that members of the public be informed of environmental impacts and issues and have an opportunity to be involved in and to influence decision making on Federal actions. In short, NEPA ensures that environmental information is available to government officials and the public before decisions are made and actions taken.

Title II, Section 202 of NEPA (42 USC 4332) created the Council on Environmental Quality (CEQ). The CEQ is responsible for the development and oversight of regulations and procedures implementing NEPA. The CEQ regulations provide guidance for Federal agencies regarding NEPA's requirements (40 Code of Federal Regulations [CFR] Part 1500) and require agencies to identify processes for issue scoping, consideration of alternatives, developing evaluation procedures, involving the public and reviewing public input, and coordinating with other agencies.

NOAA has prepared environmental review procedures for implementing NEPA (NOAA

Administrative Order 216-6). This Administrative Order describes NOAA's policies, requirements, and procedures for complying with NEPA and the implementing regulations issued by the CEQ. The Administrative Order also expands on guidance for consideration of cumulative impacts and "tiering" in the environmental review of NOAA actions.

7.2 Endangered Species Act (ESA)

The ESA of 1973 as amended (16 USC 1531, et seq.), provides for the conservation of endangered and threatened species of fish, wildlife, and plants. The program is administered jointly by NMFS and the U.S. Fish and Wildlife Service (USFWS), with some exceptions - NMFS oversees marine mammal species, marine and anadromous fish species, and marine plant species and the USFWS oversees walrus, sea otter, seabird species, and terrestrial and freshwater wildlife and plant species.

The listing of a species as threatened or endangered is based on the biological health of that species. Threatened species are those likely to become endangered in the foreseeable future (16 USC § 1532[20]). Endangered species are those presently in danger of extinction throughout all or a significant portion of their range (16 USC § 1532[20]). Federal agencies are prohibited from taking actions that are likely to jeopardize the continued existence of a listed species.

In addition to listing species under the ESA, the appropriate expert agency (NMFS or USFWS) must designate critical habitat of the newly listed species within a year of its listing to the "maximum extent prudent and determinable" (16 USC § 1533[b][1][A]). The ESA defines critical habitat for occupied areas as those specific areas within the geographic area occupied by the species at the time of its listing that contain biological or physical features essential to the conservation of a listed species and that may be in need of special consideration or protection. For unoccupied areas, the Secretary may designate critical habitat only if he determines that such areas are essential to conservation of the species. Federal agencies are prohibited from undertaking actions that destroy or adversely modify designated critical habitat. Some species, primarily the cetaceans (whales), which were listed in 1969 under the Endangered Species Conservation Act and carried forward as endangered under the ESA, have not received critical habitat designations.

Federal agencies have an affirmative mandate to conserve listed species. One assurance of this is that Federal actions, activities, or authorizations must be in compliance with the provisions of the ESA. Section 7 of the ESA provides a mechanism for consultation by the Federal action agency with the appropriate expert agency. Section 7 consultations provide a framework by which Federal agencies, with the assistance of the expert agency, can ensure that their actions are not likely to jeopardize listed species or result in the destruction or adverse modification of critical habitat, exempt incidental take from the general prohibition in Section 9 of the ESA, and obtain recommendations on how to conserve listed species. Informal consultations are conducted for Federal actions that are not likely to result in adverse effects on the listed species and typically result in letters of concurrence from the expert agency. If the action agency or expert agency concludes that a proposed action may have adverse effects on a listed species, including take of any listed species, they must enter formal consultations under Section 7 of the ESA. The expert agency must then write a Biological Opinion (BiOp) that determines whether the proposed action

places the listed species in jeopardy of extinction or adversely modifies or destroys its critical habitat. If the BiOp concludes the proposed (or ongoing) action will cause jeopardy to the species or adversely modify or destroy its critical habitat (collectively referred to as "jeopardy" or "jeopardize"), it must also include reasonable and prudent alternatives that would modify the action so it no longer posed jeopardy to the listed species. These reasonable and prudent alternatives must generally be incorporated into the Federal action if it is to proceed. Regardless of whether the BiOp reaches a jeopardy or no jeopardy conclusion, it often contains a series of mandatory and/or recommended management measures the action agency must implement to further reduce the negative impacts to the listed species and critical habitat (50 CFR 402.24[j]). If the proposed action would likely involve the taking of any listed species, the expert agency must include an incidental take statement to the BiOp to authorize the amount of incidental take that is expected to occur from normal promulgation of the action. Incidental take statements must specify the extent or amount of take anticipated and prescribe mandatory terms and conditions to avoid or minimize take. Terms and conditions must be implemented and monitored in order for the exemption to the prohibition on take to apply. If take occurs in a manner not anticipated or exceed the amount or level specified, formal consultation must be re-initiated with the expert agency.

7.3 Marine Mammal Protection Act (MMPA)

The MMPA of 1972 (16 USC 1361 et seq.), as amended, prohibits the take of marine mammals in U.S. waters and by U.S. citizens on the high seas, and the importation of marine mammals and marine mammal products into the U.S. The primary management objective of the MMPA is to maintain the health and stability of the marine ecosystem, with a goal of obtaining an optimum sustainable population of marine mammals within the carrying capacity of the habitat. The MMPA is intended to work in concert with the provisions of the ESA. The Secretary is required to give full consideration to all factors regarding regulations applicable to the take of marine mammals, including the conservation, development, and utilization of fishery resources, and the economic and technological feasibility of implementing the regulations.
Section 101(a)(5) (A-D) of the MMPA provides a mechanism for allowing, upon request, the "incidental", but not intentional, taking, of small numbers of marine mammals by U.S. citizens who engage in a specified activity (other than commercial fishing or directed research on marine mammals) within a specified geographic region. NMFS Office of Protected Resources processes applications for incidental takes of small numbers of marine mammals under conditions described on their website: http://www.nmfs.noaa.gov/pr/permits/incidental.htm#applications. If a proper and complete application is submitted, NMFS Office of Protected Resources may authorize incidental takes of marine mammals through either a one-year Incidental Harassment Authorization or Letters of Authorization (LOA), which may be issued after development of regulations. An LOA can cover activities for up to five years. Actions that may result in serious injury or mortality to a marine mammal cannot be authorized under an IHA. They must be the subject of a rulemaking followed by issuance of an LOA. Both IHAs and LOAs must be based on findings that the take authorized will result in a minor impact on marine mammals stocks or species and not result in an unmitigable adverse impact on the availability of such species for subsistence use. They must also prescribe mitigation and monitoring measures to result in the least practicable adverse effect.

