

**FINAL
RESTORATION PLAN AND
ENVIRONMENTAL ASSESSMENT
FOR
THE *TENYO MARU* OIL SPILL**

Prepared by:

The *Tenyo Maru* Oil Spill Natural Resource Trustees

Makah Indian Tribe

State of Washington

Department of Ecology (WDOE)

Department of Fish and Wildlife (WDFW)

Department of Natural Resources (WDNR)

U.S. Department of Commerce

National Oceanic and Atmospheric Administration (NOAA)

U.S. Department of the Interior

Fish and Wildlife Service (FWS)

National Park Service (NPS)

Bureau of Indian Affairs (BIA)

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INFORMATION SHEET
Final Restoration Plan and Environmental Assessment
for the July 22, 1991, *Tenyo Maru* Oil Spill

Cooperating Agencies: Makah Indian Tribe; U.S. Department of Commerce represented by the National Oceanic and Atmospheric Administration; the U.S. Department of the Interior represented by the U.S. Fish and Wildlife Service, the National Park Service, and the Bureau of Indian Affairs; and the State of Washington represented by the Department of Ecology, Department of Fish and Wildlife, and Department of Natural Resources.

Supplementary Information: This Restoration Plan and Environmental Assessment (RP/EA) has been prepared by the Tribal, State, and Federal Natural Resource Trustees to address restoration of natural resources injured by the July 22, 1991 oil spill that resulted from a collision between the Japanese fishing vessel *Tenyo Maru* and Chinese freighter *Tuo Hai* 20 miles northwest of Cape Flattery off the Washington coast. Beaches were oiled from Vancouver, British Columbia to northern Oregon. Numerous seabirds were killed and substantial amounts of oil were observed in kelp beds. The restoration activities of the RP/EA include the combination of protection and enhancement activities that have the greatest potential to restore the injured natural resources, with particular emphasis on seabirds.

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Administrative Record: The documents comprising the Administrative Record can be viewed at the above public location.

Copies: Copies of the Final Restoration Plan and Environmental Assessment for the *Tenyo Maru* Oil Spill are available from the address listed above and are available for downloading at the following web sites: <http://www.r1.fws.gov> and <http://www.darcnw.noaa.gov/tenyo.htm>.

Executive Summary

On July 22, 1991, the Japanese fishing vessel *Tenyo Maru* and Chinese freighter *Tuo Hai* collided within Canadian Territorial waters approximately 20 miles northwest of Cape Flattery. The *Tenyo Maru*, which was reportedly carrying 354,800 gallons of intermediate fuel oil, 97,800 gallons of diesel fuel, and 22,500 gallons of fish oil, sank at collision. It initially leaked a large amount of oil and undetermined amounts were reported leaking for more than a month after the collision. Beaches were fouled with oil from Vancouver Island, British Columbia to northern Oregon. While impacts were scattered along the entire Washington State shoreline and the northern beaches of Oregon, the heaviest oiling occurred along the Makah Indian Reservation and the Olympic National Park shoreline. The Natural Resource Trustees estimated that 3,740-19,559 common murre (*Uria aalge*) and 161-273 (7-11 percent of the total outer coast population) federally threatened marbled murrelets (*Brachyramphus marmoratus*) were killed, in addition to substantial numbers of rhinoceros auklet (*Cerorhinca moncerata*), tufted puffin (*Fratercula cirrhata*), Cassin's Auklet (*Ptychoramphus aleuticus*) and pigeon guillemot (*Cepphus columba*). Substantial amounts of oil were observed in many of the giant kelp (*Macrocystis*) and bull kelp (*Nereocystis*) dominated kelp beds from Cape Alava north to Tatoosh Island and from Tatoosh Island east to Waadah Island. Laboratory studies indicate that oil from the *Tenyo Maru* may have injured the kelp. (*Tenyo Maru* Trustees 1993, Battelle Marine Sciences Laboratory 1992)

Claims for natural resource damages were settled by consent decree under the Oil Pollution Act of 1990 (OPA), 33 U.S.C. 2701 *et seq.* Under the consent decree the defendants agreed to pay approximately \$5.2 million to restore, rehabilitate, replace or acquire the equivalent of natural resources injured by the oil discharge. This Restoration Plan and Environmental Assessment (RP/EA) is presented to the public by the Natural Resource Trustees (Trustees) responsible for restoration implementation under the consent decree. The RP/EA describes the affected environment and illustrates potential restoration alternatives and their environmental consequences. Following consideration of public comments the Trustees have selected an integrative restoration approach as their preferred alternative to restore, rehabilitate, replace, or acquire the equivalent of natural resources injured in the *Tenyo Maru* oil spill.

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LIST OF ACRONYMS

BIA - Bureau of Indian Affairs
CEQ - Council on Environmental Quality
CERCLA - Comprehensive Environmental Response, Compensation, and Liability Act
CFR- Code of Federal Regulations
DOC - Department of Commerce
DOI - Department of the Interior
DOM - dissolved organic matter
DRP - draft Restoration Plan
EA - Environmental Assessment
EIS - Environmental Impact Statement
ESA - Endangered Species Act
EFH - Essential Fish Habitat
FAA - Federal Aviation Administration
FWS- U.S. Fish and Wildlife Service
MOA - Memorandum of Agreement
MRI - magnetic resonance imaging
NPS - National Park Service
NEPA - National Environmental Policy Act
NMFS - National Marine Fisheries Service
NOAA- National Oceanic and Atmospheric Administration
NRDA - Natural Resource Damage Assessment
NWR - National Wildlife Refuge
OCNMS - Olympic Coast National Marine Sanctuary
ONP - Olympic National Park
OPA- Oil Pollution Act of 1990
Plan - Restoration Plan
RDRP/EA - Revised Draft Restoration Plan/Environmental Assessment
RFP - Request for Proposals
RP - Restoration Plan
Sanctuary - Olympic Coast National Marine Sanctuary
SEPA - Washington State Environmental Policy Act
SOAL - State owned aquatic lands
WAC - Washington Administrative Code
WDFW - Washington Department of Fish and Wildlife
WDNR - Washington Department of Natural Resources
WDOE- Washington State Department of Ecology
WSP - Washington State Parks
UNESCO - United Nations Educational Scientific and Cultural Organization
YOY - young of year

1.0 INTRODUCTION

1.1 Purpose and Need for Proposed Action

The purpose of this Final Restoration Plan and Environmental Assessment (RP/EA) is to design, coordinate, and implement projects that restore, rehabilitate, replace and/or acquire the equivalent of natural resources injured from the discharge of oil by the *Tenyo Maru* on July 22, 1991. This document has been prepared on behalf of the public by the Natural Resource Trustees (Trustees) responsible for restoration implementation under a consent decree. The RP/EA describes the affected environment and illustrates restoration alternatives and their environmental consequences. This RP/EA was developed in accordance with the Oil Pollution Act of 1990 (OPA), 33 U.S.C. 2706(b), the National Environmental Policy Act (NEPA), 42 USC 4321-4370d, and its implementing regulations, 40 CFR Parts 1500-1508, and the Washington State Environmental Policy Act (SEPA).

1.2 Incident Background

On July 22, 1991, the Japanese fishing vessel *Tenyo Maru* and Chinese freighter *Tuo Hai* collided within Canadian Territorial waters in heavy fog approximately 20 miles northwest of Cape Flattery. The *Tenyo Maru* sank at the point of collision in 90 fathoms of water. It was reportedly carrying 354,800 gallons of intermediate fuel oil, 97,800 gallons of diesel fuel, and 22,500 gallons of fish oil. (*Tenyo Maru* Oil Spill Trustees 1993)

The vessel initially leaked a large amount of oil. For more than a month after the collision, an undetermined quantity of oil leaked from the sunken vessel, and fouled beaches from Vancouver Island, British Columbia to northern Oregon (Fig. 1-1). The heaviest oiling occurred along the Makah Indian Reservation and the Olympic National Park shoreline. Impacts were scattered along the entire Washington State shoreline and the northern beaches of Oregon.

In December 1994, the Trustees and defendants for the 1991 *Tenyo Maru* oil spill entered into a consent decree¹. Under the consent decree, the defendants agreed to pay to a federal court-held restoration fund approximately \$5.2 million to restore, replace, rehabilitate, or acquire the equivalent of natural resources injured as a result of the spill.

Restoration funds were recovered under the Oil Pollution Act of 1990 (33 USC 2701 *et seq.*) and the State's Water Pollution Control Act (90.48-56 RCW). Guidance applicable to restoration, replacement, or acquisition of equivalent resources and services is contained in 15 CFR Part 990, Department of Commerce natural resource damage assessment (NRDA)

¹ United States et al. v. Maruha Corporation et al., Civil No. C94-1537 (W.D. Wash., Dec. 23, 1994).

