ENVIRONMENTAL ASSESSMENT

NOAA Fisheries' Implementation Plan for the Community-Based Restoration Program

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1.0 NEED AND PURPOSE

1.1 Need

Habitat loss and degradation are major, long-term threats to the sustainability of the Nation's fishery resources. Approximately half of the original 11.7 million acres of coastal wetlands in the lower 48 states were lost during the period from 1780 to 1978 (NOAA 2001). Over 75 percent of commercial fisheries and 80-90 percent of recreational marine and anadromous fishes depend on estuarine, coastal and riverine habitats for all or part of their life-cycles (National Safety Council 1998). Viable coastal and estuarine habitats are important to maintaining healthy fish stocks. In addition to good substrate quality, good water quality in these areas is needed to support healthy fish stocks. Protecting existing, undamaged habitat is a priority and should be combined with coastal and riverine habitat restoration to enlarge and enhance the functionality of degraded habitat (Murphy 1995). Restored coastal and riverine habitat that supports anadromous fish will help rebuild fisheries stocks and recover certain threatened or endangered species. Restoring these habitats will help ensure that valuable resources will be available to future generations of Americans.

1.2 Purpose

NOAA Fisheries began a new Community-Based Restoration Program (CRP) in 1996 to encourage local efforts to restore fish habitats. Program guidance was made available to the public in 2000 (65 Fed. Reg. 16890). Since that time, NOAA has secured funding for 179 small-scale habitat restoration projects around the U.S. coastline. In addition to performing on-the-ground restoration, the majority of these projects possess an outreach or education component to develop natural resource stewardship. The CRP's objective is to bring together citizen groups, public and non-profit organizations, industry, corporations and businesses, youth conservation corps, students, landowners, and local government, state, and federal agencies to implement habitat restoration projects to benefit living marine and anadromous fish resources. Partnerships are sought at the national, regional and local levels to contribute funding, land, technical assistance, workforce support or other in-kind services to allow citizens to participate in the improvement of locally important living marine resources. A monitoring and tracking database, and GIS are being developed that will support regional, watershed-based activities, provide information on project status, and give bases from which to assess the CRP. This tracking system will also help to ensure compliance with implementation requirements.

NOAA Fisheries recognizes the significant role that communities play in habitat restoration and protection and acknowledges that habitat restoration is often best supported and implemented at a community level. These project types are successful because they have significant community support and depend upon citizens' "hands-on" involvement. NOAA Fisheries is interested in strengthening the development and implementation of technically-sound restoration projects. NOAA Fisheries anticipates maintaining the current focus of the CRP by continuing to form strong partnerships to fund grassroots activities that restore habitat and develop stewardship and a conservation ethic for the Nation's living marine resources.

1.2.1 NEPA Compliance

The National Environmental Policy Act of 1969, as amended (42 USC §§ 4321, *et seq*., 40 CFR Parts 1500-1508)(NEPA) was enacted in 1969 to establish a national policy for the protection of the environment. It applies to federal agency actions that have the potential to affect the quality of the human environment. Federal agencies are obligated to comply with NEPA regulations adopted by the Council of Environmental Quality (CEQ). These regulations outline the responsibilities of federal agencies under NEPA and provide specific procedures for preparing environmental documentation to comply with NEPA. NOAA's Administrative Order (NAO) 216-6 describes NOAA's policies, requirements, and procedures for complying with NEPA and the implementing regulations.

Generally, federal agencies begin the NEPA planning process by preparing an Environmental Assessment (EA) to determine whether an action will have a significant effect on the quality of the human environment (40 CFR 1508.27; NAO 216-6, 6.01b). After a period of public review and comment, federal agencies review the comments and make determinations. If an impact is considered significant, an environmental impact statement is issued. If an impact is not considered significant, a Finding of No Significant Impact (FONSI) is issued.

The purpose of this EA is to address NEPA compliance at the program level, as opposed to the specific project level. The EA is intended to accomplish NEPA compliance by: (1) summarizing the current environmental situation, (2) describing the purpose and need for restoration, (3) identifying alternative actions, (4) assessing the potential environmental impacts of the preferred alternative, and (5) summarizing the opportunities for public participation in the decision process.

Three alternatives were considered during the preparation of this EA: The No Action Alternative (not preferred), the Preferred Alternative - Implement Restoration for All Habitats, and the Third, Alternative (not preferred) – Implement Land Acquisition and Preservation Program. The two alternatives that were not selected for implementation under this program are described in sections 3.2 and 3.3. Briefly, the No Action Alternative would discontinue the Community-Based Restoration Program and eliminate any benefits the program provides to living marine resources through habitat restoration, relying instead on natural recovery and other programs. The Third Alternative would fund land acquisition and preservation projects for the protection of particular habitats and species rather than focusing on the active restoration of a variety of habitat types potentially benefiting multiple species.

The Preferred Alternative - Implement Restoration for All Habitats - will implement habitat restoration activities in all coastal habitats to benefit living marine resources, including anadromous fish species. Implementation of restoration activities under the preferred alternative may have a very localized and temporary adverse impact over the short-term, but will provide beneficial habitat in the long-term.

1.2.2 Activities Eligible for Categorical Exclusion

This EA addresses NEPA compliance at the program level. Evaluation of project-specific impacts will be addressed during the planning process for each restoration project at the earliest possible time to ensure that any significant environmental issues are identified; that consultation among agencies, other area programs, and the public occurs; and that a decision can be made on whether an EA, EIS, or a categorical exclusion (CE) determination is the appropriate level of analysis. Some projects may require a more detailed analysis of the environmental impacts of the proposed action and alternatives, more suitable for an EA or an EIS; in other instances, tiering from an EA or another EIS will be the preferred approach. Other projects that are small in scope and effect may fit the criteria for a CE determination.

"Categorical Exclusion" (CE) is defined as decisions granted to certain categories of actions that individually or cumulatively do not have the potential to pose significant impacts on the quality of the human environment and are therefore exempted from both further environmental review and requirements to prepare environmental review documents (40 C.F.R. 1508.4, NAO 4.01.c). A proposed action should be evaluated to determine the appropriateness of the use of a CE. That analysis should determine if: 1) a prior NEPA analysis for the "same action demonstrated that the action will not have significant impacts on the quality of the human environment (considerations in determining whether the proposed action is the "same" as a prior action may include, among other things, the nature of the action, the geographic area of the action, the species affected, the season, the size of the area, etc.); or 2) the proposed action is likely to result in significant impacts a defined in 40 CFR 1508.27 (NAO 216-6, 5.05.b).

CRP restoration projects that potentially can be appropriate for a CE determination include: re-vegetation of habitats; restoration of submerged, riparian, intertidal, or wetland substrates; and replacement or restoration of shellfish beds through transplanting or restocking. NAO 216-6, section 6, describes other potentially applicable actions under the MFCMA, ESA, and MMPA that may quality for a CE determination. CE determinations will be based on a case-by-case review of the CRP restoration projects.

2.0 BACKGROUND

2.1 Eligibility

Any state, local or tribal government, regional governmental body, public or private agency or organization may sponsor a project for funding consideration. The sponsoring group or the organization may be a recipient of the funds or may recommend that a Federal agency receive funds for implementation. However, in the latter situation, NOAA Fisheries would enter into a Memorandum of Agreement between NOAA Fisheries, the sponsor and the Federal agency. Although Federal and state agencies and municipalities are eligible to be the recipients of funding, they are encouraged to work in partnership with community groups. Successful applicants propose projects that demonstrate significant, direct benefits to living marine and anadromous fish resources within supportive, involved communities. Proponents who seek funding under the CRP are not eligible to seek funding for the same project under other Restoration Center (RC) programs. The CRP, which is authorized under the Fish and Wildlife

Coordination Act, precludes individuals from applying for or receiving funds from other RC programs.

2.2 Eligible Restoration Activities

NOAA Fisheries will fund projects that will result in on-the-ground restoration that benefits living marine resources, including anadromous fish species. Habitat restoration is defined here as activities that directly result in the reestablishment or re-creation of stable, productive marine, estuarine, lagoon, or coastal river ecological systems. Restoration may include, but is not limited to: improvement of coastal wetland tidal exchange or reestablishment of historic hydrology; dam or berm removal; fish passageway improvements; natural or artificial reef/substrate/habitat creation; establishment or repair of riparian buffer zones and improvement of freshwater habitats that support anadromous fishes; planting of native coastal wetland and submerged aquatic vegetation (SAV); and improvements to feeding, shade or refuge, spawning and rearing areas that are essential to fisheries.

Projects will confer benefits to habitats such as salt marshes, seagrass beds, kelp forests, oyster reefs, coral reefs, mangrove forests, and riparian habitat near rivers, streams, and creeks used by anadromous fish. Projects will be adequately monitored for their intended purpose throughout the useful life of the project.

Projects will involve significant community support through an education and volunteer component tied to the restoration activities. Implementation of on-the-ground habitat restoration projects involves community outreach and post-restoration monitoring to assess project success, and may involve limited pre-implementation activities such as engineering and design and short-term baseline studies. Projects emphasizing only research, outreach, monitoring or coordination will be discouraged, as will funding requests primarily for administration, salaries, travel, and overhead expenses.

Although NOAA Fisheries recognizes that water quality issues may impact habitat restoration efforts, the CRP is intended to fund physical habitat restoration projects rather than direct water quality improvement measures, such as wastewater treatment plant upgrades or combined sewer outfall corrections. The following restoration projects will not be eligible for funding: (1) Activities that constitute legally-required mitigation for the adverse effects of an activity regulated or otherwise governed by state or Federal law; (2) activities that constitute restoration for natural resource damages under Federal or state law, and (3) activities that are required by a separate consent decree, court order, statute or regulation. Funds from this program may be used to enhance restoration activities beyond the scope legally required under the activities described above.

3.0 ALTERNATIVES

3.1 No Action Alternative

The No Action Alternative required by NEPA would be the discontinuance of the Community-Based Restoration Program. Under the No Action Alternative, there would be no new benefits to living marine resource habitats from this program. Benefits to living marine resources would be realized only through natural recovery.

With the No Action Alternative, the ongoing loss of living marine resource habitat would continue without any restoration and additional resources leveraged through this program. Specifically, discontinuation of the CRP would result in a loss of restoration funding and volunteer resources provided through numerous partnerships. Living marine resources currently threatened by habitat loss would continue to decline without benefit of recourse provided by the CRP, and additional living marine resources would most likely become threatened and degraded as a result. Commercial and recreational fishers dependent on declining fisheries stocks would continue to experience lost revenues and increased uncertainty in the persistence of the resource, in part due to lack of habitat restoration under the CRP. The No Action Alternative fails to support the objectives of restoring living marine and anadromous fish resources, enhancing community and citizen involvement in marine resource conservation, and educating the public about the importance of these resources. Therefore, this alternative will not be considered any further.

3.2 Preferred Alternative – Implement Restoration for All Habitats

The Preferred Alternative is to implement habitat restoration activities under the Community-Based Restoration Program for all habitats that benefit living marine resources, including those that benefit anadromous fish species. These activities include fish passage implementation, as well as restoration of the following: riparian habitats, anadromous fish habitats, marshes, submerged aquatic vegetation (SAV) beds, oyster reefs, coral reefs, shorelines, kelp forest, and mangrove forests. Activities involved in these types of habitat restoration projects include: removal of invasive species; planting of kelp, dune grasses, and mangrove plants; stabilization of impacted areas such as coral reefs (such as following vessel groundings); and seeding or transplanting of shellfish beds and oyster reefs, in areas that previously supported such species.

Impacts associated with CRP activities may include, for example: minor increases in sediment erosion and turbidity caused by vegetation planting, water diversion or by individuals tracking through project areas; finning of substrate such as coral heads and kelp fronds by divers in conjunction with transplanting of donor corals and kelp plants. The Preferred Alternative involves implementing habitat restoration that may have a localized, temporary adverse impact over the short-term, but will provide beneficial habitat in the long-term to restore species populations.

Under the Preferred Alternative, benefits to living marine resources would be realized through an integrated, ecosystem-based approach to restoration. Project funding typically ranges from $10,000 to $50,000. All restoration activities will fully comply with all Federal statutory and regulatory procedures, including necessary state and local permits and other authorizations, prior to implementation. Records of Federal and state permits/consultations will be maintained in-house if the RC issues individual awards for projects. The CRP will ensure compliance with all requirements identified in this EA and the Federal Register Notice (see Appendix E).

3.3 Third Alternative – Implement Land Acquisition and Preservation Program

The Third Alternative would implement a land acquisition and preservation program to preserve the natural habitats of important species. The CRP would coordinate in partnership with other organizations and/or landowners to fund land acquisitions and preservation projects that benefit living marine resources. No restoration of specific habitats would be undertaken in this alternative.

Land acquisition and preservation is costly and time-consuming.. It requires more extensive interagency coordination, detailed plans and specifications, and more staff time for addressing legal real estate issues. This alternative is also less likely to engage the public in stewardship of the resource due to the lack of opportunities for volunteer clean-up, plantings, and stewardship of the area. The selection of the Third Alternative would result in an inability to maximize the Restoration Center's financial and labor resources. Further, while land acquisition and preservation may prevent further degradation of preserved sites, it would provide no increase in productivity or other new benefits to living marine resource habitats. In comparison, CRP projects are small, on-the-ground projects that are low in cost, have a short time frame, and engage the public in stewardship opportunities. The Land Acquisition and Preservation Program does not promote the goals of the Restoration Center and will not be considered any further.

4.0 AFFECTED ENVIRONMENT

4.1 Physical Environment

Because of the large variability in the types of species comprising living marine resources, a wide range of coastal regions and riparian systems along streams and rivers that support anadromous fish must be considered as habitat for marine species. Under the CRP, these regions include the coastal continental United States, Alaska, Hawaii, and U. S. territories. Most CRP restoration occurs in urban areas impacted by human development and pollution as well as in remote rural locations. Most projects occur in small-order sloping riparian streams and creeks, estuaries, and bays. Projects are small-scale and are generally less than 15 acres or 4 stream-miles. The majority of projects benefit coastal habitats, areas that are both very productive and very vulnerable. Since over 50 percent of the country's population lives in coastal areas, the effects of human development and pollution are most evident in coastal marine ecosystems (NOAA 1998).

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). Riparian environments are maintained by high water tables and experience seasonal or periodic flooding. Riparian zones contain or adjoin riverine wetlands and share many functions including water storage, sediment retention, nutrient and contaminant removal as well as habitat functions.

Marsh habitats, too, vary with coastal geographic location. The steep, high-energy shores of the Pacific Coast generally support smaller marsh areas (Zedler 1992) than other coasts. Salt marshes on the Gulf Coast sometimes grow right next to the seashore but on the Atlantic and Pacific Coasts, they usually grow on sediment deposits behind protective barrier islands. All coastal marsh habitats are influenced by daily tides.

Estuaries also vary in character in and along different coastlines. Estuaries in the Pacific Northwest include examples of all of the various estuarine classes: drowned river valleys, fjords, bar-built, and tectonic (Pritchard 1967; Russell 1967). These estuarine types differ dramatically from one another in habitat structure: from broad, deltaic flats with monotypic stands of emergent marsh or expansive, un-vegetated flats to mainstem channels cutting through bedrock beach terraces. 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 here (Simenstad and Thom 1992). Many restoration projects in West Coast estuaries are small projects that take place along very urbanized coastline. Some of these urbanized estuaries have lost over 70% of their littoral wetland habitats (Simenstad and Thom 1992).

Submerged grasses or seagrasses differ from most other wetland plants in that they are almost exclusively subtidal, reside mainly in marine salinities and utilize the water column for support. Seagrasses occur across a wide depth range, from rocky intertidal habitats to depths of 40 meters, and for some species, broad latitudinal ranges. Distribution patterns are influenced by light, salinity, temperature, substrate type, and currents. *Zostera marina* (eelgrass), for example, extends from near the Arctic circle on both coasts of the U.S. to North Carolina on the East Coast and to the Gulf of California on the West Coast (Fonseca 1992).

Oyster reefs may be found in intertidal and subtidal areas, where suitable substrate and adequate larval supply exist, along with appropriate (brackish to estuarine) salinity levels and water circulation. Oyster beds historically were found along the East and Gulf Coasts, but have been greatly reduced in occurrence as a result of anthropogenic impacts in the past 200 years (Kennedy and Sanford 1995).

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.

Coral reefs are wave resistant structures made of calcium carbonate secreted by, and harboring plants and animals in shallow tropical seas. While most of the reef environment is depositional, the seaward growing portion of the reef is essential for the survival and maintenance of the rest of the reef system (Wiens 1962; Guilcher 1987). Coral reefs predominate in many tropical benthic environments because of their ability to grow or maintain structures in the face of heavy or prevailing wave action. Also, coral reefs grow in oceanic waters that are low in nutrients.

Corals contain symbiotic algae (zooxanthellae), which live in the coral tissues and produce food and take up nutrients excreted by the coral animal (Maragos 1992).

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

Mangroves are woody plant communities that develop in sheltered tropical and subtropical coastal estuarine environments. Mangroves are adapted to survive in very saline, waterlogged, reduced soils that are often poorly consolidated and subject to rapid change. Three species comprise the major elements of mangrove communities in Florida, Puerto Rico, and the U.S. Virgin Islands—red, black, and white mangroves. Red mangroves usually are found in fringe or riverine environments characterized by active water flow and a high degree of flushing. The other two species tend to dominate in stagnant environments where water flows are reduced and often seasonal (Cintron-Molero 1992).

4.2 Biological Environment

Living marine resources utilize a wide variety of coastal biological habitats that are restored under the CRP, including submerged aquatic vegetation (SAV) beds, marshes, oyster reefs, kelp forests, riparian areas, and mangroves. These various habitats are targeted for restoration because they have suffered considerable degradation and loss of area in recent decades due to dredging and filling, pollution, construction, and erosion. NOAA, as the federal trustee agency for these natural resources, is responsible for their conservation and restoration. The CRP restoration projects will benefit these resources.

Riparian Areas

The riparian zone is a characteristic association of substrate, flora, and fauna within the 100-year floodplain of a stream or, if a floodplain is absent, a zone hydrologically influenced by a stream or river (Hunt 1988). Riparian environments are maintained by high water tables and experience seasonal or periodic flooding. They may also contain or adjoin riverine wetlands and share with them many functions including surface and subsurface water storage, sediment retention, nutrient and contaminant removal, and maintenance of habitat for plants and animals. They often share some of the characteristics of wetlands but cannot be defined as wetlands because they are saturated at much lower frequencies. Riparian ecosystems have distinctive vegetation and soils, and are characterized by the combination of species diversity, density, and productivity. Continuous interactions occur between riparian, aquatic, and upland ecosystems through exchanges of energy, nutrients, and species (NRC 1995). Selective removal of small dams in riparian areas allows for much improved upstream migration of anadromous species, which facilitates spawning activity and helps to increase fish populations.

Marshes

Marsh ecosystems, like all wetlands, are a function of hydrology, soil, and biota. Salt marshes exist on the transition zone between the land and the sea in protected low-energy areas such as estuaries, lagoons, bays, and river mouths (Copeland 1998). Tidal cycles allow salty and brackish water to inundate and drain the salt marsh, circulating organic and inorganic nutrients throughout the marsh. Water is also the medium in which most organisms live. The marshes are strongly influenced by tidal flushing and stream flow, which affect the inundation and salinity regimes of salt marsh soils. In areas with enough runoff, salt marshes transition into brackish and freshwater marshes (Copeland 1998). Sand- and mudflats occur at extreme low water, whereas salt marsh vegetation develops where the soils are more exposed to the air than inundated by tides, usually above mean sea level. *Spartina* spp. (cordgrass) typically dominate the lower marsh. Salt marshes are of paramount ecological importance because they 1) export vital nutrients to adjacent waters; 2) improve water quality through the removal and recycling of inorganic nutrients; 3) absorb wave energy from storms and act as a water reservoir to reduce damage further inland; and 4) serve an important role in nitrogen and sulfur cycling (Mitsch and Gosselink 1993; Turner 1977; Thayer *et al*. 1981; Zimmerman *et al*. 1984). Salt marshes provide important habitat for invertebrates (such as crabs and bivalves) and fishes. Vital nutrient exchange takes place in salt marshes, as detritus and algae in the marshes are consumed and nutrients excreted by birds, fish, and shellfish are recycled by the flora (Zedler 1992).

Submerged Aquatic Vegetation (SAV) Beds

Seagrasses supply many habitat functions, including: (1) support of large numbers of epiphytic organisms; (2) damping of waves and slowing of currents which enhances sediment stability and increases the accumulation of organic and inorganic material; (3) binding by roots of sediments, thus reducing erosion and preserving sediment microflora; and, (4) roots and leaves provide horizontal and vertical complexity to habitat, which, together with abundant and varied food sources, support densities of fauna generally exceeding those in unvegetated habitats (Wood *et. al*. 1969; Thayer *et. al*. 1984).

Shellfish/Artificial Reefs

Oyster beds are built by the cementing together of oyster shells, with additional hard substrate provided by associates such as other bivalves, barnacles, and calcareous tube builders such as some polychaetes (Kennedy and Sanford 1995). Larvae of these invertebrates settle seasonally on this substrate. Eventually, a mound forms and grows vertically and laterally as oysters accumulate and shell is scattered in the bed's vicinity (Bahr and Lanier 1981). Oyster reefs can vary in morphology, influenced by local effects (Kennedy and Sanford 1995). Oyster beds have in the past been an important food source as well as providing shore protection (hard substrate), water clarification, and habitat for other invertebrates.

Artificial reefs are structures or materials that are intentionally placed in aquatic environments to enhance fishery habitat by replacing habitat and ecosystem functions to support entire biological communities (SAFMC 1998). Artificial reefs are used in almost every possible marine environment, from shallow-water estuarine creeks to offshore sites up to several hundred feet in depth. They provide new primary hard substrate similar in function to newly exposed hard bottom. They also increase habitat complexity, which provides shelter and foraging habitat for numerous species.

Shorelines
In lower-energy shoreline environments, there may be lower population densities of a given species, but high diversity. Along higher-energy shorelines, seagrasses and certain benthic organisms, such as mollusks and worms, may predominate because they can withstand the turbulence of such an intertidal zone. Such environments may exhibit low species diversity, but high population densities of those species that can tolerate the high-energy conditions (for example, some invertebrates). Sand dunes formed in these areas provide habitat for seabirds and sea turtles, including various species of endangered sea turtles which rely on beaches for nesting habitat.

Coral Reefs
Coral may dominate a habitat (coral reefs), be a significant component (hardbottom), or exist as individuals within a community characterized by other fauna (solitary corals) (GMFMC 1998). Hardbottoms constitute a group of communities characterized by a thin veneer of live corals and other biota overlying associated sediment types. They are usually of low relief and occur on the continental shelf and may be associated with relict reefs. While most of the reef environment is depositional, the seaward growing portion of the reef is essential for the survival and maintenance of the rest of the reef system (Wiens 1962; Guilcher 1987). Coral reefs grow in oceanic waters that are low in nutrients. They contain symbiotic algae (zooxanthellae), which live in the coral tissues and produce food and take up nutrients excreted by the coral animal (Maragos 1992). Coral reefs have been called the "rainforests of the sea" (US Coral Reef Task Force 2000) because of their high level of biodiversity and productivity, providing habitat for thousands of species of fish and shellfish and hundreds of species of corals, algae, sponges, echinoderms, and many other groups of organisms. Coral reef systems provide food, shelter, breeding, and nursery areas for many reef and non-reef organisms. Coral reefs are also linked to mangroves and seagrasses where these systems occur in close proximity to one another (Maragos 1992). A number of rare or endangered species inhabit or use coral reef environments.

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

Mangrove Forests
Mangrove communities, like salt marshes, facilitate much nutrient cycling, trapping nutrient-rich sediments and maintaining high rates of organic matter fixation (Cintron-Molero 1992). Mangroves also provide important shelter for larval fish and crustaceans, and contribute detritus and dissolved organic carbon to estuarine food webs (Heald 1969; Odum 1971; Twilley 1982). Mangrove ecosystems are often coupled to other systems such as seagrass beds and coral reefs, supporting migratory species of fish, shrimp, and birds. Mangrove communities may also

support large resident and migratory populations of mammals, reptiles, and other animals (Cintron-Molero 1992). Mangroves are highly productive structures. A significant amount of the net production is incorporated into leaves and fruits, allowing more energy to be incorporated into the food web. This results in an abundance of shellfish and finfish in mangrove areas, as well as a diversity and abundance of other associated fauna.

4.2.1 Essential Fish Habitat

Under the Magnuson-Stevens Fishery Conservation and Management Act (MSFCMA), essential fish habitat (EFH) must be identified and conserved. Section 303(a)(7) of the Act requires the eight Regional Fishery Management Councils to identify and describe EFH for each life stage of the managed species within their jurisdiction. Under Section 305(b)(2) of the Magnuson-Stevens Fishery Conservation and Management Act (Magnuson-Stevens Act), Federal agencies are required to consult with the Secretary of Commerce on any action that may adversely affect Essential Fish Habitat (EFH). Consultation can be addressed programmatically to broadly consider as many adverse effects as possible. To comply with EFH requirements, we conducted programmatic consultations with all five NMFS regional offices. Programmatic consultations for each region are presented in Appendices (F – J). These consultations identify the potential impacts of program activities to approximately 300 species managed under 46 FMPs as well as conservation measures to avoid or minimize impacts.

The implementation of restoration activities under the CRP may have a very localized and temporary adverse impact on EFH over the short-term, but will provide beneficial habitat in the long-term. Possible impacts to EFH from restoration projects include localized non-point source pollution, such as influx of sediment or nutrients. Conservation measures protective of EFH will be implemented during all activities. Restoration projects will be scheduled to avoid work during critical fish windows (e.g., spawning and migration periods) for managed fish species. All other appropriate EFH Conservation Measures as identified in the FMPs will be incorporated into each project to minimize adverse impacts to EFH. Conservation measures include the use of Best Management Practices (e.g., staging areas, methods to protect the water column, buffers around sensitive resources), adequate training of volunteers in environmentally sound restoration techniques, and monitoring for restoration success and impacts. If the project plans cannot fully incorporate all impact avoidance measures or if new information becomes available that changes the basis for conservation measures, then supplemental consultation will be undertaken prior to project implementation. For additional information regarding impacts to EFH from CRP activities and measures to avoid them, refer to the regional EFH Consultations located in Appendices F – J.

The following sections present an overview of EFH for managed species that may be encountered during community-based restoration projects on the Pacific Coast, Gulf of Alaska, Gulf of Mexico, U.S. Caribbean and Atlantic Coast. Detailed habitat assessments are presented in the Appendices (F – J). Table 1 lists the FMPs and species managed under each fishery management council that have EFH designations and are likely to be encountered in a CRP project. Table 2 lists the FMPs and species managed by each fishery management council that are unlikely to be found in a CRP project area.

Table 1. Thirty-five Regional Fishery Management Plans (FMPs), species managed under each regional FMP, and the reasons for *inclusion* under the programmatic Environmental Assessment (EA).

NORTH PACIFIC		
Fishery Management Plan	Species Managed Under FMP	Reason for Inclusion
North Pacific FMP for Groundfish Fishery of the Bering Sea and Aleutian Islands	13 species/life stages including: yellowfin sole, arrowtooth flounder, rock sole, sablefish/black cod, eulachon/candlefish, sculpins, Atka mackerel, and capelin	Some species found near beaches, bays, or rivers. Atka mackerel found in kelp.
North Pacific FMP for Groundfish Fishery of the Gulf of Alaska	16 species/life stages including: yellowfin sole, arrowtooth flounder, rock sole, sablefish/black cod, Atka mackerel, capelin, yelloweye rockfish, quillback rockfish, china rockfish, and copper rockfish	Some species found near beaches, bays, or rivers. Atka mackerel and 3 rockfish species found in kelp. Copper rockfish also found in SAV and shallow coastal waters.
North Pacific FMP for the King and Tanner Crab Fisheries in the Bering Sea/Aleutian Islands	4 species/life stages including: red king crab, blue king crab, golden king crab, and tanner crab	All found in bays. Red king and tanner crab found in estuaries and inshore areas. Red king crab also found in SAV.
North Pacific FMP for the Scallop Fisheries off Alaska	Weathervane scallops & life stages	Found in waters 1 – 50 m.
North Pacific FMP for Salmon Fisheries in the EEZ off Coast of Alaska	5 species/life stages including: pink, chum, sockeye (red), chinook (King), and coho (silver)	Found in rivers, streams, and bays. May also be found in kelp and SAV.

PACIFIC COAST		
Fishery Management Plan	Species Managed Under FMP	Reason for Inclusion
Pacific Coast FMP for Groundfish Fishery	23 species/life stages: predominantly shark, rockfish, sole, and flounder	Species/life stages identified within the Estuarine Composite EFH and most likely to be found in CRP project areas
Pacific Coast FMP for Coastal Pelagic Species Fisheries	4 finfish species/life stages: Pacific sardine, Pacific (chub) mackerel, northern anchovy, jack mackerel, 1 invertebrate: market squid	Species/life stages found in estuaries or near river mouths, around kelp beds, off sandy beaches, and in near shore waters
Pacific Coast FMP for Salmon Fishery	3 species/life stages: chinook, coho, pink	Species/life stages found in estuary or near river mouths, riverine, and near-shore waters

WESTERN PACIFIC		
Fishery Management Plan	Species Managed Under FMP	Reason for Inclusion
Western Pacific FMP for Bottomfish and Seamount Groundfish Fisheries	7 species/life stages: giant trevally, blacktip grouper, sea bass, ambon emperor, blueline snapper, thicklip trevally, lunartail grouper	Species/life stages may be found in near-shore, coastal areas, SAV, and coral reefs
Western Pacific FMP for Pelagic Fisheries	6 species/life stages: mahimahi, wahoo, sailfish, *Carcharinidae spp*, albacore, and *Auxis spp*.	Species/life stages may be found in coastal areas.
Western Pacific FMPs for Precious Coral Fisheries	3 species of black coral.	Shallow water corals found at depths between 30-100 m.
Western Pacific FMP for Crustacean Fisheries	2 species/life stages: spiny lobster, kona crab	Found in coastal areas and shorelines. Spiny lobster in association with coral reefs.

GULF OF MEXICO		
Fishery Management Plan	Species Managed Under FMP	Reason for Inclusion
Gulf of Mexico FMP for Shrimp Fishery	3 species/life stages: brown shrimp, pink shrimp, white shrimp	Found in inshore waters and estuaries
Gulf of Mexico FMP for Red Drum Fishery	Red drum & life stages	Found in coastal inlets, sounds, bays, seagrass beds, shallow estuarine rivers and mainland shores
Gulf of Mexico FMP for Reef Fish Fishery	11 species/life stages: including grouper, snapper & triggerfish	Some found in shallow nearshore waters, mangroves, salt marshes, seagrass beds, coral reefs, algal mats
Gulf of Mexico FMP for Stone Crab Fishery	Stone crab & its life stages	Found in intertidal zone, seagrass beds, rocky or soft bottoms
Gulf of Mexico FMP for Coral and Coral Reefs Fishery	Coral and coral reefs & life stages	Some found in shallower waters CRP coral reef restoration projects
Gulf of Mexico FMP for Spiny Lobster Fishery	Spiny lobster & its life stages	Found in shallow subtidal bottoms, seagrass beds, soft bottoms, coral reefs and mangroves
Gulf of Mexico FMP for Coastal Migratory Pelagics Fishery	Cobia, Spanish mackerel, bluefish, little tunny & life stages	Some found in offshore, beaches, estuaries, and inlets.
Secretarial FMP for Tunas, Sharks, and Swordfish Fisheries	3 species/life stages of tuna, 1 species of swordfish, and 3 species of shark (great hammerhead, nurse shark, blacktip shark)	Some found in near-shore waters, bays and estuaries

SOUTH ATLANTIC		
Fishery Management Plan	Species Managed Under FMP	Reason for Inclusion
Spiny Lobster Fishery	Found in shallow subtidal bottoms, seagrass beds, soft bottoms, coral reefs, and mangroves	Found in shallow subtidal bottoms, seagrass beds, soft bottoms, coral reefs, and mangroves
South Atlantic FMP for Shrimp Fishery	Penaieds (brown, pink, and white shrimp) rock shrimp, royal red shrimp and life stages.	Found in tidal freshwater, estuarine, and marine emergent wetlands, seagrass, and sub-tidal and intertidal non-vegetated flats.
South Atlantic FMP for Red Drum Fishery	Red drum & life stages	Found in tidal freshwater, flooded salt marshes, brackish marsh, tidal creeks, mangrove fringe, SAV, oyster reefs, artificial reefs, and soft bottoms.
South Atlantic FMP for Snapper Grouper Fishery	72 species/life stages including triggerfish, jacks, grunts, snappers, tilefish, temperate basses, sea basses and groupers, porgies, wrasses, and spadefish.	Some found in coral reefs, live/hard bottoms, SAV, oyster & artificial reefs. Specific life stages may occur in salt marshes, tidal creeks, and soft bottoms as well.
South Atlantic FMP for Coastal Migratory Pelagic Resources (Mackerels) Fishery	Cobia, Spanish mackerel and life stages.	Spanish mackerel found in beaches and estuaries. Cobia found in estuaries and coastal areas.
South Atlantic FMP for Coral and Coral Reefs and Live/Hard Bottom Habitat Fishery	Stony coral, octocorals, and black corals	Rough, hard, exposed stable substrate and muddy silty bottoms in offshore to outer shelf depths.
South Atlantic FMP for Bluefish Fishery	Bluefish & life stages	Found in shores and estuaries
South Atlantic FMP for Summer Flounder Fishery	Summer flounder & life stages	Found in shelf waters and estuaries
Secretarial FMP for Tunas, Sharks, and Swordfish Fisheries	3 species/life stages of tuna, 1 species of swordfish, and 3 species of shark (great hammerhead, nurse shark, blacktip shark)	Found in near-shore waters, bays and estuaries

U.S. CARIBBEAN		
Fishery Management Plan	Species Managed Under FMP	Reason for Inclusion
Puerto Rico and U.S. Virgin Islands FMP for Shallow Water Reef Fish Fishery	13 species and life stages groupers, snappers, grunts, triggerfish and red hind	Found in mangroves, seagrass beds, non-vegetated bottoms (sand, mud), algal plains, coral reefs and hard-bottom.
Puerto Rico and U.S. Virgin Islands FMP for Coral and Reef-Associated Plants and Invertebrates Fishery	Over 100 species/life stages of coral: including stony corals, sea fans & gorgonians Over 60 species/life stages of plants: including seagrass & invertebrates	Found in areas with natural, rough substrate covered with other living organisms and larvae. Some found in shallower water seagrass CRP coral reef restoration projects

Puerto Rico and U.S. Virgin Islands FMP for Queen Conch Fishery	Queen conch & life stages	Coral sand, seagrass beds, algae, gravel, coral rubble, beach rock bottoms, and nearshore, sandy areas.
Puerto Rico and U.S. Virgin Islands FMP for Spiny Lobster Fishery	Spiny lobster & life stages	Found in mangroves, seagrass, reefs, algal beds, and hard-bottoms.
Secretarial FMP for Tunas, Sharks, and Swordfish Fisheries	3 species/life stages of tuna, 1 species of swordfish, and 3 species of shark (great hammerhead, nurse shark, blacktip shark)	Found in near-shore waters, bays and estuaries

MID-ATLANTIC		
Fishery Management Plan	Species Managed Under FMP	Reason for Inclusion
Mid-Atlantic FMP for Summer Flounder, Scup, and Black Sea Bass Fisheries	Summer flounder, scup, black sea bass & life stages.	Found in pelagic, demersal, and nearshore waters, shellfish and seagrass beds, sandy-shelly areas, and rough bottoms.
Mid-Atlantic FMP for Spiny Dogfish Fishery	Spiny dogfish & life stages	Found in warm waters over the continental shelf, depths greater than 5m and in nearshore areas
Mid-Atlantic FMP for Monkfish Fishery	2 species/life stages	Near-shore waters, bays and estuaries
Mid-Atlantic FMP for Surf Clam and Ocean Quahog Fisheries	Surf clam, ocean quahogs & life stages	Found from the beach out to approximately 65 m deep, vertically in substrate to 1 m depth
Mid-Atlantic FMP for Atlantic Mackerel, Squid and Butterfish Fisheries	Atlantic mackerel, *Loligo*, *Illex*, butterfish & life stages	Demersal eggs found attached to aquatic vegetation or rocks in shallower waters
Mid-Atlantic FMP for Bluefish Fishery	Bluefish & life stages	Juveniles and adults found in estuarine and nearshore waters
Secretarial FMP for Tunas, Sharks, and Swordfish Fisheries	3 species/life stages of tuna, 1 species of swordfish, and 3 species of shark (great hammerhead, nurse shark, blacktip shark)	Found in near-shore waters, bays and estuaries

NEW ENGLAND		
Fishery Management Plan	Species Managed Under FMP	Reason for Inclusion
New England Multispecies Fisheries FMP	Atlantic cod, haddock, ocean pout, American plaice, pollock, red hake, white hake, whiting, windowpane flounder, winter flounder, and yellowtail flounder & life stages	Found in bays, estuaries and some rivers
New England Atlantic Herring Fishery FMP	Atlantic herring & its life stages	Found in bays, estuaries and nearshore waters
New England FMP for Atlantic Salmon Fishery	Atlantic salmon & its life stages	Freshwater EFH for salmon fisheries includes all streams, lakes, ponds, wetlands, and other water bodies currently or historically accessible to salmonMarine EFH for salmon fisheries includes all estuarine and marine areas utilized by salmon, extending from influence of tidewater and tidally submerged habitats to the limits of the U.S. EEZ
New England FMP for Monkfish Fishery	2 species/life stages	Near-shore waters, bays and estuaries
New England FMP for Atlantic Sea Scallops Fishery	Atlantic sea scallop & its life stages	Found in near-shore bays and estuaries
New England FMP for Spiny Dogfish Fishery	Spiny dogfish & its life stages	Found in warm waters over the continental shelf, depths greater than 5m and in nearshore areas
Secretarial FMP for Tunas, Sharks, and Swordfish Fisheries	3 species/life stages of tuna, 1 species of swordfish, and 3 species of shark (great hammerhead, nurse shark, blacktip shark)	Found in near-shore waters, bays and estuaries

Table 2. Thirteen Regional Fishery Management Plans (FMPs), species managed under each regional FMP, and the reasons for *exclusion* under the programmatic Environmental Assessment (EA).

NORTH PACIFIC		
Fishery Management Plan	Species Managed Under FMP	Reason for Exclusion
North Pacific FMP for Groundfish Fisheries of the Bering Sea and Aleutian Islands	29 species including walleye pollock, Pacific cod, Greenland turbot, 6 flatfish spp., flathead sole, Pacific ocean perch, 3 red rockfish spp., 2 rockfish spp., 3 sharks, 3 skates, 3 octopus, and 4 squids	Found in deep, pelagic and benthic waters along inner, middle, and outer continental shelf
North Pacific FMP for Groundfish Fisheries of the Gulf of Alaska	35 species/life stages including:: Walleye pollock, Pacific cod, 3 deepwater flatfish, 5 shallow water flat fish, rex, sole, Flathead sole, Pacific ocean perch, 8 rockfish spp., Eulachon/candlefish, 3 sharks, 3 skate spp., 4 squids, and 3 octopus	Found in deep, pelagic and benthic waters along inner, middle, and outer continental shelf
North Pacific FMP for the King and Tanner Crab Fisheries in the Bering Sea/Aleutian Islands	4 species/life stages including: Scarlet king crab, snow crab, grooved Tanner crab, and Triangle Tanner crab	All found in deep waters on along inner, middle and outer continental shelf
North Pacific FMP for the Scallop Fisheries off Alaska	3 species/life stages including: pink, spiny, and rock scallops	Found in deep waters (40-200 m) characterized by strong currents along the continental shelf.

PACIFIC		
Fishery Management Plan	Species Managed Under FMP	Reason for Exclusion
Pacific Coast FMP for Groundfish Fisheries	59 species/life stages: Big skate, longnose skate, finescale codling, Pacific rattail, 41 species of rockfish, Pacific ocean perch, arrowtooth flounder, 7 species of sole, chilipepper, cowcod, longspine thornyhead, shortspine, and treefish	Found outside the Estuarine Composite EFH in rocky shelf, non-rocky shelf, canyon, continental slope/basin, neritic, and oceanic composites

WESTERN PACIFIC		
Fishery Management Plan	Species Managed Under FMP	Reason for Exclusion
Western Pacific FMP for Bottomfish and Seamount Groundfish Fisheries	15 species/life stages: including snappers, trevallys, groupers, emperors, amberjacks, alfonsins, ratfish, armorheads	Found on steep slopes of deepwater banks, depths approximately 35 m to 330 m
Western Pacific FMP for Pelagic Fisheries	21 species/life stages: including marlins, spearfishes, swordfishes, sharks, tunas, kawakawas, moonfishes, oilfishes, pomfrets	Found in near-surface waters far from shore, moving freely in the oceanic environment
Western Pacific FMPs for Precious Coral Fisheries	9 species/life stages: pink corals, red corals, gold corals, bamboo corals	Deepwater corals found at depths between 350-1500 m.
Western Pacific FMP for Crustacean Fisheries	Hawaiian spiny lobster & life stages Kona crab & life stages	Spiny lobster (not in association with corals) found at depths between 10-185 m. Kona crab found at depths between 24-225 m.

GULF OF MEXICO/SOUTH ATLANTIC/MID-ATLANTIC/U.S. CARIBBEAN		
Fishery Management Plan	Species Managed Under FMP	Reason for Exclusion
South Atlantic FMP for Golden Crab Fishery	Golden crab & its life stages	Found in mounds of dead coral, ripple habitat, dunes, black pebble habitat, low outcrop, soft bioturbated habitat.
South Atlantic/Mid-Atlantic FMP for Spiny Dogfish Fishery	Spiny dogfish & life stages	Found in depths of 33 to 1480 ft.
Secretarial FMP for Atlantic Billfish Fishery	Blue marlin, White marlin, Longbill spearfish, Sailfish & life stages	Found in epipelagic waters in upper 300-600 ft open sea areas and neritic waters over the continental shelf.

NEW ENGLAND/MID-ATLANTIC		
Fishery Management Plan	Species Managed Under FMP	Reason for Exclusion
Mid-Atlantic FMP for Tilefish Fishery	Tilefish, monkfish & life stages	Found on the outer continental shelf.

North Pacific FMP for Groundfish of the Gulf of Alaska and FMP for the Salmon Fisheries in the EEZ off the Coast of Alaska

Community-based restoration projects off the coast of Alaska may be located within areas identified as EFH for species managed by the North Pacific Fishery Management Council under Amendment 55 to the FMP for Groundfish of the Bering Sea and Aleutian Islands (January, 1999). This Plan identifies 13 groundfish species and life stages, predominantly flounder, sculpins, sole, and 4 families of forage fish (Smelts, sand fish, Pholids, Stichaeids) that may exist in CRP project areas. Amendment 55 to the FMP for Groundfish in the Gulf of Alaska identifies 16 groundfish species and life stages, predominantly flounder, sole, and rockfish that may exist in CRP project areas (January, 1999). Other projects off the coast of Alaska may be located in areas identified as EFH for species managed under Amendment 8 to the FMP for the King and Tanner Crab Fisheries in the Bering Sea/Aleutian Islands, which identifies four species and life stages including red king crab, blue king crab, golden king crab, and tanner crab that may exist in CRP project areas (January, 1999). Amendment 5 to the FMP for the Salmon Fisheries in the EEZ off the Coast of Alaska identifies five species and life stages of salmon, including chinook, coho, pink, sockeye, and chum that may exist in CRP project areas (January, 1999). Amendment 5 to the Scallop Fisheries off the Coast of Alaska identify Weathervane scallops and life stages that may exist in CRP project areas (January, 1999).

Pacific Coast FMPs for Groundfish, Coastal Pelagic Species, and Salmon

Community-based restoration projects off the coast of California, Oregon, Idaho, and Washington may be located within areas identified as EFH for species managed by the Pacific Fishery Management Council under Amendment 11 to the Pacific Coast Groundfish FMP (October, 1998). This Plan identifies 23 groundfish species and life stages, predominantly shark, rockfish, sole, and flounder that may exist in CRP project areas. Other West Coast projects may be located in areas identified as EFH for species managed under Amendment 8 to the Coastal Pelagic Species FMP (December, 1998). This Plan identifies four finfish species and one invertebrate species and life stages, including Pacific sardine, Pacific (chub) mackerel, northern anchovy, and jack mackerel, and the invertebrate, market squid, that may exist in CRP project areas. Under the Pacific Coast Salmon FMP, three species and life stages, specifically chinook, coho, and pink salmon, may exist in CRP project areas (August, 1999).

Western Pacific FMPs for Bottomfish and Seamount Fisheries Groundfish, Pelagic Fisheries, Precious Coral Fisheries, and Crustacean Fisheries

Community-based restoration projects in the Western Pacific off the coasts of Hawaii, American Samoa, the Territory of Guam, Commonwealth of the Northern Mariana Islands, and U.S. Pacific Island possessions may be located within areas identified as EFH for species managed by the Western Pacific Fisheries Management Council under the Western Pacific FMP for Bottomfish and Seamount Fisheries Groundfish. This Plan identifies EFH for seven species and life stages that may coincide with CRP project areas: giant trevally, blacktip grouper, sea bass, ambon emperor, blueline snapper, thicklip trevally, and lunartail grouper (September, 1998). Under the FMP for Pelagic Fisheries, EFH for six species and life stages may occur in CRP project areas: mahimahi, wahoo, sailfish, *Carcharinidae spp*., albacore, and *Auxis spp*. Restoration projects in the Western Pacific may be located within other areas identified as EFH for: three species of black coral under the Precious Corals FMP, and two species and life stages of spiny lobster and kona crab under the Crustacean Fisheries FMP (September, 1998).

Gulf of Mexico FMPs for Shrimp Fishery, Red Drum Fishery, Reef Fish Fishery, Stone Crab Fishery, Coral and Coral Reefs Fishery, Spiny Lobster Fishery, Coastal Migratory Pelagics, and Secretarial FMP for Tunas, Sharks, and Swordfish

Community-based restoration projects in the Gulf of Mexico may be located within areas identified as EFH for species managed by the Gulf of Mexico Fishery Management Council under a Generic Amendment for Addressing Essential Fish Habitat Requirements in several FMPs (October, 1998). The Shrimp FMP identifies three species and life stages, including brown shrimp, pink shrimp, and white shrimp, that may coincide with CRP project sites. Restoration projects in the Gulf of Mexico may be located within other areas identified as EFH for: red drum under the Red Drum FMP; 11 species and life stages of reef fish, including grouper, snapper, and triggerfish, under the Reef Fish FMP; stone crab under the Stone Crab FMP; coral and coral reefs under the Coral and Coral Reefs FMP; spiny lobster under the Spiny Lobster FMP; and four species and life stages under the Coastal Migratory Pelagics FMP: cobia, Spanish mackerel, bluefish, and little tunny. Also, CRP projects may occur in areas identified as EFH under the Secretarial FMP for Tunas, Sharks, and Swordfish, including: three species and life stages of tuna; one species of swordfish; and three species of shark: great hammerhead, nurse shark, and blacktip shark (April, 1999).

South Atlantic FMPs for Spiny Lobster Fishery, Shrimp Fishery, Red Drum Fishery, Snapper Grouper Fishery, Migratory Pelagics (Mackerels), and Coral, Coral Reefs, and Live/Hard Bottom Habitat Fishery, Bluefish Fishery, Summer Flounder Fishery, and Secretarial FMP for Tunas, Sharks, and Swordfish

Community-based restoration projects off the coasts of North Carolina, South Carolina, Georgia, and east Florida may be located within areas identified as EFH for species managed by the South Atlantic Fishery Management Council under the Comprehensive Amendment for addressing EFH (October, 1998). The Comprehensive Amendment identifies EFH in separate Amendments for each of the seven fishery management plans managed by the South Atlantic FMC. CRP project areas may coincide with EFH for spiny lobster and its life stages under the Spiny Lobster FMP, and with brown, pink, white shrimp, rock shrimp, and royal red shrimp and their life stages under the Shrimp FMP. Restoration projects in the South Atlantic may be located within other areas identified as EFH for: red drum under the Red Drum FMP; approximately 72 species and life stages in the snapper-grouper complex, including triggerfishes, grunts, snappers, sea basses, and groupers; cobia and Spanish mackerel and its life stages under the Migratory Pelagic Resources FMP; coral and coral reefs under the Coral, Coral Reefs, and Live/Hard Bottom Habitat FMP; bluefish and its life stages under the Bluefish FMP; and summer flounder and its life stages under the Summer Flounder FMP. Also, CRP projects may occur in areas identified as EFH under the Secretarial FMP for Tunas, Sharks, and Swordfish, including: three species and life stages of tuna, one species of swordfish; and three species of shark: great hammerhead, nurse shark, and blacktip shark.

U.S. Caribbean FMPs for Shallow Water Reef Fish, Coral and Reef-Associated Plants and Invertebrates, Queen Conch, Spiny Lobster, and Secretarial FMP for Tunas, Sharks, and Swordfish

Community-based restoration projects in Puerto Rico and the U.S. Virgin Islands may be located within areas identified as EFH for species managed by the Caribbean Fishery Management Council under a Generic Amendment to four FMPs (October, 1998). The Shallow Water Reef Fish FMP identifies thirteen species of reef fish, including grouper, snapper, grunt, triggerfish, and red hind and their life stages that may exist in CRP project areas. Other species that may inhabit areas that coincide with CRP project locations include: over 100 species of coral and life stages, including stony corals, sea fans and gorgonians, and over 60 species of plants, including seagrasses, and invertebrates under the Coral and Reef-Associated Plants and Invertebrates FMP; spiny lobster and its life stages under the Spiny Lobster FMP; queen conch and its life stages under the Queen Conch FMP. Also, CRP projects may occur in areas identified as EFH under the Secretarial FMP for Tunas, Sharks, and Swordfish, including: three species and life stages of tuna; one species of swordfish; and three species of shark: great hammerhead, nurse shark, and blacktip shark.