7.4 Magnuson-Stevens Conservation and Management Act (MSA)

In 1976, Congress passed the Magnuson-Stevens Act (16 USC 1801, et seq.). This law authorized the U.S. to manage its fishery resources in an area extending from a State's territorial sea (extending in general and in Alaska to 3 nm from shore) to 200 nm (4.8 kilometers [km] to 320 km) off its coast (termed the Exclusive Economic Zone [EEZ]).

The Essential Fish Habitat (EFH) provisions of the Magnuson-Stevens Act require NMFS to provide recommendations to Federal and State agencies for conserving and enhancing EFH, for any actions that may adversely impact EFH. EFH is defined as "…those waters and substrate necessary to fish for spawning, breeding, feeding, or growth to maturity…". Federal agencies must consult with NMFS and assess the potential adverse effects of their actions on EFH. While there is no separate permit or authorization process, agencies proposing actions that may adversely affect EFH must consult with NMFS, must obtain and consider conservation recommendations to avoid or minimize adverse effects and document the rationale for decisions to proceed without implementing such recommendations. EFH consultation is typically addressed during the NEPA process and incorporated into other permits.

7.5 Migratory Bird Treaty Act (MBTA)

The MBTA protects approximately 836 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 USFWS often requests that other agencies address impacts to migratory birds in NEPA documents and incorporate applicable MBTA mitigation measures as stipulations in their permits.

7.6 Fish and Wildlife Coordination Act (FWCA)

The FWCA requires USFWS and NMFS to consult with other State and Federal agencies in a broad range of situations to help conserve fish and wildlife populations and habitats in cases where Federal actions affect natural water bodies. Specific provisions involve conservation or expansion of migratory bird habitats related to water body impoundments or other modifications. FWCA requires consultation among agencies and the incorporation of recommended conservation measures if feasible, but does not involve a separate permit or authorization process.

7.7 National Historic Preservation Act (NHPA)

Section 106 of the NHPA requires review of any project funded, licensed, permitted, or assisted by the Federal government for impact on historic properties. The agencies must consult with the State Historic Preservation Officer (SHPO) and/or the Advisory Council on Historic Preservation, a Federal agency, and provide a reasonable opportunity for their comment on a project. Consultations may result in Section 106 compliance agreements, either a Memorandum

of Agreement or a Programmatic Agreement. If a Federal undertaking will occur on tribal lands, consultation would occur with a Tribal Historic Preservation Officer if one has been designated to carry out Section 106 responsibilities on behalf of the tribe.

7.8 Government to Government Relationships with Tribes

The longstanding and distinctive relationship between the Federal and tribal governments is defined by treaties, statutes, executive orders, judicial decisions, and agreements, which differentiate tribal governments from the other entities that deal with, or are affected by, the Federal Government. This relationship has given rise to a special Federal trust responsibility involving the legal responsibilities and obligations of the United States toward federally recognized Indian Tribes and the application of fiduciary standards of due care with respect to Indian lands, tribal trust resources, and the exercise of tribal rights. Executive Order 13175, Consultation and Coordination with Indian Tribal Governments, outlines the responsibilities of the Federal Government in matters affecting tribal interests. Tribes will be consulted under the circumstances specified on a government-to-government basis per E.O. 13175.

7.9 Executive Order 12989, Environmental Justice

EO 12898 directs Federal agencies to take the appropriate and necessary steps to identify and address disproportionately high and adverse effects of Federal projects on the health or environment of minority and low-income populations to the greatest extent practicable and permitted by law. No such effects are identified in this EA.

7.10 Information Quality Act

Pursuant to NOAA guidelines implementing Section 515 of Public Law 106-554 (the Data Quality Act), all information products released to the public must first undergo a Pre-Dissemination Review to ensure and maximize the quality, objectivity, utility, and integrity of the information (including statistical information) disseminated by or for Federal agencies. The following sections address these requirements.

7.10.1 Utility

The information presented in this document is helpful to the intended users (the affected public) by presenting a clear description of the purpose and need of the proposed action, the measures proposed, and the impacts of those measures. A discussion of the reasons for selecting the proposed action is included so that intended users may have a full understanding of the proposed action and its implications.

This document is the principal means by which the information contained herein is available to the public. The information provided in this document is based on the most recent available information from the relevant data sources. The development of this document and the decisions made by NMFS to propose this action are the result of a multi-stage public process.
This document is available in several formats, including printed publication and CD-ROM, upon request.

7.10.2 Integrity

Prior to dissemination, information associated with this action, independent of the specific intended distribution mechanism, is safeguarded from improper access, modification, or destruction, to a degree commensurate with the risk and magnitude of harm that could result from the loss, misuse, or unauthorized access to or modification of such information. All electronic information disseminated by NMFS adheres to the standards set out in Appendix III, "Security of Automated Information Resources," of Office of Management and Budget (OMB) Circular A-130; the Computer Security Act; and the Government Information Security Act. All confidential information is safeguarded pursuant to the Privacy Act; Titles 13, 15, and 22 of the USC (confidentiality of census, business, and financial information); the Confidentiality of Statistics provisions of the Magnuson-Stevens Act; and NOAA Administrative Order 216-100, Protection of Confidential Fisheries Statistics.

7.10.3 Objectivity

For purposes of the Pre-Dissemination Review, this document is considered to be a "Natural Resource Plan." Accordingly, the document adheres to the published standards of NOAA Administrative Order (NAO) 216-6, Environmental Review Procedures for Implementing NEPA.