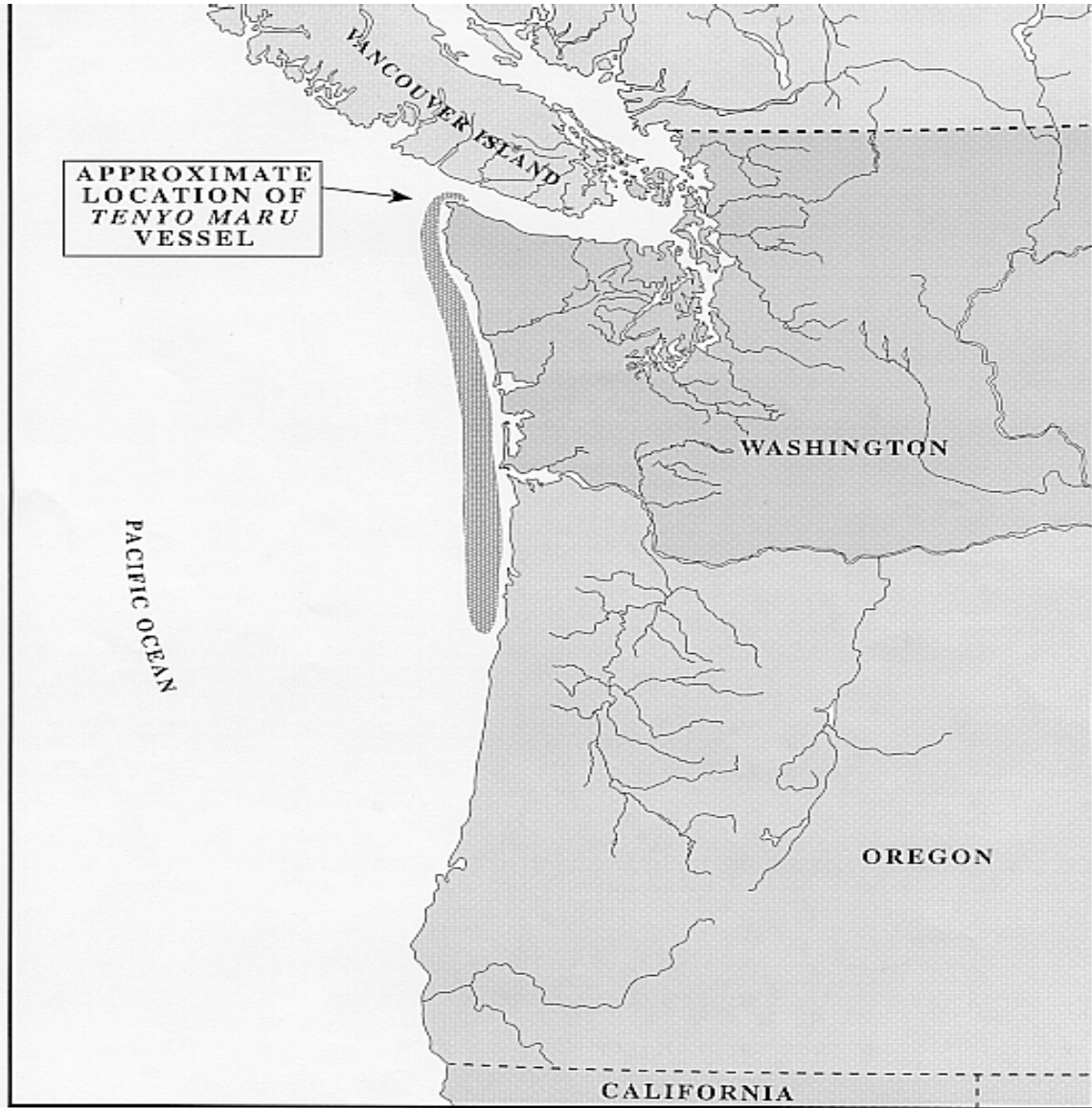


Figure 1-1. Approximate area impacted by *Tenyo Maru* Oil Spill

regulations. According to the consent decree, a restoration plan must be adopted and a mechanism for its implementation must be in place before expenditure of funds. A Trustee Committee was formed by a Memorandum of Agreement (MOA), consisting of the Makah Indian Tribe, the State of Washington (Department of Ecology, Department of Fish and Wildlife, and Department of Natural Resources), the U.S. Department of Commerce (National Oceanic and Atmospheric Administration [NOAA]) and, the U.S. Department of the Interior (Fish and Wildlife Service, National Park Service, and the Bureau of Indian Affairs). The objective for the *Tenyo Maru* Trustee Committee is to plan and design, coordinate and implement projects that restore, rehabilitate, replace and/or acquire the equivalent of natural resources injured by the *Tenyo Maru* oil spill.

1.3 Fish and Wildlife Resources and Natural Resource Injury

Spill-related natural resource injuries were documented primarily for marine birds, and secondarily for kelp (*Macrocystis* and *Nereocystis*) (*Tenyo Maru* Oil Spill Trustees 1993). Of the 740 oiled birds rescued alive, 97 (13 percent) survived rehabilitation and were released. Their ultimate fate is unknown. A total of 4,300 bird carcasses was recovered during search and rescue efforts (Table 1-1). However, this number is a minimum estimate for total seabird mortality because many carcasses may have sunk, been scavenged, or were not found by rescue workers. Thirty bird species were identified from birds recovered from the spill. Approximately 93 percent of the total number of birds recovered were from species known commonly to breed in Washington State (15 species). However, not all of these birds necessarily were Washington breeders or were hatched in Washington. For example, Warheit (1996) estimated that between 39 percent and 58 percent of the adult common murre (*Uria aalge*) killed by the spill in Washington were from Washington, and the remaining adult common murre were from Oregon.

Models have been developed to extrapolate total seabird mortality from carcass counts. These models use the at-sea abundance and distribution of the seabirds; spill trajectories; and probabilities that birds will become oiled, that a particular carcass will be scavenged after reaching shore, and that an unscavenged carcass will be found by rescue workers (see Page et al. 1990, Ford et al. 1996). Because only at-sea seabird distribution information and spill trajectory data are available for the *Tenyo Maru* spill, there are no data to calculate the probabilities that a carcass washed ashore, was scavenged, or was recovered.

Table 1-1. Bird species with mortalities associated with the *Tenyo Maru* oil spill.

Species	# Oiled Birds Retrieved	Breeding Population Estimates		Source ¹
		Statewide	Outer coast	
Common Loon	1	rare		
Red-throated Loon	1			
Western Grebe	2	rare		
Black-footed Albatross	11			
Northern Fulmar	67			
Sooty Shearwater	49			
Short-tailed Shearwater	5			
Unidentified Shearwater	1			
Fork-tailed Storm-petrel	1	3,878	3,878	(a)
Leach's Storm-petrel	1	35,700	35,700	(a)
Unidentified Storm-petrel	1			
Double-crested Cormorant	5	6,472 ²	(b)	
Brandt's Cormorant	10	700	700	(b)
Pelagic Cormorant	18	6,134	4,800	(b)
Unidentified Cormorant	12			
Surf Scoter	10			
White-winged Scoter	41			
Bufflehead	1	rare		
Black Turnstone	1			
Mew Gull	4			
California Gull	87	>500		
Western/Gl.-winged Gull	91	36,923	36,923	(a)
Unidentified Gull	39			
Caspian Tern	25	7,918	?	(a)
Arctic Tern	1	rare		
Common Murre	3,157	13,600 ³	13,600 ³	(e) (f)
Pigeon Guillemot	33	4,270	4,270	(a)
Marbled Murrelet	45	5,000	2,400 ⁴	(c) (d)
Cassin's Auklet	116	45,375 ⁵	45,375 ⁵	(b)
Rhinoceros Auklet	281	55,662	27,872	(b)
Horned Puffin	1			
Tufted Puffin	127	5,612 ⁵	5,582 ⁵	(b)
Crow spp.	1	common	common	
Unidentified bird	54			
Total	4,300			

¹ Source for population estimates: (a) Speich & Wahl (1989); (b) Ulrich Wilson, pers. comm (1996); (c) Speich et al. (1992); (d) Speich & Wahl (1995); (e) Wilson (1995); (f) Parrish (1996a)

² Statewide estimate for *marine* population

³ Population estimate based on Wilson (1995) attendance data for murrees nesting within FWS refuges (1995 median = 5,230) & Parrish (1996a) attendance data for murrees nesting on Tatoosh Island in 1995 (3,270). Attendance total was multiplied by 1.6 to estimate breeding population.

⁴ Speich et al (1992) estimated *total* population (adults, subadults, and juveniles) for outer coast

⁵ Population estimates based, in part, on burrow counts and percent occupancy for those burrows on Carroll and Alexander Islands, and Cake Rock. Data collected in 1980's.

The Trustees identified and documented 3,157 common murres killed by the oil spill, which is a minimum estimate of actual mortality. The median attendance at common murre breeding colonies in Washington in 1991, 1995, 1996, and 1997 was roughly 7,700; 8,500; 6,738; 3,810 birds, respectively (Wilson 1995, Parrish 1996a, Wilson 1997). Therefore, a potentially sizable proportion of the total Washington state common murre population (includes breeding and nonbreeding adult, sub-adult, and juvenile birds) may have been killed by the *Tenyo Maru* oil spill.

The federally threatened marbled murrelet (*Brachyramphus marmoratus*) population in Washington was also impacted by the *Tenyo Maru* spill. Forty-five known murrelet mortalities were observed and documented from the spill. Approximately 70 percent of birds of known age were juveniles, and 62 percent of known sex were females (Warheit 1996). As with common murres, this spill may have affected a sizable proportion of marbled murrelets nesting in Washington.

Similar to many other oil spills in the north temperate to subarctic waters the Alcidae (murres, puffins, and their allies) comprised the highest percentage of known mortality (87 percent) from the *Tenyo Maru* oil spill. Besides common murres and marbled murrelets, substantial numbers of rhinoceros auklets (*Cerorhinca moncerata*), tufted puffins (*Fratercula cirrhata*), Cassin's Auklet (*Ptychoramphus aleuticus*) and pigeon guillemots (*Cepphus columba*) carcasses were recovered from the spill, with estimated total mortality for these species possibly ranging into several hundred individual birds per species.

Known mortality of rhinoceros auklets was second only to common murres; however, the statewide breeding population for this species may be among the largest for all seabirds in Washington, and the effects from the oil spill at the population level are unclear. The estimated breeding population of rhinoceros auklets within the spill zone is about half its total statewide population (27,872 and 55,662 birds, respectively), and if the *Tenyo Maru* oil spill affected only this portion of the population, upwards of 2 percent of that portion may have been killed. Tufted puffin mortality was nearly as high as or higher than that of rhinoceros auklets. However, this mortality may have totaled 9 percent of the tufted puffin's statewide population (5,582 birds) making the effects of this spill on this species considerably greater than the effects on the rhinoceros auklet population.

Oil lingered in giant kelp (*Macrocystis*) and bull kelp (*Nereocystis*) dominated kelp beds from Cape Alava north to Tatoosh Island and from Tatoosh Island east to Waadah Island, for up to two weeks following the spill. During the natural resource damage assessment process, laboratory and mesocosm studies conducted by Battelle's Pacific Northwest Marine Sciences Laboratory showed that samples of weathered and unweathered Bunker C, diesel, and crude oils can be toxic to *Nereocystis* kelp by affecting blade growth and physiological functions. (Antrim et al. 1995)

Quantification of injuries to fish, shellfish, and the fisheries resources, including injury to fishery associated habitats, were not pursued as part of the damage assessment process. Therefore, little

data were collected that would either defend or refute assertions of injury to fisheries. Injury to human scale organisms (those visible by unaided sight) inhabiting the intertidal zone were not

observed to be sufficient to trigger efforts to quantify injuries. An oiled and dead harbor seal pup and a sea otter were found. Woodbury and Deither (1991:7) stated that the oil that washed ashore along Washington coastal beaches "affected only the high and very high intertidal or supra littoral zone . . . which is relatively depauperate. The areas of direct impact were patchy, and no devastating destruction or mass mortality was observed . . . [and] intertidal areas surveyed in August [1991] and resurveyed September [1991] showed no gross community change." Again, results from initial surveys did not indicate further studies were feasible.

1.4 Public Involvement and Plan Implementation

Public involvement is required in the development of a restoration plan. Toward this end, the Trustee Committee has made, and will continue to make, opportunities available for the public to participate in the restoration planning and implementation processes.

As part of the development of the restoration plan, a scoping document was prepared and released in November 1995. The scoping document contained information describing the incident and injured natural resources, restoration criteria, and possible restoration actions. The public was invited to review and provide recommendations to be considered during the restoration planning process. Two public meetings were held to give the public an early opportunity to engage in discussions regarding the preparation of the restoration plan. Meetings were held in Port Angeles and Seattle, Washington in November 1995.

A Draft Restoration Plan/Environmental Assessment (DRP/EA) was provided to the public for review and comment from February 1 through April 12, 1999. The Trustee Committee considered the comments received on the DRP/EA and elected to make modifications to the preferred alternative. Due to the substantial nature of the modification to the DRP/EA the Trustees published a Revised DRP/EA (RDRP/EA) public for an additional 30 day comment period. Notices regarding the availability of the draft documents were published locally and in the Federal Register, and copies of the draft documents were sent to interested members of the public, agencies, organizations and public representatives. All comments were reviewed and considered in the development of the final RP/EA. Responses to comments on the DRP/EA and RDRP/EA are provided in Appendix A of the final RP/EA and will be part of the Administrative Record. Public review of the DRP/EA and RDRP/EA was consistent with all federal and state laws and regulations that apply to the OPA, NEPA, and SEPA processes.

The Trustee Committee intends to review the restoration plan at least annually and evaluate the success of the projects being carried out by comparing results with stated goals of each restoration project and the baseline data collected before the spill and during the restoration planning process. Reviews will focus on determining the efficacy of, and suggestions for, improving the selected activities as well as determining that the restoration projects minimize,

avoid, or compensate for any potential environmental impacts which may arise during the project implementation. Any major revisions to the RP/EA will be subject to public review.