Mid-Atlantic FMPs for Summer Flounder, Scup, Black Sea Bass, Spiny Dogfish, Monkfish, Surf Clam and Ocean Quahog, Atlantic Mackerel, Squid, and Butterfish, Bluefish, and Secretarial FMP for Tunas, Sharks, and Swordfish

Community-based restoration projects off the coast of North Carolina north to the U.S.-Canadian border may be located within areas identified as EFH for species managed by the Mid-Atlantic Fishery Management Council under Amendment 12 to the Summer Flounder, Scup, and Black Sea Bass FMP (October, 1998). This Plan identifies summer flounder, scup, and black sea bass and their life stages as species that may exist in CRP project areas. Restoration projects may be located in areas identified as EFH under the Spiny dogfish and two species of monkfish FMPs (October, 1998). Restoration projects may also be located in areas identified as EFH for species managed under Amendment 12 to the Atlantic Surf clam and Ocean Quahog FMP (October, 1998). This Plan identifies surf clam and its life stages as another species that may exist in CRP Mid-Atlantic project areas. Other restoration projects in the Mid-Atlantic may also coincide with areas identified as EFH for species managed by the Council under Amendment 8 to the Atlantic Mackerel, Squid, and Butterfish FMP (October, 1998). This Plan identifies Atlantic Mackerel, *Loligo, Illex*, butterfish and their life stages as species that may exist in CRP project areas. CRP projects may also coincide with areas identified as EFH for bluefish under Amendment 1 to the Bluefish FMP (October, 1998). Also, CRP projects may occur in areas identified as EFH under the Secretarial FMP for Tunas, Sharks, and Swordfish, including: three species and life stages of tuna; one species of swordfish; and three species of shark: great hammerhead, nurse shark, and blacktip shark.

New England FMPs for Multispecies, Atlantic Herring, Atlantic Salmon, Monkfish, Atlantic Sea Scallop, Spiny dogfish, and Secretarial FMP for Tunas, Sharks, and Swordfish

Community-based restoration projects off the coast of New England may be located within areas identified as EFH for species managed by the New England Fishery Management Council under Amendment 11 to the Northeast Multispecies FMP (October, 1998). This Plan identifies

Atlantic cod, haddock, ocean pout, American plaice, pollock, red hake, white hake, whiting, windowpane flounder, winter flounder, and yellowtail flounder and their life stages as species that may exist within CRP project locations. Restoration projects in the Northeast may also coincide with areas identified as EFH for: Atlantic herring under the Atlantic Herring FMP; Atlantic salmon under Amendment 1 to the Atlantic Salmon FMP; monkfish and its life stages under the Monkfish FMP (October, 1998), and Atlantic sea scallops under the Atlantic Sea Scallop FMP (October, 1998). Other restoration projects may be located in areas identified as EFH for a species managed under the Spiny Dogfish FMP (October, 1998). This Plan identifies spiny dogfish and its life stages as another species that may exist in CRP Northeast project areas. Also, CRP projects may occur in areas identified as EFH under the Secretarial FMP for Tunas, Sharks, and Swordfish, including: three species and life stages of tuna, one species of swordfish; and three species of shark: great hammerhead, nurse shark, and blacktip shark.

4.2.2 Endangered Species Act

The Endangered Species Act (ESA) provides for the conservation of species that are in danger of extinction throughout all or a significant portion of their range, as well as designation of critical habitat for these species. Listed species under ESA that may benefit from CRP restoration projects are primarily aquatic species inhabiting coastal and riparian habitats, including anadromous salmon and trout and sturgeon (Table 3). These fish may temporarily migrate through a restoration project area. A listed species of vegetation that may benefit from restoration is Johnson's seagrass. Most habitat restoration projects are located in coastal or riparian areas and are of small-scale; with project implementation windows and best management practices the potential to impact listed and candidate species will be avoided. If the proposed project plans cannot fully incorporate all impact avoidance measures or if new information becomes available that affects the basis for the determination of not likely to affect, then supplemental consultation will be undertaken prior to project implementation. Information on each species listed below was obtained from the Office of Protected Resources, NOAA Fisheries' webpage. The official records for ESA listings can be found in 50 CFR Parts 17, 222, and 224. The U.S. Fish and Wildlife Service also has a web site with up-to-date listings which can be found at http://endangered.fws.gov.

Fish

--Pacific Coast

Anadromous Pacific salmon and trout *(Oncorhynchus spp.)*
Anadromous fish live in the ocean as adults, where they may undergo extensive migrations before returning to their natal streams and rivers to spawn and complete their life cycle. Steelhead trout and four species of anadromous Pacific salmon (chinook, coho, chum, sockeye) are currently listed as endangered or threatened under the Endangered Species Act. Pacific salmon and trout historically have supported important commercial, recreational and tribal fisheries in Washington, Oregon, and California.

Chinook Salmon *(Oncorhynchus tshawytscha)*
Chinook salmon are found from the Bering Strait south to Southern California. Historically, they ranged as far south as the Ventura River, California. Along the U.S. West Coast, there are 17

distinct groups, or evolutionarily significant units (ESUs), of chinook salmon, from southern California to the Canadian border and east to the Rocky Mountains. Snake River spring/summer Chinook and Snake River fall chinook were listed as threatened species in 1992. In 1994, Sacramento River winter-run chinook were listed as endangered. In March 1998, two ESUs were proposed as endangered, five proposed as threatened, and the Snake River fall-run ESU was proposed to include fall chinook salmon populations in the Deschutes River.

Description
Among chinook salmon, two distinct races have evolved. One race, described as a "stream-type" chinook, is found most commonly in headwater streams. Stream-type chinook salmon have a longer freshwater residency, and perform extensive offshore migrations before returning to their natal streams in the spring or summer months. The second race is called the "ocean-type" chinook, which is commonly found in coastal streams in North America. Ocean-type chinook typically migrate to sea within the first three months of emergence, but they may spend up to a year in freshwater prior to emigration. They also spend their ocean life in coastal waters. Ocean-type chinook salmon return to their natal streams or rivers as spring, winter, fall, summer, and late-fall runs, but summer and fall runs predominate. Ocean-type chinook salmon tend to utilize estuaries and coastal areas more extensively for juvenile rearing.

Chum Salmon (*Oncorhynchus keta*)
Along the U.S. West Coast, there are 4 distinct groups, or evolutionarily significant units (ESUs), of chum salmon. Two of these ESUs, Hood Canal summer-run and Columbia River, were proposed as threatened under the ESA in March 1998.

Description
Chum salmon are anadromous and semelparous (spawn only once and then die), and spawn primarily in fresh water. Chum salmon spawn in the lowermost reaches of rivers and streams, typically within 100 km of the ocean. They migrate almost immediately after hatching to estuarine and ocean waters, in contrast to coho, chinook, sockeye and pink salmon, and steelhead and cutthroat trout, which migrate to sea after months or even years in fresh water. This means that survival and growth in juvenile chum salmon depend less on freshwater conditions (unlike stream-type salmonids which depend heavily on freshwater habitats) than on favorable estuarine and marine conditions.

Coho Salmon *(Oncorhynchus kisutch)*
Along the U.S. West Coast, there are 6 distinct groups, or evolutionarily significant units (ESUs), of chum salmon. Three of these ESUs, Central California, Southern Oregon/Northern California Coasts, and Oregon Coasts, were listed as threatened under the ESA in October 1996, May 1997, and August 1998, respectively.

Description
Coho salmon are anadromous and semelparous. Coho spend approximately the first half of their life cycle rearing in streams and small freshwater tributaries. The remainder of the life cycle is spent foraging in estuarine and marine waters of the Pacific Ocean prior to returning to their stream of origin to spawn and die.

Sockeye Salmon *(Oncorhynchus nerka)*
Along the U.S. West Coast, there are 7 distinct groups, or evolutionarily significant units (ESUs), of sockeye salmon. One of these ESUs, Snake River, was listed as endangered in November 1991. In March 1998, the Ozette Lake ESU was proposed as threatened and the Baker River ESU was designated as a candidate species.

Description
Sockeye salmon are mostly anadromous, and they exhibit a wide variety of life history patterns that reflect varying dependency on the fresh water environment. With the exception of certain river-type and sea-type populations, the vast majority of sockeye salmon spawn in or near lakes, where the juveniles rear for 1 to 3 years prior to migrating to sea. For this reason, the major distribution and abundance of large sockeye salmon stocks are closely related to the location of rivers that have accessible lakes in their watersheds for juvenile rearing. There are also *O. nerka* life forms that are non-anadromous, meaning that most members of the form spend their entire lives in freshwater. Non-anadromous *O. nerka* in the Pacific Northwest are known as kokanee. Occasionally, a proportion of the juveniles in an anadromous sockeye salmon population will remain in their rearing lake environment throughout life and will be observed on the spawning grounds together with their anadromous siblings. Taxonomically, the kokanee and sockeye salmon do not differ.

Steelhead Trout *(Oncorhynchus mykiss)*
West coast steelhead are presently distributed across about 15 degrees of latitude, from approximately 49EN at the U.S.-Canada border south to 34EN at the mouth of Malibu Creek, California. In some years steelhead may be found as far south as the Santa Margarita River in San Diego County. Climate and geological features vary greatly across this area. The southern California and upper Columbia River ESUs are listed as endangered. Eight other steelhead ESUs are listed as threatened, and one ESU (Oregon coast) is listed as a candidate for protection.

Description
Steelhead has the greatest diversity of life history patterns of any Pacific salmonid species, including varying degrees of anadromy, differences in reproductive biology, and plasticity of life history between generations. Within the range of West coast steelhead, spawning migrations occur throughout the year, with seasonal peaks of activity. In any given river basin there may be one or more peaks of migration activity; since these runs are generally named for the season in which they occur, some rivers may have runs known as winter, spring, summer, or fall steelhead. For example, large rivers such as the Columbia, Rogue, and Klamath have migrating adult steelhead at all times of year.

Threats
Declines in anadromous salmon and steelhead trout populations have been caused by several compounding factors. The waters off the Pacific coast have become warmer and less productive since the late 1970s, triggering a decline in the chinook and coho populations that utilize this area. Overharvesting of certain populations has also put tremendous pressure on salmon and steelhead trout stocks. However, the greatest threats to anadromous salmon and steelhead trout are inherent in the species' life cycles. These fish migrate into freshwater to spawn and are thus subject to habitat degradation. Throughout their range, freshwater salmonid (including trout)

habitat has been degraded and migration impeded by dam construction, channelization, mining, logging, agriculture, livestock grazing, urbanization, and pollution.

Restoration actions
Community-based restoration projects are typically small-scale and located in coastal areas. All implementation activities will be performed during appropriate "windows" (of seasonal opportunity) when listed species are most likely to be outside the project area. These fish windows will vary by species and project location and will have to be adapted to local conditions. Most restoration activities will be performed by volunteers and will involve hand tools and replanting. Short-term impacts include localized sedimentation in streams and coastal waters. However, these impacts are very localized and temporary, and will not adversely affect anadromous salmon or trout.

--Atlantic Coast
<u>Anadromous Atlantic Salmon</u> <u>*(Salmo salar)*</u>
One distinct population segment (DPS) composed of seven river populations of Atlantic salmon are currently listed as threatened under the Endangered Species Act. The seven Maine rivers referred to are the following: Sheepscot, Ducktrap, Narraguagus, Pleasant, Machias, East Machias, and Dennys rivers.

Description
Atlantic salmon historically supported important commercial and recreational fisheries in the northeast US. Atlantic salmon of U.S. origin are anadromous and highly migratory, undertaking long marine migrations between the mouths of U.S. rivers and the northwest Atlantic Ocean where they are widely distributed seasonally over much of the region. Most Atlantic salmon of U.S. origin spend two winters in the ocean before returning to freshwater to spawn

Threats
Dams with either inefficient or non-existent fishways have been a major cause of the decline of U.S. Atlantic salmon. Dams adversely impact Atlantic salmon by impeding both their upstream and downstream migration, increasing predation, altering the chemistry and flow pattern of rivers, increasing water temperature, and reducing available flow downstream. Currently there are no hydropower dams on the seven rivers that have the potential to adversely impact the species. Beaver and debris dams have been documented on these rivers and may partially obstruct passage. Historically, the marine exploitation of U.S. origin Atlantic salmon occurred primarily in foreign fisheries. Recent scientific evidence suggests that low natural survival in the marine environment is a major factor contributing to the decline of Atlantic salmon throughout North America. It appears that survival of the North American stock complex of Atlantic salmon is at least partly explained by sea surface water temperature.

Restoration actions
Community-based restoration projects are typically small-scale and located in coastal areas. All implementation activities will be performed during appropriate fish windows when listed salmon are most likely to be outside the project area. These fish windows will vary by project location and will have to be adapted to local conditions. Most restoration activities will be performed by volunteers and will involve hand tools and replanting. Short-term impacts include localized

sedimentation in streams and coastal waters. However, these impacts are very localized and temporary, and will not adversely affect migrating salmon populations.

<u>Sturgeon *(Acipenser spp.)*</u>
Two species of sturgeon, Gulf and shortnose, are listed as threatened and endangered respectively, under the Endangered Species Act. Sturgeon are anadromous fishes that inhabit the Atlantic coast. These fishes spawn in coastal rivers and migrate offshore into the Gulf of Mexico or Atlantic Ocean. However, their marine migrations are nowhere near as extensive as other anadromous Atlantic species, such as shad and salmon. Sturgeon return to their natal freshwater streams to spawn at maturity, but unlike salmon, they return to the sea to spawn again in future years.

<u>Gulf Sturgeon *(Acipenser oxyrinchus desotoi)*</u>
The National Marine Fisheries Service (NMFS) and US Fish and Wildlife Service (FWS) listed the Gulf sturgeon as a threatened species on September 30, 1991. NMFS and FWS share jurisdiction for this species under the Endangered Species Act. The Gulf sturgeon, also known as the Gulf of Mexico sturgeon, is a subspecies of the Atlantic sturgeon.

Description
Gulf sturgeon are anadromous, with reproduction occurring in fresh water. Most adult feeding takes place in the Gulf of Mexico and its estuaries. Historically, the Gulf sturgeon occurred from the Mississippi River to Charlotte Harbor, Florida. It still occurs, at least occasionally, throughout this range, but in greatly reduced numbers. The fish is essentially confined to the Gulf of Mexico. River systems where the Gulf sturgeon are known to be viable today include the Mississippi, Pearl, Escambia, Yellow, Choctawhatchee, Appachicola, and Swannee Rivers, and possibly others.

<u>Shortnose Sturgeon *(Acipenser brevirostrum)*</u>
The shortnose sturgeon was listed as endangered throughout its range on March 11, 1967. It is an anadromous fish that spawns in the coastal rivers along the east coast of North America from the St. John River in Canada to the St. Johns River in Florida.

Description
The shortnose sturgeon is anadromous, living mainly in the slower moving riverine waters or nearshore marine waters, and migrating periodically into faster moving fresh water areas to spawn. This species prefers the nearshore marine, estuarine and riverine habitat of large river systems. Shortnose sturgeon, unlike other anadromous species in the region such as shad or salmon, do not appear to make long distance offshore migrations.

Shortnose sturgeon occur in most major river systems along the eastern seaboard of the United States. In the southern portion of the range, they are found in the St. Johns River in Florida; the Altamaha, Ogeechee, and Savannah Rivers in Georgia; and, in South Carolina, the river systems that empty into Winyah Bay and the Santee/Cooper River complex that forms Lake Marion. Data are lacking for the rivers of North Carolina. In the northern portion of the range, shortnose sturgeon are found in the Chesapeake Bay system, Delaware River from Philadelphia, Pennsylvania to Trenton, New Jersey; the Hudson River in New York; the Connecticut River;

the lower Merrimack River in Massachusetts and the Piscataqua River in New Hampshire; the Kennebec River in Maine; and the St. John River in New Brunswick, Canada. One partially landlocked population is known in the Holyoke Pool, Connecticut River, and another landlocked group may exist in Lake Marion on the Santee River in South Carolina.

Threats
Dams have been a significant factor in the decline of sturgeon. These anadromous fish are unable to negotiate fish ladders and other in-stream structures to reach spawning habitat. Habitat degradation associated with dredging and dredged material disposal, pollution, and other human activity remains a constant threat to sturgeon populations.

Restoration actions
Community-based restoration projects are typically small-scale and located in coastal areas. All implementation activities will be performed during appropriate fish windows when listed species are most likely to be outside the project area. These fish windows will vary by species and project location and will have to be adapted to local conditions. Most restoration activities will be performed by volunteers and will involve hand tools and replanting. Short-term impacts include localized sedimentation in streams and coastal waters. However, these impacts are very localized and temporary, and will not adversely affect migrating sturgeon populations.

Turtles
Turtles are saltwater reptiles, well-adapted to life in their marine world. Although sea turtles live most of their lives in the ocean, adult females must return to land in order to lay their eggs. Sea turtles often travel long distances from their feeding grounds to their nesting beaches. Six species of turtles (Green, Hawksbill, Kemp's Ridley, Leatherback, Loggerhead, and Olive Ridley) are currently listed as endangered or threatened under the Endangered Species Act.

All six species encounter human impacts in their nesting environment as well as in the marine environment. Impacts to the nesting environments include egg poaching, erosion of nesting beaches, compaction of beaches by heavy machinery and off-road vehicles, and fortification of beach front property which results in loss of a dry nesting beach. Impacts in the marine environment include habitat destruction from dredging, turtle consumption of marine debris such as plastic and Styrofoam which interferes with metabolism, and marina and dock development which causes foraging habitat to be destroyed or damaged.

Green Sea Turtle (*Chelonia mydas)*
The breeding populations of the green sea turtle off Florida and the Pacific coast of Mexico are listed as endangered while all others are threatened.

Description
The green sea turtle can be found around the U.S. Virgin Islands, Puerto Rico, and the continental U.S. from Texas to Massachusetts. Important feeding grounds include Indian River Lagoon, the Florida Keys, and Cedar Key. They are also found in the North Pacific ranging from Eliza Harbor, Alaska, to Ucluelet, British Columbia.

Threats
The greatest cause of decline in green turtle populations is commercial harvest for eggs and food. Other turtle parts are used for leather and jewelry, and small turtles are sometimes stuffed for curios. Incidental catch during commercial shrimp trawling is a continuing source of mortality that adversely affects recovery.

Hawksbill Turtle (*Eretmochelys imbricata)*
Within the United States, hawksbills are most common in Puerto Rico and its associated islands, and in the U.S. Virgin Islands. In the continental U.S., the species is recorded from all the Gulf states and from along the eastern seaboard as far north as Massachusetts, with the exception of Connecticut, but sightings north of Florida are rare.

Description
The hawksbill is a small to medium-sized turtle that utilizes a variety of habitats through out its life cycle. Post-hatchling hawksbills occupy the pelagic environment and return to coastal waters upon reaching a certain size. Juveniles and adults forage on oyster reefs in order to have access to sponges, a staple of their diet. The hawksbill occurs in tropical and subtropical seas of the Atlantic, Pacific and Indian Oceans.

Threats
There are a number of threats to hawksbill, including poaching of eggs from nesting beaches, entanglement in marine debris, including monofilament gill nets, fishing line and rope. Hawksbill turtles eat a wide variety of debris such as plastic bags, plastic and styrofoam pieces, tar balls, balloons and plastic pellets. Effects of consumption include interference in metabolism or gut function, even at low levels of ingestion, as well as absorption of toxic by-products. International commerce in hawksbill shell (bekko) is the single most significant factor endangering hawksbill populations around the world.

Kemp's Ridley Turtle (*Ledidochelys kempii)*
The Kemp's Ridley occurs mainly in coastal areas of the Gulf of Mexico and the northwestern Atlantic Ocean and listed as endangered throughout its range.

Description
The Kemp's Ridley is one of the smallest of all extant sea turtles. The major nesting beach is on the northeastern coast of Mexico.

Threats
The decline of this species was primarily due to human activities including: collection of eggs, fishing for juveniles and adults, killing adults for meat and other products, and direct take for indigenous use. In addition to these sources of mortality, Kemp's Ridley have been subject to high levels of incidental take by shrimp trawlers.

The population seems to be in the earliest stages of recovery due to strict protection. The increase can be attributed to full protection of nesting females and their nests in Mexico as well as the requirement to use turtle excluder devices (TEDs) in shrimp trawls in both the United States and Mexico.

Leatherback Sea Turtle (*Dermochelys coriacea)*

The Leatherback turtle is listed as endangered throughout its range. Some of the largest nesting assemblages are found in the U.S. Virgin Islands, Puerto Rico, and Florida. During the summer, Leatherbacks tend to be found along the East Coast of the United States ranging from the Gulf of Maine south to the middle of Florida. They have also been sited offshore of the Hawaiian Islands.

Description

The Leatherback is the largest living turtle, and is so distinctive as to be placed in a separate taxonomic family. Nesting trends of the Leatherback appear stable in the United States, but the population faces significant threats from incidental take in commercial fisheries and marine pollution.

Threats

One of the primary threats to Leatherbacks is the tremendous overharvesting of eggs as well as direct harvesting of adults. Habitat destruction and incidental catch in commercial fisheries have also caused the population to decline.

Loggerhead Sea Turtle (*Caretta caretta)*

Loggerheads are the most abundant species in U.S. coastal waters and have been listed as threatened throughout its range.

Description

Primary Atlantic sites for the Loggerhead are found along the east coast of Florida, with additional sites in Georgia, the Carolinas, and the Gulf Coast of Florida. Loggerheads are also found as far north as Alaska in the eastern Pacific with occasional sightings of juveniles off the coast of Washington.

Threats

The most significant threat to the Loggerhead populations is coastal development, increased use of nesting beaches by humans, and pollution. Shrimp trawling has also had a devastating impact on the populations.

Olive Ridley Sea Turtle (*Lepidochelys oliveacea)*

The Olive Ridley turtle is listed as threatened for the Mexican nesting population and threatened for all other populations.

Description

The Olive Ridley is a small, hard-shelled marine turtle. Its range is essentially tropical with the occasional sighting of non-nesting individuals in the southwestern United States. It has been recommended that the Olive Ridley be reclassified as endangered for the Western Atlantic because of a decline in abundance.

Threats

The greatest cause of decline of the Olive Ridley is by direct harvesting of adult turtles as well as eggs. The continued direct and incidental uptake of turtles in shrimp trawl nets and the loss of habitat are additional concerns.

Restoration Actions
Community-Based restoration projects consist of protecting nesting habitat of turtles. Restoration activities may involve the removal of invasive plants, which act as physical barriers to turtles in addition to causing de-stabilization of dunes. Removal of invasives would be completed before sea turtle nesting season in order to prevent damage to nesting habitat. Planting of native dune vegetation would promote re-stabilization of the dune community. Also, abandoned net removal from reefs would avoid potential turtle interaction.

Table 3. Partial List of Species Listed under the Endangered Species Act (ESA) that may benefit from CRP restoration projects.

(Key: C = Candidate; E = Endangered; T = Threatened)

Birds

Status	*Species Name*
E	Eagle, bald (*Haliaeetus leucocephalus*)
E	Pelican, brown (*Pelecanus occidentalis*)
E, T	Plover, piping (*Charadrius melodus*)
E, T	Tern, roseate (*Sterna dougallii dougallii*)

Corals

Status	*Species Name*
C	Elkhorn Coral (*Acropora palmate*)
C	Staghorn Coral (*Acropora cervicomis*)

Fishes

Status	*Species Name*
E	Atlantic Salmon (*Salmo salar*)
C	Brown Rockfish (*Sebastes* auriculatu)s
E, T, C	Chinook Salmon (*Oncorhynchus tshawytscha*)
T	Chum Salmon (*Oncorhynchus keta*)
T, C	Coho Salmon (*Oncorhynchus kisutch*)
C	Copper Rockfish (*Sebastes caurinus*)
T	Gulf Sturgeon (*Acipenser oxyrinchus desotoi*)
C	Key Silverside (*Menidia conchorum*)
C	Searun Cutthroat Trout (*Oncorhynchus clarki clarki*)
E	Shortnose Sturgeon (*Acipenser brevirostrum*)
E, T, C	Sockeye Salmon (*Oncorhynchus nerka*)
E, T, C	Steelhead Trout (*Oncorhynchus mykiss*)
E	Tidewater Goby (*Eucylogobius newberry*)

Mammals

Status	*Species Name*
E	Hawaiian Monk Seal (*Monachus schauinslandi*)
E	West Indian Manatee (*Trichechus manatus*)

Mollusks

Status	*Species Name*
C	Black Abalone (*Haliotis cracherodii*)

Reptiles

Status	*Species Name*
E, T	Green Turtle (*Chelonia mydas*)
E	Hawksbill Turtle (*Eretmochelys imbricata*)
E	Kemp's Ridley Turtle (*Lepidochelys kempii*)
E	Leatherback Sea Turtle (*Dermochelys coriacea*)
T	Loggerhead Sea Turtle (*Caretta caretta*)
T	Olive Ridley Sea Turtle (*Lepidochelys oliveacea*)

4.3 Human Environment/Socioeconomics

Coastal regions are home to more than 139 million people (approximately 53 percent of the nation's total), and this population is expected to increase to 165 million by the year 2010 (NOAA 1998). People enjoy coastal areas for their beauty and depend on them for recreational and commercial uses. Estuaries and coastal wetlands provide essential habitat for 80-90 percent of the recreational fish catch and 75 percent of the commercial harvest. Commercial and recreational fishing industries employ 1.5 million people and contribute $111 billion to the nation's economy (RAE 2000a). However, human activities and development have caused the destruction of more than half (roughly 55 million acres) of the wetlands in our coastal states (RAE 2000b).

As a result of these continuing increases in human development and activities in coastal areas, there have been concurrent declines in water and air quality, and habitat fragmentation and degradation. However, community, educational institutions and other groups are also increasing their involvement through activities like those conducted under the CRP, and are helping to reverse the trend in coastal habitat decline. The CRP projects are generally small-scale, involving local community individuals and groups, homeowners and businesses, working together to restore coastal marine habitat.

4.3.1 National Historic Preservation Act

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.

The Community-Based Restoration Program must comply with the NHPA by coordinating with the State Historic Preservation Officers (SHPO). Sites affected by community-based restoration will be local, small-scale, and in tidally-influenced/moving environments; there should be a very low potential to affect historical and cultural resources covered under this Act. If potential historical and cultural resources are identified at any CRP site, additional coordination would be undertaken with SHPO to ensure full compliance with the Act.

5.0 ENVIRONMENTAL CONSEQUENCES OF THE PREFERRED ALTERNATIVE

5.1 Evaluation of the Potential Significance of Proposed Actions

Pursuant to the National Environmental Policy Act (NEPA), 42 U.S.C. Section 4371 *et seq*., and the implementing regulations at 40 C.F.R. Part 1500 (the NEPA regulations), federal agencies contemplating implementation of a major federal action must produce an environmental impact statement (EIS) if the action is expected to have significant impacts on the quality of the human environment. Federal agencies may conduct an environmental assessment (EA) to evaluate the need for an EIS. If the EA demonstrates that the proposed action will not significantly impact the quality of the human environment, the agency issues a Finding of No Significant Impact (FONSI), which satisfies the requirements of NEPA, and no EIS is required.

The NEPA regulations suggest ten factors that federal agencies should consider in evaluating the potential significance of proposed actions. These include (1) likely impacts of the proposed project; (2) likely effects of the project on public health and safety; (3) unique characteristics of the geographic area in which the project is to be implemented; (4) controversial aspects of the project or its likely effects; (5) degree to which possible effects of implementing the project are highly uncertain or involve unknown risks; (6) precedential effect of the project on future actions that may significantly affect the human environment (7) possible significance of cumulative impacts from implementing this and similar projects; (8) effects of the project on National Historic Places, or likely impacts to significant cultural, scientific, or historic resources; (9) degree to which the project may adversely affect endangered or threatened species or their critical habitat; and (10) likely violations of environmental protection laws (40 C.F.R. 1508.27). These factors, along with the program manager's preliminary conclusions concerning the potential of these impacts of the proposed restoration program, are discussed in detail below.

5.1.1 Nature of Likely Impacts

The objective of the Community-Based Restoration Program is to improve all degraded natural habitats utilized by living marine resources. Activities conducted under the program include submerged aquatic vegetation (SAV) restoration; improved anadromous fish passage; invasive plant removal followed by re-vegetation with native species; salt marsh restoration; oyster reef restoration; kelp forest restoration; coral reef restoration; developing wetland plant nurseries as a source of restoration material; mangrove forest restoration; riparian habitat restoration; and anadromous fish habitat restoration.

The CRP projects involve the restoration of coastal habitats that benefit living marine resources. These restoration activities are undertaken in riparian, marsh, shellfish, submerged aquatic vegetation, coral, shoreline, kelp, and mangrove habitats. All activities address the specific habitat needs that would provide for increased ecological structure and functions. In addition to the conservation and protection provided through the stewardship and education component of each project, the following increase in habitat may occur on an annual basis. In riparian systems approximately 50 miles of stream and 190 acres of habitat would be restored. Approximately 400 hundred acres of marsh habitat would be restored. Approximately 90 acres of shellfish would be restored. Restoration of approximately six acres of submerged aquatic vegetation, 11,000 acres of coral reef, 90 acres of shoreline, one acre of kelp, and five acres of mangrove would be undertaken.

Certain CRP restoration activities may be eligible for categorical exclusion under NOAA NEPA Guidance. Examples of such activities likely to be eligible for categorical exclusion include: re-vegetation of habitats; restoration of submerged, riparian, intertidal, or wetland substrates; and replacement or restoration of shellfish beds through transplanting or restocking (NAO 216-6.03(b)(2)). These activities would have a long-term beneficial impact on living marine resources. Best management practices will be used to eliminate or minimize all short-term adverse impact associated with implementation activities on or adjacent to the project site. These potential impacts are addressed in the short-term impact sections for each habitat type. The cumulative impacts to the project site and adjacent areas for all activities undertaken would be minor water quality reduction due to turbidity plumes, noise from equipment and volunteers, and air quality reduction from vehicles. Under the CRP, these restoration activities do not individually or cumulatively have significant adverse impacts on the human environment. Collectively, projects will have a beneficial impact on aquatic resources in the restored habitats.

5.1.2 Effects on Public Health and Safety

Program managers do not expect activities related to program implementation to have any impacts on public health and safety. Habitat restoration activities will not present any unique physical hazards to humans. No pollution or toxic discharges would be associated with CRP activities.

5.1.3 Unique Characteristics of the Geographic Area

Project managers will evaluate the unique characteristics of the geographic area on a project by project basis.

5.1.4 Controversial Aspects of the Program or Its Effects

Program managers do not expect any controversy to arise in connection with CRP activities. CRP activities are implemented by local communities and have had no adverse reaction from the public. Most activities involve input and direct participation of the public. CRP activities are also supported by current government policy.

5.1.5 Uncertain Effects or Unknown Risks

Program managers must conduct a thorough site survey and other analyses to address any significant uncertainties before project implementation.

5.1.6 Precedential Effects of Implementing the Program

CRP activities improve degraded habitats used by marine resources by increasing ecological structure and functions. These activities are implemented for the purpose of preserving habitats to ensure the availability of valuable resources for future generations. Program managers do not foresee that the CRP program will set any precedent for future actions of the type that would significantly affect the quality of the human environment.

5.1.7 Possible Significant Cumulative Impacts

Program managers know of no impacts to the human environments to which the proposed restoration program would contribute, that, cumulatively, would constitute a significant impact on the quality of the human environment. The program will restore viable coastal and estuarine habitats.

5.1.8 Affects on National Historic Sites or Nationally Significant Cultural, Scientific, or Historic Resources

The CRP program must comply with the National Historic Preservation Act (NHPA) by coordinating with State Historic Preservation Officers (SHPO). There should be a very low potential to affect historical and cultural resources. If historical or cultural resources are identified at a CRP project site, additional coordination will be undertaken with SHPO to ensure full compliance with the NHPA.

5.1.9 Effects on Endangered or Threatened Species

CRP activities may benefit a number of endangered and threatened species through the restoration of coastal, estuarine, and riverine habitats. A list of species that may benefit from CRP restoration projects can be found in Table 3. Most CRP project sites are located in coastal or riparian areas and are of small-scale. Potential impacts to endangered and threatened species will be avoided through impact avoidance measures. If new information becomes available that affects the basis for the determination of not likely to affect, then supplemental consultation will be undertaken prior to project implementation.

5.1.10 Violation of Environmental Protection Laws

The proposed program does not require nor do the project managers anticipate incidental violation of federal, state, or local laws designed to protect the environment. Activities associated with the CRP can be implemented in compliance with all applicable environmental laws and regulations.

5.2 Adverse Impact Avoidance and Minimization

Timing of restoration implementation would be limited to periods when important species are least likely to be in the project area (e.g., pre-determined fish windows for anadromous fish) to minimize impacts any potential to living marine resources. People conducting the restoration will be trained in use of low-impact techniques for each activity and habitat, to avoid or minimize any impacts due to foot traffic, diving techniques, equipment handling, and planting techniques. Turbidity curtains, haybales, and other erosion prevention tools will be used as applicable, to limit sediment erosion from sites. Staging areas and access roads will be kept to a minimum size, wherever such measures are needed. Tidal and riverine flows will be maintained, to the maximum extent practicable, during restoration activities. In ecologically sensitive areas such as coral reefs, appropriate methods and care will be used in equipment handling and vessel mooring. Any transplanting of plants or other biological resources will be conducted in a manner to keep the transplants as viable as possible (for example, coral transplants will be kept moist). Monitoring will be conducted to ensure compliance with project design and restoration success.

5.3 Assessment of Potential Impacts of the Preferred Alternative

Examples of small-scale habitat restoration projects are described below, followed by an analysis of the short-term adverse affects that could result from related implementation activities. The CRP will continue to implement these project types on an annual basis.

Riparian Habitat Restoration

--Russian River, Alaska--
Restoration of approximately 1,900 feet of riverbank along the Russian River in Alaska included log terracing, coir log installation, application of imported soils and erosion mats, and planting of willows and cottonwood. Using expertise provided by NOAA's National Marine Fisheries Service in partnership with FishAmerica Foundation and with support of staff and volunteers from Alaska's Youth Restoration Corps (YRC), the restoration took place over six weeks. A new restoration technique approved by the Alaska Department of Fish and Game alternates rows of soil bags with live vegetation, creating a new stable bank with new habitat. Portions of the existing riverbank trail were temporarily fenced off and revegetated by loosening existing trail soil, replanting it with native vegetation and covering it with an erosion mat. Root wads (stumps 6-8 inches wide) were also placed in the riverbed with duckbill anchors, providing both immediate habitat and a foundation for additional streambank restoration.

Youths 16 to 19 years of age received training in the use of biorestoration and bank stabilization techniques for this project. The training consisted of classroom instruction and "hands-on" work experience. Participants learned about the ecosystem they would be restoring and the natural and human processes that have accelerated the degradation of the project areas. The restored areas were "rested" through the summer peak season and monitored by the students for the remainder of the program to study the effects of the restoration, which is expected to boost populations of sportfish, including sockeye salmon and rainbow trout.

Short-Term Impacts:
Riparian habitat restoration practices usually involve re-vegetation activities, placement of large woody debris (LWD), and often the creation of large root wad structures. Re-vegetation usually results in minor disturbance of the surrounding habitat by volunteers, which is quickly remedied by the re-vegetation of the area itself. However, the placement of LWD and creation of root wad

structures may require the use of heavy machinery to place large logs into the stream. The use of heavy machinery can often cause damage to the surrounding riparian area such as clearing of existing vegetation, compaction, and disruption of the soil. This, in turn, may cause sedimentation in the adjacent stream with turbidity plumes typically being short-term and quickly dispersed by the river current. Another factor to consider during riparian habitat restoration is the presence of spawning habitat within the stream. Any activities that disturb the stream or alter its conditions can have an impact on migrating salmonids.

The restoration of the Russian River consisted of the creation of a large root wad structure as well as re-vegetation of the surrounding area by the YRC. Several measures were taken to eliminate or reduce any possible impacts to the surrounding habitat during implementation. Instead of using heavy machinery to place LWD and construct the root wad structure, both activities were done manually by volunteers (Wolf, pers. comm). This eliminated the potential for the surrounding area to be cleared by large machinery and reduced the potential for erosion. The creation of the root wad structure involved burial of a tree stump underneath the undercut bank of the damage area and rebuilding the bank back to its original vegetated contour. To prevent damage to the stream bottom, placement of the root wad was performed during low water levels. Erosion mats made of coconut fiber were also used to prevent erosion and damage to habitat and species while allowing the root wad structure to stabilize, anchoring it into place naturally. The use of biodegradable mats ensured that no damage to salmonids would occur as the coconut fiber deteriorates. To reduce the impact of the restoration on migrating salmonids, most restoration work was done before June, when fishing season begins. The Russian River riparian habitat restoration was planned as a low-impact restoration that had little adverse effect on the surrounding habitat. Any impacts resulting from the restoration were short-term and quickly dispersed (i.e., sediments), or avoided entirely.

Anadromous Fish Habitat Restoration

--*Nine major watersheds, Oregon*--

Watershed restoration and salmon recovery are being integrated in nine key watersheds on the southern Oregon Coast. This coast is a significant, high priority region for salmon recovery. Coho salmon here are listed as threatened under the Endangered Species Act, and salmon production in this area is limited by erosion and silting in of spawning habitat, high water temperatures due to lack of streamside shade, and lack of refuge-providing habitat complexity due to past intensive logging. Large woody debris (LWD) provides multiple benefits for all species of native salmonids. Large wood traps gravel for spawning; provides refuge for juveniles; helps create pools, a vital component of freshwater habitat; provides breeding habitat for insects that become fish food; and contributes organic material to the riverine system.

In 1999, the CRP and FishAmerica joined with the South Coast and Lower Rogue Watershed Councils, Siskiyou Coast Salmon Recovery and the U.S. Forest Service to begin implementing watershed restoration projects in nine major watersheds in cooperation with over 60 individual landowners, based on an existing watershed assessment and action plan that identified priorities for restoration. One of these priority sites is located at Mill Creek tributary, second on the Chetco south bank, where intensive logging practices of the past have resulted in a lack of large woody debris. With the help of community volunteers, restoration of the Mill Creek tributary began with the addition of 20 trees and logs to the stream. The U.S. Forest Service re-vegetated approximately 10,890 square feet of the surrounding riparian zone. Monitoring of the site includes standard spawning surveys to measure habitat changes from the placement of LWD, and a measure of the ratio of riffles to pools

Short-Term Impacts:
The addition of large woody debris may require the use of heavy machinery to place wood into the stream. This process may cause temporary erosion and small-scale land clearing of the immediate area. This project did utilize heavy equipment for the placement of wood that was yarded in with a cable (Hoogesteger, pers. comm.). Adverse impacts included a skid trail from the equipment that exposed about 10 square yards of soil and caused some minor erosion and sedimentation into the stream. However, this impact was quickly mitigated by the re-vegetation of the area by the U.S. Forest Service.

Localized, temporary turbidity plumes were created as a result of erosion and sedimentation, but were quickly dispersed by stream currents. Preset routes to the restoration site were also established to minimize trampling of adjacent riparian areas. The risk of impact to migrating salmon was also a possible result of the restoration. To avoid this impact, restoration activities took place during the fish window, from July 15 through September 30, when few salmonids are present in the stream. Overall, adverse impacts were limited as a result of precautionary measures taken to limit the potential damage to the surrounding habitat. Since project implementation activities were performed during the off-peak season for salmonid migration, and re-vegetation efforts restored any soil exposed from implementation, impacts were short-term and limited in scope.

Anadromous Fish Passage Restoration

--*Adobe Creek, Sonoma County, California*--
Anadromous fish runs are declining throughout California, largely as a result of alteration of spawning habitat. As part of NOAA's effort to restore habitat for salmon and steelhead trout, the NOAA Restoration Center CRP provided funds and technical expertise to implement the Adobe Creek Fish Passage Project in Sonoma County, California. The project involved a partnership with an organization of high school students, and the United Anglers of Casa Grande, who had successfully restored habitat used by steelhead that had been nearly extirpated from the highly-modified Adobe Creek.

The CRP-funded phase of the restoration involved the creation of a permanent step-pool fish ladder system to provide passage for steelhead trout and chinook salmon over a 12-foot obstruction, thereby providing the fish with access to additional spawning habitat. The student group is maintaining the fish ladder and monitoring its success as part of their ongoing stewardship of Adobe Creek. Long-term benefits include a fully functioning stream for unrestricted passage of migrating steelhead with riparian re-growth to keep stream temperatures habitable. The restored site now provides shelter, shade, and feeding areas for many species of fish and wildlife.

Short-Term Impacts:
The greatest potential for short-term impacts was expected to result from activities associated with the creation of the fish ladder. A short stream reach was diverted around the project site (Wantuck, pers. comm). This was performed during the month of September when no fish migration was occurring. In order to build the fish passage structure, an adjacent field was used as a staging area for large boulders and implementation equipment. A medium-size backhoe was used to carry boulders and logs and place them in the stream. Care was taken to minimize disturbance and damage to riparian vegetation by planning the ingress and egress routes in advance. Cleanup and site restoration involved removing debris, re-grading where necessary, erosion control, and replanting of affected areas with native plants.

Marsh Restoration

--*Ipswich, Massachusetts*--
The construction of Argilla Road, in Ipswich, Massachusetts, over one hundred years ago reduced tidal flushing to approximately 15 acres of salt marsh. Common reed, *Phragmites australis,* expanded into many locations in the marsh as a consequence of restricted natural tidal flushing caused by a severely undersized culvert. The tidal range upstream of the road was less than two feet, while on the downstream side it ranged up to eight feet. Lack of tidal flow to this salt marsh prevented fish and shellfish species from occupying this important feeding and spawning area. Excessive mosquito breeding was also problematic in the high marsh pannes, since these areas were only flooded under storm conditions when waves and tidal surge overtopped the roadway.

In 1998, the undersized culvert was replaced with a 5-foot by 8-foot concrete box culvert to increase the mean-high-water level in portions of the previously restricted marsh. Two weeks after the installation, the upstream portion of the marsh was completely flooded for the first time since the construction of Argilla Road. Restoration of a normal tidal flushing regime to the marsh has provided a significant increase in available habitat for both estuarine plant and animal species. Monitoring efforts began in the spring of 1999 with NMFS staff and partners collecting data on fish use, tidal hydrology and vegetation. Observations of *Phragmites* indicated a drastic reduction in their height in the past year with many areas dying off. The inundation of the marsh with salt water has also resulted in replacement of *Typha* with *Salicornia,* a salt marsh pioneer species. The project resulted in the ecological enhancement and restoration of 15 acres of degraded tidal wetlands.

Short-Term Impacts:
The culvert replacement process required heavy machinery to lower the new culvert into place. Implementation work performed during the culvert replacement could have easily caused many short-term impacts to the surrounding marsh habitat. These impacts include erosion and increased turbidity levels caused by the excavation and dewatering of the tidal creek to maintain a dry work area. Another possible impact was flooding of the marsh with ocean water due to a seven-foot difference between the dry work site in the tidal creek and freshwater on the other side of Argilla Road.

Several precautionary measures were taken to prevent and/or limit these impacts. Erosion and increased turbidity levels were prevented using a turbidity curtain, a floating silt fence that prevents the flow and/or washing out of disturbed debris from the tidal creek. The turbidity curtain also localized any erosion to an isolated area. Flooding of the tidal creek was prevented through the creation of a barrier to prevent freshwater from entering the work area during project implementation. Due to these measures, very limited impacts to the surrounding habitat occurred during the replacement of the undersized culvert. Minor erosion and limited turbidity plumes were short-term and quickly dissipated because of increased tidal flushing through the larger culvert.

<u>Submerged Aquatic Vegetation (SAV) Restoration</u>

--*Chesapeake Bay, Maryland*--
Development and agriculture have had a major impact on the amount of SAV occurring in the Chesapeake Bay. Excess nutrients and suspended solids from increased fertilizer use, poor sewage treatment and pollution have led to cloudy waters that light cannot penetrate. This makes photosynthesis impossible for SAV, contributing to its decline. In 1997, the CRP partnered with the Alliance for the Chesapeake Bay to evaluate how best to use community volunteers to restore seagrasses at two sites, St. Jeromes Creek and near the mouth of the Patuxent River. The volunteer-based restoration program was implemented to assess the effectiveness of transplanting seagrass at sites where water quality requirements have been met but no grasses exist, and to evaluate the feasibility of increasing public involvement in seagrass restoration projects.

More than 350 plants from Maryland's Horn Point Laboratory were transplanted to the two sites by volunteers, to restore more than 7,400 square feet of seagrass within the Bay. Field efforts included a demonstration of transplanting techniques to be used by volunteers. Recruiting and training of volunteers to implement a water quality monitoring program was conducted. The goal of the monitoring program was to learn what areas in the Bay meet habitat requirements of the plants and identify potential locations for seagrass restoration.

Short-Term Impacts:
SAV restoration often involves transplanting eelgrass plants (*Zostera marina*) from existing SAV donor beds, which can cause short-term adverse impacts to SAV. Instead of transplanting eelgrass plants from existing beds, this project used a laboratory-based method of reproducing numerous propagules from one parent plant to be used for restoration material. The propagules were then grown-out to plant shoots in a controlled setting before being transplanted to the restoration site. This micro-propagation process causes no damage to existing seagrass beds since all work is done in the laboratory. Instead of planting propagules into the soft-bottom substrate of the restoration sites, propagules were placed on a cocoa mat planting medium where their roots were allowed to develop. Bamboo stakes were used to anchor the mats to the soft bottom at the restoration site. The use of the cocoa mat planting medium allowed the planting of more than one plant at a time and prevented plants from being covered by sediment. This method of planting had little to no impact on the surrounding habitat and associated fauna since no digging or clearing of bottom substrate was required. Overall, the restoration methods used in this project gave little evidence of any short-term impacts to the surrounding environment.

Shellfish/Artificial Reef Restoration

--Chesapeake Bay, Maryland--
The oyster has been an integral part of the Chesapeake Bay region's economic development and cultural heritage. Oysters improve water quality by filtering out large quantities of suspended sediment along with plankton they feed on. In recent years, the oyster population has experienced a significant decline in the Chesapeake Bay due to the effects of pollution. In an effort to reverse this trend, the CRP has partnered with local groups to restore an oyster reef in the Western Branch of the Elizabeth River, Virginia. Hatchery-produced seed oysters were grown in floating cages (2,000 oysters per cage) by middle and high school students. At the end of the academic year, over 100,000 oysters were planted on a reconstructed half-acre reef built with oyster shell by a local marine contractor. Students helped to monitor the growth and survival of the oysters. The project involved a partnership with the Virginia Marine Resources Commission, Chesapeake Bay Foundation, civic organizations and private citizens to stimulate public awareness of the ecological value of oyster reefs and a generated a heightened sense of community stewardship for local restoration of the affected resources.

Short-Term Impacts:
One of the primary adverse impacts caused by oyster reef creation projects is not due to the creation of reefs, but to the source from which shell is obtained. Shells are commonly obtained via two methods. Dredge shell programs obtain buried shells by dredging areas, which can cause short-term turbidity problems. The other method of obtaining shell is to purchase them through shucking houses, which has no adverse impact to aquatic habitat. During implementation, turbidity problems may also arise when shells are deployed onto the reef. Any bottom-dwelling benthic organisms, fish and plants in the area would also be buried during placement of shell, including any organisms on the existing reef.

The restoration of the oyster reef in the Elizabeth River involved the placement of over 43,484 bushels of oyster shells on the half-acre reef. These shells were obtained from shucking houses so that adverse impacts to habitat due to shell collection were avoided (Wesson, pers. comm). Before being deployed onto the oyster reef, the shells were washed to remove any debris. The project site is located in an open area of the river that is free of any submerged aquatic vegetation. To minimize turbidity problems in the creation of the reef, oyster shells were washed overboard from barges onto the project sites. Some aquatic invertebrates and fish may have been displaced in that inhabited area. However, the restoration of oysters on the reconstructed reef was beneficial in the long term for water quality and reef fauna.

Shoreline Restoration

--Blind Creek Park, Florida--
Blind Creek Park is a reserve located between the Indian River Lagoon and the Atlantic Ocean on South Hutchinson Island. The presence of non-native Australian pines on the beaches of South Hutchinson Island have resulted in increased erosion and reduced nesting areas for several species of endangered and threatened sea turtles. The roots act as a physical barrier for turtles trying to excavate nesting sites and can lead to false crawls, nests laid at or below the high tide line, or even roots growing right through the eggs. In 1999, the CRP funded efforts to remove the non-native vegetation from the shoreline and replace them with native species like sea oats

that will hold the sand in place. The project area consisted of approximately 62 acres of a dune system favored by Green, Leatherback, and Loggerhead sea turtles as a nesting site. Of the 62-acre project site, 30 acres had been invaded by the Australian pines; that led to dune de-stabilization as a result of the presence of roots of the non-native species.

The removal of Australian pines reduces erosion and restores the natural slope of the shoreline, which, in turn, may help nesting turtles find their way from the water to the beach. Two demonstration planting areas were established for native dune plants, and plantings were performed by local Brownie and Junior Girl Scout troops. Sand fencing was also placed next to the planted areas to protect them from public access. To date, areas cleared of Australian pines have showed signs of natural re-vegetation and replanted areas have shown a 95% survival rate of the dune plant material.