This document uses information of known quality from sources acceptable to the relevant scientific and technical communities. Other information is presented that has been accepted and published in peer-reviewed journals or by scientific organizations.
Despite current data limitations, the measures proposed for this action were selected based upon the best scientific information available. The analyses conducted in support of the proposed action were conducted using up to date information. The data used in the analyses provide the best available information.

The policy choices are clearly articulated, in sections of this document, as the management alternatives considered in this action. The supporting science and analyses, upon which the policy choices are based, have been documented. All supporting materials, information, data, and analyses within this document have been, to the maximum extent practicable, properly referenced according to commonly accepted standards for scientific literature to ensure transparency.

The review process used in preparation of this document involved staff from the Office of Protected Resources. Final approval of the action proposed in this document and clearance of any rules prepared to implement resulting regulations was conducted by staff at NMFS Headquarters and the NOAA Office of Program Planning and Integration.

7.11 Paperwork Reduction Act

The purpose of the Paperwork Reduction Act is to reduce the paperwork burden on the public. The Director of the Office of Management and Budget (OMB) has the authority to manage

information collection and record keeping requirements in order to reduce paperwork burdens. This authority encompasses the establishment of guidelines and policies and the approval of information collection requests. The actions in this document do not contain any new collection-of-information requirements of the public subject to the Paperwork Reduction Act.

7.12 Coastal Zone Management Act (CZMA)

The principal objective of the CZMA is to encourage and assist states in developing coastal management programs, to coordinate State activities, and to safeguard regional and national interest in the coastal zone. Section 307(c) of the CZMA requires Federal activity affecting the land or water uses or natural resources of a state's coastal zone to be consistent with that state's approved coastal management program, to the maximum extent practicable. Federally sponsored projects impacting coastal zones may require preparation of consistency determinations and the request for concurrence by affected states.

7.13 Executive Order 13089. Coral Reef Protection

7.13.1 Section 2- Policy.

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

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

(1) during time of war or national emergency;

(2) when necessary for reasons of national security, as determined by the President;

(3) during emergencies posing an unacceptable threat to human health or safety or to the marine environment and admitting of no other feasible solution; or

(4) in any case that constitutes a danger to human life or a real threat to vessels, aircraft, platforms, or other man-made structures at sea, such as cases of force majeure caused by stress of weather or other act of God.

7.13.2 Section 3- Federal Agency Responsibilities.

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

7.14 National Marine Sanctuaries Act

Section 304(d) of the National Marine Sanctuaries Act (NMS) requires federal agencies whose actions are "likely to destroy, cause the loss of, or injure a sanctuary resource," to consult with the National marine Sanctuary program before taking the action. The program is, in these cases, is required to recommend reasonable and prudent alternatives to protect sanctuary resources.

8.0 LIST OF PREPARERS AND AGENCIES CONSULTED

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Appendix A. NMFS ESA Listed Species (as of April 12th, 2011) excluding Pacific Salmonids*

* Projects focusing on ESA listed Pacific salmonids are not funded under any of the grant programs covered under this PEA. NOAA may fund such efforts under the Pacific Coastal Salmon Recovery Fund (see http://www.nwr.noaa.gov/Salmon-Recovery-Planning/PCSRF/Index.cfm). These species are identified in Table 3.3-4 since they could be indirectly affected by projects funded through any of these grant programs.