2.0 AFFECTED ENVIRONMENT AND NATURAL RESOURCES OF CONCERN

This section describes the restoration area and identifies natural resources of concern that could be affected by the Plan. It provides a discussion of the current conditions that will be used as a comparison with conditions after restoration activities have been implemented. The primary restoration area refers to the geographic area primarily impacted by the spill (Fig. 1-1). The expanded restoration area refers to a larger area that has a biological connection to the primary area through an injured species or the food web to which it is a part. The primary and expanded restoration area extends from Waadah Island in the Strait of Juan de Fuca, down the outer Washington and Oregon coasts to the Winchuck River. Watersheds leading into the Washington marine waters within the primary restoration area are included. Because of the biological link to birds killed from the oil spill and the importance of seabird colonies, Protection Island National Wildlife Refuge (NWR), Smith Island and San Juan Island areas have been included in the expanded restoration area.

2.1 Affected Environment

2.1.1 Land Ownership

Makah Indian Reservation

The Makah Indian reservation is located on the northwestern tip of the Olympic Peninsula in Clallam County, Washington. The total land area of 47 square miles is bounded on the west by the Pacific Ocean and on the north by the Strait of Juan de Fuca. The shoreline of the Reservation is typically rocky headlands and sandy beaches. More than 1,000 acres of the land bordering the Pacific Ocean have been reserved as a Wilderness Area. Other reserved areas are Tatoosh and Waadah Islands. The Tatoosh Island complex supports the largest nesting colony of common murrelets in Washington. Ten species of marine birds, representing 88 percent of the birds known to be injured or killed from the *Tenyo Maru* oil spill, nest on Tatoosh Island (Parrish 1996a).

State Upland Properties

The terrestrial environment of the Olympic Peninsula encompasses diverse topography, geology, and biology. The forest and stream ecosystems that are connected to the area affected by the *Tenyo Maru* oil spill provide complex and numerous means of ecological support to various primary injured species. These connections can be direct, such as providing habitat for certain seabirds, or indirect, such as providing the sedimentation regime necessary to support kelp communities. Upland areas also support numerous plant, mammal, fish, and bird communities. Management of upland area use is determined by its ownership. The following paragraphs describe the Washington State management programs.

Upland Trust Lands. The WDNR manages substantial holdings of upland trust lands in the watersheds that drain to the primary marine area. A Habitat Conservation Plan for Western Washington has recently been adopted that will provide long-term protections for the northern spotted owl and other species of concern, including salmonids (Washington Department of Natural Resources 1997).

Washington Department of Natural Resources - Forest Practices Program. The WDNR, under the direction of the Forest Practices Board, regulates forest practices on private forest lands. The program evaluates forest practices and assesses environmental impacts.

Washington Department of Natural Resources - Special Lands Program. The WDNR acquires and manages special lands, of significance to unique or threatened plants or animals, as Natural Area Preserves or Natural Resources Conservation Areas and cooperates with other authorities to create parks or reserves as warranted.

Olympic Coast National Marine Sanctuary

The northern Washington coast area also includes the Olympic Coast National Marine Sanctuary (OCNMS), covering an area of approximately 3,310 square miles. Seaward boundaries approximate the 100 fathom isobath, extending offshore an average of 25 miles, with the northern portion extending to 50 miles. The OCNMS is managed by the National Oceanic and Atmospheric Administration. From Koitlah Point west of Neah Bay in the north to the mouth of the Copalis River in the south, the shoreline boundary is mean higher high water where adjacent to federally owned land (including Olympic National Park and U.S. Fish and Wildlife Service Refuges) and mean lower low water mark when adjacent to state owned land or tribal land. Seaward boundaries approximate the 100 fathom isobath, extending offshore 30-40 miles. The Sanctuary supports one of the world's most diverse kelp communities and provides extensive habitat for myriad seabird and marine mammal species. It complements the area's other designations by providing protected status to marine waters that surround national wildlife refuge islands and national park coastal lands, which are vital foraging habitats for seabirds and marine mammals.

Olympic National Park

A narrow, detached portion of the Olympic National Park extends south from the Makah Tribal lands to Kalaloch. The Park is managed by the National Park Service. It is known as the coastal strip and has 57 miles of the most primitive natural coastline in the lower 48 states. The dramatic sea, cliffs, headlands, islands, and seastacks, coupled with the rich biological and archeological resources, provide a unique recreational experience. Five major intertidal habitat types have been described for this wilderness coast, making it one of the most complex and diverse shoreline communities in the United States. The coastal strip varies between 0.5 and 3 miles in width. The Park boundary extends seaward to the lowest low tide line and includes the intertidal beaches, rocky headlands and tidepools. About 70 percent of the 43,000 acres is Congressionally designated as wilderness. It has also been designated by the United Nations Educational Scientific and Cultural Organization (UNESCO) as a Biosphere Reserve and a World Heritage Site.

National Wildlife Refuges

The National Wildlife Refuges are managed by the U.S. Fish and Wildlife Service. The outer coast affected area in Washington includes five National Wildlife Refuges (NWR): Copalis NWR, Flattery Rocks NWR, Quillayute Needles NWR, Willapa NWR, and Protection Island NWR. Copalis, Flattery Rocks, and Quillayute Needles NWRs comprise approximately 870 islands and rocks strung along the coast. The Willapa Bay NWR provides feeding and resting habitat for migratory shorebirds. Protection Island NWR is the most important seabird nesting island in Washington's inner marine waters. It hosts more than 70 percent of the areas breeding seabirds. All the National Wildlife Refuge islands north of Grays Harbor, with the exception of Destruction Island, have been designated as federal wilderness areas. The San Juan Island NWR is made up of 83 rock islands and reefs scattered throughout the San Juan Island complex, including Smith Island, most of which have been established as federal wilderness areas. Six National Wildlife Refuges have been established along the Oregon coast. The Oregon Islands National Wildlife Refuge includes the Oregon Islands which extend almost the entire length of the Oregon Coast, Cape Meares NWR and Three Arch Rock NWR. The Refuge islands in Washington and Oregon provide nesting, foraging, and resting habitat for seabirds. They are also important as pupping, resting, and molting sites for marine mammals.

2.1.2 Species in the Affected Environment

Marine Birds

More than 72 percent of Washington's marine birds nest on the outer coast north from near Point Grenville to Seal and Sail Rocks near Neah Bay (Speich and Wahl 1989). Sixteen species of marine birds nest in this area with a total estimated population over 218,000 birds. The most numerous species include Cassin's auklets, Leach's storm-petrels (*Oceanodroma leucorhoa*), common murrelets, rhinoceros auklets, glaucous-winged (*Larus glaucescens*) and western gulls (*Larus occidentalis*), and tufted puffins (Speich and Wahl 1989).

Approximately 22 percent (over 66,000 birds) of Washington's marine birds nest within the inner marine waters, with 16 percent found on Protection Island (Speich and Wahl 1989). Protection Island is one of the three main rhinoceros auklet colonies in the state with over 55 percent of the state's breeding population for this species. It supports 30 percent of the state's breeding populations of glaucous-winged gulls and pigeon guillemots, and 18 percent of the state's total number of pelagic cormorants (*Phalacrocorax pelagicus*) (Speich and Wahl 1989). Thirteen pairs of tufted puffins nested on Protection Island in 1993 (Wilson, pers. comm., 1996), which is the only puffin nesting colony currently in Washington's inner marine waters. Approximately 33 percent of Washington's double-crested cormorants (*Phalacrocorax auritus*) nest in the inner marine waters (Speich and Wahl 1989).

More than a dozen species of seabirds nest on the rocks and islands of the 300-mile Oregon Coast. The Oregon Islands and Three Arch Rocks NWRs provide critical nesting habitat for more than one million seabirds. Common murrelets are the most numerous with an estimated mean breeding population since 1988 of 722,500 birds (Lowe and Pitkin 1996). Other nesting seabirds

include rhinoceros auklets, pigeon guillemots, tufted puffins, cormorants, and western and glaucous-winged gulls.

Common murres, marbled murrelets and rhinoceros auklets will likely benefit from many of the restoration projects. The following species discussions provide information as to why their populations are of particular interest in Washington.

Common Murres. Common murre populations in Washington are of concern for the following reasons: 1) a precipitous decline in colony attendance throughout the state occurred during the 1983 El Niño, principally at the southern colonies around Pt. Grenville, and at Split and Willoughby Rocks, attendance has remained depressed through at least the 1996 breeding season; 2) during the time period of little or no recovery since the 1983 El Niño, two major oil spills have occurred off the coast of Washington, the *Nestucca* and the *Tenyo Maru*, and common murres were the principal seabird species killed in both spills; 3) common murres are the principal seabird species killed in gillnets; oil spills and gillnet mortality may have contributed to the lack of common murre recovery since the 1983 El Niño (see Takekawa et al. [1990] for effects of gillnet and oil spill mortalities on common murres nesting in California) and; 4) common murres on Tatoosh Island, the only stable colony in Washington, have been seriously disrupted by bald eagles and predation by gulls (Parrish 1995, 1996a).

Marbled Murrelets. The Washington, Oregon, and California populations of marbled murrelets were listed as threatened under the Endangered Species Act (ESA) on September 28, 1992 (57 Fed. Reg. 45328). The Washington State Wildlife Commission (now Fish and Wildlife Commission) classified the Washington population of marbled murrelets as threatened in October 1993 (Protected Wildlife Classification, subcategory Threatened; WAC 232-12-011).

The most recent estimate of the Washington breeding population of marbled murrelets was 5,000 birds (Speich and Wahl 1995). This estimate is based on surveys in the early 1980s. Using current juvenile/adult ratios and a population model, Beissinger (1995) indicated that the marbled murrelet population is declining 4 to 7 percent annually. This decline is primarily due to the loss of old growth forests. Nest predation, mortality through net fisheries, and oil spills have also contributed to this decline.

Rhinoceros Auklets. Washington's population of rhinoceros auklets is estimated at less than 60,000 birds (Speich and Wahl 1989). Approximately 50 percent of the population is located on the outer coast of the Olympic peninsula (primarily on Destruction Island) and the remainder are located in the Straits of Juan de Fuca on Protection Island and the San Juan Islands (primarily on Smith Island) (Speich and Wahl 1989). The population trend for rhinoceros auklets on the outer coast is unknown. However, a decline in the number of rhinoceros auklets nesting in the inner marine waters has been observed. Between 1976 and 1993, a 26 percent and 40 percent decline of rhinoceros auklet nesting burrow densities was recorded on Kannen and Violet Points, respectively, on Protection Island. A decline in the number of rhinoceros auklets nesting on Smith Island, observed the past 6 to 7 years, has been attributed to disturbance by a double-crested cormorant colony situated on top of the auklet colony. The number of rhinoceros auklets

drowned in gillnets is second only to common murre. The *Nestucca* and *Tenyo Maru* oil spills also killed rhinoceros auklets in Washington State.

Kelp Community

A number of species of considerable ecological, commercial, and recreational value are known to rely on kelp beds for refuge and feeding, and potentially could benefit from kelp restoration activities. The importance of kelp beds can be divided into three functions: productivity, habitat, and hydrodynamics.

Productivity. Kelp plants provide input to the food web in four ways: (1) directly while the plant material is still attached to a substrate, (2) directly while the plant material is detached but still respiring (floating mats, etc.), (3) indirectly by providing detritus that fall to the bottom and is eaten, and (4) by producing dissolved organic matter (DOM) that is food for many microorganisms. Productivity of kelp beds is estimated at between 350-1500 g carbon/m² /yr, making them one of the most productive systems on earth.