Short-Term Impacts:
In order to remove the Australian pines from the dunes, heavy machinery was used to cut and extract these invasive plants, including their roots, from the zone within 20 feet of the dune crest. Further behind the dune, cut-stump herbicide applications were used on the invasive plants (the pines and also Brazilian pepper plants) in a manner so as to minimize these treatments and amounts of herbicide applied. All locally or federally required permits for use of the herbicide were obtained prior to project implementation. All removed exotic vegetation was stock-piled and burned on site in an area located at least 40 feet from the dune crest and also 40 feet from any live trees. Care was taken to avoid impacts to the wetlands adjacent to the dunes on site.

<u>Coral Reef Restoration</u>

--Florida Keys National Marine Sanctuary, Florida--
On April 25, 1997, the 47-foot trawler yacht *Voyager* struck an inshore patch of coral reef in the Florida Keys National Marine Sanctuary (FKNMS). This reef is a very popular spot for visitors and local marine education programs. The damaged area, which includes an inbound path, resting site, and outbound path caused by the salvage effort, totaled 452 m^2. Numerous coral heads were toppled, several areas scarified to bare substrate, and large quantities of vessel debris were deposited. The CRP partnered with FKNMS and the Mote Marine Center for Tropical Research (MMCTR) to restore this impacted coral reef. FKNMS staff mapped the site and removed pieces of debris. Coral transplants were taken to the site and permanently secured to the reef. Monitoring of the restoration site will document coral recovery progress and health, as well as mobile fauna utilizing the site.

Short-Term Impacts:
The greatest source of short-term impacts was the potential for doing additional damage to the site during the restoration process. This might include accidental contact with the already-damaged corals by divers, equipment and anchoring boats. Since divers were required to drill cores from existing corals to be transferred to the restoration site, there was also the potential to damage healthy, intact colonies. Extra care had to be taken in order to make as little disturbance as possible. Cores also had to be stored in a safe environment to avoid physical damage that could occur during transfer. Healthy donor corals have been demonstrated to suffer little to no adverse impacts from coring and after a period of time are able to heal around the lesion created by taking a core.

A number of guidelines were followed during the restoration that required the knowledge and experience of skilled divers. Training for the divers included overviews of coral biology, reef ecology and the principles of habitat restoration. Standard diving principles were used throughout the restoration and included rules such as not touching any coral tissue, knowing the location of any equipment used so that tools such as hoses and drills would not accidentally cause more damage to the corals (Becker, pers. comm). Only two or three divers were allowed in the water during each dive to avoid any confusion, with one person to be top-side at all times for safety. When drilling cores, divers had to be very aware of their surroundings and be able to properly use the drill without losing control.

In sediment-laden areas, divers had to be conscious of staying off the bottom and avoiding stirring up any sediment with their fins. Expert boat handling consisted of placing the boat as close to the site as possible, with awareness of the surrounding wind and current. To avoid coral damage from the boats, mooring buoys were used to tie up to, in order to avoid dropping anchor. A dry method was used to transfer the coral cores from the existing site to the damaged site. This method consisted of placing individual cores into separate plastic bags with a few tablespoons of water. This method allows cores to stay moist while eliminating the potential for further damage from contact with other cores. FKNMS and MMCTR personnel have had extensive experience with coral handling and transplantation, and there were trained volunteers available to perform work as well.

Kelp Forest Restoration

--Santa Monica Bay, California--

The coastal kelp beds off Santa Monica, California, provide critical habitat for over 800 marine species that live upon, hide among, or feed on the kelp plants or drifting kelp. Kelp beds are increasingly being affected by a variety of man-made disturbances, such as pollution, land alteration and over-fishing. Recently there has been a growing concern over whether some of these fluctuations observed are solely due to natural causes or a result of human-induced causes. The Santa Monica BayKeeper began its kelp reforestation efforts in 1996, with investigations on kelp growth cycles and identification of the most effective techniques for restoration. The first year of the project investigated kelp growth cycles and planned for the restoration work. The second year focused on documenting the state of existing kelp forests and establishing trial restoration sites to identify the most effective restoration techniques.

The CRP and FishAmerica Foundation partnered with the Santa Monica BayKeeper in 1998 to begin restoring giant kelp forest habitat in the Santa Monica Bay to its historic acreage. The project is located at a 100 square foot site in Palos Verdes. Volunteer divers from local dive groups were trained in the areas of kelp ecology, restoration, and monitoring methods and assigned 10,000 square foot kelp sites that dive groups prepared, planted and maintained. Restoration methods included tying down mature drift kelp plants on vacant substrate, removing excess purple urchins from the site, seeding the area with spores from healthy plants, and tagging and monitoring the growth of kelp. The BayKeeper has already conducted more than 136 kelp dives and the original 100 square foot site has quickly grown to over 1,000 square feet.

Short-Term Impacts:
The greatest potential for short-term impacts was the possibility of divers doing more damage to the kelp beds during planting operations. Such impacts included damages to kelp beds from equipment, boats, anchoring as well as the divers themselves. To minimize these disturbances, the kelp reforestation program used a team of trained divers to restore kelp beds using low-impact techniques (Reed, pers. comm). These divers were required to have advanced certification and experience in diving in cold water, and were thoroughly trained to perform restoration and monitoring. Divers followed low-impact techniques, which included having no more than four divers per group, the use of appropriate dive equipment and tools, expert boat anchoring, job-specific diver training, and diver awareness. The utilization of advanced SCUBA students well trained in the planting techniques further reduced the potential for adverse impacts. BayKeeper also made it a priority for divers to keep a dive log during monitoring in order to keep track of oceanic conditions, fish takes, and pollution at the site including any animal deaths or turbidity plumes that may have occurred (Mohajerani 1999).

The restoration site was in an area of rocks and sand with little other kelp growth, so no damage to the surrounding habitat occurred as a result of the kelp reforestation activities. Trays of kelp spores were incubated *in situ* over sand areas through a sub-surface buoy system. The cinderblocks used to anchor sub-surface buoys were located in the sand, and the entire system is removed from the site when not in use. Rubber bands were used to anchor juvenile kelp plants to rock outcrops until holdfasts became attached, so there were no permanent structures needed for attachment of the maturing kelp plants. Purple urchins are often found in kelp forests and often chew through kelp holdfasts in search of food, destroying the plants. In order to reestablish kelp beds, purple urchins were translocated from the restoration site to barrens. This had a positive impact on the surrounding ecosystem, enabling other kelp inhabitants/herbivores to re-establish themselves in the kelp beds (Fleischli 1999).

<u>Mangrove Forest Restoration</u>

--*Indian River Lagoon, Florida*--
Brazilian pepper (*Schinus terebinthifolius*) is an exotic plant species that was introduced to Florida as an ornamental shrub. The plant is extremely adaptive and has been invading and replacing native mangrove habitats throughout the Everglades region. In an effort to restore mangrove and salt marsh habitats to Indian River Lagoon, the Marine Resources Council of East Florida has organized "Pepperbusters," a coalition of volunteer groups working to remove Brazilian pepper and replant native shoreline vegetation. The CRP has awarded funds to coordinate the Pepperbusters' and mangrove replanting activities, which restored and maintained a mile of shoreline in four counties during 1996-97. In addition, the funds supported the development of Pepperbusters' training materials for distribution to other volunteer groups throughout Florida. Through its partnership with the Pepperbusters program, NOAA Fisheries hopes to improve fish habitat for estuarine and offshore species, while kindling wider public interest in restoration of Florida's coastal habitats.

Short-Term Impacts:
There are two possible adverse affects that were addressed during the implementation of the project. The first is the possibility of destroying existing mangrove habitat. Brazilian peppers grow in close association with several native plants of Florida such as mangroves, dahoon holly,

and buttonwood (Barile & Perez-Bedmar 1998). These native plants are often mistaken for Brazilian pepper during restoration efforts because they typically grow in the same type of habitat. Another possible impact of the restoration involved the actual removal of Brazilian pepper, which required the application of herbicides to target species. While herbicides are often effective in the removal of invasive species, there are potential environmental factors that have to be considered in their application (i.e., rainfall and wind; Barile & Perez-Bedmar 1998).

Herbicides that are applied during rainy periods may leach into the surrounding soil and could damage local, non-invasive plants as well. Applying herbicides in windy conditions may also cause unintentional damage to non-invasive plants. The time of application is also an important factor to consider for the herbicide to be most effective. Treatment should be accomplished before seeds ripen, in May or August through October, since ripe seeds from a treated tree are still able to germinate. If the use of herbicides is necessary, project managers are required to obtain permits and conduct further consultations prior to project implementation.

In order to prevent the destruction of existing mangrove habitats, volunteers were thoroughly trained to distinguish between the Brazilian pepper and native plant species. Training also included methods of proper application of herbicides and of planting native mangrove plants. A "common-sense" approach to minimize physical damage to non-invasive plants (such as avoiding walking and trampling on them) in the adjacent areas was utilized. Also, to avoid unintentional damage to native plants, point application of herbicides was utilized with a spray bottle. The two Pepperbusters' workdays occurred in October, 1996 and May, 1997, before the Brazilian pepper seeds ripened.

6.0 COORDINATION WITH OTHERS

The Community-Based Restoration Program is encouraging partnerships with Federal agencies, states, local governments, non-governmental and non-profit organizations, businesses, industry and schools to carry out locally important habitat restorations to benefit living marine resources. The CRP has partnered with the National Fish and Wildlife Foundation (NFWF), the American Sportfishing Association (ASA), Restore America's Estuaries (RAE), the National Fisheries Institute (NFI), the U.S. Forest Service (USFS), and the Environmental Protection Agency (EPA) Five Star program to implement 179 restoration projects between 1996 and 2000.

The CRP is based on local community involvement throughout restoration planning, implementation, and follow-up. Public comments on proposed CRP actions and project proposals are solicited through Federal Register notices. In addition, a draft copy of this document has been placed on the NOAA Restoration Center's website for public comments (http://www.nmfs.noaa.gov/habitat/restoration/whatsnew.html). The document has also been circulated to State environmental agencies, the Society for Ecological Restoration, and other Federal agencies for comments. CRP and other NOAA fisheries staff members have met with private entities to discuss small-scale habitat restoration on their lands. Internal NOAA resources, as well as external partnerships, are vital to the CRP's success. For additional information about the Community-Based Restoration Program, please visit our web site at http://www.nmfs.noaa.gov/habitat/restoration/.

7.0 LIST OF AGENCIES AND PERSONS CONSULTED

7.1 Agencies and Persons Consulted

Advisory Council on Historic Preservation
- Mary Ann Naber, Historic Preservation Officer

Environmental Protection Agency
- Clifford Rader

National Oceanic and Atmospheric Administration
- Nora Berwick, Northwest Regional EFH Coordinator
- Mark Helvey, Southwest Regional EFH Coordinator
- Jeanne Hanson, Alaska Regional Office
- Cindy Hartman, NMFS Alaska Region
- Lou Chiarella, Northeast Regional EFH Coordinator
- Rickey Ruebsamen, Southeast Regional Office
- Davis Kaiser, Office of Ocean and Coastal Resource Management
- Craig Johnson, ESA Coordinator

Society for Ecological Restoration
- Steve Gatewood, Executive Director

State Coastal Zone Management Offices
- including states of AK, AL, CA, CT, DE, FL, GA, HI, LA, MA, MD, ME, MS, NC, NH, NJ, NY, OR, SC, TX, VA, and WA.

U.S. Fish and Wildlife Service
- Christine Nolin, Chief, Office of Conservation and Classification
- Donald J. Peterson,

U.S. Army Corps of Engineers
- Kirk Stark, Regulatory Program

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FINDING OF NO SIGNIFICANT IMPACT
ENVIRONMENTAL ASSESSMENT
FOR IMPLEMENTATION OF NOAA FISHERIES' COMMUNITY-BASED
RESTORATION PROGRAM

In compliance with the National Environmental Policy Act (NEPA), an Environmental Assessment has been prepared for the implementation of NOAA Fisheries' Community-Based Restoration Program (CRP) of the Office of Habitat Conservation. Activities under the CRP are designed to have a long-term beneficial impact on living marine resources. Any adverse impacts associated with CRP restoration projects are expected to be minimal, localized, and short-term. All best management practices will be utilized to ensure that adverse impacts are avoided or minimized.

The public and other interested parties have participated in review of the Draft EA for implementation of this program. The proposed activities were evaluated according to the evaluation factors under the National Environmental Policy Act (40 CFR 1508.27). Based on a review of all of these factors and the referenced documents, NOAA has concluded that the proposed activities would not have a significant effect on the quality of the human environment. NOAA concludes that an EIS will not need to be prepared. A copy of the environmental assessment and supporting documentation are available form the Office of Habitat Conservation, NOAA Fisheries, Silver Spring, MD 20910.

DETERMINATION:

Based upon an environmental review and evaluation of the Environmental Assessment for the NOAA Fisheries' Community-Based Restoration Program, I have determined that the proposed action does not constitute a major Federal action significantly affecting the quality of the human environment within the meaning of Section 102(2)(c) of the National Environmental Policy Act of 1969, as amended. Accordingly, an environmental impact statement is not required for this project.

Rebecca Lent
William T. Hogarth, Ph.D.
Assistant Administrator for Fisheries
National Marine Fisheries Service
National Oceanic and Atmospheric Administration

2/7/02
Date

APPENDICES

APPENDIX A – APPLICABLE ENVIRONMENTAL LAWS AND COMPLIANCE

Anadromous Fish Conservation Act, 16 U.S.C. 757a-757g

Restoration activities under this program will help to ensure the conservation of anadromous and Great Lakes fishery habitat and resources.

Clean Air Act, 15 U.S.C. 792, 42 U.S.C. 215 note, 1857-1858a, 4362, 7401-7672; 49 App. 1421, 1430; 50 App. 456

Activities under this program will not result in an increase in the discharge of air pollutants.

Coordination has been completed with EPA Headquarters under the Act. EPA had no comments on the Draft EA.

Clean Water Act, 33 U.S.C. 1251 *et seq.*

Activities under this program will not result in a change in the discharge of water pollutants.

Coastal Zone Management Act (CZMA), 16 U.S.C. 1451-1464

Activities under this program will be consistent, to the maximum extent practicable, with the enforceable policies of approved state coastal management programs (CMP).

Draft CRP EA coordination with State CZM Offices

Concurrence	Assumed Concurrence (no response)	Pending
CA	AK	RI
CT	AL	
FL	DE	
HI	GA	
LA	MA	
MS	MD	
NC	ME	
NJ	NH	
NY	OR	
VA	SC	
	TX	
	WA	

Endangered Species Act, 7 U.S.C. 136; 16 U.S.C. 4601-9, 460k-1, 668dd, 715I, 715a, 1362, 1371-1372, 1402, 1531-1544

Activities under this program will not have an adverse effect on any Federally-listed species or their habitats. Consultation under this Act will occur as appropriate during individual project planning.

Estuary Protection Act, 16 U.S.C. 121 *et seq.*

Activities under this program will not have an adverse effect on any estuary. These activities will help to restore and improve some habitats within estuaries.

Fish And Wildlife Conservation Act, 16 U.S.C. 2901-2912

Activities under this program will encourage the conservation of non-game fish and wildlife.

Fish And Wildlife Coordination Act, 16 U.S.C. 661-666c

Activities under this program will encourage the enhancement of fish and wildlife resources.

Magnuson-Stevens Fishery Conservation and Management Act, 16 U.S.C. 1801 *et seq.*

Activities under this program will encourage the conservation and restoration of essential fish habitat and resources.

Marine Mammal Protection Act, 16 U.S.C. 1361-1326, 1371-1384 note, 1386-1389, 1401-1407, 1411-1418, 1421-1421h

Activities under this program will not have an adverse effect on marine mammals.

Migratory Bird Conservation Act, 16 U.S.C. 715 to 715r

Activities under this program will not have an adverse effect on migratory birds or programs under this Act.

National Environmental Policy Act, 42 U.S.C. 4321, 4331-4335, 4341-4347

A draft Environmental Assessment has been prepared and environmental review is occurring under this Act.

National Historic Preservation Act, 16 U.S.C. 470 *et seq.*

Coordination under Section 106 of the NHPA with the Advisory Council on Historic Preservation will occur once specific projects are identified.

The responsible project manager must consult with the appropriate State and local officials, and Indian tribes, and consider their views and concerns about historic preservation issues in making final project implementation decisions when there exists a potential for impacts to archaeological or historical resources. Effects are resolved by mutual agreement, usually among the affected State's State Historic Preservation Officer or the Tribal Historic Preservation Officer, the Federal agency, and any other involved parties.

APPENDIX B – EXECUTIVE ORDERS AND COMPLIANCE

Executive Order Number 11514 (34 FR 8693) - Protection And Enhancement Of Environmental Quality

The activities under this program will help to ensure the enhancement of environmental quality.

Executive Order Number 11990 (42 FR 26961) - Protection Of Wetlands

The activities under this program will help to ensure the conservation of wetlands and the services that they provide.

Executive Order Number 12962 (60 FR 30769) - Recreational Fisheries

The activities under this program will help to ensure the conservation of recreational fisheries habitats and the services that they provide.

Executive Order Number 13089 (63 FR 32701) **–** Coral Reef Protection

The activities under this program will help to ensure the conservation of coral reefs and the services that they provide.

Executive Order Number 12898 (59 FR 7629), as amended by EO 12948 (60 Fed. Reg. 6381, Feb. 01, 1995) - Environmental justice in minority and low-income populations

The activities under this program will help to ensure the enhancement of environmental quality in all populations. Potential impacts to any minority or low-income population as a result of any proposed CRP project will be taken into consideration prior to implementation of any restoration project.

Executive Order Number 13093 (63 FR 40357) - American Heritage Rivers

The activities under this program will help to ensure the enhancement of environmental quality in Heritage Rivers.

Executive Order Number 13112 (64 FR 6183) - Invasive species

The activities under this program will help to ensure the enhancement of environmental quality in coastal areas by the removal of invasive species.

Executive Order Number 13158 (65 FR 34909) - Marine Protected Areas

The activities under this program will help to ensure the enhancement of environmental quality in marine protected areas.

Executive Order Number 13186 (66 FR 3853) - Migratory bird protection

The activities under this program will help to ensure the enhancement of environmental quality in coastal areas that will benefit migratory birds.

Executive Order Number 12996 (61 FR 13647) - Plants; conservation and management

The activities under this program will help to ensure the enhancement of environmental quality in coastal areas by the management and conservation of native species.

APPENDIX C – LIST OF EXISTING COMMUNITY-BASED RESTORATION PROJECTS

In 1996, the NOAA Restoration Center began its Community-Based Restoration Program, which provides funding, through a competitive process, for local efforts to restore coastal habitat. The purpose of the program is to promote coastal stewardship and a conservation ethic among coastal communities while fostering the development of restoration partnerships and expertise among NOAA Fisheries personnel. Since its inception, the Community-Based Restoration Program has partnered on 179 projects, many of which are ongoing today.

Riparian habitat restoration:

FY00	Project Name	Project Size	State
1995	Brush Creek Restoration Project	1.5 stream miles	CA
1996	Pratt Farm Restoration Project	1 mile	DE
1999	Campbell Creek Restoration	0.01 acres + 0.01 miles of stream bank	AK
1999	East Fork Salmon River Stewardship Implementation	3 acres	ID
1999	Restoration of Kohanaiki Anchialine Ponds	N/A	HI
2000	Anchor River Riparian Restoration	0.02 stream miles	AK
2000	Eagle River Watershed Wonders	0.03 stream miles	AK
2000	Adobe Creek Exclusionary Fencing	4.2 stream miles	CA
2000	Riparian Restoration at Mill Creek and Tributaries	20 acres	CA
2000	Morro Bay National Estuary Riparian Restoration	0.3 stream miles	CA
2000	Lower Turner Creek Fencing and Riparian Restoration	1.3 stream miles	CA
2000	Norton Creek Wildlife Area Riparian Restoration	1.7 acres	CA
2000	Restoring Wetland, Estuarine and Riparian Habitat	N/A	CA
2000	Control of Water Chestnut in the Connecticut and Hockanum Rivers	10.0 acres	CT
2000	Hanalei Watershed Riparian Restoration	0.57 stream miles	HI
2000	Jefferson Parish Marsh Restoration	100 acres	LA
2000	Marstons Mills Riparian Restoration	0.2 stream miles	MA
2000	Bronx River Restoration	4 stream miles	NY
2000	Applegate River Watershed Riparian Restoration	N/A	OR
2000	Expanded Wetland Restoration Program	15.0 acres	VA
2000	Winters Creek Riparian Revegetation Project	0.7 acres	WA
2000	Puget Creek Riparian Restoration Project	0.4 stream miles	WA

Anadromous fish habitat restoration:

FY00	Project Name	Project Size	State
1996	Removal of Streambed Sediment to Improve Salmon Spawning Habitat in Duck Creek	less than 0.5 acres	AK
1997	Haskell Slough Enhancement Project	1.14 stream miles	WA
1998	Restoration of Water Quality and Anadromous Fish Habitat in Duck Creek	less than 0.5 acres	AK

1998	Russian River Youth Restoration Corp Project	0.4 stream miles	AK
1998	Parker River Anadromous Fish Restoration	less than 0.5 acres	MA
1999	Little Susitna River Project	0.2 stream miles	AK
1999	San Gregorio Stream Bank Stabilization	5 acres	CA
1999	Willow Creek Anadromous Fish Enhancement	1.0 stream miles	CA
1999	Crooked Creek Irrigation Ditches	2 acres	ID
1999	Idaho Salmon and Steelhead Days	less than 0.5 acres	ID
1999	Real Change Rises Up in the Salmon River Watershed	2.2 miles	ID
1999	Fish Habitat Improvements on Deer and Gate Creeks	12 acres + 3 miles of stream bank	OR
1999	Mount Scott Creek Habitat Restoration	0.3 stream miles	OR
1999	Ames Creek Habitat Restoration	1.5 stream miles	OR
1999	White River Watershed Restoration for Atlantic Salmon	0.76 miles	VT
1999	Nooksack Basin Restoration	15 stream miles	WA
1999	Citizens' Action for Habitat Restoration	0.38 stream miles	WA
1999	Finney Creek Community Restoration for Salmon	1.5 stream miles	WA
1999	Lund's Gulch Restoration Project	1.5 stream miles	WA
1999	Newaukum Creek Restoration Project	0.04 stream miles	WA
1999	Glade Bekken Stream Restoration	0.5 acres	WA
1999	Involving Youth in Salmon Habitat Restoration	less than 0.5 acres	WA
1999	Haskell Slough Salmon Habitat Restoration	less than 0.5 acres	WA
2000	Russian River Restoration	0.4 stream miles	AK
2000	Little Susitna River Restoration Project	0.4 stream miles	AK
2000	Mill Creek-Channel Restoration Project 2001	less than 0.5 acres	CA
2000	Green Valley French Drain	0.02 stream miles	CA
2000	McCoy Creek Stream Restoration	0.07 stream miles	CA
2000	Orr's Creek Restoration	less than 0.5 acres	CA
2000	Fisheries Restoration Through Coastal Wetland Creation	less than 0.5 acres	FL
2000	Sebasticook River - Plymouth Pond Fisheries Rest. Project	Less than 0.5 acres	ME
2000	Anderson Creek Marsh Restoration Project at South Slough National Estuarine Research Reserve	0.04 acres	OR
2000	Yaquina Estuarine Wetland Restoration	0.30 stream miles	OR
2000	Walla Walla Habitat Restoration Project	5.0 stream miles	OR
2000	Mill Creek Watershed Restoration	Less than 0.5 acres	OR
2000	Ten Mile River Anadromous Fish Restoration	Less than 0.5 acres	RI
2000	Potter Pond Restoration	Less than 0.5 acres	RI
2000	North Fork Newaukum Creek Restoration Project	0.51 stream miles	WA
2000	Lorenzan Creek Salmon Enhancement Project	Less than 0.5 acres	WA
2000	Groeneveld Slough Restoration	Less than 0.5 acres	WA
2000	Muck Lake/Lacamas Creek Restoration	0.3 stream miles	WA
2000	Plant a Tree, Save a Fish Project	N/A	WA
2000	Squalicum Creek Fish Habitat Restoration	Less than 0.5 acres	WA

** Projects of "Less than 5 acres" indicate small-scale projects that occur at points along streams and have benefits for anadromous fish both upstream and downstream from the site. Exact project sizes unknown.

Anadromous fish passage restoration:

FY00	Project Name	Project Size	State
1996	Adobe Creek Culvert Project	less than 0.5 acres	CA
1998	Fiock Dam Removal Project	less than 0.5 acres	CA
1998	Dutch Bill Creek Fish Ladder Renovation Project	Less than 0.5 acres	CA
1999	Grassy Creek Fish Passage Restoration	less than 0.5 acres	CA
1998	The Cooper River Fishway Restoration Project	Less than 0.5 acres	NJ
1998	Farmer's Ditch Fish Passage and Stream Flow Improvement Project	less than 0.5 acres	OR
1998	Drobkiewicz Dam Removal	less than 0.5 acres	OR
1998	Mussachuck Creek Fishway at Echo Lake	Less than 0.5 acres	RI
1999	Centennial Park King Salmon Stairs Project	Less than 0.5 acres	AK
1999	Roys Dam Fishway Project	Less than 0.5 acres	CA
1999	Ed Bill's Pond Fishway Restoration	Less than 0.5 acres	CT
1999	Pilgrim Trail Herring Restoration Project	Less than 0.5 acres	MA
1999	Hartman Irrigation Dam Removal	less than 0.5 acres	OR
1999	Restoring Salmon Runs on the Southern Oregon Coast	.25 acres	OR
1999	Upper Puyallup Culvert Projects	less than 0.5 acres	WA
2000	Fife Creek Dam Removal and Habitat Enhancement Project	0.42 stream miles	CA
2000	Carriger Creek Fish Passage Project	less than 0.5 acres	CA
2000	The Sacramento River Fish Screen Program	less than 0.5 acres	CA
2000	Rippowam/Mill River Fishway	less than 0.5 acres	CT
2000	Spaulding Dam Bypass on the Sawmill River	less than 0.5 acres	MA
2000	Paskamansett River Fishway Modification	less than 0.5 acres	MA
2000	Agawam River Herring Run Rehabilitation	less than 0.5 acres	MA
2000	Parker River Fishway Restoration (Central Street)	Less than 0.5 acres	MA
2000	Kennard Bog Fishway Replacement	Less than 0.5 acres	MA
2000	Wiswall Dam Fish Ladder	Less than 0.5 acres	NH
2000	McGoldrick Dam Removal	Less than 0.5 acres	NH
2000	Cuddlebackville Dam Removal, Neversink River	Less than 0.5 acres	NY
2000	Clackamas County Fish Passage Improvements Project	Less than 0.5 acres	OR
2000	Fairmount Fishway	Less than 0.5 acres	PA
2000	Good Hope Dam	Less than 0.5 acres	PA
2000	Kickemuit Reservoir Fish Ladder	Less than 0.5 acres	RI
2000	Puget Creek Fishway Project	Less than 0.5 acres	WA

** Projects of "Less than 5 acres" indicate small-scale projects that occur at points along streams and have benefits both upstream and downstream from the site. Exact project sizes unknown.

Marsh restoration:

FY00	Project Name	Project Size	State
1996	Pepper Buster and Johnny Mangrove Seed	15 acres	FL
1997	Argilla Road--Restoration of a Tidally-Restricted Salt Marsh	15 acres	MA
1997	Tampa Bay High School Wetland Nursery Program I	0.006 acres/nursery	FL
1998	Tampa Bay High School Wetland Nursery Program II	0.006 acres/nursery	FL
1998	Community-Based Wetland Restoration and Outreach Education at Fort McHenry	3 acres	MD
1998	Eastern Neck Salt Marsh Monitoring	4 acres	MD
1999	Restoration of Coastal Wetland Habitat with Use of Prescribed Burning	N/A	AL
1999	Oleta River Wetland Restoration Project	29.5 acres	FL
1999	Shorekeeper Program	N/A	NC
1999	Winsegansett Marsh Restoration	N/A	MA
1999	Eastern Neck Salt Marsh Restoration	4 acres	MD
1999	Hashamomuck Pond Wetland Restoration	2 acres	NY
1999	Pilot Wetland Restoration in Stony Brook Harbor	1 acre	NY
1999	Pattersquash Creek Salt Marsh Restoration	0.23 acres	NY
1999	Galveston Bay Marsh Restoration Weekend	10 acres	TX
1999	Tampa Bay Wetland Nursery Program Expansion	0.006 acres/nursery	FL
2000	Ballona Lagoon Wetland Restoration	3 acres	CA
2000	Bahia Grande Restoration Nursery	N/A	TX
2000	Coast 2050	N/A	LA
2000	Pepper Cove Impoundment Restoration	10 acres	FL
2000	North Apollo Beach Habitat Restoration	35 acres	FL
2000	Restoring Tampa Bay with Community Volunteers	25 acres	FL
2000	Eastern Point Salt Marsh Restoration	9.4 acres	MA
2000	Pelican Landing Coastal Riparian Restoration	8 acres	MS
2000	Ice Plant Island Marsh Restoration	0.5 acres	NC
2000	Oyster Reefs, SAV and Marsh Restoration for Shoreline Stabilization and Improved Ecological Community	0.05 acres	VA
2000	Little River Saltmarsh Restoration	150 acres	NH
2000	Awcomin Marsh Ecosystem Restoration	27 acres	NH
2000	South Mill Pond Multi-habitat Restoration	N/A	NH
2000	Hempstead Harbor Trail Wetland Restoration	0.14 acres	NY
2000	John M. O'Quinn I-45 Estuarial Corridor	6.5 acres	TX
2000	Marsh Mania	15 acres	TX
2000	Hamm Creek Estuary	1 acre	WA
2000	Duwamish Estuary Restoration Project	1 acre	WA
2000	Massachusetts Wetlands Restoration Projects	N/A	MA
2000	Restoring Tidal Flow to Salt Marshes	35 acres	ME

Submerged aquatic vegetation (SAV) restoration:

FY00	Project Name	Project Size	State
1996	Community-Based Restoration of SAV in the Chesapeake Bay	.02 acres	MD
1996	Restoration of Submerged Aquatic Vegetation to Delaware's Inland Bays	1-2 acres	DE
1997	Community-Based Propagation and Restoration of SAV Beds in the Chesapeake Bay	0.17 acres	MD
1999	Seagrasses in Classes: Revegetating Eelgrass in Narragansett Bay	0.02 acres	RI
2000	Bay Grasses in Classes	N/A	MD
2000	Developing a Manual and Video for Community-Based Restoration of Eelgrass Habitat	N/A	NH
2000	Community-Based Eelgrass Restoration at Back Creek	2 acres	VA
2000	Eelgrass Restoration in Little Egg Harbor	1.1 acres	NJ

Shellfish/Artificial reef restoration:

FY00	Project Name	Project Size	State
1997	Applying a Local Partnership to Restore an Oyster Reef in the Chesapeake Bay	0.5 acres	VA
1998	Education-Based Oyster Reef Restoration in Upper Chesapeake Bay	2 acres	MD
1998	Oyster Reef Restoration in the Lafayette River	0.5 acres	VA
1999	San Francisco Bay Oyster Restoration	862 acres	CA
1999	ACE Basin Shellfish Restoration	N/A	SC
1999	Elizabeth River Restoration	1 acre	VA
2000	Artificial Reef Creation in Lake Pontchartrain	1 acre	LA
2000	North Shore Soft-Shell Clam Ecosystem Restoration	10 acres	MA
2000	Coastal Wetland Restoration	N/A	MD
2000	Restore Mid-Atlantic Reef/Wreck Habitat off Ocean City	10 acres	MD
2000	South Carolina Oyster Habitat Restoration	N/A	SC
2000	Nanticoke River Oyster Project	N/A	MD
2000	Oyster Reef Restoration Projects	0.005 acres	MD/VA
2000	Hudson-Raritan Oyster Restoration Project	N/A	NY/NJ
2000	Oyster Restoration	N/A	NY/NJ

Shoreline restoration:

FY00	Project Name	Project Size	State
1999	Blind Creek Park Restoration	0.11 acres	FL
1999	Cedar Key - Pepper Free	N/A	FL
2000	Blind Creek Park Sea Turtle Habitat Restoration	30.0 acres	FL
2000	Shoreline Restoration Demonstration Project	N/A	NC

Coral reef restoration:

FY00	Project Name	Project Size	State
1999	Restoration of the Voyager Grounding Site	10560 acres	FL
1999	Establishing Stony Coral Nurseries for Reef Fishery Habitat Restoration	N/A	FL
2000	Removal of Waste Tires: Reef Fishery Habitat Restoration	N/A	FL
2000	Rehabilitation of EFH in the Florida Keys National Marine Sanctuary: Treating Coral Colonies with Black Band Disease	N/A	FL
2000	Hawaii Reef Monitoring and Clean-up	Survey of 370 acres	HI

Kelp forest restoration:

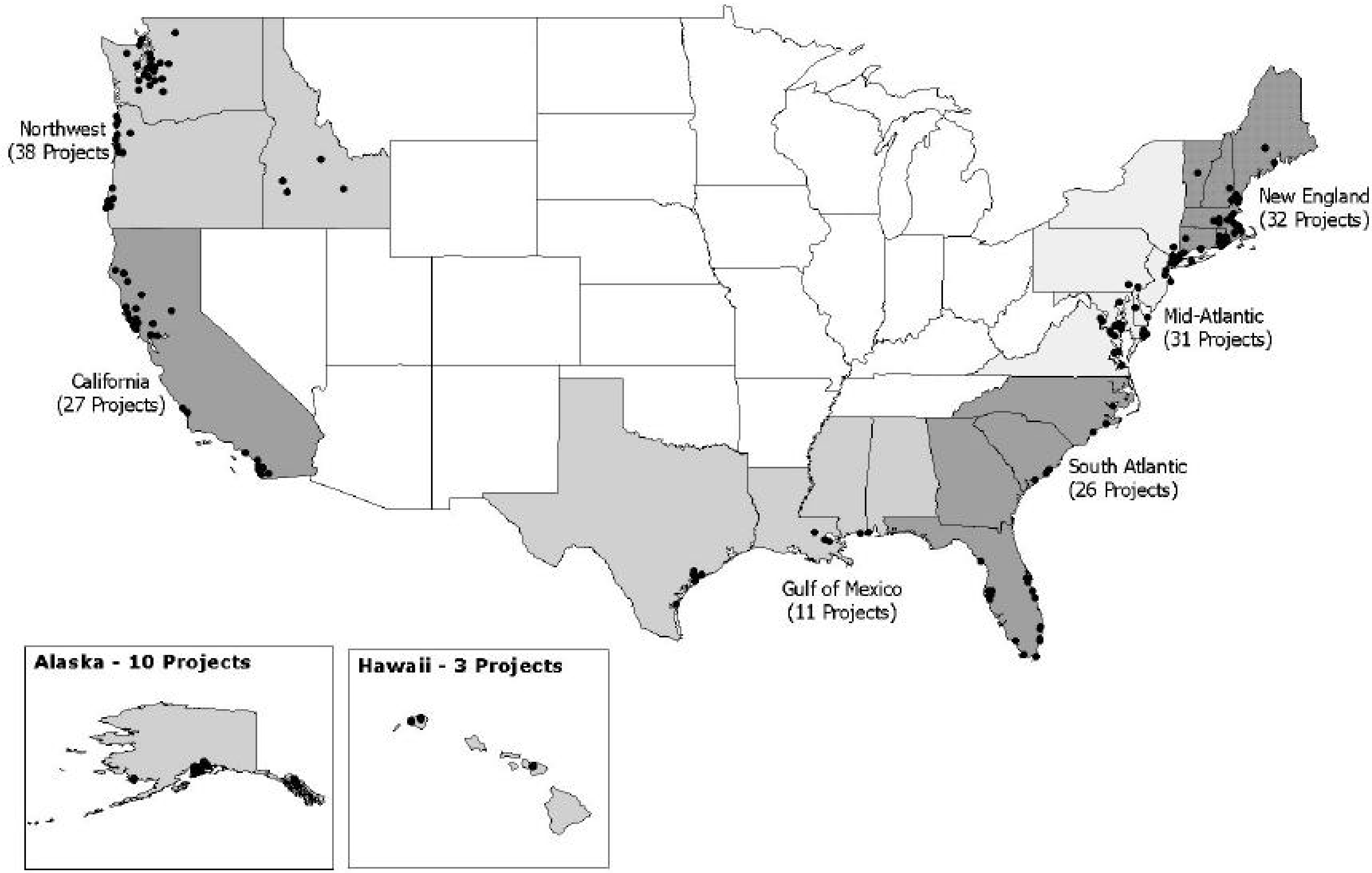
FY00	Project Name	Project Size	State
1998	Kelp Reforestation Project In Southern California	0.25 acres	CA
1998	Kelp Reforestation Project In Southern California II	0.25 acres	CA
2000	Kelp Restoration Project	0.07 acres	CA
2000	Kelp Habitat Restoration	0.07 acres	CA

Mangrove forest restoration:

FY00	Project Name	Project Size	State
2000	Indian River Lagoon Shoreline Restoration	N/A	FL
2000	Egret Island Restoration	4.0 acres	FL
2000	Mangrove March Impoundment Habitat Rest. Pilot Project	less than 0.5 acres	Fl

APPENDIX D - MAP OF EXISTING COMMUNITY-BASED RESTORATION PROJECTS

NOTE: There are 179 projects that have secured funding to date.



APPENDIX E

Federal Register Notic

Report and the Final Report, and the submission of up to twenty copies of proposals. Copies of these forms and formats can be found on the COP Home Page under Grants Support section, Part F.

Proposals to NSF must include a one-page NSF-UNOLS Ship Time Request Form and the NSF Form l239 for Current and Pending Support. Both NSF forms have been approved by OMB as follows: The UNOLS form, also titled NSF Form 831, has OMB clearance through June 2002 under control number OMB No. 3145–0058. The NSF Form l239 for Current and Pending Support is also cleared as part of the NSF Grant Proposal Guide and Proposal Forms Kit under OMB Number. 3145–0058 with an expiration date of June 2002.

Notwithstanding any other provision of law, no person is required to respond to, nor shall any person be subject to a penalty for failure to comply with a collection of information subject to the requirements of the Paperwork Reduction Act, unless that collection displays a currently valid OMB control number.

Dated: March 23, 2000.

Ted I. Lillestolen,

Deputy Assistant Administrator, National Ocean Service, National Oceanic and Atmospheric Administration.

Dated: March 15, 2000.

G. Michael Purdy,

Director, Division of Ocean Sciences, National Science Foundation.

[FR Doc. 00–7922 Filed 3–29–00; 8:45 am]

BILLING CODE 3510–JS–F

DEPARTMENT OF COMMERCE

National Oceanic and Atmospheric Administration

[Docket No. 990907250–0062–02; I.D. 063099B]

RIN 0648–ZA70

Community-based Restoration Program Guidelines

AGENCY: National Marine Fisheries Service (NMFS), National Oceanic and Atmospheric Administration (NOAA), Commerce.

ACTION: Notification of Program Guidelines.

SUMMARY: NOAA Fisheries began a new Community-based Restoration Program (Program) in 1996 to encourage local efforts to restore fish habitats. Since that time, NOAA has provided funding to 83 small-scale habitat restoration projects around coastal America. The Program is a systematic national effort to encourage partnerships with Federal agencies, states, local governments, non-governmental and non-profit organizations, businesses, industry and schools, to carry out locally important habitat restorations to benefit living marine resources. The Program has developed formal guidelines that will expand the financial instruments available to accomplish furtherance of this mission. This announcement provides program guidelines for the implementation of the Program in FY 2000 and beyond, which incorporates comments by the public and NOAA. This is not a solicitation of project proposals.

DATES: Guidelines are effective March 30, 2000.

ADDRESSES: Send comments to Director, NOAA Restoration Center, National Marine Fisheries Service, 1315 East West Highway (F/HC3), Silver Spring, MD 20910–3282.

FOR FURTHER INFORMATION CONTACT: Christopher D. Doley, (301) 713–0174, or by e-mail at Chris.Doley@noaa.gov.

SUPPLEMENTARY INFORMATION: Details concerning the justification for and development of this notification are provided at 64 FR 53339, October 1, 1999, and are repeated here. In that document, comments were sought on modifications to the Program that would allow greater flexibility to support community-based habitat restoration projects.

Comments and Responses

Comments were few, and all commenters supported the proposed modifications to the existing Program. Comments consisted of minor additions of explanatory detail or minor changes of word choices to clarify points. A summary of the comments and description of changes made to the proposed guidelines follows:

The eligibility requirements section was reworded to clarify that Federal agencies may be designated by a project sponsor as recipients of funding for selected projects, but may not apply for funding directly. To protect the Federal investment, projects on private lands will need to provide assurance that the project will remain intact throughout the useful life of the project, instead of the proposed rule's requirement that project proponents demonstrate a minimum 10-year conservation easement. Partnership arrangements will be pursued on a national level, as well as on a broad-based geographic and regional level, to be more inclusive. Text on pre-application format and process and on full proposal cost estimate requirements was deleted, as this information is presented in great detail in the NOAA grants application package available to all applicants and discussed in solicitations. Under ''evaluation criteria'', item number 3, Community Commitment and Partnership Development, the text ''qualified youth conservation or service corps'' has been added as an example of significant community involvement. And finally, to address environmental justice concerns expressed by one commenter and assure that all residents and citizens affected by the project have the opportunity to participate, under ''evaluation criteria,'' text was added to state that proposed projects may be evaluated on their ability to demonstrate that they are incorporated into a regional or community planning process.

Background

Habitat loss and degradation are major, long-term threats to the sustainability of the Nation's fishery resources. Over 75 percent of commercial fisheries and 80 to 90 percent of recreational marine and anadromous fishes depend on estuarine or coastal habitats for all or part of their life-cycles. Protecting existing, undamaged habitat is a priority and should be combined with coastal habitat restoration to enlarge and enhance the functionality of degraded habitat. Restored coastal habitat will help rebuild fisheries stocks and recover threatened or endangered species. Restoring coastal habitats will help ensure that valuable resources will be available to future generations of Americans.

The guidelines that follow reflect modifications to the Program that allow greater flexibility to support community-based habitat restoration projects. The purpose of this document is to provide an outline of the goals, objectives, and structure of the Program for implementation in FY 2000 and beyond. The Program will provide **Federal Register** notifications on the availability of funds and will solicit project proposals once a year, or more. Each solicitation will provide detail on the criteria for project selection and/or on the weighting of the criteria.

Electronic Access

Information on the Program, including partnerships and projects that have been funded to date, can be found on the world wide web at: http://www.nmfs.gov/habitat/restoration.

Goals and Objectives

The Program's objective is to bring together citizen groups, public and non-profit organizations, industry, corporations and businesses, youth conservation corps, students, landowners, and local government, and state and Federal agencies to implement habitat restoration projects to benefit NOAA trust resources. Partnerships are sought at the national and local level to contribute funding, land, technical assistance, workforce support or other in-kind services to allow citizens to take responsibility for the improvement of locally important living marine resources.

The Program recognizes the significant role that communities play in habitat restoration and protection and acknowledges that habitat restoration is often best supported and implemented at a community level. Projects are successful because they have significant community support and depend upon citizens' ''hands-on'' involvement. The role of NMFS in the Program is to strengthen the development and implementation of sound restoration projects. NMFS anticipates maintaining the current focus of the Program by continuing to form strong national and local partnerships to fund grass-roots, bottom-up activities that restore habitat and develop stewardship and a conservation ethic for the Nation's living marine resources.

Eligibility Requirements

Any state, local or tribal government, regional governmental body, public or private agency or organization may sponsor a project for funding consideration. The sponsoring group or organization may be a recipient of the funds or may recommend that a Federal agency receive the funds for implementation. However, in the latter situation, NMFS would enter into a Memorandum of Agreement among NMFS, the sponsor, and the Federal agency. Federal agencies are not eligible to apply for funding; however, they are encouraged to work in partnership with state agencies, municipalities, and community groups. Successful applicants will be those whose projects demonstrate that significant, direct benefits are expected to NOAA trust resources within supportive, involved communities. Proponents who seek funding under the Program are not eligible to seek funding for the same project under other Restoration Center programs. The Program operates under statutory authority that precludes individuals from applying.

Eligible Restoration Activities

NMFS is interested in funding projects that will result in on-the-ground restoration of habitat to benefit living marine resources, including anadromous fish species. Habitat restoration is defined here as activities that directly result in the reestablishment or re-creation of stable, productive marine, estuarine or coastal river biological systems. Restoration may include, but is not limited to, improvement of coastal wetland tidal exchange or reestablishment of historic hydrology; dam or berm removal; fish passageway improvements; natural or artificial reef/substrate/habitat creation; establishment of riparian buffer zones and improvement of freshwater habitat features that support anadromous fishes; planting of native coastal wetland and submerged aquatic vegetation; and improvements of feeding, spawning, and growth areas essential to fisheries.

In general, proposed projects should clearly demonstrate anticipated benefits to such habitats as salt marshes, seagrass beds, coral reefs, mangrove forests and riparian habitat near rivers, streams and creeks used by anadromous fish. To protect the Federal investment, projects on private lands need to provide assurance that the project will be maintained for its intended purpose for the useful life of the project. Projects on permanently protected lands may be given priority consideration.

Projects must involve significant community support through an educational and/or volunteer component tied to the restoration activities. Implementation of on-the-ground habitat restoration projects must involve community outreach and post-restoration monitoring to assess project success and may involve limited pre-implementation activities, such as engineering and design and short-term baseline studies. Proposals emphasizing only research, outreach, monitoring, or coordination are discouraged, as are funding requests primarily for administration, salaries, overhead, and travel.

Although NMFS recognizes that water quality issues may impact habitat restoration efforts, this initiative is intended to fund physical habitat restoration projects rather than direct water quality improvement measures, such as wastewater treatment plant upgrades or combined sewer outfall corrections. Similarly, the following restoration projects will not be eligible for funding: (1) activities that constitute legally required mitigation for the adverse effects of an activity regulated or otherwise governed by state or Federal law; (2) activities that constitute restoration for natural resource damages under Federal or state law; and (3) activities that are required by a separate consent decree, court order, statute or regulation. Funds from this program may be sought to enhance restoration activities beyond the scope legally required by these activities.

Examples of Previously Funded Projects

The following examples are community-based restoration projects that have been funded with assistance from the Restoration Center. These examples are only illustrative and are not intended to limit the scope of future proposals in any way.

Submerged Aquatic Vegetation Restoration

Funding was provided to evaluate the feasibility of using volunteer divers to restore seagrass. A protocol was developed to train volunteers in water quality monitoring and seagrass transplantation techniques.

Fish Ladder Construction

An impediment to fish passage was corrected through the design and construction of a step-pool fish ladder, which now allows native steelhead trout to reach their historic spawning grounds.

Invasive Plant Removal

Funding was provided to a coalition of volunteer groups called ''Pepperbusters'' who worked to remove exotic Brazilian pepper plants and replant native shoreline vegetation.

Salt Marsh Restoration

Tidal flushing was restored to 20 acres of salt marsh by replacing an undersized culvert to increase the mean high water level in the restricted portion of the marsh.

Oyster Reef Restoration

Funding was provided to increase oyster reef habitat by reconstructing historic reefs and seeding them with hatchery-produced seed oysters grown in floating cages by students.

Kelp Forest Restoration

Funding was provided to train community dive groups in kelp reforestation activities, including the preparation, planting and maintenance of kelp sites, documentation of growth patterns, and changes in marine life attracted to the newly planted kelp areas.

Wetland Plant Nursery

Funding was provided to start an innovative wetland nursery program in local high schools, where science and ecology classes build wetland nurseries on-campus to grow salt marsh grasses for local restoration efforts.

Riparian Habitat Restoration

Funding was provided to train youth corps in the use of biorestoration and stabilization techniques to restore eroding riverbanks and improve habitat for salmon smolt and other fish species.

Anadromous Fish Habitat Restoration

Highly functional salmonid and wildlife habitat was restored with the cooperation of private landowners by opening silted enclosures along a slough to provide refuge for juvenile salmonids during the winter flood flows.

Funding Sources and Dispersal Mechanisms

The Restoration Center envisions funding projects through joint project agreements, cooperative agreements and grants, and intra- and interagency transfers, as appropriate.

The Secretary of Commerce has authority to enter into joint project agreements with non-profit, research, or public organizations on matters of mutual interest, the cost of which is equitably apportioned. The principal purpose of a joint project agreement under this program is to engage in a collaborative and equitably apportioned effort with a qualified organization on matters of mutual interest.

For purposes of this Program, interagency agreements are written documents containing specific provisions of governing authorities, responsibilities, and funding, entered into between NMFS and a reimbursing Federal agency or between another Federal agency and NMFS when NMFS is the funding organization. Such agreements will also require inclusion of a local sponsor of the restoration project.

A cooperative agreement is a legal instrument reflecting a relationship between NMFS and a recipient whenever (1) the principal purpose of the relationship is to provide financial assistance to the recipient and (2) substantial involvement is anticipated between NMFS and the recipient during performance of the contemplated activity. A grant is similar to a cooperative agreement, except that in the case of grants, substantial involvement between NMFS and the recipient is not anticipated during the performance of the contemplated activity. Financial assistance is the transfer of money, property, services or anything of value to a recipient in order to accomplish a public purpose of support or stimulation which is authorized by Federal statute.

The instrument chosen will be based on such factors as degree of direct NOAA involvement with the project beyond the provision of financial assistance, the proportion of funds invested in the project by NOAA and the other organizations, and the efficiency of the different mechanisms to achieve the Program's goals and objectives. NMFS will determine which method is the most appropriate for funding individual projects based on the specific circumstances of each project.