Species	ESA Status	Species Information
Atlantic salmon (*Salmo salar*)- Gulf of Maine DPS	E	http://www.nmfs.noaa.gov/pr/species/fish/atlanticsalmon.htm
Beluga Whale (*Delphinapterus leucas*)	E	http://www.nmfs.noaa.gov/pr/species/mammals/cetaceans/belugawhale.htm
Black Abalone (*Haliotis cracherodii*)	E	http://www.nmfs.noaa.gov/pr/species/invertebrates/blackabalone.htm
Blue Whale (*Balanenoptera musculus*)	E	http://www.nmfs.noaa.gov/pr/species/mammals/cetaceans/bluewhale.htm
Bocaccio Rockfish (*Sebastes paucispinis*)- Puget Sound/Georgia Basin DPS	E	http://www.nmfs.noaa.gov/pr/species/fish/bocaccio.htm
Bowhead Whale (*Balaena mysticetus*)	E	http://www.nmfs.noaa.gov/pr/species/mammals/cetaceans/bowheadwhale.htm
Canary Rockfish (*Sebastes pinniger*)- Puget Sound/Georgia Basin DPS	T	http://www.nmfs.noaa.gov/pr/species/fish/canaryrockfish.htm
Elkhorn Coral (*Acropora palmata*)	T	http://www.nmfs.noaa.gov/pr/species/invertebrates/elkhorncoral.htm
Fin Whale (*Balaenoptera physalus*)	E	http://www.nmfs.noaa.gov/pr/species/mammals/cetaceans/finwhale.htm
Green Sturgeon (*Acipenser medirostris*)- Southern DPS	T	http://www.nmfs.noaa.gov/pr/species/fish/greensturgeon.htm
Green Turtle (*Chelonia mydas*)		
breeding pops in Florida and Pacific Coast of Mexico	E	http://www.nmfs.noaa.gov/pr/species/turtles/green.htm
all other pops	T	http://www.nmfs.noaa.gov/pr/species/turtles/green.htm
Guadalupe Fur Seal (*Arctocephalus townsendi*)	T	http://www.nmfs.noaa.gov/pr/species/mammals/pinnipeds/guadalupefurseal.htm
Gulf Sturgeon (*Acipenser oxyrinchus desotoi*)	T	http://www.nmfs.noaa.gov/pr/species/fish/gulfsturgeon.htm
Hawaiian Monk Seal (*Monachus schauinslandi*)	E	http://www.nmfs.noaa.gov/pr/species/mammals/pinnipeds/hawaiianmonkseal.htm
Hawksbill Turtle (*Eretmochelys imbricata*)	E	http://www.nmfs.noaa.gov/pr/species/turtles/hawksbill.htm
Humpback Whale (*Megaptera novaengliae*)	E	http://www.nmfs.noaa.gov/pr/species/mammals/cetaceans/humpbackwhale.htm
Johnson's Seagrass (*Halophilia johnsonii*)	T	http://www.nmfs.noaa.gov/pr/species/plants/johnsonsseagrass.htm
Kemp's Ridley Turtle (*Lepidochelys kempii*)	E	http://www.nmfs.noaa.gov/pr/species/turtles/kempsridley.htm
Killer Whale (*Orcinus orca*)- Southern Resident DPS	E	http://www.nmfs.noaa.gov/pr/species/mammals/cetaceans/killerwhale.htm
Leatherback Turtle (*Dermochelys coriacea*)	E	http://www.nmfs.noaa.gov/pr/species/turtles/leatherback.htm
Loggerhead Turtle (*Caretta caretta*)	E	http://www.nmfs.noaa.gov/pr/species/turtles/loggerhead.htm
North Atlantic Right Whale (*Eubalaena glacialis*)	E	http://www.nmfs.noaa.gov/pr/species/mammals/cetaceans/rightwhale_northatlantic.htm
North Pacific Right Whale (*Eubalaena japonica*)	E	http://www.nmfs.noaa.gov/pr/species/mammals/cetaceans/rightwhale_northpacific.htm
Olive Ridley Turtle (*Lepidochelys olivacea*)		http://www.nmfs.noaa.gov/pr/species/turtles/oliveridley.htm
breeding pops on Pacific Coast of Mexico	E	http://www.nmfs.noaa.gov/pr/species/turtles/oliveridley.htm
all other pops	T	http://www.nmfs.noaa.gov/pr/species/turtles/oliveridley.htm
Pacific Eulachon/Smelt (*Thaleichthys pacificus*)	T	http://www.nmfs.noaa.gov/pr/species/fish/pacificeulachon.htm
Sei Whale (*Balaenoptera borealis*)	E	http://www.nmfs.noaa.gov/pr/species/mammals/cetaceans/seiwhale.htm
Shortnose Sturgeon (*Acipenser brevirostrum*)	E	http://www.nmfs.noaa.gov/pr/species/fish/shortnosesturgeon.htm
Smalltooth Sawfish (*Pristis pectinata*)	E	http://www.nmfs.noaa.gov/pr/species/fish/smalltoothsawfish.htm
Sperm Whales (*Physeter macrocephalus*)	E	http://www.nmfs.noaa.gov/pr/species/mammals/cetaceans/spermwhale.htm
Staghorn Coral (*Acropora cervicornis*)	T	http://www.nmfs.noaa.gov/pr/species/invertebrates/staghorncoral.htm
Steller Sea Lion (*Eumetopias jubatus*)- Eastern DPS	T	http://www.nmfs.noaa.gov/pr/species/mammals/pinnipeds/stellersealion.htm
Steller Sea Lion (*Eumetopias jubatus*)- Western DPS	E	http://www.nmfs.noaa.gov/pr/species/mammals/pinnipeds/stellersealion.htm
Totoaba (*Totoaba macdonaldi*)- Puget Sound/Georgia Basin DPS	E	http://www.nmfs.noaa.gov/pr/species/fish/totoaba.htm
White Abalone (*Haliotis sorenseni*)	E	http://www.nmfs.noaa.gov/pr/species/invertebrates/whiteabalone.htm
Yelloweye Rockfish (*Sebastes ruberrimus*)- Puget Sound/Georgia Basin DPS	T	http://www.nmfs.noaa.gov/pr/species/fish/yelloweyerockfish.htm

Appendix B. NMFS ESA Candidate/Proposed/Delisted Species (as of April 12th, 2011).
(C=Candidate, PT=Proposed Threatened, PE= Proposed Endangered, D=Delisted)

Species	Status	Species Information
82 Coral Species	C	http://www.nmfs.noaa.gov/pr/species/invertebrates/corals.htm
Atlantic Bluefin Tuna (*Thunnus thynnus*)	C	http://www.nmfs.noaa.gov/pr/species/fish/bluefintuna.htm
Atlantic Sturgeon (*Acipenser oxyrinchus oxyrinchus*)	C	http://www.nmfs.noaa.gov/pr/species/fish/atlanticsturgeon.htm
Bearded Seal (*Erignathus barbatus*)	PT	http://www.nmfs.noaa.gov/pr/species/mammals/pinnipeds/beardedseal.htm
Bumphead Parrotfish (*Bolbometopon muricatum*)	C	http://www.nmfs.noaa.gov/pr/species/fish/bumpheadparrotfish.htm
Cusk (*Brosme brosme*)	C	http://www.nmfs.noaa.gov/pr/species/fish/cusk.htm
Eastern North Pacific Gray Whale (*Eschrichtius robustus*)	D	http://www.nmfs.noaa.gov/pr/species/mammals/cetaceans/graywhale.htm
False Killer Whale (*Pseudorca crassidens*)	PE	http://www.nmfs.noaa.gov/pr/species/mammals/cetaceans/falsekillerwhale.htm
Largetooth Sawfish (*Pristis perotteti*)	PE	http://www.nmfs.noaa.gov/pr/species/fish/largetoothsawfish.htm
Loggerhead Sea Turtle		http://www.nmfs.noaa.gov/pr/species/turtles/loggerhead.htm
South Atlantic Ocean DPS	PT	http://www.nmfs.noaa.gov/pr/species/turtles/loggerhead.htm
Southwest Indian Ocean DPS	PT	http://www.nmfs.noaa.gov/pr/species/turtles/loggerhead.htm
Mediterranean Sea DPS	PE	http://www.nmfs.noaa.gov/pr/species/turtles/loggerhead.htm
North Indian Ocean DPS	PE	http://www.nmfs.noaa.gov/pr/species/turtles/loggerhead.htm
North Pacific Ocean DPS	PE	http://www.nmfs.noaa.gov/pr/species/turtles/loggerhead.htm
Northeast Atlantic Ocean DPS	PE	http://www.nmfs.noaa.gov/pr/species/turtles/loggerhead.htm
Northwest Atlantic Ocean DPS	PE	http://www.nmfs.noaa.gov/pr/species/turtles/loggerhead.htm
South Pacific Ocean DPS	PE	http://www.nmfs.noaa.gov/pr/species/turtles/loggerhead.htm
Southeast Indo-Pacific Ocean DPS	PE	http://www.nmfs.noaa.gov/pr/species/turtles/loggerhead.htm
Pacific Herring (*Clupea pallasii*)	C	http://www.nmfs.noaa.gov/pr/species/fish/pacificherring.htm
Ringed Seal (*Phoca hispida*)	PT	http://www.nmfs.noaa.gov/pr/species/mammals/pinnipeds/ringedseal.htm