Kelp beds support a rich and diverse community of planktonic, epiphytic, and epibenthic organisms that serve as prey for fish and invertebrates. Kelp is an important part of the diet of herbivorous invertebrates such as purple urchins (*Strongylocentrotus pupuratus*), red sea urchins (*S. fanciscanus*) and northern abalone (*Haliotis kamtschatkana*). Young- of-the-year, juvenile, and adult forage fish species such as Pacific herring (*Clupea pallasii*), northern anchovy (*Engraulis mordax*), and sand lance (*Ammodytes hexapterus*) are abundant in and around kelp beds and feed extensively on planktonic invertebrates associated with these beds. These forage fish also form an important component of the diet of piscivorous seabirds (e.g., common murre, rhinoceros auklet) occurring in the northeastern Pacific Ocean (e.g., Vermeer et al. 1987). Adult lingcod (*Ophiodon elongatus*), true cod (*Gadus macrocephalus*), cabezon (*Scorpaenichthys marmoratus*), and large schools of black rockfish (*Sebastes melanops*) and yellowtail rockfish (*S. flavidus*) aggregate in and along the periphery of kelp beds and forage to a large extent on other fish using the kelp beds.

Habitat. Bull whip kelp, *Nereocystis luetkeana*, and giant kelp, *Macrocystis integrifolia*, beds provide significant habitat for a number of organisms. The beds provide a place of refuge, and a substrate for reproduction. The canopy formed during the summer and fall shades the plants below, thereby influencing the amounts and kinds of plants that co-exist in the kelp beds.

"The *Nereocystis luetkeana* plants create a habitat wherein diversity and abundance of fish species increases over non-kelp areas" (Leaman 1976). Wheeler (1990) states " larger pink salmon, lingcod and Pacific cod were found more frequently in *Macrocystis* beds than in non-kelp areas. Large lingcod, large Pacific cod, small pink salmon and small chinooks are more commonly found in *Nereocystis* beds over non-kelp areas."

Sea otters (*Enhydra lutris*), recently reintroduced to the Washington coast, have a close association with kelp beds. They feed on many of the associated organisms, use kelp to rest in, and their feeding activities profoundly change the kelp community (Bowlby et al. 1988).

Some marine birds and shorebirds, such as marbled murrelets, have been demonstrated to be closely associated with the kelp beds along the north coast and western Strait of Juan de Fuca (Thompson 1996).

Hydrodynamics. Hydrodynamic effects can be divided into those with physical and biological ramifications. Kelp beds absorb wave energy and dampen wave action shoreward of the bed. Wave action influences beach slope and stability, and beach material makeup and therefore loss of kelp and the resultant wave dampening may change the beach makeup and the types or numbers of organisms that use the beach material.

Kelp plants act as active transporters of rock material (Emery 1941). Young sporophytes begin growth on any rock surface in size from sand grains up to boulders. When the plant reaches the size at which the hydrodynamic drag of the plant can move the rock substrate, the plant/rock may be moved into deeper water, onto the shore, or along the shore. Significant amounts and sizes and rocks up to one foot in diameter can be moved in this manner. Reduction in the number of plants or plant size will reduce this material transport. (Duggins 1988)

Marine Mammals

Several populations of pinnipeds are common to the Olympic Coast, including harbor seals (*Phoca vitulina*), California sea lions (*Zalophus californianus*), and Stellar sea lions (*Eumetopias jubatus*) (NOAA 1993). An important sea otter population numbering about 500 individuals, is located along the Olympic Coast (Jameson 1997). The California gray whale (*Eschrichtius robustus*) and harbor porpoise (*Phocoena phocoena*) are also common to the area (NOAA 1993). Several marine mammals species in the Pacific are listed under the ESA as threatened and endangered; others are being considered or proposed for listing.

3.0 DESCRIPTION OF RESTORATION ALTERNATIVES, PROPOSED PROJECTS, AND ENVIRONMENTAL CONSEQUENCES

3.1 Development of Restoration Alternatives

The OPA regulations require trustees to develop a reasonable range of primary and compensatory restoration alternatives and then identify the preferred alternatives based on criteria provided at 15 CFR Part 990.54(a). Primary restoration is action(s) taken to return injured natural resources and services to baseline on an accelerated time frame. Compensatory restoration is action(s) taken to compensate for the interim losses of natural resources and services pending recovery.

The National Environmental Policy Act (NEPA) applies to restoration actions taken by federal trustees. To reduce transaction costs and avoid delays in restoration, the OPA regulations encourage the trustees to conduct the NEPA process concurrently with the development of the draft restoration plan.

To comply with the requirements of NEPA, the Trustees analyzed the effects of each preferred alternative on the quality of the human environment. NEPA's implementing regulations direct federal agencies to evaluate the potential significance of proposed actions by considering both context and intensity. For most of the actions considered in this RP/EA, the appropriate context for considering potential significance of the action is regional, as opposed to national or worldwide.

Several restoration alternatives included in this section are based on conceptual designs rather than detailed engineering design work or operational plans. Therefore, details of specific projects may require additional refinements or adjustments to reflect site conditions or other factors. The Trustees assume that implementation of restoration will begin during the summer of 2000.

The primary goal of restoration is to meet the statutory objective to compensate the public for injuries to natural resources from the *Tenyo Maru* oil spill. Injury was clearly documented for seabirds and kelp from this incident. Therefore, the goals provided in this Plan are to restore, rehabilitate, or replace specific populations of seabirds and kelp beds (including their associated communities). This plan does not directly apply to fisheries because there was no documentation of injury to fishery resources in the damage assessment. The primary objective is to provide a functioning and sustainable ecosystem where specific populations of seabirds and kelp beds are enhanced to provide a net gain of habitat function beyond existing conditions.

In accordance with the consent decree, the MOA, OPA and the *Tenyo Maru* Trustee Committee's Resolution 96-1, expenditures from the *Tenyo Maru* restoration fund are limited to implementing restoration projects that meet the following minimum restoration criteria:

- 1) Restoration projects must be directly linked to natural resources shown to be injured from the *Tenyo Maru* oil spill. Seabirds, and to a lesser extent, kelp habitats, are the only resources for which there exists documented injury;
- 2) Restoration projects will be linked either geographically or biologically to the physical area where the impacts of the spill occurred;
- 3) Restoration projects will restore, rehabilitate, replace or acquire the equivalent of injured natural resources; and,
- 4) Restoration projects will be consistent with relevant federal, state and tribal laws, regulations and policies.

Pilot Projects Conducted to Assist with Restoration Planning

Some of the dollars generated as interest from the restoration fund were used to support pilot projects necessary for restoration planning. These projects also helped establish the necessary baseline from which the success of the restoration efforts can be measured. The Trustee Committee determined that projects had to enable the preparation of the RP/EA and be limited to the collection of data that would have been irretrievably lost if the project were not conducted, and was beyond normal agency work. The projects funded for these reasons were:

- 1) FWS aerial surveys of common murre colonies in Washington and Oregon. The FWS historically has conducted annual, single aerial surveys off the coast of Washington and Oregon. During each of the 1995, 1996, and 1997 common murre breeding seasons, three additional surveys were flown in Washington and two in Oregon.
- 2) Tatoosh Island common murre. Common murre productivity and reproductive success on Tatoosh Island was evaluated in 1995-97. The studies were conducted by the University of Washington, and continued similar work initiated in 1991.
- 3) Seabird prey-base study. A seabird prey-base study was conducted in 1995 as a cooperative program between the University of Washington and WDFW.
- 4) At-sea distribution of common murre and marbled murrelets. An at-sea distribution study of common murre and marbled murrelets was conducted by WDFW in 1996 and 1997.
- 5) Kelp distribution. Aerial surveys of kelp distribution were conducted in 1996 and data were analyzed from the 1994 survey.
- 6) Common murre population genetics. A population genetics analysis of common murre colonies in Washington and Oregon was conducted in 1996 and 1997 by WDFW to determine the type of restoration (including natural recovery) that would be best prescribed for specific localities.

3.2 Proposed Alternatives and Potential Projects

To restore natural resources lost as a result of the *Tenyo Maru* oil spill, the *Tenyo Maru* Trustee Committee developed four Alternatives:

- 1) No action/ Natural Recovery (required by the OPA and NRDA regulations and the NEPA process)
- 2) Population-Focused Restoration
- 3) Habitat-focused Restoration
- 4) An Integrative Approach

The following sections describe the proposed restoration alternatives, their environmental consequences, and specific projects. Work plans, detailed scopes, schedules, budgets, appropriate environmental documents, and applicable permits will be prepared for review and adoption by the Trustee Committee before implementation of any project. The project managers will ensure that all monitoring reports and data will be shared among all the selected projects to ensure a more comprehensive picture of the effects of those activities on the bird and kelp species being restored under this restoration program. Public review and comment of the alternatives was conducted for a minimum of 90 days. The alternatives are defined and a selected alternative is named in Section 4. Project proposal schedules and estimated budgets are provided in Section 4.1.

3.2.1 Alternative A: No-Action/Natural Recovery

NEPA requires the Trustees to consider a “no action” alternative, and the OPA regulations require consideration of the equivalent, the natural recovery option. Under this alternative, the Trustees would take no direct action to restore injured natural resources or compensate for lost services pending environmental recovery. Instead, the Trustees would rely on natural processes for recovery of the injured natural resources. While natural recovery would occur over varying time scales for various injured resources, the interim losses suffered would not be compensated under the no-action alternative. The no-action alternative has no *direct* environmental consequences because, by definition, no manipulations to the environment would take place. Furthermore, natural recovery is threatened by the risk of further oil spills in the affected area.

3.2.2 Alternative B: Population-Focused Restoration

Projects conducted under this alternative will attempt to beneficially affect populations of injured species by directly or indirectly manipulating one or more population demographic factors (e.g., survival, number of adults attempting to breed, age at first breeding attempt). A population’s size may be increased, restored, or distribution may be altered by increasing immigration,

releasing rehabilitated injured individuals, enhancing natal recruitment, and improving reproductive success at specific localities.

The rate of seabird population growth is a function of net immigration-emigration, survival, and productivity (i.e., reproductive success); restoration projects conducted under this alternative will focus on these population parameters. As with seabirds, populations of kelp are also affected by rates of survival, reproductive success and immigration-emigration.

Specific project proposals consistent with the population-focused restoration alternative are identified in Sections 3.2.2.1 through 3.2.2.3. Although any manipulation to a wild population may have unforeseen consequences to that population or to the ecosystem to which that population is a part, the environmental consequences of properly conceived, designed, implemented, and monitored projects conducted under this alternative should be minimal. Under this alternative, no adverse impacts to threatened or endangered species are anticipated, however, the appropriate consultations under the Endangered Species Act will be pursued for projects that may affect federally listed species.

3.2.2.1 Restoration of Common Murre Colonies in Copalis National Wildlife Refuge, Washington

Purpose(s): The purpose of this project is to restore common murre colonies, using social attraction techniques, to locations in the Copalis NWR that are not used now for breeding, but traditionally were the locations of the largest breeding colonies in Washington State.

Project goals: The goals of this project are to increase the presence of murres at the site, elicit breeding behavior, breeding activities, and breeding attempts. The long term goal is to reestablish a self-sustainable breeding population within the Copalis NWR.