NMFS reserves the right to fund individual projects directly, or through partnership arrangements. The Program will continue to create partnership arrangements at a national or broad-based, geographic or regional level with non-profit and other organizations that have similar goals for improving fisheries habitat. Partnerships are a key element that allows the Restoration Center to significantly leverage the funding available for on-the-ground restoration. Partnerships also encourage the sharing and distribution of technical expertise, often improve relations between diverse organizations with common goals, and allow NOAA to reach larger and more diverse communities that have vested interests in fishery habitat restoration.

The Restoration Center will also function in a clearinghouse capacity to help develop and link high quality proposals for habitat restoration with other potential funding sources whose evaluation criteria contain similar specifications for habitat enhancement. This will provide greater exposure for project ideas that increase the chances for project proponents to secure funding.

Each year, the Restoration Center Director will determine the proportion of the funds available to the Program that will be obligated to national or broad-based, geographic or regional partnerships and the proportion for direct project solicitation. The proportion will be established annually and will depend upon the amount of funds available from partnership organizations for habitat restoration activities that meet the goals and objectives of the Program, including the goal of funding a broad array of projects over a wide geographic distribution.

Funding Ranges

NMFS anticipates that typical project awards will range from $25,000 to $50,000, but NMFS will accept proposals ranging from $5,000 to $200,000. Final awards will be dependent on funding levels appropriated by Congress. Each solicitation issued for the Program will contain suggested ranges for funding requests and any specific criteria, including the weighting of selection criteria that will be used for proposal evaluation. The number of awards to be made in FY 2000 and beyond will depend on the amount of funds appropriated to the Program.

Match and Use of Funds

The focus of the Program is to provide seed money to leverage funds and other contributions from a broad public and private sector to implement locally important habitat restoration to benefit living marine resources. To this end, proposals are required to demonstrate a minimum 1:1 non-Federal match (equitable share, in the case of a joint project) for CRP funds requested to complete the proposed project. The Restoration Center may waive the requirement for 1:1 matching funds if the project meets the following three requirements: (1) The project is judged to be an outstanding match with NMFS and Restoration Center objectives; (2) there is a critical need to carry out the project in a timely fashion in order to benefit NOAA trust resources; and (3) the project sponsor has attempted to obtain matching funds but was unable to come up with the full 1:1 minimum match required. NOAA strongly encourages applicants to leverage as much investment as possible. The degree to which cost-sharing exceeds the minimum level may be taken into account in the final selection of projects to be funded. The match can come from a variety of public and private sources and can include in-kind goods and services. Federal funds may not be considered as matching funds. Applicants are permitted to combine contributions from additional project partners in order to meet the 1:1 required match (equitable share, in the case of a joint project) for the project. Applicants whose proposals are selected for funding will be obligated to account for the amount of cost-share reflected in the proposal and may be asked to provide letters of commitment identifying and precisely specifying match (or equitable share) to confirm stated contributions.

For each proposal accepted for funding, one award will be made. Funds awarded cannot necessarily pay for all the costs which the recipient might incur in the course of carrying out the project. Allowable costs for grants and cooperative agreements are determined by reference to the Office of Management and Budget Circulars A–122, ''Cost Principles for Non-profit

Organizations''; A–21, ''Cost Principles for Education Institutions''; and A–87, ''Cost Principles for State, Local and Indian Tribal Governments.'' Generally, costs that are allowable include salaries, equipment, supplies, and training, as long as these are reasonable, allowable, and allocable. However, in order to encourage on-the-ground restoration, if funding for salaries is requested, at least 75 percent of the total salary request must be used to support staff accomplishing the restoration work. Entertainment costs are an example of unallowable costs. Generally, the Program will make awards only to those projects where requested funding will be used to complete proposed restoration activities, with the exception of post-construction monitoring, within a period of 18 months from the time awards are distributed.

Project Selection Process

NOAA will publish, in the **Federal Register**, notifications soliciting letters of intent and project proposals once a year or more. Letters of intent submitted in response to these solicitation notices, when required, will be screened for eligibility and conformance with the Program guidelines, and guidance will be provided as to the most suitable funding mechanism that project proponents may pursue for further consideration. Applicants providing full proposals for financial assistance will be asked to follow standard NOAA Grants procedures. Full proposals will be screened to determine whether applicants meet the minimum Program requirements, and eligible restoration projects will undergo a technical review, ranking, and selection process. As appropriate during this process, the NOAA Restoration Center will solicit individual technical evaluations of each project and may consult with other NMFS and NOAA offices, the NOAA Grants Management Division, the U.S. Department of Commerce, the Regional Fishery Management Councils, such other Federal and state agencies as state coastal management agencies and state fish and wildlife agencies, and private and public sector subject experts or other interested parties, such as potential partners who have knowledge of a specific project or its subject matter. Reviews will be consolidated, and recommendations on the merits of funding each project and the level of funding NMFS should award will be presented to the Director of the NOAA Restoration Center for approval. Reviewers will assign scores to proposals ranging from 0 (unacceptable) to 100 (excellent) based on the following four evaluation criteria:

(1) Benefit to NOAA Trust Resources

NMFS is interested in funding projects where benefits to living marine resources can be realized. Therefore, NMFS will evaluate proposals based on the potential of the restoration project to restore, protect, conserve, and create habitats and ecosystems vital to self-sustaining populations of living marine resources under NOAA Fisheries stewardship. Locations where restoration projects may have high potential to benefit NOAA trust resources include areas identified as essential fish habitat (EFH) and areas within EFH identified as Habitat Areas of Particular Concern; areas identified as critical habitat for listed marine and anadromous species; areas identified as important habitat for marine mammals; areas located within National Marine Sanctuaries or National Estuarine Research Reserves; watersheds or other areas under conservation management, such as special management areas under state coastal management programs; and other important commercial or recreational marine fish habitat, including degraded areas that formerly were important habitat for living marine resources.

(2) Technical Merit and Adequacy of Implementation Plan

Proposals will be evaluated on the technical feasibility of the project from both biological and engineering perspectives and on the qualifications and past experience of the project leaders and/or partners. Communities and/or organizations developing their first locally driven restoration project may not be able to document past experience, and, therefore, will be evaluated on the basis of the availability of technical expertise to guide the project to a successful completion. Proposals will also be evaluated on their ability to (a) deliver the restoration objective stated in the proposal; (b) provide educational benefits; (c) incorporate post-restoration monitoring and assessment of project success in terms of meeting the proposed objectives; (d) demonstrate that the restoration activity will be sustainable and long-lasting;(e) provide assurance that implementation of the project will meet all Federal and state environmental laws and Federal consistency requirements by obtaining or proceeding to obtain applicable permits and consultations; and (f) provide mid-term and final project reports, including photo-documentation of the project site and restoration activities.

(3) Community Commitment and Partnership Development

Proposals will be evaluated on how well they describe the depth and breadth of the community's support. Projects must incorporate significant community involvement, which may include the following: (a) Hands-on training and restoration activities undertaken by volunteer students, qualified youth conservation or service corps, or other citizens; (b) input from local entities, such as businesses, conservation organizations, and others, either through in-kind goods and services (earth moving, technical expertise, easements) or cash contributions; (c) visibility within the community and demonstrated potential for public outreach and/or outreach products, including, but not limited to, an educational sign/poster at the project site, compilation of protocols into training manuals, guides, brochures, or videos; (d) cooperation with private landowners that set an example within the community for natural resource conservation; (e) support by state and local governments; (f) representation of those within the community who have an interest in or are affected by the project and seek the benefits of the restoration; (g) ability to achieve long-term stewardship for restored resources and generate a community conservation ethic; and/or (h) ability of a project to demonstrate that it is incorporated into a regional or community planning process or otherwise assure that all residents or citizens affected by the project are provided an opportunity to participate.

(4) Cost-effectiveness and Budget Justification

Projects will be evaluated on (a) their ability to demonstrate that a significant benefit will be generated for the most reasonable cost; (b) their importance to living marine resources under NOAA stewardship; (c) the extent of habitat and degree to which it will be restored; and (d) on their demonstration of partnership and collaboration. Projects will also be ranked in terms of their need for funding and the ability of NMFS to act as a catalyst to implement projects. NMFS will require cost sharing to leverage funding and to encourage partnerships among government, industry, and academia to address the needs of communities to restore important fisheries habitat.

The exact amount of funds awarded to a project and the funding instrument will be determined in pre-award negotiations between the applicant and NOAA/NMFS representatives. The application and reporting requirements will differ depending upon the funding instrument selected. Projects receiving funds under this program will have to meet applicable NOAA/Department of Commerce/Federal policies, requirements, and laws.

Administrative Procedure Act

Prior notice and an opportunity for public comments are not required by the Administrative Procedure Act, (5 U.S.C. sec. 553), because these are agency guidelines. Because NMFS was interested in receiving comments on modifications to the Program that would allow greater flexibility to support community-based habitat restoration projects, NMFS solicited comments in the notice that was published in the **Federal Register** on October 1, 1999. This notice responds to those comments, and announces the final guidelines for the Program.

Statutory Authority

Fish and Wildlife Coordination Act of 1956, 16 U.S.C. 661–667; Joint Project Authority, 15 U.S.C. 1525; and the Economy Act, 31 U.S.C. 1535.

Dated: March 27, 2000.

Penelope D. Dalton,

Assistant Administrator for Fisheries, National Marine Fisheries Service.

[FR Doc. 00–7919 Filed 3–29–00; 8:45 am]

BILLING CODE 3510–22–F

DEPARTMENT OF COMMERCE

National Oceanic and Atmospheric Administration

[I.D. 032200B]

Endangered Species; Permits

AGENCY: National Marine Fisheries Service (NMFS), National Oceanic and Atmospheric Administration (NOAA), Commerce.

ACTION: Receipt of an application for a scientific research permit (1247); issuance of modifications to existing permits (1051, 1189).

SUMMARY: Notice is hereby given of the following actions regarding permits for takes of endangered and threatened species for the purposes of scientific research and/or enhancement:

NMFS has received a permit application from Mr. Tom Savoy, of the Connecticut Department of Environmental Protection (CTDEP) (1247); and NMFS has issued modifications to scientific research permits to Mr. Jorgen Skjeveland, of the U.S. Fish and Wildlife Service (JS-FWS) (1051) and Dr. James Kirk, of the Corps of Engineers Waterways Experiment Station (COE-WES) (1189).

DATES: Comments or requests for a public hearing on the new application must be received at the appropriate address or fax number (see **ADDRESSES**) no later than 5:00pm eastern standard time on May 1, 2000.

ADDRESSES: Written comments on the new application should be sent to the Office of Protected Resources, Endangered Species Division, F/PR3, 1315 East-West Highway, Silver Spring, MD 20910. Comments may also be sent via fax to 301–713–0376. Comments will not be accepted if submitted via e-mail or the internet. The application and related documents are available for review by appointment in the Office of Protected Resources, F/PR3, NMFS, 1315 East-West Highway, Silver Spring, MD 20910–3226 (301–713–1401).

FOR FURTHER INFORMATION CONTACT: Terri Jordan, Silver Spring, MD (ph: 301–713–1401, fax: 301–713–0376, e-mail: Terri.Jordan@noaa.gov).

SUPPLEMENTARY INFORMATION:

Authority

Issuance of permits and permit modifications, as required by the Endangered Species Act of 1973 (16 U.S.C. 1531–1543) (ESA), is based on a finding that such permits/modifications: (1) Are applied for in good faith; (2) would not operate to the disadvantage of the listed species which are the subject of the permits; and (3) are consistent with the purposes and policies set forth in section 2 of the ESA. Authority to take listed species is subject to conditions set forth in the permits. Permits and modifications are issued in accordance with and are subject to the ESA and NMFS regulations governing listed fish and wildlife permits (50 CFR parts 222–226).

Those individuals requesting a hearing on the application listed in this notice should set out the specific reasons why a hearing on the application would be appropriate (see ADDRESSES). The holding of such hearing(s) is at the discretion of the Assistant Administrator for Fisheries, NOAA. All statements and opinions contained in the permit action summaries are those of the applicant and do not necessarily reflect the views of NMFS.

Species Covered in this Notice

The following species is covered in this notice: shortnose sturgeon (*Acipenser brevirostrum*).

New Application Received

CTDEP (1247) has requested a 5-year permit for annual lethal takes of up to 300 shortnose sturgeon spawned eggs and larvae; annually capture, examine, collect stomach contents samples via gastric lavage, PIT tag, and release up to 400 adult and 100 juvenile sturgeon; and implant sonic tags in up to 25 adult sturgeon annually. The research proposes to determine general seasonal movements and fine scale diurnal movement patterns as well as food habits and prey preferences of shortnose sturgeon in the Connecticut River below Holyoke Dam.

Permit Modifications Issued

Notice was published on October 22, 1999 (64 FR 57069), that JS-FWS had applied for a modification to permit 1051. Modification #2 to permit 1051 was issued on March 21, 2000, and authorizes the deployment of an additional 15 sonic tags on 15 of the shortnose sturgeon captured from the Delaware River, and to change the tagging methodology from external to completely internal. The purpose of the sonic tagging is to determine if there is migration back and forth via the Chesapeake and Delaware Canal. The sturgeon will be measured, tagged, have tissues sampled and released. Modification #2 to Permit 1051 is valid for the duration of the permit, which expires May 31, 2002.

Modification #1 to Permit 1189 was issued to COE-WES on March 21, 2000, and authorizes the addition of baited trotlines as a sampling method for shortnose sturgeon, thus increasing the effectiveness of seasonal sampling. Modification #1 to Permit 1189 is valid for the duration of the permit, which expires December 31, 2002.

Dated: March 23, 2000.

Wanda L. Cain,

Chief, Endangered Species Division, Office of Protected Resources, National Marine Fisheries Service.

[FR Doc. 00–7924 Filed 3–29–00; 8:45 am]

BILLING CODE 3510–22–F

DEPARTMENT OF COMMERCE

National Oceanic and Atmospheric Administration

[I.D. 032000A]

Marine Mammals; File No. 895–1450–00

AGENCY: National Marine Fisheries Service (NMFS), National Oceanic and Atmospheric Administration (NOAA), Commerce.

APPENDIX F

ESSENTIAL FISH HABITAT ASSESSMENT

ESSENTIAL FISH HABITAT (EFH) PROGRAMMATIC CONSULTATION BETWEEN THE NATIONAL MARINE FISHERIES SERVICE, NORTHEAST REGIONAL OFFICE (NEW ENGLAND/MID-ATLANTIC) AND NOAA RESTORATION CENTER, COMMUNITY-BASED RESTORATION PROGRAM

ESSENTIAL FISH HABITAT ASSESSMENT

Essential Fish Habitat (EFH) Programmatic Consultation between the National Marine Fisheries Service, Northeast Regional Office (New England/Mid-Atlantic) and NOAA Restoration Center, Community-Based Restoration Program

Purpose

Under Section 305(b)(2) of the Magnuson-Stevens Fishery Conservation and Management Act (Magnuson-Stevens Act), Federal agencies are required to consult with the Secretary of Commerce on any action that may adversely affect Essential Fish Habitat (EFH). Consultation can be addressed programmatically to broadly consider as many adverse effects as possible through programmatic EFH conservation recommendations.

This programmatic consultation applies to restoration activities undertaken in the New England and Mid-Atlantic regions through the NOAA Restoration Center's (RC) Community-Based Restoration Program (CRP) to restore habitat for living marine resources.

Program Description

The NOAA Community-Based Restoration Program began in 1996 to inspire local efforts to conduct meaningful, on-the-ground restoration of marine, estuarine and riparian habitat. Since that time, NOAA has secured funding for 179 small-scale habitat restoration projects around the U.S. coastline. Habitat restoration is defined here as activities that directly result in the reestablishment or re-creation of stable, productive marine, estuarine, lagoon, or coastal river ecological systems. The Program is a systematic effort to catalyze partnerships at the national and local level to contribute funding, technical assistance, land, volunteer support or other in-kind services to help citizens carry out technically sound restoration projects that promote stewardship and a conservation ethic for living marine resources.

The program links seed money and technical expertise to citizen-driven restoration projects, and emphasizes collaborative strategies built around improving NOAA trust resources and the quality of the communities they sustain. Human activities and development have caused unprecedented destruction of coastal and wetland habitat. In a world of reliance on natural resources for a sound economy, and stress over natural resource management issues, stakeholders are coming together to assess and evaluate natural resource priorities, promote awareness and education, develop common goals and facilitate local habitat enhancement projects. Community-based habitat restoration helps repair habitats required by fish, endangered species and marine mammals. Restoration may include, but is not limited to: improvement of coastal wetland tidal exchange or reestablishment of historic hydrology; dam or berm removal; fish passageway improvements; natural or artificial reef/substrate/habitat creation; establishment or repair of riparian buffer zones and improvement of freshwater habitats that support fishes; planting of native coastal wetland and submerged aquatic vegetation (SAV); and improvements to feeding, shade or refuge, spawning and rearing areas that are essential to fisheries.

All restoration activities shall comply with Federal statutory and regulatory procedures, as well as state requirements, prior to implementation. Records of Federal and state permits/consultations will be maintained in-house if the RC issues individual awards for projects.

In the New England and Mid-Atlantic regions, the RC CRP is evaluated through the National Environmental Policy Act components typically consisting of a Draft and Final Environmental Assessment (EA) and Finding of No Significant Impact (FONSI). The purpose of the EA document is to address NEPA compliance of Federal actions at the program level, as opposed to the specific project level. The EA and FONSI identify and discuss the potential impacts of proposed actions on coastal and riverine environments.

CRP projects involve the restoration of coastal habitats that benefit living marine resources. These restoration activities are undertaken in riparian, marsh, shellfish, submerged aquatic vegetation, kelp, shoreline habitats in the Northeast/Mid-Atlantic regions. Restoration activities implemented under the CRP have very localized and temporary adverse impacts over the short-term, but will provide beneficial habitat to living marine resources in the long-term.

During project implementation involving revegetation activities, volunteers may cause a minor disturbance of the surrounding habitat by compacting soil due to foot traffic or disturbing existing vegetation. Submerged aquatic vegetation (SAV) restoration activities may also cause short-term impacts to SAV, depending on the method used to transplant SAV plants. Some methods require digging or clearing of the bottom substrate which may result in temporary turbidity plumes as well as disturbance to any organisms in the substrate.

The creation of shellfish reefs may result in adverse impacts to the surrounding habitat, depending on the source from which shell is obtained. Shells are commonly obtained via two methods: 1) from dredge shell programs which may result in localized turbidity problems, and 2) purchasing shell through shucking houses, which result in no adverse impacts. During creation of reefs, additional turbidity problems may arise when shells are deployed onto the reef.

Activities involving invasive plant removal may also result in minor disturbances depending on methods used. Herbicides used in restoration projects may leach into surrounding soils during rainy periods and could also damage local, non-invasive plants during windy conditions. For projects in which volunteers are in direct contact with the aquatic environment such kelp forest restoration, the greatest source of short-term impacts is the potential for doing additional damage to the project site. These impacts may include accidental contact with kelp beds by divers or equipment, disruption of bottom sediment from diving fins, and impacts resulting from the transplanting of coral and kelp to restoration sites.

The Magnuson-Stevens Fishery Conservation and Management Act

Section 303(a)(7) of the Magnuson-Stevens Act (16 U.S.C. 1801 et seq.), requires that Fishery Management Councils include provisions in their fishery management plans that identify and describe EFH, including adverse impacts and conservation and enhancement measures. These provisions are addressed in one generic amendment to FMPs in New England and a summary of FMPs in the Mid-Atlantic.

New England Essential Fish Habitat (EFH) Amendment to Fishery Management Plans (FMP)

The EFH amendments (NEFMC, 1998) represent the New England Fishery Management Council's (New England Council) response to those requirements stated in Section 303(a)(7) of the Magnuson-Stevens Act (16 U.S.C. 1801 et seq.) by serving as a generic amendment to the following FMPs:

- Fishery Management Plan for the **Multispecies (Groundfish)** Fishery in New England
- Fishery Management Plan for the **Atlantic Salmon** Fishery in New England
- Fishery Management Plan for the **Monkfish** Fishery in New England/Mid-Atlantic

- Fishery Management Plan for the **Sea Scallop** Fishery in New England
- Fishery Management Plan for the **Atlantic Herring** Fishery in New England

The generic EFH document (NEFMC, 1998) amends four existing and one proposed FMP of the New England Council. EFH is identified and described based on areas where the various life stages of 19 managed species occur. The 19 species are groundfish (Atlantic cod, *Gadus morhua*; Witch flounder, *Glyptocephalus cynoglossus;* American plaice, *Hippoglossoides platessoides*; Yellowtail flounder, *Pleuronectes ferruginea*; Ocean pout, *Macrozoarces americanus*; Haddock, *Melanogrammus aeglefinus*; Whiting, *Merluccius bilinearis*; Pollock, *Pollachius virens*; Winter Flounder, *Pleuronectes americanus*; Windowpane flounder, *Scophthalmus aquosus*; Redfish, *Sebastes faciatus*; Red hake, *Urophycis chuss*; White hake, *Urophycis tenuis*; Atlantic halibut, *Hippoglossus hippoglossus*; Offshore hake, *Merluccius albidus*), Monkfish, *Lophius americanus*; Atlantic sea scallop, *Placopecten magellanicus*; Atlantic sea herring, *Clupea harengus;* and Atlantic salmon, *Salmo salar*.

Fishery Management Plans of the Mid-Atlantic Region

Six FMPs exist in the Mid-Atlantic region. The EFH sections within each amendment are summarized in the EFH Summary (MAFMC) which serves as a guide and a cross-reference to facilitate EFH consultations State and Federal agencies and NMFS and the Council. The EFH Summary (MAFMC) reviews the Mid-Atlantic Fishery Management Council's (Mid-Atlantic Council) amendments to the following FMPs:

- Fishery Management Plan for **Summer Flounder, Scup, & Black Sea Bass** Fishery in the Mid-Atlantic
- Fishery Management Plan for the **Spiny Dogfish** Fishery in the Mid-Atlantic and New England
- Fishery Management Plan for the **Surf Clam & Ocean Quahog** Fishery in the Mid-Atlantic
- Fishery Management Plan for the **Atlantic Mackerel, Squid, & Butterfish** Fishery in the Mid-Atlantic
- Fishery Management Plan for the **Bluefish** Fishery in the Mid-Atlantic
- Fishery Management Plan for the **Tilefish** Fishery in the Mid-Atlantic

EFH is identified and described based on areas where various life stages of 12 managed species commonly occur. The 12 species are Atlantic Mackerel, *Scomber scombrus*; Long-finned Squid, *Loligo pealei;* Short-finned Squid, *Illex illecebrosus*; Butterfish, *Peprilus triacanthus*; Bluefish, *Pomatomus saltatrix;* Spiny Dogfish, *Squalus acanthias*; Surf clam, *Spisula solidissima*; Ocean Quahog, *Arctica islandica*; Summer Flounder, *Paralichtyys dentatus*; Scup, *Stenotomus chrysops*; Black Sea Bass, *Centropristis striata striata*; and Tilefish, *Lopholatilus chamaeleonticeps*.

Secretarial FMPs

Two other Secretarial Fishery Management Plans are effective in New England and the Mid-Atlantic: The Highly Migratory Species (Tunas, Sharks, and Swordfish) FMP and the Atlantic Billfish FMP (HMSMD, 1999). Under the Magnuson-Stevens Act, federal jurisdiction of EFH for Highly Migratory Species and Atlantic Billfish spans the area between the Canadian border in the north and the Dry Tortugas in the south as well as the Gulf of Mexico and the U.S. Caribbean.

The following sections address EFH for managed species that may be encountered during community-based restoration projects in New England and the Mid-Atlantic. Table 1 lists the FMPs and species that have EFH designations and are likely to be encountered in a CRP project. Table 2 lists the FMPs and species unlikely to be found in a CRP project area.

Table 1. Fishery Management Plans (FMPs) in New England and the Mid-Atlantic, species managed under each FMP, and the reasons for *inclusion* under the CRP Environmental Assessment (EA).

NEW ENGLAND		
Fishery Management Plan	Species Managed Under FMP	Reason for Inclusion
New England Multispecies FMP	Atlantic cod, haddock, ocean pout, American plaice, pollock, red hake, white hake, whiting, windowpane flounder, winter flounder, and yellowtail flounder & life stages	Found in bays, estuaries and some rivers
New England Atlantic Herring FMP	Atlantic herring & its life stages	Found in bays, estuaries and nearshore waters
New England FMP for Atlantic Salmon	Atlantic salmon & its life stages	Freshwater EFH for salmon fisheries includes all streams, lakes, ponds, wetlands, and other water bodies currently or historically accessible to salmon. Marine EFH for salmon fisheries includes all estuarine and marine areas utilized by salmon, extending from influence of tidewater and tidally submerged habitats to the limits of the U.S. EEZ
New England/Mid-Atlantic FMP for Monkfish	2 species/life stages	Near-shore waters, bays and estuaries
New England FMP for Atlantic Sea Scallops	Atlantic sea scallop & its life stages	Found in near-shore bays and estuaries
New England/Mid-Atlantic FMP for Spiny Dogfish	Spiny dogfish & its life stages	Found in warm waters over the continental shelf, depths greater than 5m and in nearshore areas
Secretarial FMP for Tunas, Sharks, and Swordfish	3 species/life stages of tuna, 1 species of swordfish, and 3 species of shark (great hammerhead, nurse shark, blacktip shark)	Found in near-shore waters, bays and estuaries

MID-ATLANTIC		
Fishery Management Plan	Species Managed Under FMP	Reason for Inclusion
Mid-Atlantic FMP for Summer Flounder, Scup, and Black Sea Bass	Summer flounder, scup, black sea bass & life stages.	Found in pelagic, demersal, and nearshore waters, shellfish and seagrass beds, sandy-shelly areas, and rough bottoms.
Mid-Atlantic/New England FMP for Spiny Dogfish	Spiny dogfish & life stages	Found in warm waters over the continental shelf, depths greater than 5m and in nearshore areas
Mid-Atlantic/New England FMP for Monkfish	2 species/life stages	Near-shore waters, bays and estuaries
Mid-Atlantic FMP for Surf Clam and Ocean Quahog	Surf clam, ocean quahogs & life stages	Found from the beach out to approximately 65 m deep, vertically in substrate to 1 m depth
Mid-Atlantic FMP for Atlantic Mackerel, Squid and Butterfish	Atlantic mackerel, *Loligo*, *Illex*, butterfish & life stages	Demersal eggs found attached to aquatic vegetation or rocks in shallower waters
Mid-Atlantic FMP for Bluefish	Bluefish & life stages	Juveniles and adults found in estuarine and nearshore waters
Secretarial FMP for Tunas, Sharks, and Swordfish	3 species/life stages of tuna, 1 species of swordfish, and 3 species of shark (great hammerhead, nurse shark, blacktip shark)	Found in near-shore waters, bays and estuaries

Table 2. Fishery Management Plans (FMPs) in New England and the Mid-Atlantic, species managed under each FMP, and the reasons for *exclusion* under the CRP Environmental Assessment (EA).

NEW ENGLAND/MID-ATLANTIC		
Fishery Management Plan	Species Managed Under FMP	Reason for Exclusion
Mid-Atlantic FMP for Tilefish	Tilefish, life stages	Found on the outer continental shelf.
Secretarial FMP for Atlantic Billfish	Blue marlin, White marlin, Longbill spearfish, Sailfish , life stages	Found in epipelagic waters in upper 300-600 ft open sea areas and neritic waters over the continental shelf.

New England Council Policies

The New England Fishery Management Council's jurisdiction extends from Maine to southern New England, although some NEFMC-managed species range to the mid-Atlantic. Information presented in the EFH generic amendment (NEFMC, 1998) is consistent with and supports the Gulf Council's long-standing habitat policy. The policy, as set forth in the Council's Habitat Policy and Management Objectives, states:

Recognizing that all species are dependent on the quantity and quality of their habitat, it is the policy of the New England Fishery Management Council to promote and encourage the conservation, restoration and enhancement of the habitat upon which living marine resources depend.

This policy shall be supported by four policy objectives which are to:

(1) Maintain and rehabilitate the current quantity and quality of habitats supporting harvested species, including their prey base.

(2) Restore and rehabilitate fish habitats which have already been degraded.

(3) Create and develop fish habitats where increased availability of fishery resources will benefit society.

(4) Modify fishing methods and create incentives to reduce the impacts on habitat associated with fishing.

These objectives are based on ensuring the sustainability of harvested species and optimizing the societal benefits of our marine resources.

The Council shall assume an active role in the protection and enhancement of habitats important to marine and anadromous fish. In support of the Council's habitat policy, the management objectives for the EFH amendment (NEFMC, 1998) are:

(a) To the maximum extent possible, to identify and describe all essential fish habitat for those species of finfish and mollusks managed by the Council;

(b) To identify all major threats to the essential fish habitat of those species managed by the Council; and

(c) To identify existing and potential mechanisms to protect, conserve, and enhance the essential fish habitat of those species managed by the Council, to the extent practicable.

Mid-Atlantic Council Policies

The Mid-Atlantic Council has jurisdiction over fisheries in federal waters which occur predominantly off the mid-Atlantic coast. It includes waters off the coasts of New York, New Jersey, Pennsylvania, Delaware, Maryland, Virginia, and North Carolina.

Types of EFH Affected by Program Activities and Assessment of Effects on EFH

EFH is described and identified as everywhere that the above managed species commonly occur. In New England and the Mid-Atlantic, the EFH determination is based on source document reports from NMFS for each species managed by the Councils (NEFMC, 1998). The reports consist of a description of the habitat associations and requirements for species across all life stages, including summary descriptions of relevant survey data that indicate the relative abundance of and range for each species. This information is used by the Council to develop appropriate EFH designations for all species that identify preferred geographic areas, substrate, and ideal ranges for water temperature, depth, and salinity. The text descriptions of EFH set the environmental parameters within which the map designations are considered. Text descriptions, map designations, and tables identifying bays and estuaries included in the EFH designations for the existing FMPs for each life stage are available in Section 3.4 of the New England EFH amendment. For the Mid-Atlantic, text descriptions and habitat association tables for managed FMPs are found in the EFH Summary (MAFMC, 1998).

The following discussions of estuarine and marine environments, excerpted from the CRP EA (2001), complement the EFH descriptions of the New England and Mid-Atlantic Fishery Management Councils. Because of the large variability in the types of species comprising living marine resources, a wide range of coastal regions and riparian systems along streams and rivers that support fish must be considered as EFH for marine species. Most CRP projects occur in urban areas impacted by human development and pollution as well as in remote rural locations. Living marine resources also utilize a wide variety of coastal biological habitats that are restored under the CRP, including riparian areas, marshes, submerged aquatic vegetation, oyster/artificial reefs, shorelines, and kelp forests. These various habitats are targeted for restoration because they have suffered considerable degradation and loss of area in recent decades due to dredging and filling, pollution, construction, and erosion.

Each discussion is followed by a description of potential restoration activities that may occur during CRP projects and an assessment of their impacts to EFH. Most restoration activities are considered non-fishing related threats but are not addressed in the chemical, biological, and physical descriptions of non-fishing impacts provided by the FMPs. In Section 6.4.2 of the EFH Amendment, restoration and education outreach are taken into consideration by the New England Council as management approaches or measures to conserve and enhance EFH (NEFMC, 1998). Since activities are aimed at restoring habitats for living marine resources, implementation of restoration activities under the CRP may have a very localized and temporary adverse impact over the short-term, but will provide beneficial habitat in the long-term. Under the CRP, these restoration activities do not individually or cumulatively have significant adverse impacts on the human environment, and many projects may be eligible for categorical exclusion under NOAA NEPA Guidance.

A. Estuarine Environments

For the estuarine component, EFH is described and identified as all estuarine waters and substrates (mud, sand, shell, rock and associated biological communities), including the sub-tidal vegetation (SAV and algae) and adjacent inter-tidal vegetation (marshes and mangroves). These areas provide essential nursery habitat for the development of many anadromous, estuarine, and marine fish and invertebrates. The restoration of estuarine environments typically include similar types of activities such as removal of invasive species, revegetation, and the placement or removal of structures such as logs or culverts.

1. Riparian Areas

Riparian zones are defined as the land immediately adjacent to a stream or a river. They are characteristic associations of substrate, flora, and fauna within the 100-year flood plain of a stream or, if a flood plain is absent, zones that are hydrologically influenced by a stream or river (Hunt, 1988). In the East, riparian zones are commonly characterized by bottomland hardwood and floodplain forests (Mitsch and Gosselink, 1993). Riparian environments are maintained by high water tables and experience seasonal or periodic flooding. They may also contain or adjoin riverine wetlands and share many functions including water storage, sediment retention, nutrient and contaminant removal as well as habitat functions. They often share some of the characteristics of wetlands but cannot be defined as wetlands because they are saturated at much lower frequencies. Riparian ecosystems have distinctive vegetation and soils, and are characterized by the combination of species diversity, density, and productivity. Continuous interactions occur between riparian, aquatic, and upland ecosystems through exchanges of energy, nutrients, and species (NRC, 1995).

Description of Habitat (EFH) Affected:
Essential fish habitat descriptions provided by the New England and Mid-Atlantic Councils do not include detailed descriptions of riverine or riparian systems and their distribution within each of the management areas. Potential impacts to managed species would be limited to species within estuarine habitats and along stream channels such as marsh edges, SAV, and pools and riffles. In New England, eggs, larvae, and spawning adult stages of Atlantic salmon may occur above or below or a pool or interspersed with deeper riffles in rivers and estuaries. Juvenile stages of red drum also use shallow backwaters of estuaries as nursery areas and remain there until they move to deeper water portions of the estuary associated with river mouths.

Potential impacts from restoration activities:
Riparian habitat restorations usually involve re-vegetation activities and placement of large woody debris (LWD). Placement of LWD is manually done by volunteers, which may result in minor disturbance of the surrounding habitat through increased foot traffic. This may result in soil compaction as well as disturbance of existing vegetation or other habitat structures.

Measures to eliminate or reduce potential impacts include planning ingress and egress routes to keep the impacted area to a minimum. To prevent damage to stream bottoms during project implementation, activities may be limited to periods when water levels are low. In addition, the use of measures to protect the water column such as erosion mats can prevent further damage to habitat and species.

2. Shoreline Habitats

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. In lower-energy shoreline environments, there may be lower population densities of a given species, but high diversity. Along higher-energy shorelines, SAV and certain benthic organisms, such as mollusks and worms, may predominate because they can withstand the turbulence of such an intertidal zone. Such environments may exhibit low species diversity, but high population densities of those species that can tolerate the high-energy conditions (for example, some invertebrates). Sand dunes formed in these areas provide habitat for seabirds and sea turtles, including various species of endangered sea turtles which rely on beaches for nesting habitat. Activities occurring in these areas may have impacts to habitats immediately offshore such as SAV beds, mangroves, and reefs.

Description of Habitat (EFH) Affected:

The New England and Mid-Atlantic coasts contain a variety of habitats critical to inshore and offshore habitat conditions. These habitats include rocky intertidal zones, sandy beaches as well as inland wetlands and salt marshes. Sandy beaches are most extensive along the coasts of Rhode Island, Massachusetts, New Hampshire, and Maine (Gordon, 1994). A variety of marine and terrestrial organisms are present in different zones of the beach and function as foraging and spawning habitats for marine resources (NEFMC, 1998). The upper beach is suitable habitat for dune grasses, invertebrates and nesting birds. Invertebrates and birds are also found along the intertidal zone. The subtidal zone presents suitable habitat for several invertebrates and fish. In New England, adult stages of red drum may occur in beach fronts. Juvenile and adult stages of surfclams and ocean quahogs managed by the Mid-Atlantic Council occur in the beach zone to 200-feet from the Gulf of Maine to Georges Bank.

Potential impacts from restoration activities:

Shoreline restoration involves the removal of invasive species which may result in potential adverse impacts to non-target species. Invasive species removal may be performed using chemical, mechanical, biological and ecological control methods, depending on the characteristics of species being eradicated. CRP projects involving invasive plant removals are usually accomplished using chemical methods, where volunteers spot-treat plants individually, or mechanical methods where plants are manually removed by hand. Herbicide application is often effective in the removal of invasive species, but minor impacts to surrounding areas may occur. Rainfall and wind may cause herbicides to leach into the surrounding soil or be transported to non-invasive plants, causing unintentional damage. The physical removal of invasive species may also be effective but potential impacts may occur if revegetation doesn't occur immediately.

In order to minimize the potential impacts from invasive species removal activities, certain precautions are taken. If volunteers manually remove plants, ingress and egress routes are planned to minimize the area impacted. Prior to project implementation, volunteers receive proper training on sound methods to apply herbicides and remove invasive plants by hand. This ensures the proper application of herbicides used to remove invasive species to avoid unintentional damage to native plants. Pesticides are not applied during rainy or windy periods.

3. Marsh Habitats

Marsh habitats vary with coastal geographic location. Salt marshes exist on the transition zone between the land and the sea in protected low-energy areas such as estuaries, lagoons, bays, and river mouths (Copeland, 1998). Marsh ecosystems, like all wetlands, are a function of hydrology, soil, and biota. Tidal cycles allow salty and brackish water to inundate and drain the salt marsh, circulating organic and inorganic nutrients throughout the marsh. Water is also the medium in which most organisms live. The marshes are strongly influenced by tidal flushing and stream flow, which affect the inundation and salinity regimes of salt marsh soils. In areas with enough runoff, salt marshes transition into brackish and freshwater marshes (Copeland, 1998). Sand- and mudflats occur at extreme low water, whereas salt marsh vegetation develops where the soils are more exposed to the air than inundated by tides, usually above mean sea level. *Spartina* spp. (cordgrass) typically dominate the lower marsh. Salt marshes are of paramount ecological importance because they 1) export vital nutrients to adjacent waters; 2) improve water quality through the removal and recycling of inorganic nutrients; 3) absorb wave energy from stops and act as a water reservoir to reduce damage further inland; and 4) serve an important role in nitrogen and sulfur cycling (Mitsch and Gosselink, 1993; Turner, 1977; Thayer et al., 1981; Zimmerman et al., 1984).

Description of Habitat (EFH) Affected:
In New England, salt marshes are found throughout the Gulf of Maine with major marshes being located on Cape Cod, the north shore of Massachusetts, and the coast of Maine (Gordon, 1994). Mud- and sandflats also occur throughout the Gulf of Maine wherever proper sedimentary conditions exist, especially in Cape Cod Bay. In New England, juvenile black sea bass and summer flounder may use salt marsh edges and channels. Estuarine wetlands are especially important habitat for red drum larvae.

Potential Impacts From Restoration Activities:
Salt marsh restorations may involve removal of invasive vegetation, revegetation of native plants, and culvert replacement to restore tidal flushing. Revegetation is usually performed with the help of volunteers which may result in minor disturbance of the surrounding habitat through increased foot traffic. This may result in soil compaction as well as disturbance of existing vegetation or other habitat structures. If activities occur during periods when fish may be present in the area, damage to EFH may occur. Invasive species removal is performed using methods similar to those in coastal areas.

Measures to eliminate or reduce potential impacts from restoration activities include the use of turbidity curtains and other forms of water column protection to prevent the flow and/or washing out of disturbed debris from the tidal creek. These measures should also localize erosion to an isolated area. In order to minimize the potential impacts from invasive species removal activities, certain precautions are taken. Ingress and egress routes for volunteers are planned to minimize the area impacted. Volunteers are also properly trained on sound methods to apply herbicides and removing invasive plants. Herbicides used to remove invasive species are applied directly with special care to avoid unintentional damage to native plants. Herbicides are not be applied during rainy or windy periods.

4. Submerged Aquatic Vegetation (SAV)

Submerged grasses or SAV differ from most other wetland plants in that they are almost exclusively subtidal, occur mainly in marine salinities and utilize the water column for support. SAV occur across a wide depth range, from rocky intertidal habitats to depths of 40 meters, and for some species, broad latitudinal ranges. Distribution patterns are influenced by light, salinity, temperature, substrate type, and currents. SAV habitat is currently threatened because of the cumulative effects of overpopulation, commercial development, and recreation activities in the coastal zone. SAV supply many habitat functions, including: (1) support of large numbers of epiphytic organisms; (2) damping of waves and slowing of currents which enhances sediment stability and increases the accumulation of organic and inorganic material; (3) binding by roots of sediments, thus reducing erosion and preserving sediment microflora; and, (4) roots and leaves provide horizontal and vertical complexity to habitat, which, together with abundant and varied food sources, support densities of fauna generally exceeding those in unvegetated habitats (Wood *et. al.*, 1969; Thayer *et. al.*, 1984). They also provide nursing grounds for many juvenile fish species and habitat for many larval and adult invertebrates critical to near-shore food chains.

Description of Habitat (EFH) Affected:
The primary types of submerged aquatic vegetation (SAV) in New England are eelgrass (*Zostera marina*) and widgeon grass (*Ruppia maritima*). SAV is found along the coast of Maine and southern New England. SAV serves as important nursery grounds for a number of commercially and recreationally important species. In addition, they are specialized refuges and a rich food source for herbivores. In New England, juvenile pollock and summer flounder use bottom habitats with aquatic vegetation in the intertidal zone as nursery areas. Juvenile black sea bass also use eelgrass beds offshore from New Jersey during wintering. Juvenile scup are found in eelgrass beds in estuaries and bays during the spring and summer. Red drum larvae and cobia may also be found in seagrass beds. Atlantic cod are often associated with SAV because they use it as a predation refuge (Gotceitas *et. al.*, 1997). Egg and larval stages of summer flounder managed by the Mid-Atlantic Council may be found in SAV beds and nearshore areas from 12 to 50 miles offshore. Juvenile black sea bass are also found in SAV beds from the Atlantic coast to limits of the EEZ, as well as from the Gulf of Maine to Cape Hatteras, North Carolina.

Potential impacts from restoration activities:
SAV restoration often involves transplanting seagrass plants from existing SAV donor beds, which can cause short-term adverse impacts to SAV. These include temporary damages to existing beds by volunteers which may reduce the quality and quantity of EFH in the donor area. SAV plants may also be damaged during transplant. Planting may result in disturbance of existing bottom-substrate from clearing or digging.

One method of avoiding potential impacts by volunteers is through the use of TERFS™ racks (Transplanting Eelgrass Remotely using Frame Systems) which allows seagrass to be transplanted with little contact with the water. This system attaches seagrass plants to reusable wire frames with biodegradable ties which are dropped to the bottom of the restoration site where seagrass roots can then anchor new shoots in place. This method minimizes potential impacts to bottom sediment from divers as well as impacts to SAV plants from handling and storage. In order to avoid damage to transplanted SAV plants, projects may also be required to complete transplanting activities within 24 hours of collection from donor beds. Plants should also be gathered through careful field collection to minimize damage to existing beds.

B. Marine Environments

In marine waters, EFH is described and identified as all marine waters and substrates (mud, sand, shell, rock, hardbottom, and associated biological communities) from the shoreline to the seaward limit of the EEZ.

1. Oyster Shell/Artificial Reefs

Oyster reefs may be found in intertidal and subtidal areas, where suitable substrate and adequate larval supply exist, along with appropriate (brackish to estuarine) salinity levels and water circulation. Oyster beds historically were found along the East Coast, but have been greatly reduced in occurrence as a result of anthropogenic impacts in the past 200 years (Kennedy and Sanford, 1995). Artificial reefs have recently been used to enhance fishery habitat by replacing habitat and ecosystem functions to support entire biological communities. Oyster beds are built by the cementing together of oyster shells, with additional hard substrate provided by associates such as other bivalves, barnacles, and calcareous tube builders such as some polychaetes (Kennedy and Sanford, 1995). Larvae of these invertebrates settle seasonally on this substrate. Eventually, a mound forms and grows vertically and laterally as oysters accumulate and shell is scattered in the bed's vicinity (Bahr and Lanier, 1981). Oyster reefs can vary in morphology, influenced by local effects (Kennedy and Sanford, 1995). Oyster beds have in the past been an important food source as well as providing shore protection (hard substrate), water clarification, and habitat for other invertebrates.

Description of Habitat (EFH) Affected:

In New England, juvenile and adult stages of black sea bass are found on shellfish beds, patches, and artificial structures. EFH for spawning adult Atlantic herring, Atlantic sea scallops, monkfish, and juvenile red hake is in areas with shell fragments or sandy and shelly areas. Adult spawning ocean pout may be found near artificial reefs in late summer through early winter while adult pollock are found from September through April. Juvenile and adult stages of black sea bass are found near natural and man-made sand and shell substrates during different times of the year. Juveniles occur in coastal locations from April through December between Virginia and Massachusetts. During wintering, they occur offshore of New Jersey. Wintering adult stages of white sea bass occur offshore in New York through North Carolina from November through April. Juvenile and adult stages of summer flounder, scup, and black sea bass managed by the Mid-Atlantic Council are found in shellfish beds and artificial habitats.

Potential impacts from restoration activities:

Shellfish/Artificial reef creation involves the placement of shell and/or other materials at specific sites to provide hard substrate for aquatic communities. The placement of the reef may result in impacts to bottom-dwelling benthic organisms and fish in the area which may be buried during the placement of reef material. Temporary increases in turbidity may also result when materials are placed. When oyster shell is used, is it often washed overboard from barges which minimizes turbidity problems.

Impacts may also result depending on the source from which shell for the reef is obtained. Shells are commonly acquired via two method. Dredge shell programs obtain buried shells by dredging areas, which can cause short-term turbidity problems. In addition, any aquatic organisms in the area would be eliminated. The other method of obtaining shell is to purchase them through shucking houses. This method has no adverse impacts to the aquatic environment.

Potential impacts from oyster/artificial reef creation may be minimized by ensuring that shells are washed overboard onto the reef sites instead of being dumped overboard, which would result in turbidity plumes. Artificial reefs should be constructed using materials that do not impact EFH. In addition, shell will only be obtained from shucking houses where no impacts to habitat were made during shell acquisition.

2. Kelp Forests

Kelp forests are subtidal marine communities dominated by large brown algae (kelps) that form floating canopies on the surface of the sea. Kelp forest communities are found from sea level to as deep as 60 meters, depending on light penetration (Foster and Schiel, 1985). Kelp beds are highly productive and create a three-dimensional aspect to the nearshore environment, providing habitat and food for hundreds of other species of plants (algae), and animals. Kelp forests on hard reef areas can harbor lush understory layers of red and brown algae, as well as mobile and encrusting invertebrates. Throughout the kelp forest, there are hundreds of species of fish distributed across vertical layers of vegetation that vary with depth

(Schiel and Foster, 1992). Food is exported from kelp forests to associated communities such as sandy beaches and the deep sea.

Description of Habitat (EFH) Affected:

Along the east coast, kelp plants with floating canopies do not occur although plants can obtain heights over 6 meters above the bottom (Schiel and Foster, 1992). In New England, kelp is usually limited to the coast of the Gulf of Maine (NEFMC, 1998). Kelp is a source of detritus and primary productivity that is important in the numerous chemical and biological cycles in New England (NEFMC, 1998). Kelp and rockweed are abundant benthic seaweeds within New England waters and are found along the coast of the Gulf of Maine. Kelp plants function as a complex habitat, providing refuge from predators and foraging habitat for a variety of marine and estuarine organisms. In New England, sea scallops, winter flounder, and lobsters have been documented to inhabit kelp beds.

Potential impacts from restoration activities:

Kelp restoration may include tying down mature kelp plants on vacant substrate, removing grazers or competitors, seeding the area with spores from healthy plants, and tagging and monitoring the growth of kelp. Activities may require the use of volunteer divers to prepare, plant and maintain project sites.
The greatest potential for short-term impacts is the possibility of volunteer divers doing more damage to kelp beds during project implementation. Impacts may include damages to kelp beds from equipment, boats, anchoring, and divers themselves.

To minimize these disturbances, certified volunteer divers with proper training in low-impact restoration techniques are used. Low-impact techniques include having no more than four divers per group, the use of appropriate dive equipment and tools, expert boat anchoring, job-specific diver training, and diver awareness. Any equipment or materials used during the restoration is removed from the site upon completion.

<u>RC Conservation Measures</u>

The RC has developed measures to mitigate possible impacts of CRP activities on environmental resources and non-CRP activities. These measures are specific to restoration activities within project areas and have already been put to use in funded projects. The NOAA RC finds that these measures are protective of EFH. These measures which are normally specified in CRP contracts are:

1. Use of Best Management Practices (BMP)

Best management practices (BMPs) are measures to minimize and avoid all potential impacts to EFH during CRP restoration activities. This conservation measure requires the use of BMPs during restoration activities to reduce impacts from project implementation. BMPs shall include but are not limited to:

a. Measures to protect the water column - Turbidity curtains, haybales, and erosion mats shall be used
b. Staging areas - Areas used for staging will be planned in advance and kept to a minimum size.
c. Buffer areas around sensitive resources - Rare plants, archeological sites, etc., will be flagged and avoided.
d. Invasive species - Measures to ensure native vegetation or revegetation success with be identified and implemented.

2. Avoidance of Work During Critical Fish Windows

This conservation measure requires CRP projects to be scheduled to avoid work when managed species are expected in the area. These periods shall be determined prior to project implementation to avoid any potential impacts.

3. Use of FMP Conservation Measures

In addition to measures stated in this section, EFH conservation measures provided by each Council will be incorporated into projects to minimize potential impacts. These measures address project-specific activities that may impact EFH and offer guidance to reduce these impacts.

4. Adequate Training of Volunteers

The adequate training measure is intended to ensure minimal impact to the restoration site through proper training and education of volunteers. Volunteers shall be trained in the use of low-impact techniques for planting, equipment handling, and any other activities associated with the restoration. Proper diving techniques will also be used by volunteer divers.

Training volunteers to perform restoration activities using low-impact techniques will minimize impacts to critical habitat for species managed under the New England and Mid-Atlantic Councils.