Appendix C. NMFS Species of Concern (as of April 12th, 2011).

Species	Species Information
Alabama Shad (*Alosa alabamae*)	http://www.nmfs.noaa.gov/pr/species/fish/alabamashad.htm
Alewife (*Alosa pseudoharengus*)	http://www.nmfs.noaa.gov/pr/species/fish/alewife.htm
Atlantic Halibut (*Hippoglossus hippoglossus*)	http://www.nmfs.noaa.gov/pr/species/fish/atlantichalibut.htm
Atlantic Sturgeon (*Acipenser oxyrinchus oxyrinchus*)	http://www.nmfs.noaa.gov/pr/species/fish/atlanticsturgeon.htm
Atlantic Wolffish (*Anarchias lupus*)	http://www.nmfs.noaa.gov/pr/species/fish/atlanticwolffish.htm
Basking Shark (*Cetorhinus maximus*)- Eastern North Pacific population	http://www.nmfs.noaa.gov/pr/species/fish/baskingshark.htm
Blueback Herring (*Alosa aestivalis*)	http://www.nmfs.noaa.gov/pr/species/fish/bluebackherring.htm
Bocaccio (*Sebastes paucispinis*)- Southern DPS	http://www.nmfs.noaa.gov/pr/species/fish/bocaccio.htm
Bumphead Parrotfish (*Bolbometopon muricatum*)	http://www.nmfs.noaa.gov/pr/species/fish/bumpheadparrotfish.htm
Chinook Salmon (Oncorhynchus tshawytscha)- Central Valley Fall and Late Fall runs ESU	http://www.nwr.noaa.gov/ESA-Salmon-Listings/Salmon-Populations/Chinook/CKCVF.cfm
Coho Salmon (*Oncorhynchus kisutch*)- Puget Sound/Strait of Georgia ESU	http://www.nwr.noaa.gov/ESA-Salmon-Listings/Salmon-Populations/Coho/COPUG.cfm
Cowcod (*Sebastes levis*)	http://www.nmfs.noaa.gov/pr/species/fish/cowcod.htm
Cusk (*Brosme brosme*)	http://www.nmfs.noaa.gov/pr/species/fish/cusk.htm
Dusky Shark (*Carcharhinus obscurus*)	http://www.nmfs.noaa.gov/pr/species/fish/duskyshark.htm
Green Abalone (*Haliotis fulgens*)	http://www.nmfs.noaa.gov/pr/species/invertebrates/greenabalone.htm
Green Sturgeon (*Acipenser medirostris*)- Northern DPS	http://www.nmfs.noaa.gov/pr/species/fish/greensturgeon.htm
Hawaiian Reef Coral (*Montipora dilatata*)	http://www.nmfs.noaa.gov/pr/species/invertebrates/hawaiianreefcoral.htm
Humphead Wrasse (*Cheilinus undulatus*)	http://www.nmfs.noaa.gov/pr/species/fish/humpheadwrasse.htm
Inarticulated Brachiopod (*Lingula reevii*)	http://www.nmfs.noaa.gov/pr/species/invertebrates/inarticulatedbrachiopod.htm
Ivory Tree Coral (*Oculina varicosa*)	http://www.nmfs.noaa.gov/pr/species/invertebrates/ivorytreecoral.htm
Key Silverside (*Menidia conchorum*)	http://www.nmfs.noaa.gov/pr/species/fish/keysilverside.htm
Largetooth Sawfish (*Pristis perotteti*)	http://www.nmfs.noaa.gov/pr/species/fish/largetoothsawfish.htm
Mangrove Rivulus (*Rivulus marmoratus*)	http://www.nmfs.noaa.gov/pr/species/fish/mangroverivulus.htm
Nassau Grouper (*Epinephelus striatus*)	http://www.nmfs.noaa.gov/pr/species/fish/nassaugrouper.htm
Opossum Pipefish (*Microphis brachyura lineatus*)	http://www.nmfs.noaa.gov/pr/species/fish/opossumpipefish.htm
Pacific Hake (*Merluccis productus*)- Georgia Basin DPS	http://www.nmfs.noaa.gov/pr/species/fish/pacifichake.htm
Pink Abalone (*Haliotis corrugata*)	http://www.nmfs.noaa.gov/pr/species/invertebrates/pinkabalone.htm
Pinto Abalone (*Haliotis kamtschatkana*)	http://www.nmfs.noaa.gov/pr/species/invertebrates/pintoabalone.htm
Porbeagle Shark (*Lamna nasus*)	http://www.nmfs.noaa.gov/pr/species/fish/porbeagleshark.htm
Rainbow Smelt (*Osmerus mordax*)	http://www.nmfs.noaa.gov/pr/species/fish/rainbowsmelt.htm
Ribbon Seal (*Histriophoca fasciata*)	http://www.nmfs.noaa.gov/pr/species/mammals/pinnipeds/ribbonseal.htm
Saltmarsh Topminnow (*Fundulus jenkinsi*)	http://www.nmfs.noaa.gov/pr/species/fish/saltmarshtopminnow.htm
Sand Tiger Shark (*Carcharias taurus*)	http://www.nmfs.noaa.gov/pr/species/fish/sandtigershark.htm
Speckled Hind (*Epinephelus drummondhayi*)	http://www.nmfs.noaa.gov/pr/species/fish/speckledhind.htm
Steelhead Trout (*Oncorhynchus mykiss*)- Oregon Coast ESU	http://www.nwr.noaa.gov/ESA-Salmon-Listings/Salmon-Populations/Steelhead/STORC.cfm
Striped Croaker (*Bairdella sanctaeluciae*)	http://www.nmfs.noaa.gov/pr/species/fish/stripedcroaker.htm
Thorny Skate (*Amblyraja radiata*)	http://www.nmfs.noaa.gov/pr/species/fish/thornyskate.htm
Warsaw Grouper (*Epinephelus nigritus*)	http://www.nmfs.noaa.gov/pr/species/fish/warsawgrouper.htm