Potential project coordinators: U.S. Fish and Wildlife Service and Washington Department of Fish and Wildlife

Project description: This project assumes that the reason common murres are not attempting to breed at the chosen site is the result of low population numbers and/or behavioral phenomena associated with the social aspects of common murre colony dynamics. Social attraction is a restoration technique that uses decoys, sound recording, and other devices to attract potential recruits to a specific location or habitat. The technique works much the same way “traditional” waterfowl decoys work in that decoys, sound recordings, and other devices (e.g., mirrors) are placed in a way that mimics an active breeding colony, sub-colony, or social aggregation. Aerial surveys during 1997-1998 indicated larger numbers of murres attending some of the colonies in the Point Grenville area of the Copalis NWR. Small numbers (5-10) of murre chicks were observed. Phase I information will be used to intensively assess the status of these colonies over a two-year period. The information gathered during Phase I will be used to determine whether Phase II should be implemented. This project may be determined infeasible if

implementation would interfere with natural breeding efforts or if factors other than the lack of social cohesion are resulting in a lack of breeding efforts at these sites.

Phase II would involve the deployment of common murre social attraction devices at historical breeding colonies within the Copalis NWR.

Proposed activities:

Phase I - Feasibility Study

The purpose of Phase I is to assess the potential effectiveness and feasibility of the project. This would involve two years of data collection to determine if: (1) social attraction enhancement activities are warranted, and (2) project implementation would be impeded by physical or natural limitations. No decoys will be deployed during Phase I. Several observation points at Point Grenville will be established. Sites will be monitored to determine if common murre breeding is currently occurring at any of the potential sites or any other colony rock in the vicinity. Monitoring will also determine if disturbance (by eagles or any other natural or anthropogenic activities), and not the lack of social attraction, is preventing breeding and whether the disturbance can be managed. Because breeding activity may be occurring on sides of the rock not visible from the shore, boat and aerial surveys of the areas will also be conducted to assess attendance and breeding status.

Project Criteria

Data will be gathered during Phase I to address the following criteria that would evaluate the need to proceed with Phase II. Phase II of the project will be implemented only if:

- 1) findings of Phase I indicate that common murres are not self sustaining within the colony identified for restoration;
- 2) social attraction methods are deemed to have a reasonable likelihood of success based on Phase I findings;
- 3) social attraction devices can be deployed in a manner safe for humans and all necessary access permission is obtained;
- 4) rock(s) in which social attraction devices are to be deployed allows adequate monitoring of common murres and other seabirds for attendance, breeding behavior, and reproductive success, and;
- 5) it is compatible with Refuge purposes at Copalis NWR and surrounding Refuges, i.e., it will not materially impair the management of migratory birds, including common murres and other migratory species.

* The Trustee Committee may have additional requirements in the work plans and detailed scopes of work for this and other projects.

Phase II should be implemented if the results from Phase I suggest that:

- 1) social attraction techniques are a viable option at these sites,
- 2) the sites can be adequately monitored for behavioral interactions with the attraction devices and,
- 3) the sites can be adequately monitored for reproductive success. If carrying out Phase II is not feasible or beneficial, the remaining funding will be redistributed to either the Marbled Murrelet Habitat Protection and River Silt Reduction Project (Section 3.3.1) or potentially a tufted puffin restoration project. If a tufted puffin restoration project proposal is pursued, it will be provided to the public for review and comment prior to a decision by the Trustee Committee to implement.

Phase II

Phase II would deploy the social attraction devices and monitor the results. Roughly 200-500 life-sized common murre decoys, in standing and incubation postures, would be placed at a single site. Decoys will be arranged in clusters, with the size and spacing of each group dependent on the topography of the site, and based on preliminary results from other similar projects, such as the *Apex Houston* restoration project, managed by the FWS for the OPA Trustees (USFWS 1995). In addition to decoys, mirrors and omnidirectional weather resistant loudspeakers will be placed throughout the site. The loudspeakers will broadcast common murre vocalizations typically heard at breeding colonies.

Benefits: This specific project benefits common murre populations, injured by the *Tenyo Maru* oil spill, by attempting to increase the number of birds breeding at a specific habitat. It alters seabird behavior to entice the murres to resume breeding within the Copalis NWR where historically large breeding colonies existed. Affecting immigration potentially may be the easiest and fastest way of increasing a population if there are mechanisms by which individuals can be brought or attracted to an area (social attraction). Facilitating relocation of otherwise non-breeding murres to locations where large breeding colonies historically occurred is expected to have a beneficial impact on the species' population.

Environmental consequences: The restoration of seabird populations will proceed by increasing the number of individual seabirds that attempt to breed. The project *actions* taken under this alternative are designed to increase the rate of immigration, decrease the age at which individuals first attempt to breed, and increase the probability that an adult bird will attempt to breed during any given year, at a particular site. As such, this project provides the mechanisms for relatively rapid colonization and restoration at localities where breeding does not occur, or is severely depressed. Project restoration goals are for nesting murres to increase to a level that would create self-sustaining and viable colonies at target locations.

This project has little or no impact upon other injured resources or resources of concern. Adverse impacts to wildlife could occur as there is some potential for actions that benefit one group of species to have short-term impacts on other species. For example, as the number of individual murre in a specific colony expands, prey fish may be impacted short-term. Raptors may be affected in the short term either negatively by reducing the potential prey base (breeding colony murre) at the translocation site or positively by increasing the potential prey base at the relocation site. A potential negative consequence of this action would be that birds are lured from a more optimal breeding locality to breed at a potentially sub-optimal site. However, it is very unlikely that an entire successful colony would move, so any negative impact would be minimal.

Any environmental consequences associated with population manipulation would be minimal and short-term.

Project goal monitoring: This project includes intensive monitoring of attendance, breeding productivity, and other bird activity at the site and sub-colonies in the vicinity. Intensive monitoring of the restoration site, productivity monitoring compared between Pt. Grenville and Tatoosh Island (reference site), and murre population monitoring (beyond what would normally be conducted by the refuge) would be conducted.

3.2.2.2 Oiled Wildlife Rehabilitation Center

Purpose: The purpose of this project is to provide base funding so that additional funds can be secured and used to improve the capability to rehabilitate oiled wildlife (primarily seabirds) in western Washington.

Project goal: The goal of this project is to improve the State of Washington's ability to rescue, rehabilitate, and release oiled wildlife. This project is premised on the State of Washington securing the remaining funds from other sources to build a permanent rehabilitation facility in the South Puget Sound area and to develop a primary care facility at Neah Bay.

Potential project coordinator: Washington Department of Fish and Wildlife

Project description and activities: Since the *Tenyo Maru* oil spill, Washington has become a leader in the field of oiled wildlife rescue and rehabilitation. Unfortunately, the rehabilitation center, a major component of the state's wildlife rescue and rehabilitation program, has been leased out by the owners for other purposes and will no longer be available for use as a rehabilitation facility. The loss of the facility has suddenly nullified Washington's ability to rescue, rehabilitate, and release oiled wildlife.

This project proposes to provide some funding to the State to help build a rehabilitation center in the South Puget Sound area. The center would operate under the protocols of the Washington Wildlife Coalition. The Washington Wildlife Coalition was convened, and is chaired, by the Washington Department of Fish and Wildlife as required by Section 12 of the 1990 Washington

State Legislature House Bill 2494 to plan and coordinate the rescue and rehabilitation of wildlife injured or endangered by spills of oil or other toxic substances. It comprises members and advisors from state and federal agencies, environmental organizations, and industries that have responsibilities, expertise, or interests in the protection of wildlife resources. The proposed rehabilitation center could receive oiled birds from any primary care station in Washington or Oregon and provide long-term care for oiled wildlife to prepare them for release back into their natural environment.

This center would also be used to research more effective techniques for cleaning oiled wildlife to maximize the survival rate, especially when rehabilitating threatened and endangered species. When not working with oiled birds from a spill, the center may be used for informational and educational outreach as well as a training facility for wildlife rehabilitators, researchers, and veterinarians.

In addition to a long-term care facility, a 40-foot, primary care trailer, stocked with appropriate primary bird care supplies would be provided at Neah Bay. This trailer would be permanently positioned on the Makah Reservation at Neah Bay to provide immediate care for oiled birds in case of another oil spill there. The primary care facility would give emergency care to oiled animals and stabilize them for transport to the rehabilitation center. A pole-barn type roof would be built over the trailer for long term protection from the elements. This primary care station would operate under the direction of the Washington Wildlife Rescue Coalition during oil spills.

Members of the oil or shipping industry that contribute matching funds for building and maintaining the center may be able to use the center at a reduced rate if they have a spill. Oil spillers that did not contribute to the center will likely pay the standard daily rate. Monies collected will be used for operations and maintenance. Any funds collected that exceed the operations and maintenance costs will be placed in a Seabird Restoration/Research Account. The funds from this account would be used to gain a better understanding of Washington's seabirds and to explore new techniques for assuring their survival.

Project Criteria

Minimum qualifications for the project to proceed involve the procurement of final project funds within three years of the release of the final restoration plan. If matching funds are not secured within this time, the funds will be redistributed to the Marbled Murrelet Habitat Protection and River Silt Reduction project (Section 3.2.3.1).

Benefits: To increase the rate of population growth (or to stabilize or reverse a population decline), immigration, survival at any or all age classes, reproductive success, and probability of breeding must be increased. Successfully rehabilitating and releasing oiled seabirds may contribute to population recruitment and stabilization.

Environmental consequences: The intent of this project is to provide a starting point to act as a catalyst for the Washington Wildlife Coalition to secure funding for a wildlife rehabilitation center and a primary care facility. The majority of the funding for this project is to come from

outside sources. The overall contribution (\$500,000) to the development of the facilities from *Tenyo Maru* funds is about one-fourth of the cost of the center (roughly estimated at \$1.8 - \$2.2 million). In addition, this project also provides for excess user fees to be returned to seabird restoration/research projects.

The environmental consequences associated with providing a catalyst for the collection of additional funds to support wildlife rehabilitation is expected to be minimal. A separate environmental assessment or environmental impact statement (EIS) will be conducted by the State for any rehabilitation facility construction activities. There is a slight possibility that adverse impacts, such as disease, could occur to wildlife from the activities associated with rehabilitation and release of wild animals. Rehabilitated animals may play a vital role in maintaining and improving their species populations and in providing function to the ecosystem. Under this alternative, no adverse impacts to threatened or endangered species are anticipated. Restoring populations through rehabilitating individuals and returning them to the wild population is expected to benefit the species directly.

Project goal monitoring: The Washington Wildlife Rescue Coalition will provide interim reports to the *Tenyo Maru* Trustee Committee on the success of securing additional funds for the rehabilitation facilities and on the process of improving Washington's ability to rescue, rehabilitate, and release oiled wildlife.

3.2.2.3 Public Education Signs and Brochures

Purpose: The purpose of this project is to inform boaters, kayakers, aircraft pilots, and other visitors about disturbance impacts to nesting seabird colonies and Makah culturally sensitive areas and educate them on how to avoid such disturbances.

Project goal: The public with access to seabird colonies will become informed about the negative impacts of human disturbance on seabird productivity and survival. Through education, individuals may modify their behavior that would cause a decrease in disturbance of seabirds.