5. Monitoring

Monitoring will be conducted before, during, and after project implementation to ensure compliance with project design and restoration success.

6. Mitigation for Potential Impacts

Any unavoidable damage to EFH during project implementation will be fully mitigated within one growing season.

7. Post-Project Implementation Removal

Any temporary access pathways and staging areas will be removed or restored to re-establish or improve site conditions.

Project-Specific Consultation

If the proposed project plans are substantially different than plans mentioned in this consultation or if new information becomes available that affects the basis for no adverse affect determination, then EFH consultation will be reinitiated.

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UNITED STATES DEPARTMENT OF COMMERCE
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AUG - 8 2001

Mr. James Burgess
Director, NOAA Restoration Center
Office of Habitat Conservation
National Marine Fisheries Service
1315 East-West Highway
Silver Spring, MD 20910-3282

Dear Mr. Burgess:

The Northeast Regional Office of the National Marine Fisheries Service (NMFS) has received the NOAA Restoration Center's (RC) request initiating Essential Fish Habitat (EFH) Programmatic Consultation for Community-Based Restoration Program (CRP) activities in New England and Mid-Atlantic states (Maine through Virginia) . The EFH consultation request was made pursuant to Section 305(b)(2) of the Magnuson-Stevens Fishery Conservation and Management Act (MSFCMA) and its implementing regulations at 50 CFR Part 600.920(a)(2) and is the result of a cooperative effort by our staffs.

The RC's Programmatic Consultation request addresses EFH for managed species that may be encountered during community-based restoration projects in coastal, estuarine, and riverine locations within New England and Mid-Atlantic states. A description of CRP restoration activities, an analysis of their effects, your views on those effects, and proposed conservation measures have been provided in the Draft EA and EFH Assessment (appended to this letter).

The EFH Assessment determined that restoration activities implemented under the CRP will have the potential for localized and temporary adverse impacts over the short-term, but will provide beneficial habitat to living marine resources in the long-term. NMFS Northeast Regional Office concurs with this determination. Conservation measures are incorporated into each project in order to minimize adverse impacts to EFH. If the project plans cannot fully incorporate all impact avoidance measures or if new information becomes available that affects the basis for conservation measures, then supplemental consultation will be undertaken prior to project implementation. The assessment meets the requirements of the EFH regulations at 50 CFR Subpart K, 600.920(g).

The EFH Assessment and supporting documents, in combination with NMFS' review of CRP restoration activities and impacts, provides the basis for our determination that a Programmatic Consultation provides an appropriate mechanism to evaluate EFH impacts of program activities.

EFH Conservation Recommendations

To ensure that adverse impacts on EFH and federally-managed fisheries from NOAA Restoration Center activities are avoided, minimized, or appropriately mitigated, the implementation of EFH conservation measures is necessary. Pursuant to Section 305(b)(4)(A) of the MSFCMA, we recommend the following programmatic EFH conservation recommendations:

1. Use of Best Management Practices (BMPs)

Best management practices (BMPs) are measures to minimize and avoid all potential impacts on EFH during CRP restoration activities. This conservation measure requires the use of BMPs during restoration activities to reduce impacts from project implementation. BMPs shall include but are not limited to:

> a. Measures to protect the water column - Turbidity curtains, haybales, and erosion mats shall be used
> b. Staging areas - Areas used for staging will be planned in advance and kept to a minimum size.
> c. Buffer areas around sensitive resources - Rare plants, archeological sites, etc., will be flagged and avoided.
> d. Invasive species - Measures to ensure native vegetation or revegetation success will be identified and implemented.

2. Avoidance of Work During Critical Fish Windows

This conservation measure requires CRP projects to be scheduled to avoid work when managed species are expected in the area. These periods shall be determined prior to project implementation to avoid any potential impacts.

3. Use of FMP Conservation Measures

In addition to measures stated in this section, EFH conservation measures provided by each Council will be incorporated into projects to minimize potential impacts. These measures address project-specific activities that may impact EFH and offer guidance to reduce these impacts.

4. Adequate Training of Volunteers

The adequate training measure is intended to ensure minimal impact on the restoration site through proper training and education of volunteers. Volunteers shall be trained in the use of low-impact techniques for planting, equipment handling, and any other activities associated with the restoration. Proper diving techniques will also be used by volunteer divers.

Training volunteers to perform restoration activities using low-impact techniques will minimize impacts on critical habitat for species managed under the New England and Mid-Atlantic Councils.

5. Monitoring

Monitoring will be conducted before, during, and after project implementation to ensure compliance with project design and restoration success.

6. Mitigation for Potential Impacts

Any unavoidable damage to EFH during project implementation will be fully mitigated within one growing season.

7. Post-Project Implementation Removal

Any temporary access pathways and staging areas will be removed or restored to re-establish or improve site conditions.

Project-specific Consultation

All CRP projects benefit habitat for living marine resource. Potential impacts on EFH will be localized, minor, and short-term in nature. However, certain circumstances may exist where project impacts are more than minimal and not short-term, or projects cannot avoid or minimize the adverse effects by implementing the above conservation recommendations. In these instances, project-specific consultation will be required and can be coordinated through the regulatory review process for federal permits. NMFS Northeast Regional Office will notify the RC of the need for project-specific consultation upon preliminary project review.

Review and Revision

If any changes are made to CRP programs and "Recommendations" described in the EFH Assessment, such that effects on EFH are potentially changed, the RC shall notify NMFS Northeast Regional Office and the agencies will discuss whether this Programmatic Consultation should be revised. Should NMFS receive new or additional information that may affect EFH conservation recommendations, NMFS will consider whether to request additional consultation with the RC and/or provide additional EFH conservation recommendations. At intervals of not less than every five years following this consultation, NMFS Northeast Regional Office will review these programmatic EFH conservation recommendations with the RC and determine whether they should be revised to account for any new information or new technology.

Conclusion

Based on our review of the Draft EA, FONSI, and EFH Assessment, we have determined that the EFH Programmatic Consultation with EFH Conservation Recommendations is appropriate for the Community-Based Restoration Program.

As required by section 305(b) of the Magnuson-Stevens Act, the RC must respond in writing within 30 days of receiving these EFH conservation recommendations. The RC must include in their response the acceptability of the EFH conservation recommendations. If the RC's response is inconsistent with NMFS' EFH conservation recommendations, the RC must explain its reasons for not following the recommendations, including the scientific justification for any disagreements with NMFS over the anticipated effects of the proposed actions and the measures needed to avoid, minimize, or mitigate for such effects. If the RC adopts the NMFS' EFH conservation recommendations, no further EFH consultation is required for actions covered by this Programmatic Consultation unless otherwise requested by the NMFS Northeast Regional Office.

Should you have any questions regarding this EFH consultation, please contact Lou Chiarella, EFH Coordinator, at (978) 281-9277.

Sincerely,

Peter Colosi, Jr.

Peter D. Colosi, Jr.
Assistant Regional Administrator
for Habitat Conservation Division

Attachment

cc: w/out attachment
Pat Kurkul
John Catena
Stan Gorski
Mike Ludwig
Tim Goodger
Eric Hutchins
Jon Kurland

APPENDIX G

ESSENTIAL FISH HABITAT (EFH) CONSULTATION BETWEEN THE NATIONAL MARINE FISHERIES SERVICE, SOUTHWEST REGION AND NOAA RESTORATION CENTER, COMMUNITY-BASED RESTORATION PROGRAM

Essential Fish Habitat (EFH) Programmatic Consultation between the National Marine Fisheries Service, Southwest Region and NOAA Restoration Center, Community-Based Restoration Program

Purpose

Under Section 305(b)(2) of the Magnuson-Stevens Fishery Conservation and Management Act (Magnuson-Stevens Act), Federal agencies are required to consult with the Secretary of Commerce on any action that may adversely affect Essential Fish Habitat (EFH). Consultation can be addressed programmatically to broadly consider as many adverse effects as possible through programmatic EFH conservation recommendations.

This programmatic consultation applies to restoration activities undertaken in the Southwest region through the NOAA Restoration Center's (RC) Community-Based Restoration Program (CRP) to restore habitat for living marine resources. The Southwest region includes areas managed by Fishery Management Councils in the Pacific and Western Pacific.

Program Description

The NOAA Community-Based Restoration Program began in 1996 to inspire local efforts to conduct meaningful, on-the-ground restoration of marine, estuarine and riparian habitat. Since that time, NOAA has secured funding for 179 small-scale habitat restoration projects around the U.S. coastline. Habitat restoration is defined here as activities that directly result in the reestablishment or re-creation of stable, productive marine, estuarine, lagoon, or coastal river ecological systems. The Program is a systematic effort to catalyze partnerships at the national and local level to contribute funding, technical assistance, land, volunteer support or other in-kind services to help citizens carry out technically sound restoration projects that promote stewardship and a conservation ethic for living marine resources.

The program links seed money and technical expertise to citizen-driven restoration projects, and emphasizes collaborative strategies built around improving NOAA trust resources and the quality of the communities they sustain. Human activities and development have caused unprecedented destruction of coastal and wetland habitat. In a world of reliance on natural resources for a sound economy, and stress over natural resource management issues, stakeholders are coming together to assess and evaluate natural resource priorities, promote awareness and education, develop common goals and facilitate local habitat enhancement projects. Community-based habitat restoration helps repair habitats required by fish, endangered species and marine mammals. Restoration may include, but is not limited to: improvement of coastal wetland tidal exchange or reestablishment of historic hydrology; dam or berm removal; fish passageway improvements; natural or artificial reef/substrate/habitat creation; establishment or repair of riparian buffer zones and improvement of freshwater habitats that support fishes; planting of native coastal wetland and submerged aquatic vegetation (SAV); and improvements to feeding, shade or refuge, spawning and rearing areas that are essential to fisheries.

All restoration activities shall comply with Federal statutory and regulatory procedures, as well as state requirements, prior to implementation. Records of Federal and state permits/consultations will be maintained in-house if RC issues individual awards for projects.

In the Southwest region, the RC CRP is evaluated through the National Environmental Policy Act components consisting of a Draft and Final Environmental Assessment (EA) and Finding of No Significant Impact (FONSI). The purpose of the EA document is to address NEPA compliance of Federal

actions at the program level, as opposed to the specific project level. The EA and FONSI identify and discuss the potential impacts of proposed actions on coastal and riverine environments.
CRP projects involve the restoration of coastal habitats that benefit living marine resources. These restoration activities are undertaken in riparian, marsh, shellfish, submerged aquatic vegetation, coral, shoreline, and mangrove habitats in the Southwest region. Restoration activities implemented under the CRP have very localized and temporary adverse impacts over the short-term, but will provide beneficial habitat to living marine resources in the long-term.

During project implementation involving revegetation activities, volunteers may cause a minor disturbance of the surrounding habitat by compacting soil due to foot traffic or disturbing existing vegetation. Submerged aquatic vegetation (SAV) restoration activities may also cause short-term impacts to SAV, depending on the method used to transplant SAV plants. Some methods require digging or clearing of the bottom substrate which may result in temporary turbidity plumes as well as disturbance to any organisms in the substrate.

The creation of shellfish reefs may result in adverse impacts to the surrounding habitat, depending on the source from which shell is obtained. Shells are commonly obtained via two methods: 1) from dredge shell programs which may result in localized turbidity problems, and 2) purchasing shell through shucking houses, which result in no adverse impacts. During creation of reefs, additional turbidity problems may arise when shells are deployed onto the reef.

Activities involving invasive plant removal may also result in minor disturbances depending on methods used. Herbicides used in restoration projects may leach into surrounding soils during rainy periods and could also damage local, non-invasive plants during windy conditions. For projects in which volunteers are in direct contact with the aquatic environment such as during coral reef and kelp forest restoration, the greatest source of short-term impacts is the potential for doing additional damage to the project site. These impacts may include accidental contact with damaged corals or kelp beds by divers or equipment, disruption of bottom sediment from diving fins, and impacts resulting from the transplanting of coral and kelp to restoration sites.

The Magnuson-Stevens Fishery Conservation and Management Act

Section 303(a)(7) of the Magnuson-Stevens Act (16 U.S.C. 1801 et seq.), requires that Fishery Management Councils include provisions in their fishery management plans that identify and describe EFH, including adverse impacts and conservation and enhancement measures. These provisions are addressed in the separate FMPs for species managed by the Pacific Fishery Management Council and a generic amendment for the Western Pacific Fishery Management Council.

Fishery Management Plans (FMPs) Addressing Essential Fish Habitat in the Pacific

The Pacific Council has authority over the fisheries in the Pacific Ocean seaward of the states of California, Oregon, Washington, and Idaho. The individual FMPs addressing EFH for managed species in these areas represent the Pacific Council's response to those requirements stated in Section 303(a)(7) of the Magnuson-Stevens Act (16 U.S.C. 1801 et seq.). The FMPs are:

- Fishery Management Plan for **Groundfish** in the Pacific
- Fishery Management Plan for **Coastal Pelagic Species** in the Pacific
- Fishery Management Plan for **Salmon** in the Pacific

EFH is identified and described based on areas where various life stages of 90 managed species commonly occur. These include 82 species of groundfish (Butter sole, *Isopsetta isolepis*; Flag rockfish, *Sebastes rubrivinctus*; Curlfin sole, *Pleuronichthys decurrens*; Gopher rockfish, *Sebastes carnatus*; Dover sole, *Microstomus pacificus*; Grass rockfish, *Sebastes rastrelliger*; English sole, *Parophrys vetulus*; Greenblotched rockfish, *Sebastes*; Flathead sole, *Hippoglossoides elassodon*; Greenspotted rockfish, *Sebastes chlorostictus*; Pacific sanddab, *Citharichthys*; Greenstriped rockfish, *Sebastes elongatus*; Petrale sole, *Eopsetta jordani*; Harlequin rockfish, *Sebastes variegatus*; Rex sole, *Glyptocephalus zachirus*; Honeycomb rockfish, *Sebastes umbrosus*; Rock sole, *Lepidopsetta bilineata*; Kelp rockfish, *Sebastes atrovirens*; Sand sole, *Psettichthys melanostictus*; Mexican rockfish, *Sebastes macdonaldi*; Starry flounder, *Platichthys stellatus*; Olive rockfish, *Sebastes;* Arrowtooth flounder, *Atheresthes stomias*; Pink rockfish, *Sebastes eos*; Ratfish, *Hydrolagus colliei*; Quillback rockfish, *Sebastes maliger*; Finescale codling, *Antimora microlepis;* Redbanded rockfish, *Sebastes* ; Pacific rattail, *Coryphaenoides acrolepis*; Redstripe rockfish, *Sebastes*; Leopard shark, *Triakis semifasciata*; Rosethorn rockfish, *Sebastes helvomaculatus*; Soupfin shark, *Galeorhinus zyopterus*; Rosy rockfish, *Sebastes rosaceus;* Spiny dogfish, *Squalus acanthias;* Rougheye rockfish, *Sebastes* ; Big skate, *Raja binoculata;* Sharpchin rockfish, *Sebastes*; Longnose skate, *Raja rhina*; California Skate, *Raja inornata*; Shortraker rockfish, *Sebastes borealis;* Pacific ocean perch, *Sebastes alutus*; Silvergrey rockfish, *Sebastes;* Shortbelly rockfish, *Sebastes jordani*; Speckled rockfish, *Sebastes ovalis*; Widow rockfish, *Sebastes entomelas*; Splitnose rockfish, *Sebastes diploproa*; Aurora rockfish, *Sebastes aurora*; Squarespot rockfish, *Sebastes hopkinsi*; Bank rockfish, *Sebastes rufus;* Starry rockfish, *Sebastes constellatus;* Black rockfish, *Sebastes melanops*; Stripetail rockfish, *Sebastes saxicola;* Black-and-yellow rockfish, *Sebastes chrysomelas*; Tiger rockfish, *Sebastes nigrocinctus*; Blackgill rockfish, *Sebastes melanostomus*; Treefish, *Sebastes serriceps*; Blue rockfish, *Sebastes mystinus*; Vermilion rockfish, *Sebastes*; Bocaccio, *Sebastes paucispinis*; Yelloweye rockfish, *Sebastes ruberrimus*; Bronzespotted rockfish, *Sebastes gilli*; Yellowmouth rockfish, *Sebastes reedi;* Brown rockfish, *Sebastes auriculatus*; Yellowtail rockfish, *Sebastes flavidus*; Calico rockfish, *Sebastes dallii;* Longspine Thornyhead, *Sebastolobus altivelis;* California rockfish, *Scorpena guttatta;* Shortspine Thornyhead, *Sebastolobus alascanus;* Canary rockfish, *Sebastes pinniger*; Cabezon, *Scorpaenichthys marmoratus*; Chilipepper, *Sebastes goodei*; Kelp greenling, *Hexagrammos decagrammus*; China rockfish, *Sebastes nebulosus;* Lingcod, *Ophiodon elongatus*; Copper rockfish, *Sebastes caurinus*; Pacific cod, *Gadus macrocephalus*; Cowcod rockfish, *Sebastes levis*; Pacific whiting, *Merluccius productus;* Darkblotched rockfish, *Sebastes crameri*; Sablefish, *Anoplopoma fimbria*; Dusky rockfish, *Sebastes ciliatus*), five coastal pelagic species (4 finfish: Pacific sardine, *Sardinops sagax*; Pacific (chub) mackerel, *Scomber japonicus*; northern anchovy, *Engraulis mordax,* Jack mackerel, *Trachurus symmetricus*; and 1 invertebrate: market squid, *Loligo opalescens*), and three species of salmon (chinook, *Oncorhynchus tshawytscha*; coho, *Oncohynchus kisutch;* pink, *Oncorhynchus gorbuscha*).

Fishery Management Plans Addressing Essential Fish Habitat (EFH) in the Western Pacific
The Western Pacific Council manages fisheries within the exclusive economic zone (EEZ) around the territory of American Samoa, Territory of Guam, State of Hawaii, the Commonwealth of the northern Mariana Islands, and the U.S. Pacific Island possessions. The EFH amendment (WPFMC, 1998) represents the Western Pacific Fishery Management Council's response to those requirements stated in Section 303(a)(7) of the Magnuson-Stevens Act (16 U.S.C. 1801 et seq.) by serving as a generic amendment to the following FMPs:

- Fishery Management Plan for the **Bottomfish and Seamount Groundfish** in the Western Pacific
- Fishery Management Plan for the **Pelagic Fishery** in the Western Pacific
- Fishery Management Plan for the **Crustacean Fishery** in the Western Pacific
- Fishery Management Plan for the **Precious Coral Fishery** in the Western Pacific

The comprehensive EFH document (WPFMC 1998) amends the four FMPs of the Western Pacific. EFH is identified and described based on areas where various life phases of 65 species occur. These species (local name) are bottomfish (lehi, *Aphareus rutilans*; uku, *Aprion virescens*; giant trevally, *Caranx ignobilis*; black trevally, *Caranx lugubris*; blacktip grouper, *Epinephelus fasciatus*; hapupuu, *Epinephelus quernus*; red snapper (ehu), *Etelis carbunculus*; red snapper (onaga), *Etelis coruscans*; ambon emperor, *Lethrinus amboinensis*; redgill emperor, *Lethrinus rubrioperculatus*; blueline snapper (taape), *Lutjanus kasmira*; yellowtail kalekale, *Pristipomoides auricilla*; pink snapper (opakapaka), *P. filamentosus*; yelloweye opakapaka, *P. flavipinnis*; pink snapper (kalekale), *P. sieboldii*; snapper (gindai), *P. zonatus*; thicklip trevally, *Pseudocaranx dentex*, amberjack, *Seriola dumerili*; lunartail grouper, *Variola louti*), seamount groundfish (alfonsin, *Beryx splendens*; ratfish/butterfish, *Hyperoglyphe japonica*; armorhead, *Pseudopentaceros richardsoni*), pelagic species (mahimahi, *Coryphaena spp.*; wahoo, *Acanthocybium solandri*; Indo-Pacific blue marlin/black marlin, *Makaira nigrocans/M. Indica*; striped marlin, *Tetrapurus audax*; shortbill spearfish, *T. angustirostris*; sailfish, *Istiophorus platypterus*; swordfish, *Xiphias gladius*; moonfish, *Lampris* spp.; oilfishes, *family Gempylidae*; pomfret, *Bramidae*; oceanic sharks, *Alopiidae, Carcharinidae, Lamnidae, Sphyrnidae*; albacore, *Thunnus alalunga;* bigeye tuna, *T. obesus*; yellowfin tuna, *T. albacares*; northern bluefin tuna, *T. thynnus*; skipjack tuna, *Katsuwonus pelamis*; kawakawa, *Euthynnus affinis*; dogtooth tuna, *Gymnosarda unicolor*; other tuna relatives, *Auxis* spp., *Scomber* spp., *Allothunnus* spp.), crustaceans (spiny lobster, *Panulirus spp.*; Hawaiian spiny lobster, *Panulirus marginatus;* ridgeback slipper lobster, *Scyllaridae sp.*; Chinese skipper lobster, *Parribacus antarticus;* Kona crab, *Ranina ranina*), and precious corals (pink coral, *Corallium secundum*; red coral, *C. regale;* pink coral, *C. laauense;* Midway deepsea coral, *Corallium sp nov.;* gold coral, *Gerardia sp., Narella sp., Calyptrophora sp., Callogorgia gilberti;* bamboo coral, *Lepidisis olapa, Acanella sp.;* black coral, *Antipathes dichotoma, A. grandis, A. ulex*).

Management of Highly Migratory Species

Highly migratory species in the Pacific Ocean include tunas, swordfish, marlins, sailfish, oceanic sharks, and others. The Magnuson-Stevens Fishery Conservation and Management Act gives plan development responsibility for these species to the councils in the Pacific area. Currently, the councils in the Pacific area and the NMFS are discussing the need for a fishery management plan for all U.S. waters in the Pacific and ways to develop such a plan and implement a management process which involves all three councils. Management of highly migratory species in currently addressed in separate FMPs for each council.

The following sections address EFH for managed species that may be encountered during community-based restoration projects in the Pacific and Western Pacific regions. Table 1 lists the FMPs and species that have EFH designations and are likely to be encountered in a CRP project. Table 2 lists the FMPs and species unlikely to be found in a CRP project area.

Table 1. Fishery Management Plans (FMPs), species managed under each FMP, and the reasons for *inclusion* under the programmatic Environmental Assessment (EA) in the Pacific and Western Pacific regions.

PACIFIC		
Fishery Management Plan	Species Managed Under FMP	Reason for Inclusion
Pacific Coast FMP for Groundfish	23 species/life stages including: leopard and soupfin shark, spiny dogfish, California skate, ratfish, Lingcod, Cabezon, kelp greenling, Pacific cod, Pacific whiting, sablefish, brown, Calico, California, copper, kelp, and quillback rockfish, bocaccio, English and Rex sole, Pacific sanddab, and Starry flounder	Species/life stages identified within the Estuarine Composite EFH and most likely to be found in CRP project areas
Pacific Coast FMP for Coastal Pelagic Species	4 finfish species/life stages: Pacific sardine, Pacific (chub) mackerel, northern anchovy, jack mackerel, 1 invertebrate: market squid	Species/life stages found in estuaries or near river mouths, around kelp beds, off sandy beaches, and in near shore waters
Pacific Coast FMP for Salmon	3 species/life stages: chinook, coho, pink	Species/life stages found in estuary or near river mouths, riverine, and near-shore waters

WESTERN PACIFIC		
Fishery Management Plan	Species Managed Under FMP	Reason for Exclusion
Western Pacific FMP for Bottomfish and Seamount Fisheries Groundfish	7 species/life stages: giant trevally, blacktip grouper, sea bass, ambon emperor, blueline snapper, thicklip trevally, lunartail grouper	Species/life stages may be found in near-shore, coastal areas, SAV, and coral reefs
Western Pacific FMP for Pelagic Fisheries	6 species/life stages: mahimahi, wahoo, sailfish, *Carcharinidae spp*, albacore, and *Auxis spp*.	Species/life stages may be found in coastal areas.
Western Pacific FMPs for Precious Coral Fisheries	3 species of black coral.	Shallow water corals found at depths between 30-100 m.
Western Pacific FMP for Crustacean Fisheries	2 species/life stages: spiny lobster, kona crab	Found in coastal areas and shorelines. Spiny lobster in association with coral reefs.

Table 2. Fishery Management Plan (FMP), species managed under FMP, and the reasons for *exclusion* under the programmatic Environmental Assessment (EA) in the Pacific and Western Pacific regions.

PACIFIC		
Fishery Management Plan	Species Managed Under FMP	Reason for Exclusion
Pacific Coast FMP for Groundfish	59 species/life stages: Big skate, longnose skate, finescale codling, Pacific rattail, 41 species of rockfish, Pacific ocean perch, arrowtooth flounder, 7 species of sole, chilipepper, cowcod, longspine thornyhead, shortspine, and treefish	Found outside the Estuarine Composite EFH in rocky shelf, non-rocky shelf, canyon, continental slope/basin, neritic, and oceanic composites

WESTERN PACIFIC		
Fishery Management Plan	Species Managed Under FMP	Reason for Exclusion
Western Pacific FMP for Bottomfish and Seamount Groundfish	15 species/life stages: including snappers, trevallys, groupers, emperors, amberjacks, alfonsins, ratfish, armorheads	Found on steep slopes of deepwater banks, depths approximately 35 m to 330 m
Western Pacific FMP for Pelagic Fisheries	21 species/life stages: including marlins, spearfishes, swordfishes, sharks, tunas, kawakawas, moonfishes, oilfishes, pomfrets	Found in near-surface waters far from shore, moving freely in the oceanic environment
Western Pacific FMPs for Precious Coral Fisheries	9 species/life stages: pink corals, red corals, gold corals, bamboo corals	Deepwater corals found at depths between 350-1500 m.
Western Pacific FMP for Crustacean Fisheries	Hawaiian spiny lobster & life stages Kona crab & life stages	Spiny lobster (not in association with corals) found at depths between 10-185 m. Kona crab found at depths between 24-225 m.

Types of EFH Affected by Program Activities and Assessment of Effects on EFH

EFH is described and identified as everywhere that the above managed species commonly occur. For the Pacific salmon fishery, EFH is identified using U.S. Geological Survey (USGS) hydrologic units as well as habitat association tables and life history descriptions of each life stage (PFMC 1999). This information is provided in Appendix A of Amendment 14 to the Pacific Coast Salmon Plan (PFMC 1999). These areas encompass all those streams, lakes, ponds, wetlands, and other currently viable water bodies and most of the habitat historically accessible to salmon in Washington, Oregon, Idaho, and California. In estuarine and marine areas, EFH for Pacific salmon extends from the near shore and tidal submerged environments within state waters out to the full extent of the EEZ.

For the Pacific coast groundfish fishery, EFH descriptions are grouped into seven units called “composite” EFHs which focus on the ecological relationships among species and between the species and their habitats (PFMC 1998b). These seven habitats include “estuarine”, “rocky shelf”, “non-rocky shelf”, “canyon”, “continental slope”, “neritic zone”, and “oceanic zone”. The EFH determination is based on a series of presence/absence tables for all 82 species/life stages within each composite EFH in Section 11.5 of the West Coast Groundfish Amendment. Life history descriptions and maps showing species distributions are available in the Appendix (EFH Core Team 1998).

The EFH designation for coastal pelagic species groups the four finfish and the market squid into one complex due to similarities in their life histories and habitat requirements. EFH is based upon a thermal range bordered within the geographic area where a coastal pelagic species occurs at any life stage, where the species has occurred historically during periods of similar environmental conditions, or where environmental conditions do not preclude colonization by the coastal pelagic species (PFMC 1998a). Habitat/life history descriptions for each species can be found in Section 6.0 of the Description and Identification of EFH for the Coastal Pelagic Species FMP.

In the Western Pacific, the EFH determination is based on species distribution maps, habitat descriptions, and habitat association tables in Appendices 3 and 4 in the EFH Amendment (WPFMC 1998). The species distribution maps show EFH and habitat areas of particular concern (HAPC) for each life stage in the Hawaiian Islands, American Soma, Guam, and the Northern Mariana Islands. Habitat distribution tables describe the duration, diet, distribution and location of each life stage in the water column and bottom habitat.

The following discussions of estuarine and marine environments, excerpted from the CRP EA (2001), complement the EFH descriptions of the Pacific and Western Pacific Fishery Management Councils. Because of the large variability in the types of species comprising living marine resources, a wide range of coastal regions and riparian systems along streams and rivers that support fish must be considered as EFH for marine species. Most CRP projects occur in urban areas impacted by human development and pollution as well as in remote rural locations. Living marine resources also utilize a wide variety of coastal biological habitats that are restored under the CRP, including submerged aquatic vegetation (SAV) beds, marshes, oyster reefs, riparian areas, kelp beds, and mangroves. These various habitats are targeted for restoration because they have suffered considerable degradation and loss of area in recent decades due to dredging and filling, pollution, construction, and erosion. Each discussion is followed by a description of potential restoration activities that may occur during CRP projects and an assessment of their impacts to EFH. Implementation of restoration activities under the CRP may have a very localized and temporary adverse impact over the short-term, but will provide beneficial habitat in the long-term. Under the CRP, these restoration activities do not individually or cumulatively have significant adverse impacts on the human environment, and many projects may be eligible for categorical exclusion under NOAA NEPA Guidance.

A. Estuarine Environments

For the estuarine component, EFH is described and identified as all estuarine waters and substrates (mud, sand, shell, rock and associated biological communities), including the sub-tidal vegetation (SAV and algae) and adjacent inter-tidal vegetation (marshes and mangroves). The restoration of estuarine environments typically include similar types of activities such as removal of invasive species, revegetation, and the placement or removal of structures such as logs, culverts, and dams.

1. Riparian Areas

Riparian zones are defined as the land immediately adjacent to a stream or a river. They are characteristic associations of substrate, flora, and fauna within the 100-year flood plain of a stream or, if a flood plain is absent, zones that are hydrologically influenced by a stream or river (Hunt 1988). In the West, riparian zones are commonly characterized by streambank vegetation (Mitsch and Gosselink 1993). Riparian environments are maintained by high water tables and experience seasonal or periodic flooding. They may also contain or adjoin riverine wetlands and share many functions including water storage, sediment retention, nutrient and contaminant removal as well as habitat functions. They often share some of the characteristics of wetlands but cannot be defined as wetlands because they are saturated at much lower frequencies. Riparian ecosystems have distinctive vegetation and soils, and are characterized by the combination of species diversity, density, and productivity. Continuous interactions occur between riparian, aquatic, and upland ecosystems through exchanges of energy, nutrients, and species (NRC 1995).

Description of Habitat (EFH) Affected:
In the Pacific, EFH for managed salmon species include many areas along riparian zones where CRP projects may occur. Chinook, coho and pink salmon spawn in stream beds in select areas such as pool tailouts, runs, and riffles during the fall or winter (Vronskiy 1972; Burger *et al.* 1985; Healey 1991). Water quality within these areas is particularly important during larval stages and must be non-toxic, of suitable temperature, and contain an adequate supply of dissolved oxygen to ensure egg survival (PFMC 1999). Coho larvae (alevins) also inhabit streambeds during the winter and spring and may be found in rivers, streams, and lakes as adults. Freshwater juvenile chinook salmon primarily inhabit pools and stream margins, particularly undercut banks and behind large woody debris (LWD). As adults, chinook salmon can be found in large, deep, low velocity pools with abundant LWD. These areas serve as refuge from high river temperatures and predators as well as resting sites prior to sexual maturation and spawning. (PFMC 1999). Pink salmon are often found in the same river reaches and habitats as chinook but migrate to oceanic and near shore waters as adults.

Potential impacts from restoration activities:
Riparian habitat restorations usually involve re-vegetation activities and placement of large woody debris (LWD). Placement of LWD is manually done by volunteers, which may result in minor disturbance of the surrounding habitat through increased foot traffic. This may result in soil compaction as well as disturbance of existing vegetation or other habitat structures.

Measures to eliminate or reduce potential impacts include planning ingress and egress routes to keep the impacted area to a minimum. To prevent damage to stream bottoms during project implementation, activities may be limited to periods when water levels are low. In addition, the use of measures to protect the water column such as erosion mats can prevent further damage to habitat and species.

2. Shoreline Habitats

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. In lower-energy shoreline environments, there may be lower population densities of a given species, but high diversity. Along higher-energy shorelines, SAV and certain benthic organisms, such as mollusks and worms, may predominate because they can withstand the turbulence of such an intertidal zone. Such environments may exhibit low species diversity, but high population densities of those species that can tolerate the high-energy conditions (for example, some invertebrates). Sand dunes formed in these areas provide habitat for seabirds and sea turtles, including various species of endangered sea turtles which rely on beaches for nesting habitat. Activities occurring in these areas may have impacts to habitats immediately offshore such as SAV beds, mangroves, and reefs. In the Southeast region, coastal habitats such as reefs, SAV, and mangroves are all interconnected physically, chemically, and biologically providing mutual support and operating as one system (SAFMC 1998).

Description of Habitat (EFH) Affected:
Coastal areas contain EFH for a number of species managed by the Pacific Council. Juvenile chinook, coho, and pink salmon occupy beaches and bays before emigrating to marine waters (PFMC 1999). Juvenile pink salmon may remain along shorelines to feed for up to several weeks. A number of coastal pelagic species are also found within coastal areas. These include juvenile and adult life stages of Pacific mackerel which occur off sandy beaches and in open bays, and eggs and paralarvae of market squid which are found in shallow, semi-protected near shore areas (PFMC 1998a). Small jack mackerel are also abundant near the coast in the Southern California Bight. Larger fish are found further north up to the Gulf of Alaska. Pacific sardines are also common along near shore and offshore areas along the coast. Most life stages remain off the California coast, but adults may migrate to feeding grounds off the Pacific northwest and Canada. Coastal areas such as estuaries, bays, and inshore areas are also EFH for a number of estuarine groundfish. One species is the leopard shark which uses estuaries and shallow coastal waters as pupping and feeding/rearing grounds (EFH Core Team 1998). Leopard shark pups can also be found in and just beyond the surf zone in areas of southern California, such as Santa Monica Bay. Female soupfin sharks may occur in waters as shallow as two meters and are most commonly found in San Francisco Bay, Tomales Bay, and inshore areas in southern California which are also used as pupping grounds. Other groundfish species found in intertidal and inshore areas include the spiny dogfish, California skate, lingcod, cabezon, black rockfish, California rockfish, kelp rockfish, and quillback rockfish. These species may also occur in estuaries and bays along with ratfish, kelp greenling, Pacific cod, Pacific whiting, bocaccio, brown rockfish, calico rockfish, copper rockfish, English sole, Pacific sanddab, rex sole, and starry flounder. Most species use estuaries and sheltered inshore bays as spawning grounds and nursery areas.

Coastal areas also contain EFH for a number of species managed by the Western Pacific Council. Bottomfish species include the giant trevally/jack, blacktip grouper, ambon emperor, blueline snapper, thicklip trevally, and lunartail grouper (WPFMC 1998). The giant trevally is one of the most abundant species of jacks found in Hawaii (Sudekum *et al.* 1991). Juvenile species of the giant trevallys and thicklip trevallys are usually found in near-shore and estuarine waters (Lewis *et al.* 1983) as well as in small schools over sandy inshore reef flats (Myers 1991). The blacktip grouper is also abundant in shallow waters and is an important food fish throughout its geographic range. Juvenile blueline snapper are also known to utilize shallow water habitats such as seaward reefs and sea-grass beds as nursery habitat (Myers 1991). Juvenile life stages of lunartail groupers are also found in shallow water habitats within sea-grass beds and tide pools. Coastal pelagic species such as dolphinfish (mahimahi), sailfish, albacore, and some shark and tuna species may also be found in coastal areas. The dolphinfish is primarily an ocean fish but is occasionally found in estuaries and harbors (Palko *et al.* 1982). Albacore larvae are also highly concentrated within coastal waters near islands. Some species of sharks in different families are found in coastal areas as well. Most belong to the family of requiem sharks (*Carcharhinidae spp*.) that occur in in-shore waters but are not under management by the Western Pacific Council. Adult spiny lobsters are typically found in coastal areas on rocky substrate in well-protected areas. In the Northwest Hawaiian Islands (NWHI), they inhabit shallow waters of less than 18 m. Kona crabs also occur in the NWHI on sandy bottom habitat at depths from 24 to 115 m.

Potential impacts from restoration activities:
Shoreline restoration involves the removal of invasive species which may result in potential adverse impacts to non-target species. Invasive species removal may be performed using chemical, mechanical, biological and ecological control methods, depending on the characteristics of species being eradicated. CRP projects involving invasive plant removals are usually accomplished using chemical methods, where volunteers spot-treat plants individually, or mechanical methods where plants are manually removed by hand. Herbicide application is often effective in the removal of invasive species, but minor impacts to surrounding areas may occur. Rainfall and wind may cause herbicides to leach into the surrounding soil

or be transported to non-invasive plants, causing unintentional damage. The physical removal of invasive species may also be effective but potential impacts may occur if revegetation doesn't occur immediately.

In order to minimize the potential impacts from invasive species removal activities, certain precautions are taken. If volunteers manually remove plants, ingress and egress routes are planned to minimize the area impacted. Prior to project implementation, volunteers receive proper training on sound methods to apply herbicides and remove invasive plants by hand. This ensures the proper application of herbicides used to remove invasive species to avoid unintentional damage to native plants. Pesticides are not applied during rainy or windy periods.

3. Marsh Habitats

Marsh habitats vary with coastal geographic location. Salt marshes exist on the transition zone between the land and the sea in protected low-energy areas such as estuaries, lagoons, bays, and river mouths (Copeland 1998). Marsh ecosystems, like all wetlands, are a function of hydrology, soil, and biota. Tidal cycles allow salty and brackish water to inundate and drain the salt marsh, circulating organic and inorganic nutrients throughout the marsh. Water is also the medium in which most organisms live. The marshes are strongly influenced by tidal flushing and stream flow, which affect the inundation and salinity regimes of salt marsh soils. In areas with enough runoff, salt marshes transition into brackish and freshwater marshes (Copeland 1998). Sand- and mudflats occur at extreme low water, whereas salt marsh vegetation develops where the soils are more exposed to the air than inundated by tides, usually above mean sea level. *Spartina* spp. (cordgrass) typically dominate the lower marsh. Salt marshes are of paramount ecological importance because they 1) export vital nutrients to adjacent waters; 2) improve water quality through the removal and recycling of inorganic nutrients; 3) absorb wave energy from stops and act as a water reservoir to reduce damage further inland; and 4) serve an important role in nitrogen and sulfur cycling (Mitsch and Gosselink 1993; Turner 1977; Thayer *et al.* 1981; Zimmerman *et al.* 1984).

Description of Habitat (EFH) Affected:
Coastal wetlands may provide rearing habitat for coho salmon. In the summer, brackish-water estuarine areas may also be used by juvenile coho to migrate upstream (Crone and Bond 1976).

Potential Impacts From Restoration Activities:
Salt marsh restorations may involve removal of invasive vegetation, revegetation of native plants, and culvert replacement to restore tidal flushing. Revegetation is usually performed with the help of volunteers which may result in minor disturbance of the surrounding habitat through increased foot traffic. This may result in soil compaction as well as disturbance of existing vegetation or other habitat structures. If activities occur during periods when fish may be present in the area, damage to EFH may occur. Invasive species removal is performed using methods similar to those in coastal areas.

Measures to eliminate or reduce potential impacts from restoration activities include the use of turbidity curtains and other forms of water column protection to prevent the flow and/or washing out of disturbed debris from the tidal creek. These measures should also localize erosion to an isolated area. In order to minimize the potential impacts from invasive species removal activities, certain precautions are taken. Ingress and egress routes for volunteers are planned to minimize the area impacted. Volunteers are also properly trained on sound methods to apply herbicides and removing invasive plants. Herbicides used to remove invasive species are applied directly with special care to avoid unintentional damage to native plants. Herbicides are not be applied during rainy or windy periods.

4. Submerged Aquatic Vegetation (SAV)

Submerged grasses or SAV differ from most other wetland plants in that they are almost exclusively subtidal, occur mainly in marine salinities and utilize the water column for support. SAV occur across a wide depth range, from rocky intertidal habitats to depths of 40 meters, and for some species, broad latitudinal ranges. Distribution patterns are influenced by light, salinity, temperature, substrate type, and currents. SAV habitat is currently threatened because of the cumulative effects of overpopulation, commercial development, and recreation activities in the coastal zone. SAV supply many habitat functions, including: (1) support of large numbers of epiphytic organisms; (2) damping of waves and slowing of currents which enhances sediment stability and increases the accumulation of organic and inorganic material; (3) binding by roots of sediments, thus reducing erosion and preserving sediment microflora; and, (4) roots and leaves provide horizontal and vertical complexity to habitat, which, together with abundant and varied food sources, support densities of fauna generally exceeding those in unvegetated habitats (Wood *et. al.* 1969; Thayer *et. al.* 1984).

Description of Habitat (EFH) Affected:
Submerged aquatic vegetation is EFH for a number of species managed by the Pacific Council. They provide nursing grounds for pink salmon in estuarine and near shore habitats (PFMC 1999). A number of groundfish species are also found in near shore habitats with SAV. These include adult lingcod, whose small prey fish feed on SAV; cabezon, adult bocaccio, brown rockfish, young quillback rockfish, and English sole.

In the Western Pacific, some species of bottomfish are associated with SAV. These include the juvenile blacktip grouper and seabass, ambon emperor, blueline snapper, and lunartail grouper. Juvenile blueline snapper use seagrass beds as nursery habitat (Myers 1991).

Potential impacts from restoration activities:
SAV restoration often involves transplanting seagrass plants from existing SAV donor beds, which can cause short-term adverse impacts to SAV. These include temporary damages to existing beds by volunteers which may reduce the quality and quantity of EFH in the donor area. SAV plants may also be damaged during transplant. Planting may result in disturbance of existing bottom-substrate from clearing or digging.

One method of avoiding potential impacts by volunteers is through the use of TERFS™ racks (Transplanting Eelgrass Remotely using Frame Systems) which allows seagrass to be transplanted with little contact with the water. This system attaches seagrass plants to reusable wire frames with biodegradable ties. Frames are then dropped to the bottom of the restoration site where seagrass roots can then anchor new shoots in place. This method minimizes potential impacts to bottom sediment from divers as well as impacts to SAV plants from handling and storage. In order to avoid damage to transplanted SAV plants, projects may also be required to complete transplanting activities within 24 hours of collection from donor beds. Donor beds should be left with enough plants to allow for recolonization. Plants should also be gathered through careful field collection to minimize damage to existing beds.

5. Mangroves

Mangroves are woody plant communities that develop in sheltered tropical and subtropical coastal estuarine environments. Mangroves are adapted to survive in very saline, waterlogged, reduced soils that are often poorly consolidated and subject to rapid change. Mangrove communities, like salt marshes, facilitate much nutrient cycling, trapping nutrient-rich sediments and maintaining high rates of organic matter fixation (Cintron-Molero 1992). Mangroves also provide important shelter for larval fish and crustaceans, and contribute detritus and dissolved organic carbon to estuarine food webs (Heald 1969; Odum, 1971; Twilley 1982). Mangrove ecosystems, like all ecosystems, are coupled to other systems such as seagrass beds and coral reefs, supporting species of fish, shrimp, and birds. Mangroves are highly productive structures. A significant amount of the net production is incorporated into woody tissues and roots. A large proportion is also used to produce leaves and fruits, allowing more energy to be incorporated into the food web. This results in an abundance of shellfish and finfish in mangrove areas, as well as a diversity and abundance of other associated fauna.

Description of Habitat (EFH) Affected:
In the Western Pacific, the ambon emperor fish may be found inhabiting mangrove swamps.

Potential impacts from restoration activities:
Mangrove restoration may involve invasive species removal and revegetation of mangrove species. Revegetation is usually performed with the help of volunteers which may result in minor disturbance of the surrounding habitat through increased foot traffic. This may result in soil compaction as well as disturbance of existing vegetation or other habitat structures. Invasive species removal is performed using similar methods used in shoreline restoration from above.

In order to minimize the potential impacts from invasive species removal activities, certain precautions are taken. Ingress and egress routes for volunteers planned to minimize the area impacted. Volunteers are also properly trained on sound methods to apply herbicides and removing invasive plants. Herbicides used to remove invasive species are applied directly with special care to avoid unintentional damage to native plants. Herbicides are not be applied during rainy or windy periods.

B. Marine Environments

In marine waters, EFH is described and identified as all marine waters and substrates (mud, sand, shell, rock, hardbottom, and associated biological communities) from the shoreline to the seaward limit of the EEZ.

1. Oyster Shell/Artificial Reefs

Oyster reefs may be found in intertidal and subtidal areas, where suitable substrate and adequate larval supply exist, along with appropriate (brackish to estuarine) salinity levels and water circulation. Oyster beds historically were found along the East and Gulf Coasts, but have been greatly reduced in occurrence as a result of anthropogenic impacts in the past 200 years (Kennedy and Sanford 1995). Artificial reefs have recently been used to enhance fishery habitat by replacing habitat and ecosystem functions to support entire biological communities. Oyster beds are built by the cementing together of oyster shells, with additional hard substrate provided by associates such as other bivalves, barnacles, and calcareous tube builders such as some polychaetes (Kennedy and Sanford 1995). Larvae of these invertebrates settle seasonally on this substrate. Eventually, a mound forms and grows vertically and laterally as oysters accumulate and shell is scattered in the bed's vicinity (Bahr and Lanier 1981). Oyster reefs can vary in morphology, influenced by local effects (Kennedy and Sanford 1995). Oyster beds have in the past been an important food source as well as providing shore protection (hard substrate), water clarification, and habitat for other invertebrates.

Description of Habitat (EFH) Affected:
In southern California waters, schools of jack mackerel may be found around artificial reefs (PFMC 1998a). Artificial reefs are also EFH for a number of groundfish including young and adult bocaccio, brown rockfish, and copper rockfish.

Potential impacts from restoration activities:
Shellfish/Artificial reef creation involves the placement of shell and/or other materials at specific sites to provide hard substrate for aquatic communities. The placement of the reef may result in impacts to stationary benthic organisms in the area which may be buried during the placement of reef material. Fish may be temporarily displaced. Temporary increases in turbidity may also result when materials are placed. When oyster shell is used, is it often washed overboard from barges which minimizes turbidity problems.

Impacts may also result depending on the source from which shell for the reef is obtained. Shells are commonly acquired via two method. Dredge shell programs obtain buried shells by dredging areas, which can cause short-term turbidity problems. In addition, any aquatic organisms in the area would be eliminated. The other method of obtaining shell is to purchase them through shucking houses. This method has no adverse impacts to the aquatic environment.

Potential impacts from oyster reef creation may be minimized by ensuring that shells are washed overboard onto the reef sites instead of being dumped overboard, which would result in turbidity plumes. In addition, shell should only be obtained from shucking houses where no impacts to habitat were made during shell acquisition. Benthic productivity should also be determined prior to any restoration activities (PFMC, 1999). Areas of high productivity should be avoided. Monitoring should also be performed upon completion to determine the effectiveness of the structures in actually increasing productivity of targeted species.

2. Coral Reefs

Coral reefs are wave resistant structures made of calcium carbonate secreted by, and harboring plants and animals in shallow tropical seas. While most of the reef environment is depositional, the seaward growing portion of the reef is essential for the survival and maintenance of the rest of the reef system (Wiens 1962; Guilcher 1987). Coral reefs grow in oceanic waters that are low in nutrients. They contain symbiotic algae (zooxanthellae), which live in the coral tissues and produce food and take up nutrients excreted by the coral animal (Maragos 1992). Coral reefs have been called the “rainforests of the sea” (US Coral Reef Task Force 2000) because of their high level of biodiversity and productivity, providing habitat for thousands of species of fish and shellfish and hundreds of species of corals, algae, sponges, echinoderms, and many other groups of organisms. Coral reef systems provide food, shelter, breeding, and growth areas for many reef and non-reef organisms. Coral reefs are also linked to mangroves and SAV where these systems occur in close proximity to one another (Maragos 1992). A number of rare or endangered species inhabit or use coral reef environments. Hardbottoms constitute a group of communities characterized by a thin veneer of live corals and other biota overlying associated sediment types. They are usually of low relief and occur on the continental shelf and may be associated with relict reefs.

Description of Habitats (EFH) Affected:
A number of species managed by the Western Pacific may be found in coral reef habitat. Bottomfish such as the blacktip grouper, ambon emperor, blueline snapper and lunartail grouper are all found near coral reefs at different life stages. Blacktip groupers may inhabit coral reefs to a depth of 160 m for a number of years. Spiny lobsters are typically found in association with coral reefs that provide shelter as well as a diverse supply of food items (Pitcher 1993). The precious corals managed by the Western Pacific Council exist in American Samoa, Guam, Hawaii, and the Northern Mariana Islands, as well as other U.S. possessions in the Pacific, but very little is known about their distribution (WPFMC 1998). In Hawaii, six known beds of pink, gold, and bamboo corals are located off Keahole Point, Makapuu, Kaena Point, between Nihoa and Necker Islands, Brooks Bank, and at the 180 Fathom Bank. These deep water corals occur at depths between 350-450 m and 1,000-1,500 m. Shallow water corals, such as black corals,

are found between 30 and 100 m (Grigg 1993). In Hawaii, *Antipathes dichotoma* species accounts for 90% of the commercial harvest of black coral (Oishi 1990). Although different species of coral inhabit distinct depth zones, their habitat requirements are strikingly similar. Solid substrates, strong currents, and light are the most important factors for coral survival.

Potential impacts from restoration activities:
The restoration of coral reefs requires direct contact of volunteer divers with the aquatic environment. Potential impacts include accidental contact with already-damaged corals by divers, equipment, and anchoring boats. Divers may also disturb bottom sediment with fins, causing turbidity problems. The use of healthy, intact coral sites as donor sites increases the potential for damage to the existing corals by transplanting methods and the divers themselves.