Appendix D. NMFS ESA Listed Pacific Salmonids* (as of April 12th, 2011).

Species	ESA Status	Species Information
Chinook Salmon (*Oncorhynchus tshawytscha*)		http://www.nmfs.noaa.gov/pr/species/fish/chinooksalmon.htm
California Coastal Chinook ESU	T	http://www.nwr.noaa.gov/ESA-Salmon-Listings/Salmon-Populations/Chinook/CKCAC.cfm
Central Valley Spring-Run Chinook ESU	T	http://www.nwr.noaa.gov/ESA-Salmon-Listings/Salmon-Populations/Chinook/CKCVS.cfm
Lower Columbia River Chinook ESU	T	http://www.nwr.noaa.gov/ESA-Salmon-Listings/Salmon-Populations/Chinook/CKLCR.cfm
Upper Columbia River Spring-Run Chinook ESU	E	http://www.nwr.noaa.gov/ESA-Salmon-Listings/Salmon-Populations/Chinook/CKUCS.cfm
Puget Sound Chinook ESU	T	http://www.nwr.noaa.gov/ESA-Salmon-Listings/Salmon-Populations/Chinook/CKPUG.cfm
Sacramento River Winter-Run Chinook ESU	E	http://www.nwr.noaa.gov/ESA-Salmon-Listings/Salmon-Populations/Chinook/CKSAC.cfm
Snake River Fall-Run Chinook ESU	T	http://www.nwr.noaa.gov/ESA-Salmon-Listings/Salmon-Populations/Chinook/CKSRF.cfm
Snake River Spring/Summer-Run Chinook ESU	T	http://www.nwr.noaa.gov/ESA-Salmon-Listings/Salmon-Populations/Chinook/CKSRS.cfm
Upper Willamette River Chinook ESU	T	http://www.nwr.noaa.gov/ESA-Salmon-Listings/Salmon-Populations/Chinook/CKUWR.cfm
Chum Salmon (Oncorhynchus keta)		http://www.nmfs.noaa.gov/pr/species/fish/chumsalmon.htm
Columbia River Chum ESU	T	http://www.nwr.noaa.gov/ESA-Salmon-Listings/Salmon-Populations/Chum/CMCOL.cfm
Hood Canal Summer-Run Chum ESU	T	http://www.nwr.noaa.gov/ESA-Salmon-Listings/Salmon-Populations/Chum/CMHCS.cfm
Coho Salmon (*Oncorhynchus kisutch*)		http://www.nmfs.noaa.gov/pr/species/fish/cohosalmon.htm
Central California Coast Coho ESU	E	http://www.nwr.noaa.gov/ESA-Salmon-Listings/Salmon-Populations/Coho/COCCA.cfm
Oregon Coast Coho ESU	T	http://www.nwr.noaa.gov/ESA-Salmon-Listings/Salmon-Populations/Coho/COORC.cfm
Southern OR/Northern CA Coasts Coho ESU	T	http://www.nwr.noaa.gov/ESA-Salmon-Listings/Salmon-Populations/Coho/COSNC.cfm
Sockeye Salmon (*Oncorhynchus nerka*)		http://www.nmfs.noaa.gov/pr/species/fish/sockeyesalmon.htm
Ozette Lake Sockeye ESU	T	http://www.nwr.noaa.gov/ESA-Salmon-Listings/Salmon-Populations/Sockeye/SOOZT.cfm
Snake River Sockeye ESU	E	http://www.nwr.noaa.gov/ESA-Salmon-Listings/Salmon-Populations/Sockeye/SOSNR.cfm
Steelhead Trout (*Oncorhynchus mykiss*)		http://www.nmfs.noaa.gov/pr/species/fish/steelheadtrout.htm
Puget Sound Steelhead DPS	T	http://www.nwr.noaa.gov/ESA-Salmon-Listings/Salmon-Populations/Steelhead/STPUG.cfm
Central California Coast Steelhead DPS	T	http://www.nwr.noaa.gov/ESA-Salmon-Listings/Salmon-Populations/Steelhead/STCCC.cfm
Snake River Basin Steelhead DPS	T	http://www.nwr.noaa.gov/ESA-Salmon-Listings/Salmon-Populations/Steelhead/STSNR.cfm
Upper Columbia River Steelhead DPS	T	http://www.nwr.noaa.gov/ESA-Salmon-Listings/Salmon-Populations/Steelhead/STUCR.cfm
Southern California Steelhead DPS	E	http://www.nwr.noaa.gov/ESA-Salmon-Listings/Salmon-Populations/Steelhead/STSCA.cfm
Middle Columbia River Steelhead DPS	T	http://www.nwr.noaa.gov/ESA-Salmon-Listings/Salmon-Populations/Steelhead/STMCR.cfm
Lower Columbia River Steelhead DPS	T	http://www.nwr.noaa.gov/ESA-Salmon-Listings/Salmon-Populations/Steelhead/STLCR.cfm
Upper Willamette River Steelhead DPS	T	http://www.nwr.noaa.gov/ESA-Salmon-Listings/Salmon-Populations/Steelhead/STUWR.cfm
Northern California Steelhead DPS	T	http://www.nwr.noaa.gov/ESA-Salmon-Listings/Salmon-Populations/Steelhead/STNCA.cfm
South-Central California Coast Steelhead DPS	T	http://www.nwr.noaa.gov/ESA-Salmon-Listings/Salmon-Populations/Steelhead/STSCC.cfm
California Central Valley Steelhead DPS	T	http://www.nwr.noaa.gov/ESA-Salmon-Listings/Salmon-Populations/Steelhead/STCCV.cfm

Appendix E. Organization Distribution List.