Potential project coordinator: Olympic Coast National Marine Sanctuary

Project description: An education campaign using on-site interpretation and publications would be developed to describe the wildlife using the coastal NWR islands in Oregon and Washington, and the Olympic Coast National Marine Sanctuary (OCNMS) in Washington (including NWRs and Tatoosh Island). The campaign will focus on messages of the value of protected coastal habitats, seabird colonies, why these islands and wildlife are protected, how to avoid human disturbance, and tribal bird terms. The campaign will build on current education efforts in OCNMS in areas of reducing impacts from aircraft overflights. It will build upon multi-agency interpretation and education programs currently operated among FWS, Washington State Parks (WSP), Olympic National Park (ONP), and OCNMS. The campaign will also complement and enhance FWS education efforts underway with *Nestucca* oil spill restoration funds.

Proposed activities:

1) **Interpretive planning.** Education program representatives from FWS, NPS, WSP, OCNMS, coastal tribes and other potential partner agencies and organizations will identify needs, opportunities and critical gaps in existing information and education programs. Some of this assessment has already been conducted (OCNMS 1999). The group will also assist in the development of strong marine resource protection and restoration messages that will be effective with specific target audiences and assist in the design of methods to monitor the effectiveness of the education campaign.

2) **Signs.** Signs would be placed where boaters have access to marine waters near seabird nesting colonies. *Tenyo Maru* oil spill restoration funding would be used at eleven ports along the Oregon Coast from the Columbia River south to Brookings, Oregon and at Tatoosh Island, in OCNMS. Signs will be posted at marinas and not on a NWR. This project will coordinate with Nestucca oil spill restoration funding to address the remaining Washington Coast.

3) **Publications.** Brochures and other printed material would be developed and distributed to visitors and users of the marine environment, including recreational users (kayakers, sportfishers, divers, private pilots etc.) and commercial users.

Benefits: It has been documented that seabird reproductive success is reduced through disturbance resulting from human intrusion into colonies (Anderson and Keith 1980; Anderson 1988; Hunt 1972; and Kury and Gochfield 1975). Boats, private and military aircraft, and people have been observed near or on nesting islands. Birds and mammals have been observed leaving the islands in panic flights as a direct result of these disturbances (Parrish 1998). The effects of disturbance on seabirds has been documented and includes loss of eggs, loss of chicks, abandonment of nesting sites by adults, and increased vulnerability to predation (Parrish 1996, 1998; Paine et al 1990; Dixon 1997). The frequency of disturbance is not well documented but is expected to increase as coastal recreational opportunities increase. As the disturbance of common murre colonies is reduced and/or prevented, common murre reproductive success may increase. Reduction of disturbance may also benefit other species that use the islands.

Reducing human disturbance at seabird breeding colonies through educational efforts may increase the number of breeding adults and is another example of how controlling human impacts could complement a population-based approach.

Environmental consequences: This project is designed to ease the pressure applied to the environment from human disturbance. Overall habitat quality, and subsequently habitat functionality, may be improved and strengthened from this project.

The indirect consequences of carrying out this project include a greater understanding of human interaction with natural resources, and the consequences of our actions. It is hoped that the educational efforts will result directly in a decrease in disturbance at breeding colonies that should result in increased reproductive success of common murres at coastal Washington and

Oregon breeding colonies. An increase in reproductive success may lead to greater numbers of breeding common murre in Washington and Oregon which will maintain species diversity and aid in restoring common murre populations to their pre-spill levels.

The proposed project includes interpretive signs that should make the public more aware of the environment and the impacts they may unintentionally cause. Although not anticipated, there is a slight potential that the interpretive signs could draw attention and more frequent visitors. The signs will be designed to educate, to increase awareness of disturbance impacts, and not to attract visitors. Any negative environmental impacts of the educational project are unlikely.

Project goal monitoring: Project monitoring would involve evaluating the effectiveness of the education campaign through a variety of techniques, including measuring audience exposure to project messages, changes in audience awareness and knowledge of seabirds and coastal habitat and documenting changes in audience behavior regarding seabirds.

3.2.3 Alternative C: Habitat-Focused Restoration

Habitat is broadly defined as both the biological and physical environment in which kelp occur or individual seabirds breed, roost, or forage. Under this alternative, projects would be designed to restore, enhance, replace and/or acquire habitats that provide benefits to a range of natural resources injured from the *Tenyo Maru* oil spill. In this sense, the goal of this alternative is simply to provide quality habitat. It is assumed that the injured species and services would be restored, over time, if such habitat is created, protected, or otherwise made available. For example, the protection and/or manipulation of seabird habitats may positively affect seabird population parameters by increasing the number of breeding adults, increasing reproductive success, and/or increasing survival of individuals of all age classes. However, the goal of this alternative would not be the manipulation of these seabird population parameters (see Alternative B), but simply the manipulation and/or protection of the seabird habitats.

Specific project proposals consistent with the habitat-focused restoration alternative are identified in Sections 3.2.3.1 and 3.2.3.2. Although this project proposes to restore habitat, any habitat manipulation may have unforeseen consequences. Since the objective of this alternative is to provide quality habitats such that natural processes may result in the recovery of populations, the environmental consequences of properly conceived, designed, implemented, and monitored projects conducted under this alternative should be minimal. Under this alternative, no adverse impacts to threatened or endangered species are anticipated, however, the appropriate consultations under the Endangered Species Act will be pursued for projects that may affect federally listed species. NEPA compliance and reviews will evaluate whether there may be inadvertent environmental impacts affecting the quality of the human environment.

3.2.3.1 Marbled Murrelet Habitat Protection and River Silt Reduction

Purpose: The purpose of this project is twofold. One is to permanently protect marbled murrelet nesting habitats in Washington State and the second is to reduce silt deposits on kelp ecosystems at the mouths of streams and rivers in or near the kelp ecosystems affected by the *Tenyo Maru* oil spill. Projects could be combined marbled murrelet habitat protection and silt reduction (preferred), marbled murrelet habitat only, or silt reduction projects only. Because primary injury was documented for seabird injuries, the driver for selecting projects will be protection of marbled murrelet nesting habitat and buffer areas. The secondary consideration will be reducing siltation.

Project goals: The goal of the marbled murrelet component is to permanently protect marbled murrelet nesting habitat and/or forest stands next to marbled murrelet nesting habitats. This permanent protection would occur at habitats not presently protected under other regulation and are at risk of being logged or where permanent protection will significantly enhance the future habitat availability for marbled murrelets.

A second goal is to reduce the amount of silt being deposited on the kelp ecosystems off the mouth of streams or rivers in or near the area impacted by the *Tenyo Maru* oil spill. Accepted silt reduction projects would be above and beyond what is required by other regulations and programs to reduce siltation into streams and rivers.

Potential project coordinators: U.S. Fish and Wildlife Service, Washington Department of Fish and Wildlife, and Washington Department of Natural Resources

Project description: Section 1.2 describes impacts of the *Tenyo Maru* spill on the federally threatened marbled murrelet population in Washington. According to the Recovery Plan for the Marbled Murrelet (USFWS 1997), the major factors contributing to their threatened status include:

- 1) loss of nesting habitats, and

- 2) poor reproductive success in the habitat that does remain. In the Pacific Northwest, marbled murrelets forage almost exclusively in the near shore marine environment, but fly inland to nest in mature conifers. One component of this proposed restoration project is to permanently protect and improve marbled murrelet nesting habitats. Besides protecting marbled murrelet nesting habitats, nesting success can be improved by protecting forest stands adjacent to nesting habitats. The marbled murrelet recovery plan (USFWS 1997) recommends decreasing habitat fragmentation by increasing the size of suitable forest stands to provide a larger area of interior forest conditions as a long-term strategy. It also recommends the protection of “recruitment habitats” to enlarge existing stands and buffer occupied sites from predators and wind damage that can gradually degrade the stand.

Kelp was also documented to be injured by the *Tenyo Maru* oil spill. Surveys by the Washington Department of Natural Resources have shown losses of *Macrocystis* and *Nereocystis* beds off the mouths of some northwest Olympic Peninsula rivers in recent years (Van Wagenen 1989-1997; Van Wagenen 1995). Siltation can cause a decrease in kelp populations by:

- 1) increasing turbidity, therefore decreasing the photic zone;
- 2) covering otherwise suitable substrates with a layer of fine silt preventing recruitment of microscopic phases of gametophytes or sporophytes;
- 3) covering boulders or bedrock with finer substrates such as sand or gravel; or
- 4) smothering of either gametophytes or sporophytes (Dean and Devsher 1983; Devlinny and Volse 1978; Schiel and Foster 1992; Shaffer and parks 1994). The second component of this proposed restoration project involves sediment management projects for selected watersheds to reduce undesired siltation flows through, and deposition in, potential kelp habitat sites in the adjacent near shore areas.

Proposed activities: Fee title acquisition, easements, and other available conservation measures would be used to secure protection in perpetuity for known occupied marbled murrelet nesting habitat and/or nesting habitat buffer areas. Marbled murrelet surveys may be conducted where occupied habitat information is lacking. Priority would be given to property that maximizes the acreage protected with available dollars. Stands of mature hemlock with mistletoe would provide marbled murrelet nesting habitats, but would be of lower timber value, thereby reducing the cost. Criteria to be used for the selection of buffer areas are:

- 1) the buffer area would be adjacent to a forest stand occupied by marbled murrelets;
- 2) the occupied stand is in protected status from timber harvest;
- 3) the land is available to be acquired through fee title purchase, an easement, or other conservation measure. Buffer areas could be managed to enhance the expansion of nesting habitats through forest manipulations. Even age stands could be manipulated to accelerate late successional structures. It is possible that direct tree manipulations could be conducted to increase nesting platforms. Protection of marbled murrelet habitats that reduces the impact of siltation into river systems, as well as protecting nesting areas, will be prioritized. The Trustee Committee has not selected marbled murrelet nesting habitat protection project sites at this time. They would be identified through working with agencies and organizations interested in protecting nesting sites. The U.S. Fish and Wildlife Service would be consulted regarding activities underway with the Forest Recovery Plan.

The kelp component of this project is multi-phased. Phase I would identify and prioritize major sources of erosion that produce excessive silt. Local government agencies, tribes, private conservation organizations and landowners will be contacted for input. Phase II will involve

implementing projects. Only projects that are not already required by regulation or other programs will be pursued. Projects may include, but are not limited to, repairing failing roads, correcting small slides, placing large organic debris for bank protection, and buying or securing conservation easements for riparian buffer zones. The project coordinator(s) will pursue additional funds from other sources to complete any large projects that are approved. All funds must be available before the project can begin.

Habitats and projects where cost-sharing is available would have highest priority for both marbled murrelet habitat and siltation reduction components of the project.

Project Criteria for Marbled Murrelet Protection

Marbled murrelet surveys must be completed within a two-year period. The purchase process must begin within approximately one year of the survey results.

Project Criteria for River Silt Reduction

Phase I (feasibility) portion of the silt reduction component must be completed within six months of the release of the final restoration plan. In addition, the following criteria must be met in sequence according to criteria number, prior to the selection of a project.

- 1) If major erosion is found, is there another regulatory mandate that addresses the issue? If no, then proceed to step 2.
- 2) Is there a kelp linkage? If yes, proceed to step 3.
- 3) Is habitat currently unprotected? If yes, proceed to 4.
- 4) Submit the project proposal for Trustee Committee consideration.

Benefits: The Trustee Committee emphasizes that habitat protection is one of the most important activities that can be conducted under this alternative. Because land development or certain management methods may alter habitats so injured resources are negatively affected, the protection or enhancement of these habitats may reduce the potential for further injury, and by that allow recovery to continue for marbled murrelet and kelp with little interference.