To minimize potential impacts, divers are required to be skilled in the use of standard diving principles. These principles include rules such as not touching any coral tissue, knowing the location of all equipment, and staying off the bottom in sediment-laden areas. Prior to restoration activities, divers are also trained in coral biology, reef ecology, and restoration methods. During transplant, coral are stored in such a way to minimize movement to prevent damage to cores.

3. Kelp Forests

Kelp forests are subtidal marine communities dominated by large brown algae (kelps) that form floating canopies on the surface of the sea. Kelp forest communities are found from sea level to as deep as 60 meters, depending on light penetration (Foster and Schiel 1985). Kelp forests are highly productive and create a three-dimensional aspect to the near shore environment, providing habitat and food for hundreds of other species of plants (algae), and animals. Kelp forests on hard reef areas can harbor lush understory layers of red and brown algae, as well as mobile and encrusting invertebrates. Throughout the kelp forest, there are hundreds of species of fish distributed across vertical layers of vegetation that vary with depth (Schiel and Foster 1992). Food is exported from kelp forests to associated communities such as sandy beaches and the deep sea.

Description of Habitat (EFH) Affected:
Kelp forests are EFH for a number of coastal pelagic species managed by the Pacific Council. Species include juvenile jack mackerel and Pacific mackerel who travel in schools under floating kelp canopies (PFMC 1998a). A number of groundfish species can also be found in kelp beds. These include the leopard shark, cabezon, kelp greenling, black rockfish, bocaccio, brown rockfish, copper rockfish, kelp rockfish, and quillback rockfish (EFH Core Team 1998). Kelp beds are also feeding grounds for the small prey fish of lingcod. Juvenile black fish live on both the canopy and bottom of kelp beds in Monterey Bay, and are often associated with kelp holdfasts and sporophylls.

Potential impacts from restoration activities:
Kelp restoration may include tying down mature kelp plants on vacant substrate, removing grazers or competitors, seeding the area with spores from healthy plants, and tagging and monitoring the growth of kelp. Activities may require the use of volunteer divers to prepare, plant and maintain project sites. The greatest potential for short-term impacts is the possibility of volunteer divers doing more damage to kelp beds during project implementation. Impacts may include damages to kelp beds from equipment, boats, anchoring, and divers themselves.

To minimize these disturbances, certified volunteer divers with proper training in low-impact restoration techniques are used. Low-impact techniques include having no more than four divers per group, the use of appropriate dive equipment and tools, expert boat anchoring, job-specific diver training, and diver awareness. Any equipment or materials used during the restoration is removed from the site upon completion.

RC Conservation Measures

Section 3.2.5.11 of the Appendix to the Pacific Coast Salmon Plan addresses potential impacts resulting from habitat restoration projects and measures to reduce them (PFMC, 1999). These measures include having a good understanding of the conditions in a watershed and protecting a watersheds habitat-forming processes to maintain the biophysical structure and function of aquatic systems. The Pacific Council encourages habitat restoration projects that are part of watershed or basin conservation plans and implement monitoring activities for sustained biophysical process and function. Most CRP projects are part of regional restoration efforts.

The RC has developed additional measures to mitigate possible impacts of CRP activities on EFH in the Pacific and Western Pacific. These measures are specific to restoration activities within project areas and have already been put to use in funded projects. The NOAA RC finds that these measures are protective of EFH. These recommendation which are normally specified in CRP contracts are:

1. Use of Best Management Practices (BMP)

Best management practices (BMPs) are measures to minimize and avoid all potential impacts to EFH during CRP restoration activities. This conservation measure requires the use of BMPs during restoration activities to reduce impacts from project implementation. BMPs shall include but are not limited to:

   a. Measures to protect the water column - Turbidity curtains, haybales, and erosion mats shall be used
   b. Staging areas - Areas used for staging will be planned in advance and kept to a minimum size.
   c. Buffer areas around sensitive resources - Rare plants, archeological sites, etc., will be flagged and avoided.
   d. Invasive species - Measures to ensure native vegetation or revegetation success with be identified and implemented.
   e. Ingress/egress areas - Temporary access pathways will be established prior to restoration activities to minimize adverse impacts from project implementation.

2. Avoidance of Work During Critical Fish Windows

This conservation measure requires CRP projects to be scheduled to avoid work when managed species are expected in the area. These periods shall be determined prior to project implementation to avoid any potential impacts.

3. Use of FMP Conservation Measures

In addition to measures stated in this section, appropriate EFH conservation measures provided by each Council will be incorporated into projects to minimize potential impacts. These measures address project-specific activities that may impact EFH and offer guidance to reduce these impacts.

4. Adequate Training of Volunteers

The adequate training measure is intended to ensure minimal impact to the restoration site through proper training and education of volunteers. Volunteers shall be trained in the use of low-impact techniques for planting, equipment handling, and any other activities associated with the restoration. Proper diving techniques will also be used by volunteer divers.

Training volunteers to perform restoration activities using low-impact techniques will minimize impacts to critical habitat for species managed by the Pacific and Western Pacific Councils.

5. Monitoring

Monitoring will be conducted before, during, and after project implementation to ensure compliance with project design and restoration success. If immediate post-construction monitoring reveals that unavoidable impacts to EFH have occurred, appropriate coordination with regional EFH personnel will take place to determine appropriate response measures, possibly including mitigation.

6. Mitigation for Potential Impacts

Any unavoidable damage to EFH during project implementation will be fully mitigated within one growing season.

7. Herbicide Application Controls

Use of herbicides in project areas will be conducted according to established protocols. Such protocols will include information and guidelines for appropriate use, timing, amounts, application methods, and safety procedures relevant to the herbicide application. For example,

- Only Federal, state, and locally approved herbicides that are non-toxic to fish may be used,
- Herbicide applications should have a six-hour contact time prior to rain,
- Herbicides should never be applied during periods of wind (greater than 10 mph) or rain,
- Herbicides should be directly applied using spray bottles or garden sprayers, and
- If removal takes place in the aquatic environment, appropriate herbicides such as Rodeo® should be used, but only if stumps are at least 1 foot above the water line (MRC, 1998).

8. Post-Project Implementation Removal

Any temporary access pathways and staging areas will be removed or restored to re-establish or improve site conditions.

Project-Specific Consultation

If the proposed project plans are substantially different than plans mentioned in this consultation or if new information becomes available that affects the basis for no adverse affect determination, then EFH consultation will be reinitiated.

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UNITED STATES DEPARTMENT OF COMMERCE
National Oceanic and Atmospheric Administration
NATIONAL MARINE FISHERIES SERVICE
Southwest Region
501 West Ocean Boulevard, Suite 4200
Long Beach, California 90802-4213

AUG 20 2001

F/SWR4:MH

Mr. James Burgess
Acting Director, NOAA Restoration Center
Office of Habitat Conservation
National Marine Fisheries Service
1315 East-West Highway
Silver Spring, MD 20910-3282

Dear Mr. Burgess:

The Southwest Regional Office (SWR) of the National Marine Fisheries Service has received the NOAA Restoration Center's request initiating Essential Fish Habitat (EFH) Programmatic Consultation for Community-Based Restoration Program (CRP) activities in California and the Western Pacific. The EFH consultation request was made pursuant to Section 305(b)(2) of the Magnuson-Stevens Fishery Conservation and Management Act (MSFCMA) and its implementing regulations at 50 CFR Part 600.920(a)(2) and is the result of a cooperative effort by our staffs.

The Restoration Center's (RC) Programmatic Consultation request addresses EFH for managed species that may be encountered during community-based restoration projects in coastal, estuarine and riverine locations within California and the Western Pacific. A description of CRP restoration activities, an analysis of their effects, your views on those effects, and proposed conservation measures have been provided in the Draft EA and EFH Assessment.

The EFH Assessment determined that restoration activities implemented under the CRP will have the potential for localized and temporary adverse impacts over the short-term, but will provide beneficial habitat to living marine resources in the long-term. The SWR concurs with this determination. Conservation measures are incorporated into each project in order to minimize adverse impacts to EFH. If the project cannot fully incorporate all impact avoidance measures or if new information becomes available that affects the basis for conservation measures, then supplemental consultation will be undertaken prior to project implementation. The assessment meets the requirements of the EFH regulations at 50 CFR Subpart K, 600.920(g).

The EFH Assessment and supporting documents, in combination with a review of CRP restoration activities and impacts, serve as the basis for our determination that a Programmatic Consultation provides an appropriate mechanism to evaluate EFH impacts of program activities.

EFH Conservation Recommendations

To ensure that adverse impacts to EFH and federally-managed fisheries from NOAA Restoration Center activities are avoided, minimized, or appropriately mitigated, the implementation of EFH conservation measures is necessary. Pursuant to Section 305(b)(4)(A) of the MSFCMA, we recommend the following programmatic EFH Conservation Recommendations:

1. Use of Best Management Practices (BMP)

Best management practices (BMPs) are measures to minimize and avoid all potential impacts to EFH during CRP restoration activities. This conservation measure requires the use of BMPs during restoration activities to reduce impacts from project implementation. BMPs shall include but are not limited to:

a. Measures to protect the water column - Turbidity curtains, haybales, and erosion mats shall be used.
b. Staging areas - Areas used for staging will be planned in advance and kept to a minimum size.
c. Buffer areas around sensitive resources - Rare plants, archeological sites, etc., will be flagged and avoided.
d. Invasive species - Measures to ensure native vegetation or revegetation success with be identified and implemented.
e. Ingress/egress areas - Temporary access pathways will be established prior to restoration activities to minimize adverse impacts from project implementation.

2. Avoidance of Work During Critical Fish Windows

This conservation measure requires CRP projects to be scheduled to avoid work when managed species are expected in the area. These periods shall be determined prior to project implementation to avoid any potential impacts.

3. Use of FMP Conservation Measures

In addition to measures stated in this section, appropriate EFH conservation measures provided by each Council will be incorporated into projects to minimize potential impacts. These measures address project-specific activities that may impact EFH and offer guidance to reduce these impacts.

4. Adequate Training of Volunteers

The adequate training measure is intended to ensure minimal impact to the restoration site through proper training and education of volunteers. Volunteers shall be trained in the use of low-impact techniques for planting, equipment handling, and any other activities associated with the restoration. Proper diving techniques will also be used by volunteer divers.

Training volunteers to perform restoration activities using low-impact techniques will minimize impacts to critical habitat for species managed by the Pacific and Western Pacific Councils.

5. Monitoring

Monitoring will be conducted before, during, and after project implementation to ensure compliance with project design and restoration success. If immediate post-construction monitoring reveals that unavoidable impacts to EFH have occurred, appropriate coordination with regional EFH personnel will take place to determine appropriate response measures, possibly including mitigation.

6. Mitigation for Potential Impacts

Any unavoidable damage to EFH during project implementation will be fully mitigated and accomplished within one year of when the impacts occurred.

7. Herbicide Application Controls

Use of herbicides in project areas will be conducted according to established protocols. Such protocols will include information and guidelines for appropriate use, timing, amounts, application methods, and safety procedures relevant to the herbicide application. For example,

- Only federal, state, and locally approved herbicides (e.g., Rodeo®) that are non-toxic to fish may be used,
- Herbicide applications should have a six-hour contact time prior to rain,
- Herbicides should never be applied during periods of wind (greater than 10 mph) or rain, and
- Herbicides should be directly applied using spray bottles or garden sprayers.

8. Post-Project Implementation Removal

Any temporary access pathways and staging areas will be removed or restored to re-establish or improve site conditions.

Project-specific Consultation

All CRP projects benefit habitat for living marine resources. Potential impacts to EFH will be localized, minor, and short-term in nature. However, certain circumstances may exist where project impacts are more than minimal and not short-term or projects cannot avoid or minimize the adverse effects by implementing the above EFH Conservation Recommendations. In these instances, project-specific consultation will be required and can be coordinated through the regulatory review process for federal permits. The SWR will notify the RC of the need for project-specific consultation upon preliminary project review.

Review and Revision

If any changes are made to CRP programs and "Recommendations" described in the EFH Assessment, such that effects on EFH are potentially changed, the RC shall notify the SWR to discuss whether this Programmatic Consultation should be revised. Should the SWR receive new or additional information that may affect EFH Conservation Recommendations, it will consider whether to request additional consultation with the RC and/or provide additional EFH Conservation Recommendations. At intervals of not less than every five years following this consultation, the SWR will review these programmatic EFH Conservation Recommendations with the RC and determine whether they should be revised to account for any new information or new technology.

Conclusion

Based on our review of the Draft EA, FONSI and EFH Assessment, we have determined that the EFH Programmatic Consultation with EFH Conservation Recommendations is appropriate for the Community-Based Restoration Program.

As required by section 305(b) of the Magnuson-Stevens Act, the RC must respond in writing within 30 days of receiving these EFH Conservation Recommendations. The RC must include in their response the acceptability of these recommendations. If the RC's response is inconsistent with the SWR's EFH Conservation Recommendations, the RC must explain its reasons for not following them, including the scientific justification for any disagreements with the SWR over the anticipated effects of the proposed actions and the measures needed to avoid, minimize, or mitigate for such effects. If RC adopts the SWR's EFH recommendations, no further EFH consultation is required for actions covered by this Programmatic Consultation unless otherwise requested by the SWR.

Should you have any questions regarding this EFH consultation please contact Mark Helvey, EFH Coordinator, at (562) 980-4046.

Sincerely,

Rodney R McInnis

for Rebecca Lent, Ph.D.
Regional Administrator

APPENDIX H

ESSENTIAL FISH HABITAT (EFH) CONSULTATION BETWEEN THE NATIONAL MARINE FISHERIES SERVICE, SOUTHEAST REGION AND NOAA RESTORATION CENTER, COMMUNITY-BASED RESTORATION PROGRAM

Essential Fish Habitat (EFH) Programmatic Consultation between the National Marine Fisheries Service, Southeast Region and NOAA Restoration Center, Community-Based Restoration Program

Purpose

Under Section 305(b)(2) of the Magnuson-Stevens Fishery Conservation and Management Act (Magnuson-Stevens Act), Federal agencies are required to consult with the Secretary of Commerce on any action that may adversely affect Essential Fish Habitat (EFH). Consultation can be addressed programmatically to broadly consider as many adverse effects as possible. Section 600.920(a)(2) of the EFH regulations describes programmatic consultation as appropriate if sufficient information is available at a programmatic level to develop EFH conservation recommendations that will address all reasonably foreseeable adverse impacts to EFH.

This programmatic consultation addresses restoration activities undertaken in the Southeast region through the NOAA Restoration Center's (RC) Community-Based Restoration Program (CRP) to restore habitat for living marine resources. The Southeast region includes areas managed by Fishery Management Councils in the Gulf of Mexico, South Atlantic, and U.S. Caribbean. Some areas in the South Atlantic have also been identified as EFH by the Mid-Atlantic Fishery Management Council.

Program Description

The NOAA Community-Based Restoration Program began in 1996 to inspire local efforts to conduct meaningful, on-the-ground restoration of marine, estuarine and riparian habitat. Since that time, NOAA has secured funding for 179 small-scale habitat restoration projects around the U.S. coastline. Habitat restoration is defined here as activities that directly result in the reestablishment or re-creation of stable, productive marine, estuarine, lagoon, or coastal river ecological systems. The Program is a systematic effort to catalyze partnerships at the national and local level to contribute funding, technical assistance, land, volunteer support or other in-kind services to help citizens carry out technically sound restoration projects that promote stewardship and a conservation ethic for living marine resources.

The program links seed money and technical expertise to citizen-driven restoration projects, and emphasizes collaborative strategies built around improving NOAA trust resources and the quality of the communities they sustain. Human activities and development have caused unprecedented destruction of coastal and wetland habitat. In a world of reliance on natural resources for a sound economy, and stress over natural resource management issues, stakeholders are coming together to assess and evaluate natural resource priorities, promote awareness and education, develop common goals and facilitate local habitat enhancement projects. Community-based habitat restoration helps repair habitats required by fish, endangered species and marine mammals. Restoration may include, but is not limited to: improvement of coastal wetland tidal exchange or reestablishment of historic hydrology; dam or berm removal; fish passageway improvements; natural or artificial reef/substrate/habitat creation; establishment or repair of riparian buffer zones and improvement of freshwater habitats that support fishes; planting of native coastal wetland and submerged aquatic vegetation (SAV); and improvements to feeding, shade or refuge, spawning and rearing areas that are essential to fisheries.

All restoration activities shall comply with Federal statutory and regulatory procedures, as well as state requirements, prior to implementation. Records of Federal and state permits/consultations will be maintained in-house if the RC issues individual awards for projects. In the Southeast region, the RC CRP is evaluated through the National Environmental Policy Act components consisting of a Draft and Final Environmental Assessment (EA) and Finding of No Significant Impact (FONSI). The purpose of the EA document is to address NEPA compliance of Federal actions at the program level, as opposed to the specific project level. The EA and FONSI identify and discuss the potential impacts of proposed actions on coastal and riverine environments.

CRP projects involve the restoration of coastal habitats that benefit living marine resources. These restoration activities are undertaken in riparian, marsh, shellfish, submerged aquatic vegetation, coral, shoreline, and mangrove habitats in the Southeast region. Restoration activities implemented under the CRP have very localized and temporary adverse impacts over the short-term, but will provide beneficial habitat to living marine resources in the long-term.

During project implementation involving revegetation activities, volunteers may cause a minor disturbance of the surrounding habitat by compacting soil due to foot traffic or disturbing existing vegetation. Submerged aquatic vegetation (SAV) restoration activities may also cause short-term impacts to SAV, depending on the method used to transplant SAV plants. Some methods require digging or clearing of the bottom substrate which may result in temporary turbidity plumes as well as disturbance to any organisms in the substrate.

The creation of shellfish reefs may result in adverse impacts to the surrounding habitat, depending on the source from which shell is obtained. Shells are commonly obtained via two methods: 1) from dredge shell programs which may result in localized turbidity problems, and 2) purchasing shell through shucking houses, which result in no adverse impacts. During creation of reefs, additional turbidity problems may arise when shells are deployed onto the reef.

Activities involving invasive plant removal may also result in minor disturbances depending on methods used. Herbicides used in restoration projects may leach into surrounding soils during rainy periods and could also damage local, non-invasive plants during windy conditions. For projects in which volunteers are in direct contact with the aquatic environment such as during coral reef restorations, the greatest source of short-term impacts is the potential for doing additional damage to the project site. These impacts may include accidental contact with damaged corals by divers or equipment, disruption of bottom sediment from diving fins, and impacts resulting from the transplanting of coral to restoration sites.

The Magnuson-Stevens Fishery Conservation and Management Act

Section 303(a)(7) of the Magnuson-Stevens Act (16 U.S.C. 1801 et seq.), requires that Fishery Management Councils include provisions in their fishery management plans that identify and describe EFH, including adverse impacts and conservation and enhancement measures. These provisions are addressed in three separate generic FMPs for the Gulf of Mexico, South Atlantic, and U.S. Caribbean.

Gulf of Mexico Essential Fish Habitat (EFH) Amendment to Fishery Management Plans (FMP)

The EFH amendment (GMFMC, 1998) represents the Gulf of Mexico Fishery Management Council's (Gulf Council) response to those requirements stated in Section 303(a)(7) of the Magnuson-Stevens Act (16 U.S.C. 1801 et seq.) by serving as a generic amendment to the following FMPs:

- Fishery Management Plan for the **Shrimp** Fishery of the Gulf of Mexico
- Fishery Management Plan for the **Red Drum** Fishery of the Gulf of Mexico
- Fishery Management Plan for the **Reef Fish** Fishery of the Gulf of Mexico
- Fishery Management Plan for the **Coastal Migratory Pelagic Resources** in the Gulf of Mexico
- Fishery Management Plan for the **Stone Crab** Fishery of the Gulf of Mexico
- Fishery Management Plan for **Spiny Lobster** in the Gulf of Mexico
- Fishery Management Plan for **Coral and Coral Reefs** of the Gulf of Mexico

This generic EFH document (GMFMC, 1998) amends the seven FMPs of the Gulf Council. EFH is identified and described based on areas where various life stages of 30 representative managed species and the coral complex commonly occur. The 30 representative species are shrimp (brown shrimp, *Farfantepenaeus aztecus;* white shrimp, *Litopenaeus setiferus;* pink shrimp, *Farfantepenaeus duorarum;* and royal red shrimp, *Pleoticus robustus*); red drum, *Sciaenops ocellatus;* reef fish (red grouper, *Epinephelus morio*; gag grouper, *Mycteroperca microlepis;* scamp grouper, *Mycteroperca phenax*; black grouper, *Mycteroperca bonaci*; red snapper, *Lutjanus campechanus;* vermilion snapper, *Rhomboplites aurorubens*; gray snapper, *Lutjanus griseus;* yellowtail snapper, *Ocyurus chrysurus;* lane snapper, *Lutjanus synagris*; greater amberjack, *Seriola dumerili;* lesser amberjack, *Seriola fasciata;* tilefish, *Lopholatilus chamaeleonticeps;* and gray triggerfish, *Balistes capriscus*), coastal migratory pelagic species (king mackerel, *Scomberomorus cavalla;* Spanish mackerel, *Scomberomorus maculatus;* cobia, *Rachycentron canadum;* dolphin, *Coryphaena hippurus;* bluefish, *Pomatomus saltatrix;* and little tunny, *Euthynnus alleteratus*); stone crab, *Menippe mercenaria;* spiny lobster, *Panulirus argus;* and the coral complex.

Comprehensive Amendment Addressing Essential Fish Habitat (EFH) in Fishery Management Plans of the South Atlantic Region

The EFH amendment (SAFMC, 1998a) represents the South Atlantic Fishery Management Council's response to those requirements stated in Section 303(a)(7) of the Magnuson-Stevens Act (16 U.S.C. 1801 et seq.) by serving as a generic amendment to the following FMPs:

- Fishery Management Plan for the **Shrimp** Fishery of the South Atlantic
- Fishery Management Plan for the **Red Drum** Fishery of the South Atlantic
- Fishery Management Plan for the **Snapper Grouper** Fishery of the South Atlantic
- Fishery Management Plan for the **Golden Crab** Fishery of the South Atlantic
- Fishery Management Plan for the **Coastal Migratory Pelagic Resources (Mackerels)** of the South Atlantic
- Fishery Management Plan for **Spiny Lobster** in the South Atlantic
- Fishery Management Plan for **Coral and Coral Reefs and Live/Hard Bottom Habitat** Fishery of the South Atlantic
- Fishery Management Plan for the **Bluefish** Fishery in the South Atlantic/Mid-Atlantic
- Fishery Management Plan for the **Spiny Dogfish** Fishery in the South Atlantic/Mid-Atlantic
- Fishery Management Plan for the **Summer Flounder** Fishery in the South Atlantic/Mid-Atlantic

The comprehensive EFH document (SAFMC, 1998a) amends the seven FMPs of the South Atlantic. EFH is identified and described based on areas where various life phases of 32 selected species and the coral complex commonly occur. The selected species represent some of the key species under management by the South Atlantic Council. The selected species that are used to aid EFH descriptions are shrimp (brown shrimp, *Farfantepenaeus aztecus;* white shrimp, *Litopenaeus setiferus;* pink shrimp, *Farfantepenaeus duorarum;* rock shrimp, *Sicyonia brevirostris*; royal red shrimp, *Pleoticus robustus*); red drum, *Sciaenops ocellatus*; snapper-grouper (snowy grouper, *Epinephelus niveatus*; yellowedge grouper, *Epinephelus flavolimbatus*; Warsaw grouper, *Epinephelus nigritus*; scamp, *Mycteroperca phenax*; speckled hind, *Epinephelus drummondhayi*; jewfish, *Epinephelus itajara*; wreckfish, *Polyprion americanus*; red snapper, *Lutjanus campechanus*; Vermilion snapper, *Rhomboplites aurorubens*; gray snapper, *Lutjanus griseus*; mutton snapper, *Lutjanus analis*; blackfin snapper, *Lutjanus buccanella*; silk snapper, *Lutjanus vivanus*; white grunt, *Haemulon plumieri*; greater amberjack, *Seriola dumerili*; blueline tilefish, *Caulolatilus microps*; golden tilefish, *Lopholatilus chamaeleonticeps*); coastal migratory pelagics (king mackerel, *Scomberomorus cavalla*; Spanish mackerel, *Scomberomorus maculatus*; Cero, *Scomberomorus regalis;* Cobia, *Rachycentron canadum*; Dolphin, *Coryphaena hippurus*); golden crab, *Chaeceon fenneri*; spiny lobster, *Panulirus argus*; and the coral complex. In addition, three FMPs managed by the Mid-Atlantic Council overlap areas managed by the South Atlantic Council. The selected species within these FMPs are bluefish, *Pomatomus saltatrix;* spiny dogfish, *Squalus acanthias;* and summer flounder, *Paralichtyys dentatus*

FMPs of the Mid-Atlantic
Three FMPs developed by the Mid-Atlantic Council identify areas of EFH in the South Atlantic that are managed by the South Atlantic Council. These FMPs include:

- Fishery Management Plan for the **Bluefish** Fishery in the Mid-Atlantic/South Atlantic
- Fishery Management Plan for the **Spiny Dogfish** Fishery in the Mid-Atlantic/South Atlantic
- Fishery Management Plan for the **Summer Flounder** Fishery in the Mid-Atlantic/South Atlantic

The selected species within these FMPs are bluefish, *Pomatomus saltatrix;* spiny dogfish, *Squalus acanthias;* and summer flounder, *Paralichtyys dentatus.*

Essential Fish Habitat (EFH) Generic Amendment to the Fishery Management Plans (FMPs) of the U.S. Caribbean

The EFH amendment (CFMC, 1998) represents the U.S. Caribbean Fishery Management Council's response to those requirements stated in Section 303(a)(7) of the Magnuson-Stevens Act (16 U.S.C. 1801 et seq.) by serving as a generic amendment to the following FMPs:

- Fishery Management Plan for the **Shallow Water Reef Fish** Fishery in Puerto Rico and the U.S. Virgin Islands
- Fishery Management Plan for the **Coral and Reef Associated Plants and Invertebrates** in Puerto Rico and the U.S. Virgin Islands
- Fishery Management Plan for the **Queen Conch Resources** in Puerto Rico and the U.S. Virgin Islands
- Fishery Management Plan for **Spiny Lobster Fishery** in Puerto Rico and the U.S. Virgin Islands

The generic EFH document (CFMC, 1998) amends the four FMPs of the U.S. Caribbean. EFH is identified and described based on areas where various life phases of 15 selected species (6 under management) and the coral complex commonly occur. The selected species represent some of the key species under management by the Caribbean Council. The selected species that are used to aid EFH descriptions are reef fish (coney, *Epinephelus fulvus*; red hind, *Epinephelus guttatus*; Nassau grouper, *Epinephelus striatus;* mutton snapper *Lutjanus analis*; schoolmaster, *Lutjanus apodus*; gray snapper, *Lutjanus griseus;* silk snapper, *Lutjanus vivanus*; yellowtail snapper, *Ocyurus chrysurus*; white grunt, *Haemulon plumieri*; banded butterflyfish, *Chaetodon striatus*; queen triggerfish, *Balistes vetula*; squirrelfish, *Holocentrus ascensionis*; sand tilefish, *Malacanthus plumieri*; redtail parrotfish, *Sparisoma chrysopterum*; trunkfish, *Lactophrys quadricornis*), spiny lobster, *Panulirus argus*; queen conch, *Strombus gigas*; and the coral complex.

Secretarial FMPs
Two Secretarial Fishery Management Plans are effective in the Gulf of Mexico, South Atlantic, U.S. Caribbean, and Mid-Atlantic: the Highly Migratory Species (Tunas, Sharks, and Swordfish) FMP and the Atlantic Billfish FMP (HMSMD, 1999). Under the Magnuson-Stevens Act, federal jurisdiction of EFH for Highly Migratory Species and Atlantic Billfish spans the area between the Canadian border in the north and the Dry Tortugas in the south.
The following sections address EFH for managed species that may be encountered during community-based restoration projects in the Gulf of Mexico, South Atlantic, and U.S. Caribbean. Table 1 lists the FMPs and species that have EFH designations and are likely to be encountered in a CRP project. Table 2 lists the FMPs and species unlikely to be found in a CRP project area.

Table 1. Fishery Management Plans (FMPs), species managed under each FMP, and the reasons for *inclusion* under the programmatic Environmental Assessment (EA) in the Gulf of Mexico, South Atlantic, and Caribbean regions.

GULF OF MEXICO		
Fishery Management Plan	Species Managed Under FMP	Reason for Inclusion
Gulf of Mexico FMP for Shrimp Fishery	3 species/life stages: brown shrimp, pink shrimp, white shrimp	Found in inshore waters and estuaries
Gulf of Mexico FMP for Red Drum Fishery	Red drum & life stages	Found in coastal inlets, sounds, bays, seagrass beds, shallow estuarine rivers and mainland shores
Gulf of Mexico FMP for Reef Fish Fishery	11 species/life stages: including grouper, snapper & triggerfish	Some found in shallow nearshore waters, mangroves, salt marshes, seagrass beds, coral reefs, algal mats
Gulf of Mexico FMP for Stone Crab Fishery	Stone crab & its life stages	Found in intertidal zone, seagrass beds, rocky or soft bottoms
Gulf of Mexico FMP for Coral and Coral Reefs Fishery	Coral and coral reefs & life stages	Some found in shallower waters CRP coral reef restoration projects
Gulf of Mexico FMP for Spiny Lobster Fishery	Spiny lobster & its life stages	Found in shallow subtidal bottoms, seagrass beds, soft bottoms, coral reefs and mangroves
Gulf of Mexico FMP for Coastal Migratory Pelagics	Cobia, Spanish mackerel, bluefish, little tunny & life stages	Some found in offshore, beaches, estuaries, and inlets.
Secretarial FMP for Tunas, Sharks, and Swordfish	3 species/life stages of tuna, 1 species of swordfish, and 3 species of shark (great hammerhead, nurse shark, blacktip shark)	Some found in near-shore waters, bays and estuaries

SOUTH ATLANTIC & MID-ATLANTIC		
Fishery Management Plan	Species Managed Under FMP	Reason for Inclusion
South Atlantic FMP for Spiny Lobster Fishery	Spiny lobster & its life stages	Found in shallow subtidal bottoms, seagrass beds, soft bottoms, coral reefs, and mangroves
South Atlantic FMP for Shrimp Fishery	Penaieds (brown, pink, and white shrimp) rock shrimp, royal red shrimp and life stages.	Found in tidal freshwater, estuarine, and marine emergent wetlands, seagrass, and sub-tidal and intertidal non-vegetated flats.
South Atlantic FMP for Red Drum Fishery	Red drum & life stages	Found in tidal freshwater, flooded salt marshes, brackish marsh, tidal creeks, mangrove fringe, SAV, oyster reefs, artificial reefs, and soft bottoms.
South Atlantic FMP for Snapper Grouper Fishery	72 species/life stages including triggerfish, jacks, grunts, snappers, tilefish, temperate basses, sea basses and groupers, porgies, wrasses, and spadefish.	Some found in coral reefs, live/hard bottoms, SAV, oyster & artificial reefs. Specific life stages may occur in salt marshes, tidal creeks, and soft bottoms as well.
South Atlantic FMP for Coastal Migratory Pelagic Resources (Mackerels)	Cobia, Spanish mackerel and life stages.	Spanish mackerel found in beaches and estuaries. Cobia found in estuaries and coastal areas.
South Atlantic FMP for Coral and Coral Reefs and Live/Hard Bottom Habitat Fishery	Stony coral, octocorals, and black corals	Rough, hard, exposed stable substrate and muddy silty bottoms in offshore to outer shelf depths.
South Atlantic/Mid-Atlantic FMP for Bluefish	Bluefish & life stages	Found in shores and estuaries
South Atlantic/Mid-Atlantic FMP for Summer Flounder	Summer flounder & life stages	Found in shelf waters and estuaries
Secretarial FMP for Tunas, Sharks, and Swordfish	3 species/life stages of tuna, 1 species of swordfish, and 3 species of shark (great hammerhead, nurse shark, blacktip shark)	Found in near-shore waters, bays and estuaries

U.S. CARIBBEAN		
Fishery Management Plan	Species Managed Under FMP	Reason for Inclusion
Puerto Rico and U.S. Virgin Islands FMP for Shallow Water Reef Fish Fishery	13 species and life stages groupers, snappers, grunts, triggerfish and red hind	Found in mangroves, seagrass beds, non-vegetated bottoms (sand, mud), algal plains, coral reefs and hard-bottom.
Puerto Rico and U.S. Virgin Islands FMP for Coral and Reef Associated Plants and Invertebrates	Over 100 species/life stages of coral: including stony corals, sea fans & gorgonians Over 60 species/life stages of plants: including seagrass & invertebrates	Found in areas with natural, rough substrate covered with other living organisms and larvae. Some found in shallower water seagrass CRP coral reef restoration projects
Puerto Rico and U.S. Virgin Islands FMP for Queen Conch Resources	Queen conch & life stages	Coral sand, seagrass beds, algae, gravel, coral rubble, beach rock bottoms, and nearshore, sandy areas.
Puerto Rico and U.S. Virgin Islands FMP for Spiny Lobster Fishery	Spiny lobster & life stages	Found in mangroves, seagrass, reefs, algal beds, and hard-bottoms.
Secretarial FMP for Tunas, Sharks, and Swordfish	3 species/life stages of tuna, 1 species of swordfish, and 3 species of shark (great hammerhead, nurse shark, blacktip shark)	Found in near-shore waters, bays and estuaries

Table 2. Fishery Management Plan (FMP), species managed under FMP, and the reasons for *exclusion* under the programmatic Environmental Assessment (EA) in the Gulf of Mexico, South Atlantic, and Caribbean regions.

GULF OF MEXICO/SOUTH ATLANTIC/MID-ATLANTIC/U.S. CARIBBEAN		
Fishery Management Plan	Species Managed Under FMP	Reason for Exclusion
South Atlantic FMP for Golden Crab Fishery	Golden crab & its life stages	Found in mounds of dead coral, ripple habitat, dunes, black pebble habitat, low outcrop, soft bioturbated habitat.
South Atlantic/Mid-Atlantic FMP for Spiny Dogfish	Spiny dogfish & life stages	Found in depths of 33 to 1480 ft.
Secretarial FMP for Atlantic Billfish	Blue marlin, White marlin, Longbill spearfish, Sailfish & life stages	Found in epipelagic waters in upper 300-600 ft open sea areas and neritic waters over the continental shelf.

Types of EFH Affected by Program Activities and Assessment of Effects on EFH

EFH is described and identified as everywhere that the above managed species commonly occur. Because these species collectively occur in all estuarine and marine habitats in the southeast region, EFH is separated into estuarine and marine components for the Gulf of Mexico, South Atlantic, and U.S. Caribbean. In the Gulf of Mexico, the EFH determination is based on species distribution maps and habitat association tables presented in Section 5 of the Amendment (GMFMC, 1998). In estuaries, the EFH of each species consists of those areas depicted in the maps as “common”, “abundant” and “highly abundant.” In offshore areas, EFH consists of those areas depicted as “adult areas,” “spawning areas” and “nursery areas.” EFH identifications for the South Atlantic are available in Section 4 of the Amendment (SAFMC, 1998a) Habitat association tables and catch distribution maps are also available for species managed by the Caribbean Council in Section 4.1 of the Amendment (CFMC, 1998). These tables summarize data on the presence or absence of each species within a certain habitat for each life stage.

The following discussions of estuarine and marine environments, excerpted from the CRP EA (2001), complement the EFH descriptions of the Gulf of Mexico, South Atlantic, and U.S. Caribbean Fishery Management Councils. Because of the large variability in the types of species comprising living marine resources, a wide range of coastal regions and riparian systems along streams and rivers that support fish have been identified as EFH for marine species. Most CRP projects occur in urban areas impacted by human development and pollution as well as in remote rural locations. Living marine resources also utilize a wide variety of coastal biological habitats that are restored under the CRP, including submerged aquatic vegetation (SAV) beds, marshes, oyster reefs, riparian areas, and mangroves. These various habitats are targeted for restoration because they have suffered considerable degradation and loss of area in recent decades due to dredging and filling, pollution, construction, and erosion. Each discussion is followed by a description of potential restoration activities that may occur during CRP projects and an assessment of their impacts to EFH. Implementation of restoration activities under the CRP may have a very localized and temporary adverse impact over the short-term, but will provide beneficial habitat in the long-term. Under the CRP, these restoration activities do not individually or cumulatively have significant adverse impacts on the human environment, and many projects may be eligible for categorical exclusion under NOAA NEPA Guidance.

A. Estuarine Environments

For the estuarine component, EFH is described and identified as all estuarine waters and substrates (mud, sand, shell, rock, oyster reefs, and associated biological communities), including the sub-tidal vegetation (SAV and algae) and adjacent inter-tidal vegetation (marshes and mangroves). The restoration of estuarine environments typically include similar types of activities such as removal of invasive species, revegetation, and the placement or removal of structures such as logs or culverts.

1. Riparian Areas

Riparian zones are defined as the land immediately adjacent to a stream or a river. They are characteristic associations of substrate, flora, and fauna within the 100-year flood plain of a stream or, if a flood plain is absent, zones that are hydrologically influenced by a stream or river (Hunt, 1988). In the East, riparian zones are commonly characterized by bottomland hardwood and floodplain forests (Mitsch and Gosselink, 1993). Riparian environments are maintained by high water tables and experience seasonal or periodic flooding.

Description of Habitat (EFH) Affected:

Essential fish habitat descriptions provided by the Gulf, South Atlantic, and Caribbean Councils do not include detailed descriptions of riverine or riparian systems and their distribution within each of the management areas. Potential impacts to managed species would be limited to species within estuarine habitats such as marsh edges, SAV, mangroves, and tidally-influenced scrub/shrub and forested habitats.

In the Gulf of Mexico, some managed species exist within estuarine habitats, depending on life stages. Juvenile brown, white, and pink shrimp are present in marsh edges, SAV, and bottom habitats which may be impacted by activities further upstream (GMFMC, 1998). Juvenile and adult red drum are present in estuarine mud bottoms, marsh, and SAV habitats. Some species of juvenile reef fish and stone crabs also occur in these habitats. In the South Atlantic, juvenile shrimp occur in estuarine areas such as marsh edges, SAV and tidal creeks which may be impacted by upstream activities (SAFMC, 1998b). Juvenile species of red drum, jewfish, gray snapper, and mutton snapper may also occur in these habitats. Bluefish and summer flounder managed by the Mid-Atlantic Council may also occur in these areas. Snapper and grouper species managed by the Caribbean Council are present in SAV and mangrove habitats during various life stages (CFMC, 1998). Other managed species are only found in marine habitats and are not affected by activities upstream of estuaries.

Potential impacts from restoration activities:
Riparian habitat restorations usually involve re-vegetation activities and placement of large natural vegetation. Placement of natural vegetation is manually done by volunteers, which may result in minor disturbance of the surrounding habitat through increased foot traffic. This may result in soil compaction as well as disturbance of existing vegetation or other habitat structures.

Measures to eliminate or reduce potential impacts include planning ingress and egress routes to keep the impacted area to a minimum. To prevent damage to stream bottoms during project implementation, activities may be limited to periods when water levels are low. In addition, the use of measures to protect the water column such as erosion mats can prevent further damage to habitat and species.

2. Shoreline Habitats

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. Along higher-energy shorelines, SAV and certain benthic organisms, such as mollusks and worms, may be found because they can withstand the turbulence of such an intertidal zone. Such environments may exhibit low species diversity, but high population densities of those species that can tolerate the high-energy conditions (for example, some invertebrates). Activities occurring in these areas may have impacts to habitats immediately offshore such as SAV beds, mangroves, and reefs. Coastal habitats such as reefs, SAV, and mangroves are all interconnected physically, chemically, and biologically providing mutual support and operating as one system (SAFMC, 1998b).

Description of Habitat (EFH) Affected:
Texas contains approximately 367 miles of open Gulf shoreline and 2,125 miles of bay-estuary-lagoon shoreline (GMFMC, 1998). These areas are the most biologically rich and diverse regions in the state. From the Louisiana border to Galveston, the shoreline is comprised of marshy plains and low, narrow beach ridges. From Galveston Bay to the Mexican border, long barrier islands and large shallow lagoons dominate. The Louisiana coast is indented with numerous shallow bays containing valuable areas for the growth, feeding and foraging of managed species. The total area of Florida's west coast estuaries is 3,003,312 acres which contain areas of open water, tidal marsh and mangroves. Managed species of various life stages may be found off the Gulf coast. These include brown, white, and pink shrimp of postlarvae/juvenile life stages which may inhabit marsh edges and SAV off coasts. Brown shrimp are in greatest abundance from Apalachicola Bay to Mexico while white shrimp are in greatest abundance in coastal areas from the Suwannee River to Mexico. Pink shrimp are most common off Florida coasts.

Postlarvae/juvenile red drum are found in SAV as well as estuarine mud bottoms from Florida through Texas. Juvenile reef fish species such as black grouper, gag grouper, gray snapper, and yellowtail snapper are found in estuarine SAV, coastal lagoons, and mangrove habitats in the eastern Gulf of Mexico. Two species of coastal migratory pelagics are found off coastal areas in the Gulf. These include juvenile Spanish mackerel and bluefish which occur off beaches and in estuaries from Florida through Texas. Juvenile and adult stone crabs also occur in SAV and shell habitats from Florida through Texas.

The South Atlantic Region has approximately 20,350 miles of coastline, including Florida's Gulf Coast (CZM, 2001). In the South Atlantic Region, offshore habitats such as SAV, coral and oyster/artificial reefs are inhabited by several managed species of the South Atlantic Council. EFH for peneaid shrimp includes inshore estuarine areas for growth, foraging, and protection as well as offshore marine habitats used for spawning and growth to maturity from North Carolina to the Florida Keys (SAFMC, 1998b). EFH for red drum also occur in these nearshore habitats to a depth of 50 meters offshore from Virginia to the Florida Keys. Snapper grouper species may also occupy near shore areas inshore of the 100-foot contour such as SAV, estuarine emergent vegetated wetlands, tidal creeks, mangrove fringe, and reefs. EFH for coastal migratory pelagics includes sandy shoals of capes and offshore bars, high profile rocky bottom, and barrier island ocean-side waters. For cobia, EFH includes high salinity bays, estuaries and SAV habitat. Bluefish and summer flounder managed by the Mid-Atlantic Council may also occur in these nearshore areas.

Puerto Rico and the U.S. Virgin Islands contain a total of 875 miles of coastline (CZM, 2001). EFH for reef fish include offshore habitats such as SAV, reefs, mangroves, and sand (CFMC, 1998). Mangroves are essential juvenile spiny lobsters. Adults also feed on SAV and may be found in reefs. The queen conch is found in various offshore locations in the Caribbean. Juveniles may be found buried in sand/seagrass beds while adults occupy sand, SAV, and reef habitats.

Potential impacts from restoration activities:
Shoreline restoration involves the removal of invasive species which may result in potential adverse impacts to non-target species. Invasive species removal may be performed using chemical, mechanical, biological and ecological control methods, depending on the characteristics of species being eradicated. CRP projects involving invasive plant removals are usually accomplished using chemical methods, where volunteers spot-treat plants individually, or mechanical methods where plants are manually removed by hand. Herbicide application is often effective in the removal of invasive species, but minor impacts to surrounding areas may occur. Rainfall and wind may cause herbicides to leach into the surrounding soil or be transported to non-invasive plants, causing unintentional damage. The physical removal of invasive species may also be effective but potential impacts may occur if revegetation doesn't occur immediately.

In order to minimize the potential impacts from invasive species removal activities, certain precautions are taken. If volunteers manually remove plants, ingress and egress routes are planned to minimize the area impacted. Prior to project implementation, volunteers receive proper training on technically sound methods to apply herbicides and remove invasive plants by hand. This ensures the proper application of herbicides used to remove invasive species to avoid unintentional damage to native plants. Pesticides are not applied during rainy or windy periods.

3. Marsh Habitats

Marsh habitats vary with coastal geographic location. Salt marshes exist on the transition zone between the land and the sea in protected low-energy areas such as estuaries, lagoons, bays, and river mouths (Copeland, 1998). Marsh ecosystems, like all wetlands, are a function of hydrology, soil, and biota. Tidal cycles allow salty and brackish water to inundate and drain the salt marsh, circulating organic and inorganic nutrients throughout the marsh. Water is also the medium in which most organisms live. The marshes are strongly influenced by tidal flushing and stream flow, which affect the inundation and salinity regimes of salt marsh soils. In areas with enough runoff, salt marshes transition into brackish and freshwater marshes (Copeland, 1998). Sand- and mudflats occur at extreme low water, whereas salt marsh vegetation develops where the soils are more exposed to the air than inundated by tides, usually above mean sea level. *Spartina* spp. (cordgrass) typically dominate the lower marsh. Salt marshes are of paramount ecological importance because they 1) export vital nutrients to adjacent waters; 2) improve water quality through the removal and recycling of inorganic nutrients; 3) absorb wave energy from stops and act as a water reservoir to reduce damage further inland; and 4) serve an important role in nitrogen and sulfur cycling (Mitsch and Gosselink, 1993; Turner, 1977; Thayer et al., 1981; Zimmerman et al., 1984).

Description of Habitat (EFH) Affected:
The Gulf of Mexico Estuarine Inventory (GMEI) measured 6.0 million acres of emergent tidal vegetation with 63% of the marsh found in Louisiana (GMFMC, 1998). The Gulf Coast contains a variety of salt, brackish, intermediate, and fresh wetlands. In Texas, saline and brackish marshes are mostly distributed south of Galveston Bay and intermediate marshes occurring east of the Bay (Henderson, 1997). In Louisiana, emergent marsh amounts to more than 3.9 million acres consisting of saline, brackish, intermediate, and fresh water marsh (GMFMC, 1998). Tidal marshes in Florida cover 528,528 acres and extend northward the full length of the coast. Wetlands are of special interest in the Gulf because of their importance in maintaining the production of the rich Gulf fisheries resources by serving as fishery grounds for larvae, post larvae, juveniles, and adults of several species.(GMFMC, 1998). Brown, white and pink shrimp are intimately linked to salt marshes where they grow, feed and forage. In their postlarvae and juvenile stages, densities are highest in marsh edge habitat and SAV. These areas provide postlarvae, juvenile, and subadult shrimp with food and protection from predation and also help maintain the essential gradient between fresh and salt water. Estuarine wetlands are also important to larval, juvenile, and subadult red drum.

In the South Atlantic, salt and brackish marshes occur in all four states and cover approximately 894,200 acres (SAFMC, 1998b). These marshes account for about 16% of the nation's total coastal wetlands. They are most common in the Carolinas with the greatest amount of marsh habitat within the Albemarle-Pamlico Sound (NC) and the St. Andrews-Simons Sound (SAFMC, 1998b). Smooth Cordgrass (*Spartina alterniflora*) is the dominant vegetation in marshes along the Gulf and Atlantic coasts. For penaeid shrimp, essential fish habitat includes inshore estuarine areas used for spawning and growth to maturity. Inshore areas include tidal freshwater (palustrine), estuarine, and marine emergent wetlands (e.g. intertidal salt marshes) from North Carolina through the Florida Keys (SAFMC, 1998b). Estuarine emergent vegetated wetlands are also EFH for red drum and snapper-grouper species. Estuarine marshes are uncommon in Puerto Rico (CFMC, 1998). Species managed by the Mid-Atlantic Council such as the bluefish and summer flounder may also be found in these areas.

Potential Impacts From Restoration Activities:
Salt marsh restorations may involve removal of invasive vegetation, revegetation of native plants, and culvert replacement to restore tidal flushing. Revegetation is usually performed with the help of volunteers which may result in minor disturbance of the surrounding habitat through increased foot traffic. This may result in soil compaction as well as disturbance of existing vegetation or other habitat structures. Invasive species removal is performed using similar methods to those described in the section under shoreline habitats.

Measures to eliminate or reduce potential impacts from restoration activities include the use of turbidity curtains and other forms of water column protection to prevent the flow and/or washing out of disturbed debris from the tidal creek. These measures should also localize erosion to an isolated area. In order to minimize the potential impacts from invasive species removal activities, certain precautions are taken.

Ingress and egress routes for volunteers are planned to minimize the area impacted. Volunteers are also properly trained on sound methods to apply herbicides and removing invasive plants. Herbicides used to remove invasive species are applied directly with special care to avoid unintentional damage to native plants. Herbicides are not be applied during rainy or windy periods.

4. Submerged Aquatic Vegetation (SAV)

Submerged grasses or SAV differ from most other wetland plants in that they are almost exclusively subtidal, occur mainly in marine salinities and utilize the water column for support. SAV occur across a wide depth range, from rocky intertidal habitats to depths of 40 meters, and for some species, broad latitudinal ranges. Distribution patterns are influenced by light, salinity, temperature, substrate type, and currents. SAV habitat is currently threatened because of the cumulative effects of overpopulation, commercial development, and recreation activities in the coastal zone. SAV supply many habitat functions, including: (1) support of large numbers of epiphytic organisms; (2) damping of waves and slowing of currents which enhances sediment stability and increases the accumulation of organic and inorganic material; (3) binding by roots of sediments, thus reducing erosion and preserving sediment microflora; and, (4) roots and leaves provide horizontal and vertical complexity to habitat, which, together with abundant and varied food sources, support densities of fauna generally exceeding those in unvegetated habitats (Wood *et. al.*, 1969; Thayer *et. al.*, 1984). They also provide nursing grounds for many juvenile fish species and habitat for many larval and adult invertebrates critical to near-shore food chains (GMFMC, 1998).