Alabama Department of Conservation and Natural Resources
Alaska Department of Fish and Game
Aleut Community of St. Paul Island Tribal Government
California Department of Fish and Game
Cascadia Research
Chelonia Inc
Chesapeake Scientific LLC
Coastal Carolina University
Coastal Watershed Institute
College of the Atlantic
Commonwealth of the Northern Mariana Islands
Community and Ecology Resources
Connecticut Department of Environmental Protection
Cornell University
Cowlitz Indian Tribe
Delaware Division of Fish and Wildlife
Delaware State University
Delaware Department of Natural Resources and Environmental Control
Department of Natural and Environmental Resources of Puerto Rico
Duke University
Environmental Research and Consulting, Inc.
Fenn Enterprises
Florida Atlantic University
Florida Fish and Wildlife Conservation Commission
Florida State University
Georgia Department of Natural Resources
Great Land Trust
Greeneridge Sciences, Inc.
Hawaii Department of Land and Natural Resources
Institute for Marine Mammal Studies
Kenaitze Indian Tribe
Knik Tribe
Lower Elwah Klallam Tribe
Maine Coastal Program
Maine Department of Inland Fisheries and Wildlife
Maine Department of Marine Resources
Maine Department of Transportation
Maine Department of Environmental Protection
Makah Tribe
Marine Resources Research Institute
Maryland Department of Natural Resources
Massachusetts Division of Fish and Wildlife
Massachusetts Division of Marine Fisheries
Mississippi Department of Marine Resources

Mississippi Museum of Natural Science
Mote Marine Laboratory
Natural Resources Consultants
New England Aquarium
New Jersey Division of Fish and Wildlife
New York State Department of Environmental Conservation
New York University School of Medicine
National Oceanic and Atmospheric Administration
North Carolina Department of Natural Resources
North Carolina State University
North Carolina Wildlife Resources Commission
Northwest Straits Foundation
Nova Southeastern University
Ocean Works Group, Inc.
Old Dominion University
Oregon Department of Fish and Wildlife
Oregon State University
Pacific Rim Biological
Parks Canada
Penobscot Indian Nation
Penobscot River Restoration Trust
Port Gamble S'Klallam Tribe
Puerto Rico Department of Natural and Environmental Resources
Sewee Association, Inc.
Sitka Tribe
South Carolina Department of Natural Resources
St. George Traditional Council
Stony Brook University
Texas Parks and Wildlife Department
The Nature Conservancy
University of California, Davis
University of Central Florida
University of Delaware
University of Florida
University of Georgia
University of Maine
University of Maryland
University of Massachusetts
University of New England
University of North Carolina at Wilmington
University of Queensland
University of South Alabama
University of South Florida
University of Southern Mississippi
University of the Virgin Islands
University of Washington

U.S. Fish and Wildlife Service
U.S. Geological Survey
Virgin Islands Department of Planning & Natural Resources
Virginia Aquarium & Marine Science Center Foundation, Inc.
Virginia Commonwealth University
Virginia Department of Game and Inland Fisheries
Virginia Institute of Marine Science
Washington Department of Fish and Wildlife
Washington Department of Natural Resources
Whale Center of New England
Whale Museum
Woods Hole Oceanographic Institution
Yurok Tribe

Appendix F. Previously Funded or Ongoing Project NEPA Analysis Summaries.

Program	Year	Awardee	NEPA	Target species	State	Target Actions	Environmental Effects:	Sec 7	Incidental or Direct Take (ESA listed)	EA/S7 Mitigation	Physical Environment	Marine Mammal	Fish, Birds, Inverts	Novel, uncertain, precedent
Tribal	2010	Cowlitz	EA	eulachon	WA, OR	office/lab work, seine/dip netting, genetics sampling	boat transit, bycatch, target animal stress, equipment on substrate	BiOp	none expected	yes	no	no	no	no
Tribal	2010	Yurok	EA	eulachon	CA	office/lab work, seine/dip netting, genetics sampling	boat transit, bycatch, target animal stress, equipment on substrate	BiOp	none expected	yes	no	no	no	no
Tribal	2010	Penob scot	CE	Atlantic salmon	ME	office/lab work, site visits	boat transit	No Effect	none expected	no	no	no	no	no
Sec 6	2010	DE	EA	shortnose and Atlantic sturgeon	DE, NJ, CT	office/lab work, gill netting, telemetry, habitat assessment	boat transit, bycatch, target animal stress, equipment on substrate	NLAA	none expected	yes	no	no	no	no
Sec 6	2010	FL	CE	staghorn/ elkhorn corals	FL, PR, USVI	office/lab work, transects, collections of dead corals	boat transit, equipment on substrate	NLAA	none expected	yes	no	no	no	no
Sec 6	2010	ME	EA	shortnose and Atlantic sturgeon	ME	office/lab work, gill netting, telemetry, habitat assessment	boat transit, bycatch, target animal stress, equipment on substrate	BiOp	shortnose sturgeon	yes	no	no	no	no
Sec 6	2010	MS	EA	Gulf sturgeon	MS	office/lab work, gill netting, telemetry, substrate coring	boat transit, bycatch, target animal stress, equipment on substrate	BiOp	none expected	yes	no	no	no	no
Sec 6	2010	NY	EA	Atlantic sturgeon	ME, NY, NJ, DE, NC	office/lab work, trawl netting, telemetry	boat transit, bycatch, target animal stress, equipment on substrate	NLAA	none expected	yes	no	no	no	no