Environmental consequences: The protection, acquisition, and enhancement of fish and wildlife habitats have been relatively successful in restoring or maintaining fish and wildlife populations. In fact, the enhancement of coastal habitats and the resulting improvement to various ecosystem functions has been the primary method for conducting coastal aquatic restoration over the past 15 years (Simenstad and Thom 1992). The protection of habitats also would reduce the probability that these habitats would become fragmented. Fragmented forests are cited as a major reason for the decline of the marbled murrelet (USFWS 1997).

Decreasing siltation in rivers and streams could, in turn, decrease the sediment load into the marine environment from the watersheds. Besides a possible increase of kelp beds near the targeted watersheds, habitat for salmonid species and forage fish could be enhanced. An enhanced kelp community offers more forage habitats for salmonids and other forage fish, urchins, and subsequently sea otters and seabirds. Potentially negative impacts that may result from kelp restoration conducted under this alternative would be the redistribution of sediment and soil materials and a change in the processes that affect erosion and deposition. These would be slight short-term impacts that include a temporary increase in sedimentation during construction which would be mitigated with timing restrictions, silt fences, etc. The Trustee Committee does not anticipate these potentially adverse effects to have long-term significance. However, project-specific impacts will be evaluated on a case-by-case basis. Finally, one disadvantage of this alternative is that it may take many years before the injured populations respond to the improvements to their habitats.

The Trustee Committee assumes that this project will result in an overall benefit to the entire suite of injured resources, with relatively few negative impacts.

Project goal monitoring: Marbled murrelet nesting habitat occupancy surveys would need to be conducted minimally for two years at five year intervals to monitor site occupancy (4 years of monitoring over a 10-year period). Buffer areas should, at the minimum, maintain occupied sites where appropriate habitats would have diminished without the buffer protection, and may improve conditions for occupied sites and serve as habitat expansion areas in the future. Monitoring will be included in the projects and an annual report will be provided to the Trustee Committee for their review and approval.

3.2.3.2 Protection of Marine Environments By Stationing an Emergency Towing Vessels at the Entrance to the Strait of Juan de Fuca

Purpose: The purpose of this project is to help fund efforts to achieve two objectives. First, to provide timely and effective protection of the Trustees' efforts to restore coastal environments, including the seabird populations and kelp beds affected by the *Tenyo Maru* oil spill at a time when technological and climatic factors combine to create a high risk atmosphere. And second, to collect data on the feasibility and effectiveness of permanently stationing an emergency response vessel in the area during high-risk seasons to limit the pollution risks presented by high-risk vessels. Monies from the *Tenyo Maru* Restoration Fund would be added to any funds secured by other agencies during 1999-2000.

Project Goals: The project goals are to eliminate or mitigate the risk to restoration of affected sea bird populations, kelp beds and other marine resources posed by a drifting and/or disabled vessel from December 15, 1999, through at least April 30, 2000, to possibly conduct drills and exercises to test coordination with existing governmental and voluntary vessel safety and response measures; to develop protocols for permanently stationing and deployment of a multi-purpose emergency response vessel; and to collect data on the operation, effectiveness, utility and cost of such a permanent emergency response vessel for the Strait of Juan de Fuca. The data collected

will be used by the North Puget Sound Risk Assessment Panel as it considers improvements to the safety of marine transportation in North Puget Sound and the Strait of Juan de Fuca.

Project coordinators: Washington State Department of Ecology and Makah Indian Tribe.

Project Description: This project will contribute funds that will allow the establishment of an emergency towing vessel in the Strait of Juan de Fuca during the 1999-2000 winter season. There are four necessary elements or roles involved in the emergency towing system: the salvage/towing vessel, the operator, the dispatcher, and the “project” partners.

Project Partners would include the state of Washington and the Makah Indian Tribe. The partners will be responsible for obtaining use of the vessel and the cooperation of the U.S. Coast Guard or other dispatching agency. The U.S. Navy has contracted with a towing company to have a tug stationed at Neah Bay for the period of December 15, 1999 through at least April 30, 2000, to be available for assisting public vessels in distress. Under the Navy contract, the tug could be made available to assist other vessels using other sources of funding. Project Partners will be responsible for working with the Navy to obtain the use of this vessel or another vessel as needed.

The partners in cooperation with the dispatching agency would develop protocols for dispatch, data collection, and drills and exercises, as well as develop a comprehensive operations plan for the vessel. Partners will function as an information source and liaison with the North Puget Sound Risk Assessment Panel.

Concept of Operations The desired period of operation is December 15, 1999 through at least April 30, 2000. The area of operation will be determined by the Partners in consultation with other affected agencies. The determination will focus on the area affected by the *Tenyo Maru* oil spill. It will encompass the start of the international traffic separation scheme as well as coastal waters on both sides of the international boundary in the Western Strait of Juan de Fuca and the Pacific Ocean. Weather and sea state conditions will be established to ensure the safety of the vessel while maintaining a high degree of coverage and effectiveness. Responses beyond the boundary of the area of operation may be allowed under specific conditions defined by the Dispatch protocols.

The vessel will be on call 24 hours per day, 7 days per week, for emergency towing and salvage response to vessels in distress or that pose a high risk as determined under the Partners protocols. Dispatch will be by the U.S. Coast Guard Puget Sound Captain of the Port/ Vessel Traffic Service or other similarly capable agency.

Proposed activities: Activities funded will fall into two categories: response and drills/exercises. Vessel activities may also include drills and exercises as needed to test and evaluate the system’s efficacy.

Benefits: The specific benefit is increased protection of efforts to restore resources affected by the *Tenyo Maru* oil spill including sea bird populations and kelp beds on the coast and in the Strait of Juan de Fuca. The Olympic Coast and Strait of Juan de Fuca serve as an entry and exit point for ships transiting to and from the ports of Puget Sound and British Columbia. In 1998, 12,376 vessel transits were observed at the entrance to the Strait of Juan de Fuca (Galasso, in press). Marine traffic in the area is largely commercial in nature, the majority comprised of bulk carriers and large tank vessels carrying significant amounts of bunker fuel or transporting hazardous substances such as crude and refined oil. While improvements to marine safety have been systematically phased in over the last ten years, this is an area identified as the most vulnerable to an oil spill or threatened spill because of the difficulty of implementing current response strategies and the area's geographic remoteness (Department of Transportation 1997). In addition, the area is subject to violent winter storms and strong currents, increasing the potential for human error and ship system failures. The Volpe study concluded that "spill prevention must be the main focus of a risk management strategy. In spite of advances in response technology, most spilled oil remains in the environment even under the best cleanup conditions". The marine resources of the area, especially seabird populations and kelp bed, were significantly affected by the *Tenyo Maru* spill and are the focus of other restoration projects in the plan. Prevention of future oil spills is clearly the most effective strategy to protect the Trustees' efforts to restore the natural resources affected by the *Tenyo Maru* spill. The marine resources of this area, especially seabird populations and kelp beds, were significantly affected by the *Tenyo Maru* spill and are the focus of other restoration projects in this plan. In this area, prevention is clearly the most effective strategy to protect the Trustees' efforts to restore the natural resources affected by the *Tenyo Maru* spill from future oil spills.

A secondary, yet important, benefit is the collection of data to be used in evaluating the feasibility of a permanent dedicated multi-purpose emergency response vessel that includes spill response, fire-fighting and salvage capability. Dedicated response vessels exist to protect waters off the coast of Britain, in the Gulf of Alaska, and in other international waters. The information collected here will assist the North Puget Sound Risk Assessment Panel in comparing and identifying measures to enhance the protection of marine waters in the Strait.

Environmental consequences: This project will have little or no adverse impact on natural and cultural resources at risk. Any adverse environmental impacts from vessel operations are likely to be similar to those of other medium sized vessels operating in the area. However, the vessel will protect other efforts to restore natural resources injured by the *Tenyo Maru* oil spill and has the potential to prevent or substantially reduce the significant or catastrophic impacts of another oil spill during the project period.

Project goal monitoring: The Washington State Department of Ecology will provide a preliminary report to the Trustee Committee by April 30, 2000, with a final report due to the Trustee Committee by June 1, 2000. The report should include information on the number of responses during the stationing of the tug, effectiveness of tug operations, costs incurred including operations, an evaluation of the strengths and limitations of the stationed tug, and drill exercises.

3.2.4 Alternative D: An Integrative Restoration Approach

Alternatives A, B and C, can be integrated in a way that increases their effectiveness if they are applied simultaneously. Furthermore, because each of these alternatives attempt to increase populations by affecting specific population parameters, they are not independent.

Individuals within populations are affected by both the biological and physical environment. As such, the recovery of a population following events such as oil spills depends on both physical and biological factors. Because these factors operate at varying temporal and spatial scales, their relative effects are often difficult to identify. Furthermore, human activities contribute to both the physical and biological environment of populations further complicating our ability to identify any single factor that regulates or affects, independent of other factors, the growth of a population. The most effective restoration of populations affected by oil spills may require an integrated approach. This integrated approach would use all available techniques that promise predictable and testable results. Thus, this alternative proposes to combine actions described under Alternatives A, B and C, and to implement an integrated approach to seabird and kelp restoration.

The environmental consequences of projects that may occur under this integrated approach include the environmental consequences predicted under Alternatives A, B and C. No significant impacts to threatened or endangered species are expected to result from the integrated approach. If actions under this alternative are determined to have an adverse effect on the quality of the human environment, the project would be redesigned, relocated, or possibly abandoned. This alternative could indirectly benefit a variety of federally threatened and endangered species and state listed sensitive species by providing nesting, feeding, resting, rearing and other forms of habitats used during the lives of these species.

4.0 SELECTION OF THE PREFERRED ALTERNATIVE

The Trustee Committee has selected Alternative D-An Integrative Restoration Approach as the preferred alternative for the *Tenyo Maru* restoration plan. The following section summarizes the factors considered in this decision.

Alternative A: No Action/Natural Recovery

Restoration of the injured resources under the no-action alternative would occur only through natural processes and existing or future programs that are unrelated to this restoration plan. This alternative is the baseline against which other alternatives are compared. In order for the no-action alternative to be selected as a preferred restoration alternative, it must be more efficient and effective in restoring the environment than projects that would be conducted under other alternatives. The no-action alternative would not increase the rate of restoration of the injured natural resources and habitats beyond what will result from natural processes and existing or future programs.

This alternative recognizes the capacity of ecosystems to recover naturally and does not in any way alter existing habitats. The principal advantages of this approach are that it permits the natural recovery process to function uninhibited by human intervention and no monetary costs are associated with it because natural processes determine the trajectory of the system.

The no-action alternative could adversely affect wildlife over the long-term because no action would be taken to enhance or restore sensitive injured resources. Furthermore, this alternative does nothing to protect existing habitat that is essential for natural recovery processes to occur. Without some type of additional protection or enhancements, these species, and their habitats, may continue to decline. Threatened species, such as the marbled murrelet, may never reach their pre-spill recovery potential without additional protection and enhancement restoration activities.

OPA clearly establishes trustee responsibility to seek compensation for interim losses pending recovery of the natural resources. This responsibility cannot be addressed through a no-action alternative.

Although some natural recovery is expected, it is the Trustees' opinion that direct intervention is required to address potential acute and sub-lethal injuries to the natural resources resulting from the spill. In addition, no benefits would be realized from the settlement to recover injured resources and the obligations of the consent decree would not be met. For these reasons, the Trustee Committee did not select the no-action alternative as an effective restoration option.