Description of Habitat (EFH) Affected:
About 3,700,000 acres of SAV are found in the estuaries and shallow coastal waters within the Gulf of Mexico, with most occurring in Florida and Texas. On the Gulf coast, SAV are particularly abundant and diverse along the shores of central and southern Florida, covering nearly 50% of the estuarine bottoms (GMFMC, 1998). Five species of seagrass are commonly found in the Gulf of Mexico. The seagrass meadows are populated by diverse and abundant fish faunas. Seasonal resident fish such as drums (*Sciaenidae*), porgies (*Sparidae*), grunts *(Pomadasyidae*), snappers (*Lutjanidae*), and mojarras (*Gerreidae*) spend much of their juvenile and adult stages or spawning seasons in seagrass meadows. Juvenile brown shrimp and white shrimp are also found in SAV as well as managed species such as red drum, groupers, reef fish, stone crabs, and spiny lobster larvae.

In the South Atlantic region, SAV is found primarily in the states of Florida and North Carolina (SAFMC, 1998b). In North Carolina, SAV coverage is estimated to be around 200,000 acres. Three seagrass species grow in North Carolina but are limited to areas within coastal lagoons, protected inland waterways and river mouths protected by barrier islands (SAFMC, 1998b). There are no known open ocean seagrass beds in North Carolina. In Florida, total SAV coverage is estimated to be 2.9 million acres. Other species may be found in Florida within protected inland waters as well as oceanic environments. In north-central, central, and southeast Florida, all of the SAV occur within protected coastal lagoons and in the Intracoastal Waterway (ICW). Seven species of SAV are found in Florida's shallow coastal areas in concentrations along Florida's east coast as well as Florida Bay. In North Carolina, three dominant species are concentrated in the southern and eastern Pamlico Sound, Core Sound, Back Sound, Bogue Sound, and the numerous small southern sounds. SAV is not found in Georgia and South Carolina because of highly turbid freshwater discharges, suspended sediments and a large tidal amplitude which prevents their permanent establishment. In Florida, many economically important species utilize SAV beds as growth and feeding grounds as well as spawning habitat (SAFMC, 1998a). These species include the spotted seatrout (*Cynoscion nebulosus*), grunts (Haemulids), snook (*Centropomus* sp.), bonefish (*Albulu vulpes*), tarpon (*Megalops atlanticus*) and several species of snapper (*Lutianids* sp.) and grouper (*Serranids* sp.). In North Carolina, 40 species of fish and invertebrates have been found on seagrass beds. Larval and juvenile managed fish and shellfish species including red drum

(*Sciaenops ocellatus*), gag (*Mycteroperca microlepis*), and white grunt (*Haemulon plumieri*) utilize the SAV beds as growth and foraging areas. SAV meadows are also frequented by bluefish (*Pomatomus saltatrix*), pink and brown shrimp, as well as offshore reef fishes such as gag (*Mycteroperca microlepis*), gray snapper (*Lutianus griseus*), lane snapper (*Lutjanus synagris*), and mutton snapper (*Lutianus analis*). Puerto Rico has one of the most diverse seagrass floras of the north Atlantic Ocean with seven species of seagrass recorded, turtlegrass (*Thalassia testudinum*) being most common (CFMC, 1998). In the U.S. Caribbean, seagrass beds are important for the brooding of eggs and for fishes with demersal eggs. The spiny lobster (*Panulirus argus*), is one managed species strongly reliant on seagrass habitats including seagrass supported trophic intermediaries. Many fish also reside in grass beds to temporarily forage, spawn, or escape predation. Seagrass beds are EFH for shallow water reef fish including juvenile Nassau and schoolmaster, juvenile and adult mutton snapper, gray snapper, yellowtail, white grunt, and adult banded butterflyfish. Queen conch also feeds on certain species of seagrass beds throughout its life stages.

Potential impacts from restoration activities:
SAV restoration often involves transplanting seagrass plants from existing SAV donor beds, which can cause short-term adverse impacts to SAV. These include temporary damages to existing beds by volunteers which may reduce the quality and quantity of EFH in the donor area. SAV plants may also be damaged during transplant. Planting may result in disturbance of existing bottom-substrate from clearing or digging.

A number of methods may be used to avoid or reduce potential impacts to SAV during restoration activities. One method of reducing potential impacts by volunteers is through the use of TERFS™ racks (Transplanting Eelgrass Remotely using Frame Systems) which allows seagrass to be transplanted with little contact with the water. This system attaches seagrass plants to reusable wire frames with biodegradable ties which are dropped to the bottom of the restoration site where seagrass roots can then anchor new shoots in place. This method minimizes potential impacts to bottom sediment from divers as well as impacts to SAV plants from handling and storage. In order to avoid damage to transplanted SAV plants, projects may also be required to complete transplanting activities within 24 hours of collection from donor beds. Plants should also be gathered through careful field collection to minimize damage to existing beds. TERFS™ racks and other similar planting techniques may be used to plant other types of SAV.

5. Oyster Reefs

Oyster reefs may be found in intertidal and subtidal areas, where suitable substrate and adequate larval supply exist, along with appropriate (brackish to estuarine) salinity levels and water circulation. Oyster beds historically were found along the East and Gulf Coasts, but have been greatly reduced in occurrence as a result of anthropogenic impacts in the past 200 years (Kennedy and Sanford, 1995). Oyster beds are built by the cementing together of oyster shells, with additional hard substrate provided by associates such as other bivalves, barnacles, and calcareous tube builders such as some polychaetes (Kennedy and Sanford, 1995). Larvae of these invertebrates settle seasonally on this substrate. Eventually, a mound forms and grows vertically and laterally as oysters accumulate and shell is scattered in the bed's vicinity (Bahr and Lanier, 1981). Oyster reefs can vary in morphology, influenced by local effects (Kennedy and Sanford, 1995). Oyster beds have in the past been an important food source as well as providing shore protection (hard substrate), water clarification, and habitat for other invertebrates.

Description of Habitat (EFH) Affected:
Oyster reefs are EFH for a number of species managed by the Gulf Council. Postlarvae and juvenile brown and white shrimp occur in oyster reefs at high densities. Oyster reef substrates are also preferred by subadult and adult red drum. The juvenile and adult life stages of reef fish are associated with bottom

topographies on the continental shelf such as artificial reefs. Oyster shells are also habitat for stone crabs after they reach a width of about one-half inch, but large juveniles or small adults are also abundant on oyster reefs.

In the South Atlantic, oysters are found at varying distances up major drainage basins depending upon typography, salinity, substrate and other variables (SAFMC, 1998b). The most extensive contiguous intertidal oyster reefs occur in the South Carolina coastal zone. For red drum, EFH includes oyster reefs and shell banks to a depth of 50 meters offshore from Virginia through the Florida Keys. Artificial reefs from shore to at least 600 feet are EFH for snapper-grouper species with oyster reefs inshore of 100 feet being EFH for specific life stages. In the Charleston Bump, oyster/shell habitat is state-designated habitat of particular importance for the growth and foraging of snapper-grouper species.

Potential impacts from restoration activities:
Shellfish creation involves the placement of shell and/or other materials at specific sites to provide hard substrate for aquatic communities. The placement of the reef may result in impacts to bottom-dwelling benthic organisms and fish in the area which may be buried during the placement of reef material. Temporary increases in turbidity may also result when materials are placed. When oyster shell is used, is it often washed overboard from barges which minimizes turbidity problems.

Impacts may also result depending on the source from which shell for the reef is obtained. Shells are commonly acquired via two method. Dredge shell programs obtain buried shells by dredging areas, which can cause short-term turbidity problems. In addition, any aquatic organisms in the area would be eliminated. The other method of obtaining shell is to purchase them through shucking houses. This method has no adverse impacts to the aquatic environment.

Potential impacts from oyster reef creation may be minimized by ensuring that shells are washed overboard onto the reef sites instead of being dumped overboard, which would result in turbidity plumes. In addition, shell should only be obtained from shucking houses where no impacts to habitat were made during shell acquisition.

6. Mangroves

Mangroves are woody plant communities that develop in sheltered tropical and subtropical coastal estuarine environments. Mangroves are adapted to survive in very saline, waterlogged, reduced soils that are often poorly consolidated and subject to rapid environmental changes (eg. salinity changes) (Cintron-Molero, 1992). Mangrove communities, like salt marshes, facilitate much nutrient cycling, trapping nutrient-rich sediments and maintaining high rates of organic matter fixation (Cintron-Molero, 1992). Mangroves also provide important shelter for larval fish and crustaceans, and contribute detritus and dissolved organic carbon to estuarine food webs (Heald, 1969; Odum, 1971; Twilley, 1982). Mangrove ecosystems are coupled to other systems such as seagrass beds and coral reefs, supporting species of fish, shrimp, and birds. Mangroves are highly productive structures. A significant amount of the net production is incorporated into leaves and fruits, allowing more energy to be incorporated into the food web. This results in an abundance of shellfish and finfish in mangrove areas, as well as a diversity and abundance of other associated fauna.

Description of Habitat (EFH) Affected:
Three species comprise the major elements of mangrove communities in Florida, Puerto Rico, and the U.S. Virgin Islands—red, black, and white mangroves. A fourth species, the buttonwood (*Conocarpus erectus*), is also common in the Caribbean. Red mangroves are usually found in fringe or riverine environments characterized by active water flow and a high degree of flushing. The other two species tend to dominate in stagnant environments where water flows are reduced and often seasonal (Cintron-

Molero, 1992). Mangroves represent a major coastal wetland habitat in the southeastern United States, occupying in excess of 494,200 acres along the coastlines of all Gulf coast states, Puerto Rico, and the U.S. Virgin Islands (CFMC, 1998). They are the dominant type of emergent wetlands in Puerto Rico. The southern coast of Florida contains some 395,000 acres of mangrove (GMFMC, 1998). The distribution of mangrove along the Gulf Coast is limited to areas where hard freezes do not occur.

A few species of reef fish are found on Florida's Gulf Coast. These include gray snapper, yellowtail snapper, lane snapper, and gray triggerfish. In the South Atlantic, mangroves are EFH for sub-adult red drum. Jewfish, gray snapper, mutton snapper, and white grunt are also found in mangroves during juvenile or adult stages. In the Caribbean, spiny lobsters (*Panulirus argus*) are the most important commercial and recreation invertebrates found in the prop roots of mangroves. Reef fish such as red hind, Nassau grouper, mutton snapper, schoolmaster, gray snapper yellowtail snapper, white grunt, and banded butterflyfish are also common in mangroves, using it as a refuge and source of food.

Potential impacts from restoration activities:
Mangrove restoration may involve invasive species removal and revegetation of mangrove species. Revegetation is usually performed with the help of volunteers which may result in minor disturbance of the surrounding habitat through increased foot traffic. This may result in soil compaction as well as disturbance of existing vegetation or other habitat structures. Invasive species removal is performed using similar methods used in shoreline restoration from above.

In order to minimize the potential impacts from invasive species removal activities, certain precautions are taken. Ingress and egress routes for volunteers planned to minimize the area impacted. Volunteers are also properly trained on sound methods to apply herbicides and removing invasive plants. Herbicides used to remove invasive species are applied directly with special care to avoid unintentional damage to native plants. Herbicides are not be applied during rainy or windy periods.

B. Marine Environments

In marine waters, EFH includes all marine waters and substrates (mud, sand, shell, rock, hardbottom, and associated biological communities) from the shoreline to the seaward limit of the EEZ.

1. Artificial Reefs

Artificial reefs are structures or materials that are intentionally placed in aquatic environments to enhance fishery habitat by replacing habitat and ecosystem functions to support entire biological communities (SAFMC, 1998b). Artificial reefs are used in almost every possible marine environment, from shallow-water estuarine creeks to offshore sites up to several hundred feet in depth. They provide new primary hard substrate similar in function to newly exposed hard bottom (Goren, 1985). They also increase habitat complexity which provides shelter and foraging habitat for numerous species.

Description of Habitat (EFH) Affected:
In the Gulf of Mexico, artificial reefs have been used to enhance fishing success for many years. Texas, Louisiana, and Florida have legislative or agency sanctioned artificial reef plans which permit reef creation in designated sites in inshore and offshore waters (GMFMC, 1998). Florida has more than 587 sites permitted for artificial reefs on 378,898 acres on their west coast. Common materials used to form reefs include ships, concrete rubble, barges, tires, oyster shells and car bodies. Alabama has its own artificial reef program with five permit areas and 768,000 acres approved for permitting of artificial reefs. Mississippi, Louisiana, and Texas also have numerous sites permitted for artificial reefs in their inshore, coastal and offshore waters.

Depending on environmental conditions on a specific reef site, and the behavior patterns of certain fish, species within the Snapper-Grouper group tend to be long to short-term reef residents, while those among the Coastal Pelagics tend to be more transient visitors to the reefs as they migrate up and down the coast (SAFMC, 1998b). In the South Atlantic, artificial reefs from shore to at least 600 feet are EFH for snapper-grouper species with oyster reefs inshore of 100 feet being EFH for specific life stages. Red drum and spiny lobster, as well as some of the managed shrimp species, may be found on and around specific reef sites at different times of the year, depending on the exact location and design of the reef. While some species of managed corals may occur on reef structures as far north as the Carolina's, the waters off South Florida are the predominant site where such species are found attached to manmade substrate.

Potential impacts from restoration activities:
Artificial reef creation involves the placement of materials at specific sites to provide hard substrate for aquatic communities. The placement of the reef may result in impacts to bottom-dwelling benthic organisms and fish in the area which may be buried during the placement of reef material. Temporary increases in turbidity may also result when materials are placed.

Artificial reefs should be constructed using materials that do not impact EFH. In addition, shell used should only be obtained from shucking houses where no impacts to habitat were made during shell acquisition.

2. Coral Reefs

Coral reefs are wave resistant structures made of calcium carbonate secreted by, and harboring plants and animals in shallow tropical seas. While most of the reef environment is depositional, the seaward growing portion of the reef is essential for the survival and maintenance of the rest of the reef system (Wiens, 1962; Guilcher, 1987). Coral may dominate a habitat (coral reefs), be a significant component (hardbottom), or be individuals within a community characterized by other fauna (solitary corals) (GMFMC, 1998). Coral reef systems provide food, shelter, breeding, and growth areas for many reef and non-reef organisms. Coral reefs are also linked to mangroves and SAV where these systems occur in close proximity to one another (Maragos, 1992). A number of rare or endangered species inhabit or use coral reef environments. Hardbottoms constitute a group of communities characterized by a thin veneer of live corals and other biota overlying associated sediment types. They are usually of low relief and occur on the continental shelf and may be associated with relict reefs.

Description of Habitats (EFH) Affected:
Coral reef communities and solitary specimens exist throughout the eastern Gulf of Mexico and occur in near-shore environments. Coral and coral reefs are managed species under the Gulf Council. EFH for corals include both the coral organism itself and the reef formation as well as the fishery associated with the reef. Coral reefs are found in the East and West Flower Garden Banks, the Florida Middle Grounds, and the extreme southwestern tip of the Florida Reef Tract (GMFMC, 1998). The East and West Flower Garden Banks contain a total of 175 acres of reef and are the northernmost reefs in the Gulf of Mexico. The Florida Middle Ground is a live hardbottom area located on the outer edge of the continental shelf in the eastern Gulf. Coral reefs are EFH for all reef fish species managed by the Gulf Council. Juvenile and adult reef fish are often associated with bottom topographies on the continental shelf which have high relief. Offshore coral reefs are the principal habitats used by spiny lobster. The spiny lobster also spawns in offshore waters along the deeper reef fringes. Coral is also EFH for stone crabs which may burrow under them.

Coral reef communities and solitary specimens may be found in the South Atlantic region and are found more frequently in the U.S. Caribbean from nearshore environments to continental slopes and canyons, including the intermediate shelf zones (SAFMC, 1998b). In the South Atlantic, coral habitat (i.e. habitats to which coral is a significant contributor) are divided into five categories: solitary corals, hardbottoms, deepwater banks, patch reefs, and outer bank reefs. Solitary corals are a minor component of coral stacks in the South Atlantic. Hardbottoms are most widely distributed across the management area and occur off the coasts of each state. Deepwater banks exist in the Straight of Florida off Little Bahama Bank. About 6,035 individual linear- and dome- shaped patch reefs and about 60 miles of outer bank reefs are distributed in the Florida reef tract (SAFMC, 1998b). The South Atlantic FMP for coral, coral reefs, and live/hard bottom habitats incorporates habitat requirements for over 200 species. Coral reefs provide habitat for a number of species managed by the Council. The identification of these habitats enable the Council to protect EFH effectively for other managed species. Coral reefs are EFH for nearly all snapper-grouper species managed by the South Atlantic Council. Juvenile and adult spiny lobsters also use coral reefs as EFH in Florida.

Coral reefs and other coral communities are one of the most important ecological coastal resources in the Caribbean, and they are more prevalent in the geographical areas of authority of the Caribbean Council (CFMC, 1998). Corals grow around much of Puerto Rico, but physical conditions result in only localized reef formations. High rainfall, run-off, and intense wave action causing erosion and removal of suitable substrate for growth has prevented reef development. Reef growth increases towards the east. Small reefs are found in abundance on the south coast because of low rainfall and river influx. Submerged reefs can also be found on the shelf edge in the south and west. In the U.S. Virgin Islands, the island of St. Croix has the most extensive reefs with several miles of bank-barrier reefs extending from Coakley Bay on the north coast to Great Pond Bay in the south (CFMC, 1998). Other reef areas include South-eastern St. Thomas, Saba Island/Perseverance Bay, and the Salt River Submarine Canyon. Corals are managed by the Caribbean Council through an existing Coral FMP. The FMP prohibits the taking of coral reef resources from the EEZ as well as possession or harvest of any managed species. Many other species are highly dependent on reefs for shelter, food, and as spawning sites. The FMP for corals includes over 100 coral species and over 60 species of plants and invertebrates. Most juvenile and adult snapper-grouper species managed by the Caribbean Council occur in coral reefs during various life stages. The spiny lobster is also found in coral reef and hardbottom habitats during its juvenile and adult stages. Corals reefs are also spawning areas for spiny lobster.

Potential impacts from restoration activities:
The restoration of coral reefs requires direct contact of volunteer divers with the aquatic environment. Potential impacts include accidental contact with already-damaged corals by divers, equipment, and anchoring boats. Divers may also disturb bottom sediment with fins, causing turbidity problems. The use of healthy, intact coral sites as donor sites increases the potential for damage to the existing corals by transplanting methods and by activities of the divers themselves.

To minimize potential impacts, divers are required to be skilled in the use of standard diving principles. These principles include rules such as not touching any coral tissue, knowing the location of all equipment, and staying off the bottom in sediment-laden areas. Prior to restoration activities, divers are also trained in coral biology, reef ecology, and restoration methods. During transplant, coral are stored in such a way to minimize movement to prevent damage to cores.

RC Conservation Measures

The RC has developed measures to mitigate possible impacts of CRP activities on environmental resources and non-CRP activities. These measures are specific to restoration activities within project areas and have already been put to use in funded projects. These measures which are normally specified in CRP contracts are:

1. Use of Best Management Practices (BMP)

Best management practices (BMPs) are measures to minimize and avoid all potential impacts to EFH during CRP restoration activities. This conservation measure requires the use of BMPs during restoration activities to reduce impacts from project implementation. BMPs shall include but are not limited to:

a. Measures to protect the water column - Turbidity curtains, haybales, and erosion mats shall be used
b. Staging areas - Areas used for staging will occur in non-wetland areas only. Planning for use of these staging areas will be carried out in advance and impact areas will be kept to a minimum size.
c. Buffer areas around sensitive resources - Rare plants, archeological sites, etc., will be flagged and avoided. d. Invasive species - Measures to ensure native vegetation or revegetation success will be identified and implemented.

2. Use of FMP Conservation Measures

In addition to measures stated in this section, applicable EFH conservation measures provided by each Council will be incorporated into projects to minimize potential impacts. These measures address project-specific activities that may impact EFH and offer guidance to reduce these impacts.

3. Adequate Training of Volunteers

The adequate training measure is intended to ensure minimal impact to the restoration site through proper training and education of volunteers. Volunteers shall be trained in the use of low-impact techniques for planting, equipment handling, and any other activities associated with the restoration. Proper diving techniques will also be used by volunteer divers.

Training volunteers to perform restoration activities using low-impact techniques will minimize impacts to critical habitat for species managed under the Gulf Council.

4. Monitoring

Monitoring will be conducted before, during, and after project implementation to ensure compliance with project design and restoration success. If immediate post-construction monitoring reveals that unavoidable impacts to EFH have occurred, appropriate coordination with regional EFH personnel will take place to determine appropriate response measures, possibly including mitigation.

5. Post-Project Implementation Removal

Any temporary access pathways and staging areas will be removed or restored to re-establish or improve site conditions. Monitoring steps in Section 4 will assess whether unexpected impacts to EFH have occurred.

6. Herbicide Application Controls

Use of herbicides in project areas will be conducted according to established protocols. Such protocols will include information and guidelines for appropriate use, timing, amounts, application methods, and safety procedures relevant to the herbicide application. For example,

- Herbicide applications should have a six-hour contact time prior to rain
- Herbicides should never be applied during periods of wind or rain.
- Herbicides should be directly applied using spray bottles or garden sprayers
- If removal takes place in the aquatic environment (e.g., Brazilian pepper removal), appropriate herbicides such as Rodeo® must be used, but only if the stump is cut at least 1 foot above the water line (MRC, 1998).

7. Use of Heavy Equipment

The use of heavy equipment (e.g., graders, front-end loaders, and backhoes -- to move earth, trees, etc.) that has the potential to impact soil stability should be avoided to the maximum extent possible. If the use of heavy equipment is not avoidable, then project-specific consultation will be required.

8. Multiple Tracking Events/Soil Compaction

If activities in the project site necessitates multiple episodes of individuals accessing or tracking through the site, appropriate methods to avoid or minimize impacts will be used. On a case-by-case basis, potential impacts to the project site as a consequence of these activities will be evaluated in the project planning phase prior to the start of these activities.

Project-Specific Consultation

If the proposed project plans are substantially different than plans mentioned in this consultation or if new information becomes available that affects the basis for no adverse affect determination, then EFH consultation will be reinitiated.

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UNITED STATES DEPARTMENT OF COMMERCE
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August 22, 2001

MEMORANDUM FOR: Chris Doley
Acting Director, NOAA Restoration Center

FROM: Andreas Mager, Jr.
Assistant Regional Administrator

SUBJECT: EFH Programmatic Consultation for Community-Based Restoration Program Activities in the Southeast Region

This responds to your August 14, 2001, memorandum which proposes an Essential Fish Habitat (EFH) Programmatic Consultation [reference 50 CFR 600.920(a)(2)(ii)] for the Restoration Center's (RC) Community-Based Restoration Program activities. The consultation includes an EFH assessment specific to activities undertaken within the jurisdictional area of the National Marine Fisheries Service's Southeast Region. Successful completion of an EFH Programmatic Consultation would obviate the need for future individual consultations for the RC's funding of habitat restoration projects which are consistent with the parameters specified in this consultation.

This EFH consultation encompasses funding for local efforts to conduct restoration of marsh, shellfish, submerged aquatic vegetation, coral, shoreline, mangrove, and riparian habitats. Individually and cumulatively such restoration efforts are expected to have minor and short-term adverse impacts on EFH and dependent fishery resources, but are designed to result in long-term, net benefits to those resources. RC personnel and staff of my office have exchanged information and coordinated extensively on categories of activities, potential EFH impacts, and appropriate mitigative measures. Your memorandum and attachment provide an adequate basis for our determination that a Programmatic Consultation would be an appropriate mechanism to evaluate EFH impacts of Community-Based Restoration Program activities.

EFH Conservation Recommendations

Minimization and avoidance of adverse impacts to EFH are addressed in the Programmatic Consultation through the RC's proposed conservation measures specified on pages 18 - 20 of the EFH assessment. Implementation of these measures as EFH Conservation Recommendations is necessary to ensure that adverse impacts of activities funded by the RC are avoided, minimized, and offset. Broadly, these measures include: use of best management practices; use of fishery management plan conservation measures; adequate training of volunteers; monitoring; clean-up and minimizing site access impacts. We adopt, without modification, all of the conservation measures identified in the EFH Assessment as the EFH Conservation Recommendations of the Southeast Region.

Project-specific Consultations
Individual EFH consultation pursuant to 50 CFR 600.920(h) or (i) will be required for funding of any category of activity not identified in the EFH assessment. Similarly, individual consultations will be necessary for any project proposing to use heavy equipment or which will not adhere to the EFH Conservation Recommendations. Through individual consultations initiated by the RC, NMFS Southeast Region will evaluate those projects and recommend, as appropriate, EFH Conservation Recommendations designed to avoid, minimize, or offset impacts to Federally-managed fisheries and their EFH.

Review and Revision
If any changes are made to the RC's Community-Based Restoration Program such that the effects of implementation of funded projects on EFH are potentially changed, the RC shall notify the NMFS Southeast Region and discuss whether this Programmatic Consultation should be amended. Should the Southeast Region receive new or additional information that may affect EFH Conservation Recommendations, the Southeast Region will determine whether additional consultation with the RC is necessary or will supplement those Conservation Recommendations included by reference in this memorandum. At intervals of not more than 5 years following the RC's agreement with the contents of this memorandum, the RC shall review the EFH assessment and Conservation Recommendations and determine whether they should be revised to include any new categories of projects, technology, or resource information.

Conclusion
Based on our review of the Programmatic Consultation request and prior coordination and discussion with RC staff, we have determined the conservation measures identified in the EFH assessment, in their entirety, are appropriate and necessary EFH Conservation Recommendations. In addition we have provided criteria for individual consultations and for review and revision of this agreement.

As required by section 305(b) of the Magnuson-Stevens Fishery Conservation and Management Act, the RC must respond in writing within 30 days of receiving these EFH conservation recommendations. The RC must include in their response the acceptability of the measures to avoid, minimize, and mitigate adverse impacts of Community-Based restoration activities on EFH. If the RC does not agree with the measures we have specified, it must explain the reasons for that disagreement. If the RC adopts the Southeast Region's EFH conservation recommendations and related stipulations, no further EFH consultation is required for actions covered by this Programmatic Consultation (except for those cases described in Project-Specific Consultation, where individual consultation has been specified).

If you have any questions on this EFH Programmatic Consultation or wish to discuss any of the comments and recommendations of this memorandum, please contact Rickey N. Ruebsamen, my EFH Coordinator, at telephone (727)570-5317 or by e-mail at ric.ruebsamen@noaa.gov.

APPENDIX I

ESSENTIAL FISH HABITAT (EFH) CONSULTATION BETWEEN THE NATIONAL MARINE FISHERIES SERVICE, ALASKA REGION AND NOAA RESTORATION CENTER, COMMUNITY-BASED RESTORATION PROGRAM

Essential Fish Habitat (EFH) Programmatic Consultation between the National Marine Fisheries Service, Alaska Region and NOAA Restoration Center, Community-Based Restoration Program

Purpose

Under Section 305(b)(2) of the Magnuson-Stevens Fishery Conservation and Management Act (Magnuson-Stevens Act), Federal agencies are required to consult with the Secretary of Commerce on any action that may adversely affect Essential Fish Habitat (EFH). Consultation can be addressed through programmatic EFH conservation recommendations to broadly consider as many adverse effects as possible.

This programmatic consultation applies to restoration activities undertaken in Alaska through the NOAA Restoration Center's (RC) Community-Based Restoration Program (CRP) to restore habitat for living marine resources. The Alaska region includes areas managed by the North Pacific Fishery Management Council.

Program Description

The NOAA Community-Based Restoration Program began in 1996 to inspire local efforts to conduct meaningful, on-the-ground restoration of marine, estuarine and riparian habitat. Since that time, NOAA has secured funding for 179 small-scale habitat restoration projects around the U.S. coastline. Habitat restoration is defined here as activities that directly result in the reestablishment or re-creation of stable, productive marine, estuarine, lagoon, or coastal river ecological systems. The Program is a systematic effort to catalyze partnerships at the national and local level to contribute funding, technical assistance, land, volunteer support or other in-kind services to help citizens carry out technically sound restoration projects that promote stewardship and a conservation ethic for living marine resources.

The program links seed money and technical expertise to citizen-driven restoration projects, and emphasizes collaborative strategies built around improving NOAA trust resources and the quality of the communities they sustain. Human activities and development have caused unprecedented destruction of coastal and wetland habitat. In a world of reliance on natural resources for a sound economy, and stress over natural resource management issues, stakeholders are coming together to assess and evaluate natural resource priorities, promote awareness and education, develop common goals and facilitate local habitat enhancement projects. Community-based habitat restoration helps repair habitats required by fish, endangered species and marine mammals. Restoration may include, but is not limited to: improvement of coastal wetland tidal exchange or reestablishment of historic hydrology; dam or berm removal; fish passageway improvements; establishment or repair of riparian buffer zones and improvement of freshwater habitats that support anadromous fishes; planting of native coastal wetland and submerged aquatic vegetation (SAV); and improvements to feeding, shade or refuge, spawning and rearing areas that are essential to managed species.

All restoration activities shall comply with Federal statutory and regulatory procedures, as well as state requirements, prior to implementation. Records of Federal and state permits/consultations are maintained either with RC partners or in-house if the RC issues funds for projects.

In Alaska, the RC CRP is evaluated through the National Environmental Policy Act components consisting of a Draft and Final Environmental Assessment (EA) and Finding of No Significant Impact (FONSI). The purpose of the EA document is to address NEPA compliance of Federal actions at the program level, as opposed to the specific project level. The EA and FONSI identify and discuss the potential impacts of proposed actions on coastal and riverine environments.

CRP projects involve the restoration of coastal habitats that benefit living marine resources. These restoration activities are undertaken in riparian, marsh, submerged aquatic vegetation, shoreline, and kelp habitats in the Alaska region. Restoration activities implemented under the CRP have very localized and temporary adverse impacts over the short-term, but will provide beneficial habitat to living marine resources in the long-term.

During project implementation involving revegetation activities, volunteers may cause a minor disturbance of the surrounding habitat by compacting soil due to foot traffic or disturbing existing vegetation. Submerged aquatic vegetation (SAV) restoration activities may also cause short-term and long-term beneficial impacts to SAV, depending on the method used to transplant SAV plants. Some methods require digging or clearing of the bottom substrate which may result in temporary turbidity plumes as well as disturbance to any organisms in the substrate.

Activities involving invasive plant removal may also result in minor disturbances depending on methods used. Herbicides used in restoration projects may leach into surrounding soils during rainy periods and could also damage local, non-invasive plants during windy conditions. For projects in which volunteers are in direct contact with the aquatic environment, the greatest source of short-term impacts is the potential for doing additional damage to the project site. These impacts may include accidental contact with damaged seagrass beds by divers or equipment, disruption of bottom sediment from diving fins causing increased turbidity, and impacts resulting from the transplanting of seagrasses to restoration sites.

The Magnuson-Stevens Fishery Conservation and Management Act

Section 303(a)(7) of the Magnuson-Stevens Act (16 U.S.C. 1801 et seq.), requires that Fishery Management Councils include provisions in their fishery management plans that identify and describe EFH, including adverse impacts and conservation and enhancement measures. These provisions are addressed in the separate FMPs for species managed by the North Pacific Fishery Management Council.

Fishery Management Plans (FMPs) Addressing Essential Fish Habitat in the Northern Pacific

The Northern Pacific Council has jurisdiction over the 900,000 square mile Exclusive Economic Zone (EEZ) seaward of Alaska. The individual FMPs addressing EFH for managed species in these areas represent the North Pacific Council's response to those requirements stated in Section 303(a)(7) of the Magnuson-Stevens Act (16 U.S.C. 1801 et seq.). The FMPs are:

- Fishery Management Plan for the **Groundfish Fishery** of the Bering Sea and Aleutian Islands
- Fishery Management Plan for the **Groundfish Fishery** of the Gulf of Alaska
- Fishery Management Plan for the **King and Tanner Crab Fisheries** in the Bering Sea/Aleutian Islands
- Fishery Management Plan for the **Scallop Fisheries** off Alaska
- Fishery Management Plan for the **Salmon Fisheries** in the EEZ off the Coast of Alaska

EFH is identified and described based on areas where various life stages of 65 managed species commonly occur. Some groundfish species occur in both the FMPs for the Gulf of Alaska and the Bering Straight/Aleutian Islands. A total of 51 groundfish species are managed in the Gulf of Alaska, Bering Straight, and Aleutian Islands (Walleye pollock, *Theragra calcogramma*; Pacific cod, *Gadus macrocephalus;* Yellowfin sole, *Limanda aspera;* Greenland turbot, *Reinhardtius hippoglossoides;* Arrowtooth flounder, *Atheresthes stomias*; Rock sole, *Lepidopsetta bilineatus;* Alaska plaice, *Pleuronectes quadrituberculatus*; rex sole, *Errex zachirus*; Dover sole, *Microstomus pacificus*; starry flounder, *Platichthys stellatus*, longhead dab, *Pleuronectes proboscidea*; butter sole, *Pleuronectes isolepis/Isopsetta isolepis*; Flathead sole, *Hippoglossoides elassodon;* Sablefish/Black Cod, *Anoplopoma fimbria;* Pacific ocean perch, *Sebastes alutus;* Shortraker Rockfish, *Sebastes borealis*; Rougheye Rockfish, *Sebastes aleutianus*; Northern Rockfish, *Sebastes polyspinus;* Thornyheads, *Sebastolobus sp.;*

Dusky Rockfish, *Sebastes ciliatus;* Atka mackerel, *Pleurogrammus monopterygius*; Yellow Irish lord, *Hemilepidotus jordani;* Red Irish lord, *Hemilepidotus hemilepidotus*; Butterfly sculpin, *Hemilepidotus papilio*; Bigmouth sculpin, *Hemitripterus bolini*; Great sculpin, *Myoxocephalus polyacanthocephalus*; Plain sculpin, *Myoxocephalus jaok*; Salmon shark, *Lamna ditropis*; Sleeper shark, *Somniosus pacificus*; Spiny dogfish, *Squalus acanthias;* Alaska skate, *Bathyraja parmifera*; Aleutian skate, *Bathyraja aleutica*; Bering skate, *Bathyraja interrupta*; Deep sea sole, *Embassicthys bathbius*; English sole, *Parophrys vetulus*; Alaska plaice, *Pleuronectes vetulus*; Sand sole, *Psettichthys melanostictus*; Rex sole, *Glyptocephalus zachirus;* Yelloweye rockfish, *Sebastes ruberrimus;* Quillback rockfish, *Sebastes maliger;* Rosethorn rockfish, *Sebastes helvomaculatus;* Tiger rockfish, *Sebastes nigrocinctus;* Canary rockfish, *Sebastes pinniger;* China rockfish, *Sebastes nebulosus;* Copper rockfish, *Sebastes caurinus;* Red/magistrate armhook squid, *Berryteuthis magister*; Boreal clubhook squid, *Onychoteuthis banksii borealjaponicus;* Giant/robust clubhook squid, *Moroteuthis robusta*; Eastern Pacific bobtail squid, *Rossia pacifica*; Octopus, *Octopus gilbertianus/O. dofleini*; Pelagic octopus, *Vampyroteuthis infernalis).* The three other FMPs include eight species of king and tanner crabs (Red king crab, *Paralithodes camtschaticus;* Blue king crab, *Paralithodes platypus;* Golden king crab, *Lithodes aequispina;* Scarlet king crab, *Lithodes couesi;* Tanner crab, *Chionoecetes bairdi;* Snow crab, *Chionoecetes opilio;* Grooved Tanner crab, *Chionoecetes tanneri;* Triangle Tanner crab, *Chionoecetes angulatus),* Weathervane Scallops, *Patinopectin caurinus*; and five species of salmon (Pink salmon, *Oncorhynchus gorbuscha*; Chum salmon, *Oncorhynchus keta;* Sockeye (Red) Salmon, *Oncorhynchus nerka*; Chinook (King) Salmon, *Oncorhynchus tshawytscha*; Coho (Silver) Salmon, *Oncorhynchus kisutch)*

Management of Forage Fish

Forage fish are abundant fishes that are preyed upon by marine mammals, seabirds and commercially important groundfish species (NAFMC, 1999). Amendment 36 to the BSAI groundfish FMP and Amendment 39 to the GOA groundfish FMP define a forage fish species category in both FMPs and implement associated management measures. Because Amendments 36/39 established forage fish as a separate category in the groundfish FMPs, EFH must be defined for these species. The forage fish species category include all species of the following families: *Osmeridae* (eulachon, capelin and other smelts), *Myctophidae* (lanternfishes), *Bathylagidae* (deep-sea smelts), *Ammodytidae* (Pacific sand lance), *Trichodontidae* (Pacific sand fish), *Pholidae* (gunnels), *Stichaeidae* (pricklebacks, warbonnets, eelblennys, cockscombs and shannys), *Gonostomatidae* (bristlemouths, lightfishes, and anglemouths), and the Order *Euphausiacea* (krill). Pacific Herring (*Clupea pallasi*) is also an important forage fish but it is managed by the state of Alaska.

The following section addresses EFH for managed species that may be encountered during community-based restoration projects in the North Pacific. Table 1 lists the FMPs and some of the species that have EFH designations and are likely to be encountered in a CRP project.

Table 1. Fishery Management Plans (FMPs), species managed under each FMP, and the reasons for *inclusion* under the programmatic Environmental Assessment (EA) in the North Pacific.

NORTH PACIFIC		
Fishery Management Plan	Species Managed Under FMP	Reason for Inclusion
North Pacific FMP for Groundfish of the Bering Sea and Aleutian Islands	15 species/life stages including: walleye pollock, Pacific cod, yellowfin sole, arrowtooth flounder, rock sole, sablefish/black cod, Atka mackerel, capelin, sculpins and 4 families of forage fish: smelts (capelin, eulachon, rainbow smelt), Pacific sand lance, Pacific sandfish, Pholidae, and Stichaeidae.	Some species found near beaches, bays, estuaries, SAV beds or rivers.
North Pacific FMP for Groundfish of the Gulf of Alaska	24 species/life stages including: Walleye pollock, Pacific cod, yellowfin sole, arrowtooth flounder, rock sole, butter sole, sand sole, English sole, Alaska plaice, starry flounder, sablefish (black cod), Atka mackerel, capelin, eulachon, yellow Irish lord, red Irish lord, butterfly sculpin, yelloweye rockfish, quillback rockfish, china rockfish, copper rockfish, dusky rockfish, and 4 families of forage fish: *Osmeridae* (capelin, eulachon, and other smelts), *Trichodontidae* (Pacific sandfish), *Ammodytidae* (Pacific sand lance), *Pholidae (gunnels)*, and Stichaeidae pricklebacks, warbonnets, eelblennys, cockscombs and shannys).	Some species found near beaches, bays, SAV beds or rivers. Atka mackerel and 3 rockfish species found in kelp, SAV, and shallow coastal waters.
North Pacific FMP for the King and Tanner Crab Fisheries in the Bering Sea/Aleutian Islands	4 species/life stages including: red king crab, blue king crab, golden king crab, and tanner crab	All found in bays. Red king and tanner crab found near beaches. Red king crab also found in SAV.
North Pacific FMP for Salmon Fisheries in the EEZ off Coast of Alaska	5 species/life stages including: pink, chum, sockeye (red), chinook (King), and coho (silver)	Found in rivers, streams, and bays. May also be found in wetlands, kelp, and SAV.
North Pacific FMP for the Scallop Fisheries off Alaska	4 species/life stages including: Weathervane, pink, spiny, and rock scallops	Sometimes found in shallow nearshore waters.

North Pacific Fishery Management Council Policies
Information presented in the Environmental Assessment for FMP Amendments (NPFMC, 1999) is consistent with and supports the North Pacific Council's long-standing habitat policy. The policy, as set forth in the Council's FMP Amendment text, states:

The Council shall assume an aggressive role in the protection and enhancement of habitats important to marine and anadromous fishery resources. It shall actively enter Federal decision-making processes where proposed actions may otherwise compromise the productivity of fishery resources of concern to the Council. Recognizing that all species are dependent on the quantity and quality of their essential habitats, it is the policy of the North Pacific Fishery Management Council to:

Conserve, restore, and maintain habitats upon which commercial, recreational and subsistence marine fisheries depend, to increase their extent and to improve their productive capacity for the benefit of present and future generations. (For purposes of this policy, habitat is defined to include all those things physical, chemical, and biological that are necessary to the productivity of the species being managed.)

This policy shall be supported by three policy objectives which are to:

(1) Maintain the current quantity and productive capacity of habitats supporting important commercial, recreational and subsistence fisheries, including their food base. (This objective will be implemented using a guiding principle of NO NET HABITAT LOSS caused by human activities.)

(2) Restore and rehabilitate the productive capacity of habitats which have already been degraded by human activities.

(3) Maintain productive natural habitats where increased fishery productivity will benefit society.

Types of EFH Affected by Program Activities and Assessment of Effects on EFH
EFH is described and identified as everywhere that the above managed species commonly occur. Summaries and assessments of habitat information for species managed by the North Pacific Council are available in the Habitat Assessment Reports for Essential Fish Habitat (TTEFH, 1998). Maps of the general distributions of species and life stages are also available. The general distribution is a subset of a species current or historic range, and the geographical area containing most (approximately 95%) of the individuals across all seasons (TTEFH, 1998). Life history and habitat association tables are also available for managed species and each life stage.

The following discussions of freshwater and marine environments, excerpted from the CRP EA (2001), complement the EFH descriptions of the North Pacific Fishery Management Council. Because of the large variability in the types of species comprising living marine resources, a wide range of coastal regions and riparian systems along streams and rivers that support fish must be considered as EFH for marine species. Most CRP projects occur in urban areas impacted by human development and pollution as well as in remote rural locations. Living marine resources also utilize a wide variety of coastal biological habitats that are restored under the CRP, including submerged aquatic vegetation (SAV) beds, marshes, riparian areas, shorelines, and kelp habitats. These various habitats are targeted for restoration because they have suffered considerable degradation and loss of area in recent decades due to dredging and filling, pollution, construction, and erosion. Each discussion is followed by a description of potential restoration activities that may occur during CRP projects and an assessment of their impacts to EFH. Implementation of restoration activities under the CRP may have a very localized and temporary adverse impact over the short-term, but will provide beneficial habitat in the long-term. Under the CRP, these restoration activities do not individually or cumulatively have significant adverse impacts on the human environment, and many projects may be eligible for categorical exclusion under NOAA NEPA Guidance.

A. Freshwater Environments

For the freshwater component, EFH is described and identified as all freshwater areas including riparian and shoreline habitats. The restoration of freshwater environments typically include similar types of activities such as removal of invasive species, revegetation, and the placement or removal of structures such as logs, culverts, and dams.

1. Riparian Areas

Riparian zones are defined as the land immediately adjacent to a stream or a river. They are characteristic associations of substrate, flora, and fauna within the 100-year flood plain of a stream or, if a flood plain is absent, zones that are hydrologically influenced by a stream or river (Hunt, 1988). In the West, riparian zones are commonly characterized by streambank vegetation (Mitsch and Gosselink, 1993). Riparian environments are maintained by high water tables and experience seasonal or periodic flooding. They may also contain or adjoin riverine wetlands and share many functions including water storage, sediment retention, nutrient and contaminant removal as well as habitat functions. They often share some of the characteristics of wetlands but cannot be defined as wetlands because they are saturated at much lower frequencies. Riparian ecosystems have distinctive vegetation and soils, and are characterized by the combination of species diversity, density, and productivity. Continuous interactions occur between riparian, aquatic, and upland ecosystems through exchanges of energy, nutrients, and species (NRC, 1995).

Description of Habitat (EFH) Affected:
Alaska contains over 3,000 rivers and has over 3 million lakes with areas greater than 19 acres (TTEFH, 1998). For the North Pacific salmon fisheries in Alaska, EFH includes all streams, lakes, ponds, wetlands, and other water bodies currently or historically accessible to salmon in the State. In addition to current and historically accessible waters used by Alaska salmon, other potential spawning and rearing habitats exist beyond the limits of upstream migration. Most Pacific salmon spawn in riverine habitats such as riffles with clean gravel, between pools, areas of moderate-to-fast currents, and side-channel sloughs. Larval survival is dependent on the surrounding water which must be non-toxic and of sufficient quality and quantity to provide basic requirements of suitable temperatures, adequate supply of oxygen, and removal of waste materials. Sockeye commonly spawn in lakes and also in upwelling areas. Eulachon or candlefish eggs may be found adhering to sand grains and other substrates on river bottoms throughout Alaska (TTFMC, 1998). Eulachon may also be found spawning in rivers between the months of May and June.

Potential impacts from restoration activities:
Riparian habitat restorations usually involve re-vegetation activities and placement of large woody debris (LWD. Placement of LWD is manually done by volunteers, which may result in minor disturbance of the surrounding habitat through increased foot traffic. This may result in soil compaction as well as disturbance of existing vegetation or other habitat structures.

Measures to eliminate or reduce potential impacts include planning ingress and egress routes to keep the impacted area to a minimum. To prevent damage to stream bottoms during project implementation, activities may be limited to periods when water levels are low. In addition, the use of measures to protect the water column such as erosion mats to minimize turbidity can prevent further damage to habitat and species.

B. Marine Environments

In marine waters, EFH is described and identified as all marine waters and substrates (mud, sand, shell, rock, hard bottom, and associated biological communities) from the shoreline to the seaward limit of the EEZ.

1. Near Shore Habitats

a) Intertidal Habitats

(i) Shoreline Habitats

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. In lower-energy shoreline environments, there may be lower population densities of a given species, but high diversity. Along higher-energy shorelines, SAV and certain benthic organisms, such as mollusks and worms, may exist because they can withstand the turbulence of such an intertidal zone. Such environments may exhibit low species diversity, but high population densities of those species that can tolerate the high-energy conditions (for example, some invertebrates). Sand dunes formed in these areas provide habitat for seabirds, including various species of endangered seabirds which rely on beaches for nesting habitat. Activities occurring in these areas may have impacts to habitats immediately offshore such as SAV beds.

Description of Habitat (EFH) Affected:
A number of groundfish are found along beaches and in bays along the Gulf of Alaska and Bering Straight/ Aleutian Islands. These include species such as yellowfin sole, arrowtooth flounder, and rock sole, that remain in shallow areas until they reach a certain size (TTEFM, 1998). Yellowfin sole may also be found spawning in shallow waters from May through August. Small juvenile sablefish/black cod may spend their first winters and second summers in shallow waters until they reach a certain size. Several sculpins such as yellow Irish lords, red Irish lords, great sculpins, and plain sculpins are also found in sub- and intertidal areas near shore. The Atka mackerel migrates annually to moderately shallow waters during spawning. In Alaska, capelin are found along beaches intertidally to depths of up to 10 m in May through July. In addition, demersal shelf rockfish such as yelloweye, quillback, China, and copper rockfish are also found in beaches and bays off the coast of Alaska. Several forage fish are also found in near shore areas in the Gulf of Alaska and Bering Straight/Aleutian Islands. These include smelts such as capelins and eulachons, Pacific sandfish, Pholids (Gunnels), and Stichaeids. Capelins are distributed along the entire coastline of Alaska and spawn in intertidal zones in the spring. Eulachon spawn in rivers throughout the Alaska Peninsula. Pacific sandfish are found in shallow inshore waters to a depth of 50 m. Pholids and stichaeids are also found in near shore waters among seaweeds and under rocks. Walleye pollock and Pacific cod are also found along coastal areas throughout Alaska.

Red king crabs and Tanner crabs are found on beaches and in bays along the Bering Straight/Aleutian Islands. Both migrate to shallow waters for reproduction. In Bristol Bay, red king crabs mate in waters of less than 50 m from January through June. Tanner crabs mate from February to June.

Potential impacts from restoration activities:
Shoreline restoration typically involves the removal of invasive species, which may result in potential adverse impacts to non-target species. Invasive species removal may be performed using chemical,

mechanical, biological and ecological control methods, depending on the characteristics of species being eradicated. CRP projects involving invasive plant removals are usually accomplished using chemical methods, where volunteers spot-treat plants individually, or mechanical methods where plants are manually removed by hand. Herbicide application is often effective in the removal of invasive species, but minor impacts to surrounding areas may occur. Rainfall and wind may cause herbicides to leach into the surrounding soil or be transported to non-invasive plants, causing unintentional damage. The physical removal of invasive species may also be effective, but potential impacts may occur if revegetation by native species doesn't occur immediately following invasives removal.

In order to minimize the potential impacts from invasive species removal activities, certain precautions are taken. If volunteers manually remove plants, ingress and egress routes are planned ahead of time to minimize the area impacted. Prior to project implementation, volunteers receive proper training on technically-sound methods to apply herbicides and remove invasive plants by hand. This ensures the proper application of herbicides used to remove invasive species to avoid unintentional damage to native plants. Pesticides are not applied during rainy or windy periods. Near Shore Environments

(ii) Marsh Habitats

Marsh habitats vary with coastal geographic location. Salt marshes exist on the transition zone between the land and the sea in protected low-energy areas such as estuaries, lagoons, bays, and river mouths (Copeland, 1998). Marsh ecosystems, like all wetlands, are a function of hydrology, soil, and biota. Tidal cycles allow salty and brackish water to inundate and drain the salt marsh, circulating organic and inorganic nutrients throughout the marsh. Water is also the medium in which most organisms live. The marshes are strongly influenced by tidal flushing and stream flow, which affect the inundation and salinity regimes of salt marsh soils. In areas with enough runoff, salt marshes transition into brackish and freshwater marshes (Copeland, 1998). Sand- and mudflats occur at extreme low water, whereas salt marsh vegetation develops where the soils are more exposed to the air than inundated by tides, usually above mean sea level. *Carex* spp. (sedge) typically dominate the lower marsh. Salt marshes are of paramount ecological importance because they 1) export vital nutrients to adjacent waters; 2) improve water quality through the removal and recycling of inorganic nutrients; 3) absorb wave energy from stops and act as a water reservoir to reduce damage further inland; 4) serve an important role in nitrogen and sulfur cycling; and 5) provide cover and habitat for fish (Mitsch and Gosselink, 1993; Turner, 1977; Thayer et al., 1981; Zimmerman et al., 1984).