Sec 6	2010	OR	EA	eulachon	WA, OR	office/lab work, dip/gill netting, plankton tows, trawl netting, egg sampling	boat transit, direct take, bycatch, equipment on substrate	BiOp	direct take	yes	no	no	no	no
Sec 6	2010	OR	EA	green sturgeon	WA, OR	office/lab work, gill netting, telemetry, tissue sampling, tagging	boat transit, bycatch, target animal stress, equipment on substrate	BiOp	minimal salmonid take	yes	no	no	no	no
Sec 6	2010	SC	EA	shortnose and Atlantic sturgeon	NC, SC, GA	office/lab work, gill netting, telemetry, tissue sampling , tagging	boat transit, bycatch, target animal stress, equipment anchors	BiOp	none expected	yes	no	no	no	no
Sec 6	2010	SC	EA	loggerhead sea turtle	NC, SC, GA	office/lab work, genetics sampling, bycatch monitoring, testing motor propeller modifications	boat transit, egg removal/direct take, bycatch, equipment on substrate, target animal stress	BiOp	direct take	yes	no	no	no	no
SOC	2009	DE	CE	sand tiger shark	DE	longlines, tagging, transmitters, receivers	boat transit, bycatch; equipment anchors on substrate, target animal stress	No Effect	none expected	no	no	no	no	no
Sec 6	2009	SC	CE	sea turtles	SC	office/lab work	none	No Effect	none expected	no	no	no	no	no
Sec 6	2009	FL	CE	sea turtles	FL	office/lab work, strandings response	boat transit, target animal stress	NLAA	none expected	no	no	no	no	no
SOC	2008	GA	EA	Alabama shad	ACF system FL, GA	electroshocking, rod and reel, cast nets, tagging, transmitters, receivers	effect of cast nets on habitat, boat transit, bycatch	NLAA concur rence	Gulf sturgeon, mussel	yes	no	no	no	no
SOC	2008	CNMI	CE	bumphead parrotfish, humphead wrasse	CNMI	SCUBA surveys	boat transit	NLAA	none expected	no	no	no	no	no

SOC	2008	MA	CE	sand tiger shark	MA	rod and reel, bottom longline, tagging, transmitters, receivers	boat transit, bycatch, equipment anchors on substrate, target animal stress	No Effect	none expected	no	no	no	no	no
Sec 6	2008	GA	sup EA	loggerhead sea turtle	GA	office/lab work, genetics sampling	boat transit, trampling, egg removal/direct take	BiOp	take limited to low survival age class	yes	no	no	no	no
SOC	2007	ME	EA	Rainbow smelt, Atlantic sturgeon, Atlantic salmon (unlisted)	Gulf of ME	gill and fyke netting, electroshocking, water quality, algae plates, tagging, transmitters, receivers	equipment anchors, bycatch, target animal stress, equipment on substrate	BiOp	shortnose, Atlantic salmon	yes	no	no	no	no
Sec 6	2007	HI	CE	Monk seals and sea turtles	HI	office/lab work, responding to strandings	boat transit, handling stranded animals	No Effect	none expected	no	no	no	no	no
Sec 6	2007	NY	CE	listed species in NY waters	NY	office/lab work	none	No Effect	none expected	no	no	no	no	no
SOC	2006	ME	CE	Rainbow smelt, Atlantic sturgeon, Atlantic salmon (unlisted)	Gulf of ME	stream observation	walking in stream, target animal stress, equipment on substrate	NLAA concur rence	shortnose, Atlantic salmon	no	no	no	no	no
SOC	2006	MS	CE	saltmarsh topminnow	LA, MS, AL, FL	marsh sampling in estuaries with traps, drop samplers, water quality	trampling and equipment on substrate	No Effect	none expected	no	no	no	no	no
Sec 6	2006	GA	EA	loggerhead sea turtle	GA	office/lab work, tissue sampling	boat transit, handling and tissue removal	BiOp	none expected	yes	no	no	no	no

Sec 6	2006	GA	CE	Atlantic sturgeon	GA	office/lab work, gill netting, habitat assessment	boat transit, bycatch, target animal stress, equipment anchors	BiOp	none expected	no	no	no	no	no
Sec 6	2006	NJ	CE	shortnose sturgeon	NJ, NY, DE	office/lab work, monitor eggs and subadults	boat transit, substrate impacts from egg samplers, equipment anchors			no	no	no	no	no
Sec 6	2005	GA	CE	gulf sturgeon, alabama shad	GA, FL	office/lab work, mark recapture, telemetry	boat transit, handling fish, bycatch, target animal stress			no	no	no	no	no
Sec 6	2005	PR	CE	elkhorn coral	PR	office/lab work, scuba/snorkel transect surveys	boat transit, equipment on substrate			no	no	no	no	no
Sec 6	2005	NJ	CE	listed species in NY waters	NY	office work	none			no	no	no	no	no
Sec 6	2005	USVI	CE	leatherback sea turtle	USVI	office work, installing buoys	boat transit, equipment on substrate			no	no	no	no	no
Sec 6	2005	GA	CE	sea turtles	GA	office/lab work, testing motor propeller modifications	boat transit			no	no	no	no	no
Sec 6	2005	NY	CE	Atlantic sturgeon	NY	office/lab work, tagging, telemetry, habitat assessment	boat transit, equipment on substrate, bycatch, target animal stress			no	no	no	no	no
Sec 6	2005	SC	CE	shortnose and Atlantic sturgeon	NC, SC, GA, FL	office/lab work	none			no	no	no	no	no

Sec 6	2004	GA	CE	loggerhead sea turtle	GA	office/lab work, telemetry	trampling and equipment on substrate, target animal stress		no	no	no	no	no
Sec 6	2004	FL	CE	smalltooth sawfish	FL	office/lab work, multi-gear netting	boat transit, equipment on substrate, bycatch, target animal stress		no	no	no	no	no
Sec 6	2004	GA	CE	Atlantic sturgeon	GA	office/lab work, telemetry, drift netting, tagging	boat transit, equipment on substrate, bycatch, target animal stress		no	no	no	no	no