Description of Habitat (EFH) Affected:
Waters adjacent to salt marshes that are not designated as EFH for managed species may contain species which inhabit near shore estuarine areas.

Potential Impacts From Restoration Activities:
Salt marsh restorations may involve removal of invasive vegetation, revegetation of native plants, and culvert replacement to restore tidal flushing. Revegetation is usually performed with the help of volunteers which may result in minor disturbance of the surrounding habitat through increased foot traffic. This may result in soil compaction as well as disturbance of existing vegetation or other habitat structures. If activities occur during periods when fish may be present in the area, damage to EFH may occur. Invasive species removal is performed using methods similar to those in coastal areas.

Measures to eliminate or reduce potential impacts from restoration activities include the use of turbidity curtains and other forms of water column protection to prevent the flow and/or washing out of disturbed debris from the tidal creek. These measures should also localize erosion to an isolated area. In order to minimize the potential impacts from invasive species removal activities, certain precautions are taken. Ingress and egress routes for volunteers are planned to minimize the area impacted. Volunteers are also properly trained on technically-sound methods to apply herbicides and removing invasive plants. Herbicides used to remove invasive species are applied directly with special care to avoid unintentional damage to native plants. Herbicides are not applied during rainy or windy periods.

b) Subtidal Habitats

(i) Submerged Aquatic Vegetation (SAV)

Submerged grasses or SAV differ from most other wetland plants in that they are almost exclusively subtidal, occur mainly in marine salinities and utilize the water column for support. SAV occur across a wide depth range, from rocky intertidal habitats to depths of 40 meters, and for some species, broad latitudinal ranges. Distribution patterns are influenced by light, salinity, temperature, substrate type, and currents. SAV habitat is currently threatened because of the cumulative effects of overpopulation, commercial development, and recreation activities in the coastal zone. SAV supply many habitat functions, including: (1) support of large numbers of epiphytic organisms; (2) damping of waves and slowing of currents which enhances sediment stability and increases the accumulation of organic and inorganic material; (3) binding by roots of sediments, thus reducing erosion and preserving sediment microflora; (4) roots and leaves provide horizontal and vertical complexity to habitat, which, together with abundant and varied food sources, support densities of fauna generally exceeding those in unvegetated habitats; and 5) provide cover and habitat for fish (Wood *et. al.*, 1969; Thayer *et. al.*, 1984).

Description of Habitat (EFH) Affected:
Copper rockfish may be found in seagrass areas in the Gulf of Alaska (TTFMC, 1998).

Potential impacts from restoration activities:
SAV restoration often involves transplanting seagrass plants from existing SAV donor beds, which can cause short- and long-term adverse impacts to SAV. These include temporary and permanent damage to existing beds by volunteers, which may reduce the quality and quantity of EFH in the donor area. SAV plants may also be damaged during transplant. Planting may result in disturbance of existing bottom-substrate from clearing or digging.

One method of avoiding potential impacts by volunteers is through the use of TERFS™ racks (Transplanting Eelgrass Remotely using Frame Systems), which allows seagrass to be transplanted by volunteers with little contact with the water. This method minimizes turbidity and other potential impacts to bottom sediment from divers as well as impacts to SAV plants from handling and storage. This system attaches seagrass plants to reusable wire frames with biodegradable ties. The frames are then dropped to the bottom of the restoration site where seagrass roots can then anchor new shoots in place. This method minimizes potential impacts to bottom sediment from divers as well as impacts to SAV plants from handling and storage. In order to avoid damage to transplanted SAV plants, projects may also be required to complete transplanting activities within 24 hours of collection from donor beds. Plants should also be gathered through careful field collection to minimize damage to existing beds.

2. Offshore Environments

a) Kelp Beds

Kelp forests are subtidal marine communities dominated by large brown algae (kelps) that form floating canopies on the surface of the sea. Kelp forest communities are found from sea level to as deep as 60 meters, depending on light penetration (Foster and Schiel, 1985). Kelp forests are highly productive and create a three-dimensional aspect to the nearshore environment, providing habitat and food for hundreds of other species of plants (algae), and animals. Kelp forests on hard reef areas can harbor lush understory layers of red and brown algae, as well as mobile and encrusting invertebrates. Throughout the kelp forest, there are hundreds of species of fish distributed across vertical layers of vegetation that vary with depth (Schiel and Foster, 1992). Food is exported from kelp forests to associated communities such as sandy beaches and the deep sea.

Description of Habitat (EFH) Affected:
In the Gulf of Alaska, demersal shelf rockfish such as quillback, China, and copper rockfish may be found in kelp (TTFMC, 1998). In the Gulf of Alaska and Bering Straight/Aleutian Islands, the Atka mackerel may spawn on kelp in shallow water. Two families of forage fish, Pholids and Stichaeids are also found in near shore waters among seaweeds and under rocks.

Potential impacts from restoration activities:
Kelp restoration may include tying down mature kelp plants on vacant substrate, removing grazers or competitors, seeding the area with spores from healthy plants, and tagging and monitoring the growth of kelp. Activities may require the use of volunteer divers to prepare, plant and maintain project sites. The greatest potential for short-term impacts is the possibility of volunteer divers doing more damage to kelp beds during project implementation. Impacts may include damages to kelp beds from equipment, boats, anchoring, and divers themselves.

To minimize these disturbances, certified volunteer divers with proper training in low-impact restoration techniques are used. Low-impact techniques include having no more than four divers per group, the use of appropriate dive equipment and tools, expert boat anchoring, job-specific diver training, and diver awareness. Any equipment or materials used during the restoration is removed from the site upon completion.

b) Shellfish Beds

Shellfish beds may be found in intertidal and subtidal areas, where suitable substrate and adequate larval supply exist, along with appropriate (brackish to estuarine) salinity levels and water circulation. They may be supplemented by transferring additional clams and bivalves from labs or donor beds.

Description of Habitat (EFH) Affected:
Shellfish beds are not designated EFH areas for managed species in Alaska.

Potential impacts from restoration activities:
The restoration of shellfish beds involves the hand placement of shell at specific sites during low tide. Potential impacts may include temporary increases in turbidity when shellfish are removed or placed by hand. Since restoration activities take place during low tide, little impact to the surrounding habitat occurs. Any impacts that could occur are significantly less than the increases in turbidity associated with rising tides.

NOAA Restoration Center Conservation Measures
The North Pacific Council encourages the conservation and enhancement of EFH through the enhancement of rivers, streams, and coastal areas and through the creation of habitat (NPFMC, 1999). The Council also acknowledges the potential impacts to EFH that may result from these activities and suggests measures to avoid them. These measures include, but are not limited to erosion control, road stabilization, upgrading culverts, removal of fish obstructions, and improvement of watershed management.

The NOAA RC has developed additional measures to mitigate possible impacts of CRP activities on EFH in the North Pacific region. These measures are specific to restoration activities within project areas and have already been put to use in funded projects. The NOAA RC finds that these measures are protective of EFH. These measures which are normally specified in CRP contracts are:

1. Use of Best Management Practices (BMP)

Best management practices (BMPs) are measures to minimize and avoid all potential impacts to EFH during CRP restoration activities. This conservation measure requires the use of BMPs during restoration activities to reduce impacts from project implementation. BMPs shall include but are not limited to:

a. Measures to protect the water column - Turbidity curtains, haybales, and erosion mats shall be used
b. Staging areas - Areas used for staging will occur in non-wetland areas only. Planning for use of these staging areas will be carried out in advance and impact areas will be kept to a minimum size.
c. Buffer areas around sensitive resources - Rare plants, archeological sites, etc., will be flagged and avoided.
d. Invasive species - Measures to ensure native fauna and vegetation or revegetation success will be identified and implemented.

2. Avoidance of Work During Critical Fish Windows

This conservation measure requires CRP projects to be scheduled to avoid work when managed species are expected in the area. These periods shall be determined prior to project implementation to avoid any potential impacts.

3. Use of FMP Conservation Measures

In addition to measures stated in this section, EFH conservation measures provided by each Council will be incorporated into projects to minimize potential impacts. These measures address project-specific activities that may impact EFH and offer guidance to reduce these impacts.

4. Adequate Training of Volunteers

The adequate training measure is intended to ensure minimal impact to the restoration site through proper training and education of volunteers. Volunteers shall be trained in the use of low-impact techniques for planting, equipment handling, and any other activities associated with the restoration. Proper diving techniques will also be used by volunteer divers.

Training volunteers to perform restoration activities using low-impact techniques will minimize impacts to critical habitat for species managed by the North Pacific Council.

5. Monitoring

Monitoring will be conducted before, during, and after project implementation to ensure compliance with project design and restoration success. If immediate post-construction monitoring reveals that unavoidable impacts to EFH have occurred, appropriate coordination with regional EFH personnel will take place to determine appropriate response measures, possibly including mitigation.

6. Mitigation for Potential Impacts

Any unavoidable damage to EFH during project implementation will be fully mitigated within one growing season.

7. Post-Project Implementation Removal

Any temporary access pathways and staging areas will be removed or restored to re-establish or improve site conditions.

8. Use of Heavy Equipment

The use of heavy equipment (e.g., graders, front-end loaders, and backhoes -- to move earth, trees, etc.) that has the potential to impact soil stability should be avoided to the maximum extent possible. If the use of heavy equipment is not avoidable, then project-specific consultation will be required.

9. Multiple Tracking Events/Soil Compaction

If activities in the project site necessitates multiple episodes of individuals accessing or tracking through the site, appropriate methods to avoid or minimize impacts will be used. On a case-by-case basis, potential impacts to the project site as a consequence of these activities will be evaluated in the project planning phase prior to the start of these activities.

Project-Specific Consultation

If the proposed project plans are substantially different than plans mentioned in this consultation or if new information becomes available that affects the basis for no adverse affect determination, then EFH consultation will be reinitiated.

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UNITED STATES DEPARTMENT OF COMMERCE
National Oceanic and Atmospheric Administration
National Marine Fisheries Service
P.O. Box 21668
Juneau, Alaska 99802-1668

January 31, 2002

MEMORANDUM FOR: Chris Doley
Director, NOAA Restoration Center

FROM: Ted F. Meyers
Assistant regional Administrator for
Habitat Conservation Division

SUBJECT: Essential Fish Habitat (EFH) Programic Consultation for
Community-Based Restoration Program (CRP) activities in Alaska

The Alaska Regional Office of the National Marine Fisheries Service (NMFS) has received the NOAA Restoration Center's request initiating Essential Fish Habitat (EFH) Programmatic Consultation for Community-Based Restoration Program (CRP) activities in Alaska. The EFH consultation request was made pursuant to Section 305(b)(2) of the Magnuson-Stevens Fishery Conservation and Management Act (MSFCMA) and its implementing regulations at 50 CFR Part 600.920(a)(2) and is the result of a cooperative effort by our staffs.

The Restoration Center's (RC) Programmatic Consultation request addresses EFH for managed species that may be encountered during Community-Based Restoration Projects in coastal, estuarine and riverine locations within Alaska. A description of CRP restoration activities, an analysis of their effects, your views on those effects, and proposed conservation measures have been provided in the Draft EA and EFH Assessment .

The EFH Assessment determined that restoration activities implemented under the CRP will have the potential for localized and temporary adverse impacts over the short-term, but will provide beneficial habitat to living marine resources in the long-term. NMFS Alaska Regional Office concurs with this determination. Conservation measures are incorporated into each project in order to minimize adverse impacts to EFH. If the project plans cannot fully incorporate all impact avoidance measures or if new information becomes available that affects the basis for conservation measures, then supplemental consultation will be undertaken prior to project implementation. The assessment meets the requirements of the EFH regulations at 50

The EFH Assessment and supporting documents, in combination with NMFS review of CRP restoration activities and impacts, provides the basis for our determination that a Programmatic Consultation provides an appropriate mechanism to evaluate EFH impacts of program activities.

EFH Conservation Recommendations

To ensure that adverse impacts to EFH and federally-managed fisheries from NOAA Restoration Center activities are avoided, minimized, or appropriately mitigated, the implementation of EFH conservation measures is necessary. Pursuant to Section 305(b)(4)(A) of the MSFCMA, we recommend the following programmatic EFH conservation recommendations:

1. Use of Best Management Practices (BMP)

Best management practices (BMPs) are measures to minimize and avoid all potential impacts to EFH during CRP restoration activities. This conservation measure requires the use of BMPs during restoration activities to reduce impacts from project implementation. BMPs shall include but are not limited to:

a. Measures to protect the water column - Turbidity curtains, haybales, and erosion mats shall be used
b. Staging areas - Areas used for staging will occur in non-wetland areas only. Planning for use of these staging areas will be carried out in advance and impact areas will be kept to a minimum size.
c. Buffer areas around sensitive resources - Rare plants, archeological sites, etc., will be flagged and avoided.
d. Invasive species - Measures to ensure native fauna and vegetation or revegetation success will be identified and implemented.

2. Development of Herbicide Use BMPs

Use of herbicides to minimize the impacts of invasive plant species in the aquatic environment could have unintended negative consequences. Fish could experience both mortality and sub lethal chronic effects from low levels of herbicides that reach essential fish habitat. The RC shall work to develop appropriate BMPs for herbicide use associated with restoration activities in Alaska. The NMFS Alaska Region recommends that the RC seek guidance and technical assistance in this endeavor from the Northwest Fisheries Science Center (Mr. John Stein) and the Northwest Region ARA for Habitat (Mr. Mike Crouse). Both of these persons supervise staff with recent direct involvement with the herbicides and fish. We are also available to provide regional assistance and coordination.

3. Avoidance of Work During Critical Fish Windows

This conservation measure requires CRP projects to be scheduled to avoid work when managed species are expected in the area. These periods shall be determined prior to project implementation to avoid any potential impacts.

4. Use of FMP Conservation Measures

In addition to measures stated in this section, EFH conservation measures provided by each Council will be incorporated into projects to minimize potential impacts. These measures address project-specific activities that may impact EFH and offer guidance to reduce these impacts.

5. Adequate Training of Volunteers

The adequate training measure is intended to ensure minimal impact to the restoration site through proper training and education of volunteers. Volunteers shall be trained in the use of low-impact techniques for planting, equipment handling, and any other activities associated with the restoration. Proper diving techniques will also be used by volunteer divers.

Training volunteers to perform restoration activities using low-impact techniques will minimize impacts to critical habitat for species managed by the North Pacific Council.

6. Monitoring

Monitoring will be conducted before, during, and after project implementation to ensure compliance with project design and restoration success. If immediate post-construction monitoring reveals that unavoidable impacts to EFH have occurred, appropriate coordination with regional EFH personnel will take place to determine appropriate response measures, possibly including mitigation.

7. Mitigation for Potential Impacts

Any unavoidable damage to EFH during project implementation will be fully mitigated within one growing season.

8. Post-Project Implementation Removal

Any temporary access pathways and staging areas will be removed or restored to re-establish or improve site conditions.

9. Use of Heavy Equipment

The use of heavy equipment (e.g., graders, front-end loaders, and backhoes -- to move earth, trees, etc.) that has the potential to impact soil stability should be avoided to the maximum extent possible. If the use of heavy equipment is not avoidable, then project-specific consultation will be required.

10. Multiple Tracking Events/Soil Compaction

If activities in the project site necessitates multiple episodes of individuals accessing or tracking through the site, appropriate methods to avoid or minimize impacts will be used. On a case-by-case basis, potential impacts to the project site as a consequence of these activities will be evaluated in the project planning phase prior to the start of these activities.

Project-specific Consultation

All CRP projects benefit habitat for living marine resource. Potential impacts to EFH will be localized, minor, and short-term in nature. However, certain circumstances may exist where project impacts are more than minimal and not short-term or projects cannot avoid or minimize the adverse effects by implementing the above conservation recommendations. In these instances, project-specific consultation will be required and can be coordinated through the regulatory review process for federal permits. NMFS Alaska Regional Office will notify the RC of the need for project-specific consultation upon preliminary project review.

Review and Revision

If any changes are made to CRP programs and "Recommendations" described in the EFH Assessment, such that effects on EFH are potentially changed, the RC shall notify NMFS Alaska Regional Office and the agencies will discuss whether this Programmatic Consultation should be revised. Should NMFS receive new or additional information that may affect EFH conservation recommendations, NMFS will consider whether to request additional consultation with the RC and/or provide additional EFH conservation recommendations. At intervals of not less than every five years following this consultation, NMFS Alaska Regional Office will review these programmatic EFH conservation recommendations with the RC and determine whether they should be revised to account for any new information or new technology.

Conclusion

Based on our review of the Draft EA, FONSI and EFH Assessment, we have determined that the EFH Programmatic Consultation with EFH Conservation Recommendations is appropriate for the Community-Based Restoration Program.

As required by section 305(b) of the Magnuson-Stevens Act, RC must respond in writing within 30 days of receiving these EFH conservation recommendations. RC must include in their response the acceptability of the EFH conservation recommendations. If the RC's response is inconsistent with NMFS EFH conservation recommendations, RC must explain its reasons for not following the recommendations, including the scientific justification for any disagreements with NMFS over the anticipated effects of the proposed actions and the measures needed to avoid, minimize, or mitigate for such effects. If RC adopts the NMFS EFH conservation recommendations, no further EFH consultation is required for actions covered by this Programmatic Consultation unless otherwise requested by the NMFS Alaska Regional Office.

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APPENDIX J

ESSENTIAL FISH HABITAT (EFH) CONSULTATION BETWEEN THE NATIONAL MARINE FISHERIES SERVICE, NORTHWEST REGION AND NOAA RESTORATION CENTER, COMMUNITY-BASED RESTORATION PROGRAM

Essential Fish Habitat (EFH) Programmatic Consultation between the National Marine Fisheries Service, Northwest Region and NOAA Restoration Center, Community-Based Restoration Program

Purpose

Under Section 305(b)(2) of the Magnuson-Stevens Fishery Conservation and Management Act (Magnuson-Stevens Act), Federal agencies are required to consult with the Secretary of Commerce on any action that may adversely affect Essential Fish Habitat (EFH). Consultation can be addressed programmatically to broadly consider as many adverse effects as possible through programmatic EFH conservation recommendations.

This programmatic consultation applies to restoration activities undertaken in the Northwest region through the NOAA Restoration Center's (RC) Community-Based Restoration Program (CRP) to restore habitat for living marine resources. The Northwest region includes areas managed by the Pacific Fishery Management Council including Washington, Oregon, and anadromous fish habitats in Idaho.

Program Description

The NOAA Community-Based Restoration Program began in 1996 to inspire local efforts to conduct meaningful, on-the-ground restoration of marine, estuarine and riparian habitat. Since that time, NOAA has secured funding for 179 small-scale habitat restoration projects around the U.S. coastline. Habitat restoration is defined here as activities that directly result in the reestablishment or re-creation of stable, productive marine, estuarine, or river ecological systems. The Program is a systematic effort to catalyze partnerships at the national and local level to contribute funding, technical assistance, land, volunteer support or other in-kind services to help citizens carry out technically sound restoration projects that promote stewardship and a conservation ethic for living marine resources.

The program links seed money and technical expertise to citizen-driven restoration projects, and emphasizes collaborative strategies built around improving NOAA trust resources and the quality of the communities they sustain. Human activities and development have caused unprecedented destruction of coastal and wetland habitat. In a world of reliance on natural resources for a sound economy, and stress over natural resource management issues, stakeholders are coming together to assess and evaluate natural resource priorities, promote awareness and education, develop common goals and facilitate local habitat enhancement projects. Community-based habitat restoration helps repair habitats required by fish, endangered species and marine mammals. Restoration may include, but is not limited to: improvement of coastal wetland tidal exchange or reestablishment of historic hydrology; dam or berm removal; fish passageway improvements; establishment or repair of riparian buffer zones and improvement of freshwater habitats that support fishes; planting of native coastal wetland and submerged aquatic vegetation (SAV); and improvements to feeding, shade or refuge, spawning and rearing areas that are essential to fisheries.

All restoration activities shall comply with Federal statutory and regulatory procedures, as well as state requirements, prior to implementation. Records of Federal and state permits/consultations will be maintained in-house if the RC issues individual awards for projects.

In the Northwest region, the RC CRP is evaluated through the National Environmental Policy Act components consisting of a Draft and Final Environmental Assessment (EA) and Finding of No Significant Impact (FONSI). The purpose of the EA document is to address NEPA compliance of Federal actions at the program level, as opposed to the specific project level. The EA and FONSI identify and discuss the potential impacts of proposed actions on coastal and riverine environments.

CRP projects involve the restoration of coastal habitats that benefit living marine resources. These restoration activities are undertaken in riparian, marsh, shellfish, submerged aquatic vegetation, and shoreline habitats in the Northwest region. Restoration activities implemented under the CRP have very localized and temporary adverse impacts over the short-term, but will provide beneficial habitat to living marine resources in the long-term.

During project implementation involving revegetation activities, volunteers may cause a minor disturbance of the surrounding habitat by compacting soil due to foot traffic or disturbing existing vegetation. Submerged aquatic vegetation (SAV) restoration activities may also cause short-term impacts to SAV, depending on the method used to transplant SAV plants. Some methods require digging or clearing of the bottom substrate which may result in temporary turbidity plumes as well as disturbance to any organisms in the substrate.

Activities involving invasive plant removal may also result in minor disturbances depending on methods used. Physical removal techniques are preferred, but chemical treatments may be necessary in specific cases. Herbicides used in restoration projects may leach into surrounding soils during rainy periods and could also damage local, non-invasive plants during windy conditions. For projects in which volunteers are in direct contact with the aquatic environment such as during kelp forest restoration, the greatest source of short-term impacts is the potential for doing additional damage to the project site. These impacts may include accidental contact with damaged kelp beds by divers or equipment, disruption of bottom sediment from diving fins, and impacts resulting from the transplanting of kelp to restoration sites.

The Magnuson-Stevens Fishery Conservation and Management Act

Section 303(a)(7) of the Magnuson-Stevens Act (16 U.S.C. 1801 et seq.), requires that Fishery Management Councils include provisions in their fishery management plans that identify and describe EFH, including adverse impacts and conservation and enhancement measures. These provisions are addressed in the separate FMPs for species managed by the Pacific Fishery Management Council.

Fishery Management Plans (FMPs) Addressing Essential Fish Habitat in the Pacific
The Pacific Council has authority over the fisheries in the Pacific Ocean seaward of the states of California, Oregon, Washington, and Idaho. The individual FMPs addressing EFH for managed species in these areas represent the Pacific Council's response to those requirements stated in Section 303(a)(7) of the Magnuson-Stevens Act (16 U.S.C. 1801 et seq.). The FMPs are:

- Fishery Management Plan for the **Groundfish** in the Pacific
- Fishery Management Plan for **Coastal Pelagic Species** in the Pacific
- Fishery Management Plan for **Salmon** in the Pacific

EFH is identified and described based on areas where various life stages of 90 managed species commonly occur. These include 82 species of groundfish (Butter sole, *Isopsetta isolepis*; Flag rockfish, *Sebastes rubrivinctus*; Curlfin sole, *Pleuronichthys decurrens*; Gopher rockfish, *Sebastes carnatus*; Dover sole, *Microstomus pacificus*; Grass rockfish, *Sebastes rastrelliger*; English sole, *Parophrys vetulus*; Greenblotched rockfish, *Sebastes*; Flathead sole, *Hippoglossoides elassodon*; Greenspotted rockfish, *Sebastes chlorostictus*; Pacific sanddab, *Citharichthys*; Greenstriped rockfish, *Sebastes elongatus*; Petrale sole, *Eopsetta jordani*; Harlequin rockfish, *Sebastes variegatus*; Rex sole, *Glyptocephalus zachirus*; Honeycomb rockfish, *Sebastes umbrosus*; Rock sole, *Lepidopsetta bilineata*; Kelp rockfish, *Sebastes atrovirens*; Sand sole, *Psettichthys melanostictus*; Mexican rockfish, *Sebastes macdonaldi*; Starry flounder, *Platichthys stellatus*; Olive rockfish, *Sebastes;* Arrowtooth flounder, *Atheresthes stomias*; Pink rockfish, *Sebastes eos*; Ratfish, *Hydrolagus colliei*; Quillback rockfish, *Sebastes maliger*; Finescale codling, *Antimora microlepis;* Redbanded rockfish, *Sebastes* ; Pacific rattail, *Coryphaenoides acrolepis*;

Redstripe rockfish, *Sebastes*; Leopard shark, *Triakis semifasciata*; Rosethorn rockfish, *Sebastes helvomaculatus*; Soupfin shark, *Galeorhinus zyopterus*; Rosy rockfish, *Sebastes rosaceus;* Spiny dogfish, *Squalus acanthias;* Rougheye rockfish, *Sebastes* ; Big skate, *Raja binoculata;* Sharpchin rockfish, *Sebastes*; Longnose skate, *Raja rhina*; California Skate, *Raja inornata*; Shortraker rockfish, *Sebastes borealis;* Pacific ocean perch, *Sebastes alutus*; Silvergrey rockfish, *Sebastes;* Shortbelly rockfish, *Sebastes jordani*; Speckled rockfish, *Sebastes ovalis*; Widow rockfish, *Sebastes entomelas*; Splitnose rockfish, *Sebastes diploproa*; Aurora rockfish, *Sebastes aurora*; Squarespot rockfish, *Sebastes hopkinsi*; Bank rockfish, *Sebastes rufus;* Starry rockfish, *Sebastes constellatus;* Black rockfish, *Sebastes melanops*; Stripetail rockfish, *Sebastes saxicola;* Black-and-yellow rockfish, *Sebastes chrysomelas*; Tiger rockfish, *Sebastes nigrocinctus*; Blackgill rockfish, *Sebastes melanostomus*; Treefish, *Sebastes serriceps*; Blue rockfish, *Sebastes mystinus*; Vermilion rockfish, *Sebastes*; Bocaccio, *Sebastes paucispinis*; Yelloweye rockfish, *Sebastes ruberrimus*; Bronzespotted rockfish, *Sebastes gilli*; Yellowmouth rockfish, *Sebastes reedi;* Brown rockfish, *Sebastes auriculatus*; Yellowtail rockfish, *Sebastes flavidus*; Calico rockfish, *Sebastes dallii;* Longspine Thornyhead, *Sebastolobus altivelis*; California rockfish, *Scorpena guttatta;* Shortspine Thornyhead, *Sebastolobus alascanus;* Canary rockfish, *Sebastes pinniger*; Cabezon, *Scorpaenichthys marmoratus*; Chilipepper, *Sebastes goodei*; Kelp greenling, *Hexagrammos decagrammus*; China rockfish, *Sebastes nebulosus;* Lingcod, *Ophiodon elongatus*; Copper rockfish, *Sebastes caurinus*; Pacific cod, *Gadus macrocephalus*; Cowcod rockfish, *Sebastes levis*; Pacific whiting, *Merluccius productus;* Darkblotched rockfish, *Sebastes crameri*; Sablefish, *Anoplopoma fimbria*; Dusky rockfish, *Sebastes ciliatus*), five coastal pelagic species (4 finfish: Pacific sardine, *Sardinops sagax*; Pacific (chub) mackerel, *Scomber japonicus*; northern anchovy, *Engraulis mordax*, Jack mackerel, *Trachurus symmetricus*; and 1 invertebrate: market squid, *Loligo opalescens*), and three species of salmon (chinook, *Oncorhynchus tshawytscha*; coho, *Oncohynchus kisutch;* pink, *Oncorhynchus gorbuscha*).

Management of Highly Migratory Species

Highly migratory species in the Pacific Ocean include tunas, swordfish, marlins, sailfish, oceanic sharks, and others. The Magnuson-Stevens Fishery Conservation and Management Act gives plan development responsibility for these species to the councils in the Pacific area. Currently, the councils in the Pacific area and the NMFS are discussing the need for a fishery management plan for all U.S. waters in the Pacific and ways to develop such a plan and implement a management process which involves all three councils. Management of highly migratory species in currently addressed in separate FMPs for each council.

The following sections address EFH for managed species that may be encountered during community-based restoration projects in the Pacific. Table 1 lists the FMPs and species that have EFH designations and are likely to be encountered in a CRP project. Table 2 lists the FMPs and species unlikely to be found in a CRP project area.

Table 1. Fishery Management Plans (FMPs), species managed under each FMP, and the reasons for *inclusion* under the programmatic Environmental Assessment (EA) in the Pacific.

PACIFIC REGION		
Fishery Management Plan	Species Managed Under FMP	Reason for Inclusion
Pacific Coast FMP for Groundfish	23 species/life stages: predominantly shark, rockfish, sole, and flounder	Species/life stages identified within the Estuarine Composite EFH and most likely to be found in CRP project areas
Pacific Coast FMP for Coastal Pelagic Species	4 finfish species/life stages: Pacific sardine, Pacific (chub) mackerel, northern anchovy, jack mackerel, 1 invertebrate: market squid	Species/life stages found in estuaries or near river mouths, around kelp beds, off sandy beaches, and in near shore waters
Pacific Coast FMP for Salmon	3 species/life stages: chinook, coho, pink	Species/life stages found in estuary or near river mouths, riverine, and near-shore waters

Table 2. Fishery Management Plan (FMP), species managed under FMP, and the reasons for *exclusion* under the programmatic Environmental Assessment (EA) in the Pacific region.

PACIFIC REGION		
Fishery Management Plan	Species Managed Under FMP	Reason for Exclusion
Pacific Coast FMP for Groundfish	59 species/life stages: Big skate, longnose skate, finescale codling, Pacific rattail, 41 species of rockfish, Pacific ocean perch, arrowtooth flounder, 7 species of sole, chilipepper, cowcod, longspine thornyhead, shortspine, and treefish	Found outside the Estuarine Composite EFH in rocky shelf, non-rocky shelf, canyon, continental slope/basin, neritic, and oceanic composites

Types of EFH Affected by Program Activities and Assessment of Effects on EFH

EFH is described and identified as everywhere that the above managed species commonly occur. For the Pacific salmon fishery, EFH is identified using U.S. Geological Survey (USGS) hydrologic units as well as habitat association tables and life history descriptions of each life stage (PFMC, 1999). This information is provided in Appendix A of Amendment 14 to the Pacific Coast Salmon Plan (PFMC, 1999). These areas encompass all those streams, lakes, ponds, wetlands, and other currently viable water bodies and most of the habitat historically accessible to salmon in Washington, Oregon, Idaho, and California. In estuarine and marine areas, EFH for Pacific salmon extends from the nearshore and tidal submerged environments within state waters out to the full extent of the EEZ.

For the Pacific coast groundfish fishery, EFH descriptions are grouped into seven units called “composite” EFHs which focus on the ecological relationships among species and between the species and their habitats (PFMC, 1998b). These seven habitats include “estuarine”, “rocky shelf”, “non-rocky shelf”, “canyon”, “continental slope”, “neritic zone”, and “oceanic zone”. The EFH determination is based on a series of presence/absence tables for all 82 species/life stages within each composite EFH in Section 11.5 of the West Coast Groundfish Amendment. Life history descriptions and maps showing species distributions are available in the Appendix (EFH Core Team, 1998).

The EFH designation for coastal pelagic species groups the four finfish and the market squid into one complex due to similarities in their life histories and habitat requirements. EFH is based upon a thermal range bordered within the geographic area where a coastal pelagic species occurs at any life stage, where the species has occurred historically during periods of similar environmental conditions, or where environmental conditions do not preclude colonization by the coastal pelagic species (PFMC, 1998a). Habitat/life history descriptions for each species can be found in Section 6.0 of the Description and Identification of EFH for the Coastal Pelagic Species FMP.

The following discussions of estuarine and marine environments, excerpted from the CRP EA (2001), complement the EFH descriptions of the Pacific Fishery Management Council. Because of the large variability in the types of species comprising living marine resources, a wide range of coastal regions and riparian systems along streams and rivers that support fish must be considered as EFH for marine species. Many CRP projects occur in urban areas impacted by human development and pollution as well as in remote rural locations. Living marine resources also utilize a wide variety of coastal biological habitats that are restored under the CRP, including submerged aquatic vegetation (SAV) beds, marshes, riparian areas, and kelp beds. These various habitats are targeted for restoration because they have suffered considerable degradation and loss of area in recent decades due to dredging and filling, pollution, construction, and erosion. Each discussion is followed by a description of potential restoration activities that may occur during CRP projects and an assessment of their impacts to EFH. Implementation of restoration activities under the CRP may have a very localized and temporary adverse impact over the short-term, but will provide beneficial habitat in the long-term. Under the CRP, these restoration activities do not individually or cumulatively have significant adverse impacts on the human environment, and many projects may be eligible for categorical exclusion under NOAA NEPA Guidance.

A. Estuarine Environments

For the estuarine component, EFH is described and identified as all estuarine waters and substrates (mud, sand, shell, rock and associated biological communities), including the sub-tidal vegetation (SAV and algae) and adjacent inter-tidal marsh vegetation. The restoration of estuarine environments typically include similar types of activities such as removal of invasive species, revegetation, removal of intertidal fill and riprap, and the placement or removal of structures such as logs, culverts, and dams.

1. Riparian Areas

Riparian zones are defined as the land immediately adjacent to a stream or a river. They are characteristic associations of substrate, flora, and fauna within the 100-year flood plain of a stream or, if a flood plain is absent, zones that are hydrologically influenced by a stream or river (Hunt, 1988). In the West, riparian zones are commonly characterized by streambank vegetation (Mitsch and Gosselink, 1993). Riparian environments are maintained by high water tables and experience seasonal or periodic flooding. They may also contain or adjoin riverine wetlands and share many functions including water storage, sediment retention, nutrient and contaminant removal as well as habitat functions. They often share some of the characteristics of wetlands but cannot be defined as wetlands because they are saturated at much lower frequencies. Riparian ecosystems have distinctive vegetation and soils, and are characterized by the combination of species diversity, density, and productivity. Continuous interactions occur between riparian, aquatic, and upland ecosystems through exchanges of energy, nutrients, and species (NRC, 1995).

Description of Habitat (EFH) Affected:
In the Pacific, EFH for managed salmon species include many areas along riparian zones where CRP projects may occur. Chinook, coho and pink salmon spawn in stream beds in select areas such as pool tailouts, runs, and riffles during the fall or winter (Vronskiy 1972, Burger *et al.* 1985, Healey 1991). Water quality within these areas is particularly important during larval stages and must be non-toxic, of suitable temperature, and contain an adequate supply of dissolved oxygen to ensure egg survival (PFMC, 1999). Coho larvae (alevins) also inhabit streambeds during the winter and spring and may be found in rivers, streams, and lakes as adults. Chinook salmon may be separated into two distinct races, stream-type and ocean-type fish, because of the variation in their life history (Gilbert 1912, Healey 1983). Stream-type fish have long freshwater residence as juveniles, migrate rapidly to oceanic habitats, and spawn back in freshwater in spring or summer. Freshwater juvenile chinook salmon primarily inhabit pools and stream margins, particularly undercut banks and behind large woody debris (LWD). Ocean-type fish have short residency in freshwater and extensive estuarine residence. Adult show considerable freshwater variation in the month of freshwater entry. Once adult Chinook return to freshwater, they can be found in large, deep, low velocity pools with abundant LWD. These areas serve as refuge from high river temperatures and predators as well as resting sites prior to sexual maturation and spawning. (PFMC, 1999). Pink salmon are often found in the same river reaches and habitats as chinook but migrate to oceanic and nearshore waters as adults.

Potential impacts from restoration activities:
Riparian habitat restorations usually involve re-vegetation activities and placement of large woody debris (LWD. Placement of LWD is manually done by volunteers, which may result in minor disturbance of the surrounding habitat through increased foot traffic. This may result in soil compaction as well as disturbance of existing vegetation or other habitat structures.

Measures to eliminate or reduce potential impacts include planning ingress and egress routes to keep the impacted area to a minimum. To prevent damage to stream bottoms during project implementation, activities may be limited to periods when water levels are low. In addition, the use of measures to protect the water column such as erosion mats can prevent further damage to habitat and species.

2. Shoreline Habitats

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. In lower-energy shoreline environments, there may be lower population densities of a given species, but high diversity. Along higher-energy shorelines, SAV and certain benthic organisms, such as mollusks and worms, may predominate because they can withstand the turbulence of such an intertidal zone. Such environments may exhibit low species diversity, but high population densities of those species that can tolerate the high-energy conditions (for example, some invertebrates). Sand dunes formed in these areas provide habitat for seabirds and sea turtles.

Description of Habitat (EFH) Affected:
Coastal areas contain EFH for a number of species managed by the Pacific Council. About 23 species of groundfish are found in coastal waters. Many of these species have designated EFH in the estuarine waters of Puget Sound. Spiny dogfish occur from the surface and intertidal areas to greater depths and

are common in estuaries (EFH Core Team, 1998). Adult females are most abundant during the spring when they move inshore to shallow waters to release their young. Ratfish can be found in Puget Sound from early winter to late spring during feeding and mating. They often occur in less than 10 m of water depending on the time of day and season. Adults, spawning adults, and eggs of lingcod are common to Puget Sound, Hood Canal, and Skagit Bay. Larvae is also common in nearshore areas of most other Washington estuaries as well was Coos Bay in Oregon. Juvenile and adult life stages of cabezon can also be found in shallow water bays and estuarine areas. All life stages of kelp greenling and starry flounder are found in estuarine areas. Several species of rockfish occur in estuarine areas during their juvenile and adult life stages. These include black, brown, copper, and quillback rockfish that are usually found near SAV and kelp beds. Other groundfish species that may be found in estuarine areas include Pacific cod, Pacific whitiing, sablefish, bocaccio, English sole, Pacific sanddab, and the rex sole which utilize near-shore nursery areas.

A number of coastal pelagic species are also found within coastal areas. These include juvenile and adult life stages of Pacific mackerel which occur off sandy beaches and in open bays, and eggs and paralarvae of market squid which are found in shallow, semi-protected nearshore areas (PFMC, 1998a). Small jack mackerel are also abundant near the coast in the Southern California Bight. Pacific sardines are common along near shore and offshore areas along the coast. Most life stages remain off the California coast, but adults may migrate to feeding grounds off the Pacific northwest and Canada.

Juvenile chinook, coho, and pink salmon occupy beaches and bays before emigrating to marine waters (PFMC, 1999). Juvenile pink salmon may remain along shorelines to feed for up to several weeks.

Potential impacts from restoration activities:
Shoreline restoration involves the removal of invasive species which may result in potential adverse impacts to non-target species. Invasive species removal may be performed using chemical, mechanical, biological and ecological control methods, depending on the characteristics of species being eradicated. CRP projects involving invasive plant removals are usually accomplished mechanically where volunteers remove plants by hand. Chemical methods may be used as a last resort, where volunteers spot-treat plants individually. Herbicide application is often effective in the removal of invasive species, but minor impacts to surrounding areas may occur. Rainfall and wind may cause herbicides to leach into the surrounding soil or be transported to non-invasive plants, causing unintentional damage. The physical removal of invasive species may also be effective but potential impacts may occur if revegetation doesn’t occur immediately.

In order to minimize the potential impacts from invasive species removal activities, certain precautions are taken. If volunteers manually remove plants, ingress and egress routes are planned to minimize the area impacted. Prior to project implementation, volunteers receive proper training on sound methods to apply herbicides and remove invasive plants by hand. This ensures the proper application of herbicides used to remove invasive species to avoid unintentional damage to native plants. Pesticides are not applied during rainy or windy periods.

3. Marsh Habitats

Marsh habitats vary with coastal geographic location. Salt marshes exist on the transition zone between the land and the sea in protected low-energy areas such as estuaries, lagoons, bays, and river mouths (Copeland, 1998). Marsh ecosystems, like all wetlands, are a function of hydrology, soil, and biota. Tidal cycles allow salty and brackish water to inundate and drain the salt marsh, circulating organic and inorganic nutrients throughout the marsh. Water is also the medium in which most organisms live. The marshes are strongly influenced by tidal flushing and stream flow, which affect the inundation and salinity regimes of salt marsh soils. In areas with enough runoff, salt marshes transition into brackish and freshwater marshes (Copeland, 1998). Sand- and mudflats occur at extreme low water, whereas salt marsh vegetation develops where the soils are more exposed to the air than inundated by tides, usually above mean sea level. Sedges, salt grasses, beach grasses, and eel grasses dominate the shallow, subtidal and intertidal habitats. Salt marshes are of paramount ecological importance because they 1) export vital nutrients to adjacent waters; 2) improve water quality through the removal and recycling of inorganic nutrients; 3) absorb wave energy from stops and act as a water reservoir to reduce damage further inland; and 4) serve an important role in nitrogen and sulfur cycling (Mitsch and Gosselink, 1993; Turner, 1977; Thayer *et al.*, 1981; Zimmerman *et al.*, 1984).

Description of Habitat (EFH) Affected:
Coastal wetlands may provide rearing habitat for coho salmon. In the summer, brackish-water estuarine areas may also be used by juvenile coho to migrate upstream (Crone and Bond, 1976).

Potential Impacts From Restoration Activities:
Salt marsh restorations may involve removal of invasive vegetation, revegetation of native plants, and culvert replacement to restore tidal flushing. Revegetation is usually performed with the help of volunteers which may result in minor disturbance of the surrounding habitat through increased foot traffic. This may result in soil compaction as well as disturbance of existing vegetation or other habitat structures. If activities occur during periods when fish may be present in the area, damage to EFH may occur. Invasive species removal is performed using methods similar to those in coastal areas.

Measures to eliminate or reduce potential impacts from restoration activities include the use of turbidity curtains and other forms of water column protection to prevent the flow and/or washing out of disturbed debris from the tidal creek. These measures shall also localize erosion to an isolated area. In order to minimize the potential impacts from invasive species removal activities, certain precautions are taken. Ingress and egress routes for volunteers are planned to minimize the area impacted. Volunteers are also properly trained on sound methods to apply herbicides and removing invasive plants. Herbicides used to remove invasive species are applied directly with special care to avoid unintentional damage to native plants. Herbicides are not be applied during rainy or windy periods.

4. Submerged Aquatic Vegetation (SAV)

Submerged grasses or SAV differ from most other wetland plants in that they are almost exclusively subtidal, occur mainly in marine salinities and utilize the water column for support. SAV occur across a wide depth range, from rocky intertidal habitats to depths of 40 meters, and for some species, broad latitudinal ranges. Distribution patterns are influenced by light, salinity, temperature, substrate type, and currents. SAV habitat is currently threatened because of the cumulative effects of overpopulation, commercial development, and recreation activities in the coastal zone. SAV supply many habitat functions, including: (1) support of large numbers of epiphytic organisms; (2) damping of waves and slowing of currents which enhances sediment stability and increases the accumulation of organic and inorganic material; (3) binding by roots of sediments, thus reducing erosion and preserving sediment microflora; and, (4) roots and leaves provide horizontal and vertical complexity to habitat, which, together with abundant and varied food sources, support densities of fauna generally exceeding those in unvegetated habitats (Wood *et. al.*, 1969; Thayer *et. al.*, 1984).

Description of Habitat (EFH) Affected:
Submerged aquatic vegetation is EFH for a number of species managed by the Pacific Council. They provide nursing grounds for pink salmon in estuarine and nearshore habitats (PFMC, 1999). They are also feeding grounds for the small prey fish of adult lingcod, a Pacific groundfish (EFH Core Team 1998). Juvenile black rockfish may inhabit intertidal eelgrass beds from March-October in Yaquina Bay,

Oregon. Adult bocaccio are also commonly found in eelgrass beds. Young quillback and brown rockfish may settle out to shallow, vegetated habitats such as eelgrass beds.

Potential impacts from restoration activities:
SAV restoration often involves transplanting seagrass plants from existing SAV donor beds, which can cause short-term adverse impacts to SAV. These include temporary damages to existing beds by volunteers which may reduce the quality and quantity of EFH in the donor area. SAV plants may also be damaged during transplant. Planting may result in disturbance of existing bottom-substrate from clearing or digging.

B. Marine Environments

In marine waters, EFH is described and identified as all marine waters and substrates (mud, sand, shell, rock, hardbottom, and associated biological communities) from the shoreline to the seaward limit of the EEZ.

1. Kelp Forests

Kelp forests are subtidal marine communities dominated by large brown algae (kelps) that form floating canopies on the surface of the sea. Kelp forest communities are found from sea level to as deep as 60 meters, depending on light penetration (Foster and Schiel, 1985). Kelp forests are highly productive and create a three-dimensional aspect to the nearshore environment, providing habitat and food for hundreds of other species of plants (algae), and animals. Kelp forests on hard reef areas can harbor lush understory layers of red and brown algae, as well as mobile and encrusting invertebrates. Throughout the kelp forest, there are hundreds of species of fish distributed across vertical layers of vegetation that vary with depth (Schiel and Foster, 1992). Food is exported from kelp forests to associated communities such as sandy beaches and the deep sea.

Description of Habitat (EFH) Affected:
Kelp forests are EFH for a number of coastal pelagic species managed by the Pacific Council. Species include juvenile jack mackerel and Pacific mackerel who travel in school under floating kelp canopies (PFMC, 1998a). West coast groundfish species such as the leopard shark and sablefish can also be found in kelp beds (EFH Core Team, 1998). They are also feeding grounds for the small prey fish of adult lingcod. Cabezon are found intertidally or in shallow, subtidal areas on a variety of habitats, often in the vicinity of kelp beds. Kelp greenling show a very high affinity to rocky banks near dense algae or kelp beds, or in kelp beds. Blue rockfish adults have been found in water as deep as 550 m and show a strong affinity for kelp forests. Adult Bocaccio are also found congregated around floating kelp beds. Other groundfish species such as black, brown, kelp, quillback, and copper rockfish also inhabit areas near kelp.

Potential impacts from restoration activities:
Kelp restoration may include tying down mature kelp plants on vacant substrate, removing grazers or competitors, seeding the area with spores from healthy plants, and tagging and monitoring the growth of kelp. Activities may require the use of volunteer divers to prepare, plant and maintain project sites. The greatest potential for short-term impacts is the possibility of volunteer divers doing more damage to kelp beds during project implementation. Impacts may include damages to kelp beds from equipment, boats, anchoring, and divers themselves.

To minimize these disturbances, certified volunteer divers with proper training in low-impact restoration techniques are used. Low-impact techniques include having no more than four divers per group, the use of appropriate dive equipment and tools, expert boat anchoring, job-specific diver training, and diver awareness. Any equipment or materials used during the restoration is removed from the site upon completion.

RC Conservation Measures

Section 3.2.5.11 of the Appendix to the Pacific Coast Salmon Plan addresses potential impacts resulting from habitat restoration projects and measures to reduce them (PFMC, 1999). These measures include having a good understanding of the conditions in a watershed and protecting a watershed's habitat-forming processes to maintain the biophysical structure and function of aquatic systems, including the bay and ocean habitat. The Pacific Council encourages habitat restoration projects that are part of watershed or basin conservation plans and implement monitoring activities for sustained biophysical process and function. CRP projects are all part of regional restoration efforts.

The RC has developed measures to mitigate possible impacts of CRP activities on EFH in the Northwest region. These recommendations are specific to restoration activities within project areas and have already been put to use in funded projects. The NOAA RC finds that these measures are protective of EFH. These recommendation which are normally specified in CRP contracts are:

1. Use of Best Management Practices (BMP)

Best management practices (BMPs) are measures to minimize and avoid all potential impacts to EFH during CRP restoration activities. This conservation measure requires the use of BMPs during restoration activities to reduce impacts from project implementation. BMPs shall include but are not limited to:

   a. Measures to protect the water column - Turbidity curtains, haybales, and erosion mats shall be used
   b. Staging areas - Areas used for staging will be planned in advance and kept to a minimum size.
   c. Buffer areas around sensitive resources - Rare plants, archeological sites, etc., will be flagged and avoided.
   d. Invasive species - Measures to ensure native vegetation or revegetation success with be identified and implemented.

2. Avoidance of Work During Species Presence

This conservation measure requires CRP projects to be scheduled to avoid work when managed species are expected in the area. These periods shall be determined prior to project implementation to avoid any potential impacts.

3. Use of FMP Conservation Measures

In addition to measures stated in this section, EFH conservation measures provided by each Council will be incorporated into projects to minimize potential impacts. These measures address project-specific activities that may impact EFH and offer guidance to reduce these impacts.

4. Adequate Training of Volunteers

The adequate training measure is intended to ensure minimal impact to the restoration site through proper training and education of volunteers. Volunteers shall be trained in the use of low-impact techniques for planting, equipment handling, and any other activities associated with the restoration. Proper diving techniques will also be used by volunteer divers.

Training volunteers to perform restoration activities using low-impact techniques will minimize impacts to critical habitat for species managed by the Pacific Council.

5. Monitoring

Monitoring will be conducted before, during, and after project implementation to ensure compliance with project design and restoration success.

6. Mitigation for Potential Impacts

Any unavoidable damage to EFH during project implementation will be fully mitigated within one growing season.

7. Post-Project Implementation Removal

Any temporary access pathways and staging areas will be removed or restored to re-establish or improve site conditions.

Project-Specific Consultation

All CRP projects benefit habitat for living marine resource. Potential impacts to EFH will be localized, minor, and short-term in nature. However, certain circumstances may exist where project impacts are more than minimal and not short-term or projects cannot avoid or minimize the adverse effects by implementing the above conservation recommendations. In these instances, project-specific consultation will be required and can be coordinated through the regulatory review process for federal permits.

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