Alternative B: Population-Focused Restoration

The goal of this restoration alternative is to increase populations of seabird and kelp through direct manipulations to population parameters. Actions taken under this alternative are designed to increase the rate of immigration and potential breeding, decrease the age at which individuals first attempt to breed, decrease disturbance at nesting colonies to potentially increase nesting success, and increase the probability that an adult bird will survive and successfully breed during

any given year. As such, this alternative provides the mechanisms to reduce the mortality of adult seabirds and for rapid colonization and restoration at localities where breeding does not occur, or is severely depressed.

The environmental consequences associated with population manipulation restoration should be minimal. Adverse impacts to wildlife could occur as there is some potential for actions that benefit one group of species to have short-term impacts on other species. In addition, increased interaction between predators and injured prey species may result. There would be no significant effects on the quality of the human environment if these projects are implemented.

The Trustee Committee considers this a strong alternative for an effective restoration of injured resources.

Alternative C: Habitat-Focused Restoration

The objective of this restoration alternative is to provide quality habitats such that natural processes may result in the recovery of injured populations. Furthermore, quality habitats may also provide the range of resources necessary to maintain food webs or other structural components of ecosystems.

Interim and permanent protection of habitats is a viable restoration tool that clearly offers not only the potential for restoration of the resources injured by the *Tenyo Maru* oil spill, but also the potential for comprehensive rehabilitation and protection, in perpetuity, of the ecosystems in which these injured species are a part. The proposed projects listed under this alternative will potentially increase the amount of protected nesting habitats available to marbled murrelets and improve conditions for nesting at existing occupied stands, and decrease sedimentation in selected watersheds to enhance kelp beds at the mouth of rivers. The goals of the projects include reducing the risk of spills associated with drift groundings in the affected area, providing additional assurances that natural recovery of injured resources will occur.

Protection of nesting habitat and a decrease in nesting predation and occupied stand degradation could help reduce the rate of decline of marbled murrelets in Washington. An enhanced kelp community offers more forage habitats for salmonids, and other forage fish, urchins, and subsequently sea otters and seabirds.

Permanent protection and alteration of existing habitats offer moderate to high potential for benefitting injured resources. In addition, impacts from application are low to moderate. The habitat-focused alternative has a high potential for reducing habitat fragmentation and would directly benefit functions that support fish and wildlife resources. Improvement of habitat functions has been the primary method of conducting coastal aquatic restoration over the past fifteen years (Simenstand and Thom 1992). There is a relatively long history documenting the success of this type of action that has shown that fisheries and wildlife resources can benefit from constructing and rehabilitating natural habitats. This alternative offers a growing level of confidence to restore functioning habitats for injured resources.

In addition, prevention of future oil spills is necessary if efforts to restore resources injured by the *Tenyo Maru* oil spill are to enjoy long-term success. The Trustees have proposed to fund an effort to station an emergency towing system at the mouth of the Strait of Juan de Fuca during the 1999-2000 winter season. This effort will help ensure that restoration of injured resources is not disrupted by further oil spills during this period and will collect data that will be used to evaluate the feasibility of more permanent measures to prevent oil spills in the affected area. This alternative offers additional confidence that long-term restoration of injured resource will occur.

Alternative D: An Integrative Restoration Approach

The intent of the Trustee Committee is to provide a restoration plan that will restore populations injured by the *Tenyo Maru* oil spill and balance activities so that the integrated structural components of whole ecosystems (e.g., physical habitats, food webs) are preserved or enhanced. This integrative approach to restoration combines the positive aspects of Alternatives A, B, and C, and maintains the low level of negative environmental consequences assumed to be associated with these alternatives. This will provide not only the greatest array of potential projects, but also the greatest opportunity to integrate projects into comprehensive ecosystem-level restoration, benefitting the greatest number of species.

This integrative approach to restoration is the only alternative in this restoration plan that fosters comprehensive restoration of injured resources at both the population and ecosystem levels, and by that, promotes the long-term sustainability of resources. It provides the greatest flexibility and the most options for restoring, replacing, rehabilitating, and/or acquiring the equivalent of natural resources injured as the result of the discharge of oil, and therefore, has been identified by the Trustee Committee as the selected alternative.

4.1 Proposed Project Schedules and Estimated Budgets

Restoration of Common Murre Colonies in Copalis National Wildlife Refuge, Washington State

Schedule: Upon final approval of the project; a specific work plan for Phase I will be generated by the project coordinator(s). Phase I will be completed within two years. If Phase II is conducted, there will be an annual review of the project and the Trustee Committee will discuss the progress and evaluate the relevance of continuing the project.

Estimated budget from *Tenyo Maru* Funds: \$1,800,000

*Any unused funding will be redistributed to either the Marbled Murrelet Habitat Protection and River Silt Reduction Project (Section 3.3.1) or a tufted puffin restoration project.

Oiled Wildlife Rehabilitation Center

Schedule: Upon final approval of the project, the Washington Wildlife Rescue Coalition has three years to secure outside funds for the project.

Estimated budget from Tenyo Maru Funds: \$500,000

*If the State is unable to secure outside funding, the *Tenyo Maru* restoration contribution of \$500,000 will be redistributed to the Marbled Murrelet Habitat Protection and River Silt Reduction Project (Section 3.2.3.1).

Public Education Signs and Brochures

Schedule: Upon final approval of the project proposal, implementation must begin within two years.

Estimated budget from Tenyo Maru Funds: \$100,000

Marbled Murrelet Habitat Protection and River Silt Reduction

Schedule: Suitable available marbled murrelet nesting habitat protection sites will be selected within 2 years of the final approval of the project. In the interim, the Trustee Committee will identify and consult with co-trustees and environmental organizations who would be willing to assume title on any appropriate parcels or to guarantee their conservation status and restricted uses. Permanent habitat protection (purchase, lease, conservation easement, etc.) will be secured within 1 year of final approval of the site by the Trustee Committee. Because of extenuating circumstances that may be associated with securing properties, the Trustee Committee may choose to extend this schedule on a case-by-case basis. If the time limits are exceeded, the funds earmarked for marbled murrelet nesting habitat protection will be reallocated to other *Tenyo Maru* projects identified in the plan.

Phase 1 (feasibility phase) of the river silt reduction component will be completed within 6 months of the notice of the availability of a final restoration plan. Selected and approved projects will have the appropriate permits in place and be ready to be implemented under Phase II within 2 years of the completion of Phase I. If the time limits are expired, the remaining funds will be reallocated to other *Tenyo Maru* projects identified in the plan.

Estimated budget from Tenyo Maru funds:

Habitat surveys, project development, implementation, and monitoring - \$2,500,000
(*Break out costs: 6 mo. feasibility study for the river silt reduction component = \$ 60,000;*
monitoring costs for marbled murrelet nesting habitat protection = \$10,000)

Emergency Towing Vessel

Schedule: Upon final approval of the project, funds will be transferred to the WDOE to be held and made available only to fund the stationing of a rescue tug in the area of operations. These funds would be added to any funds secured by other agencies. By June 1, 2000, the WDOE shall return to the *Tenyo Maru* restoration account any funds disbursed pursuant to this plan and not expended or obligated for this purpose. In the event that the rescue tug assistance efforts funded under this plan are subject to reimbursement from responsible parties, the Oil Spill Liability Trust Fund (established by 26 U.S.C. § 9509) and/or other sources, the WDOE shall seek

reimbursement from those parties or sources. In the event the WDOE subsequently obtains such reimbursement, the WDOE shall promptly return the reimbursed sums to the *Tenyo Maru* restoration account. Any funds returned to the *Tenyo Maru* restoration account under these provisions shall be distributed to the Marbled Murrelet Habitat Protection and River Silt Reduction Project (Section 3.2.3.1).

Budget from Tenyo Maru Funds: \$400,000

5.0 Environmental Consequences

To restore resources lost as a result of the oil spill, the Trustees examined a variety of restoration alternatives. These included alternatives:

- 1) no action and natural recovery,
- 2) population-focused restoration,
- 3) habitat-focused restoration, and
- 4) integrative restoration.

The integrative restoration approach is the alternative selected by the Trustees. The *Tenyo Maru* Trustees intend to avoid or reduce negative impacts to existing natural resources and services to the greatest extent possible. However, the Trustees could undertake actions that may have short or long term effects upon existing habitats or non-injured species. Project specific environmental consequences for each alternative and associated projects are provided in Section 3. This section addresses the potential overall cumulative, direct, and indirect impacts, and other factors to be considered in both the OPA and the NEPA regulations.

The *Tenyo Maru* Trustees believe that the projects selected in this restoration program will not cause significant negative impacts to natural resources or the services they provide. Further, the Trustees do not believe the proposed projects will adversely affect the quality of the human environment in ways deemed “significant.”

Cumulative Impacts: Since the projects are primarily designed to restore degraded habitats and improve recovery of injured natural resources, the cumulative environmental consequences will primarily be beneficial. These cumulative impacts include long-term restoration of the condition and functioning elements of the injured ecosystem by increasing the number of individual seabirds that attempt to reproduce, the recruitment of seabird and kelp populations, and the amount and condition of protected habitats. Both project and NEPA monitoring of projects funded under the *Tenyo Maru* restoration fund will verify that cumulative impacts will be beneficial rather than adverse. Any cumulative adverse effects on an area or other area program, plan, or regulatory regime from a proposed project, will result in the project being redesigned or abandoned.

Indirect Impacts: Environmental consequences would not be limited to the project location. Indirect beneficial impacts would also occur throughout populations and habitats in Western Washington and Oregon. Cumulative impacts at the project locations, and in the surrounding area, are expected to increase populations of seabirds and kelp, provide improved habitats for a variety of fish and wildlife, and provide a greater understanding of human interaction with natural resources. This alternative could indirectly benefit a variety of federally *threatened and endangered species* and Washington State listed sensitive species by providing nesting, feeding, resting, rearing and other forms of habitats utilized during the lives of these species.

Direct Impacts: Providing improved habitats, improving the survivability of seabirds of all age classes, preventing future oil spills, and enhancing natural seabird and kelp recruitment may aid in replenishing the resources injured in the *Tenyo Maru* oil spill. The restoration projects may increase the survivability of seabirds and kelp not killed in the oil spill, will help protect natural

recovery of affected resources, and will aid in replenishing the natural population by increasing productivity levels.

Overall, this alternative should enhance *water and sediment quality* and the functionality of ecosystems. However, some brief impacts from the proposed actions may include short-term disturbances from *noise and air pollutants* from construction activities and interim emergency response vessel operations; short-term water and sediment quality impacts; temporary disruption of animal migrations, breeding and nesting; short-term disturbances of existing plant communities; and temporary disturbances of ecological processes while the restored system reaches maturity.

It is the Trustees' intention to keep *construction* categorized as very "minor." The term of any construction projects (e.g., sediment control activity, forest manipulation, and the posting of signs) is anticipated to be very short, generally from two to four weeks.

Projects that involve short-term construction activities and the operation of the interim emergency response vessel could generate noise from machinery and equipment. If specific construction projects are to be conducted in "noise sensitive" areas, project specific environmental assessments will be conducted and include the extent of any impact. The proposed restoration projects could cause an increase in noise from resident and migrating birds, which would be a potential long-term impact. As habitat is restored or improved, birds and other wildlife should become more plentiful in the project area. However, the areas surrounding the proposed projects areas are primarily water or wilderness areas. It is not anticipated that any significant *noise impacts* would result from the projects proposed by the Trustee Committee.

Implementation of the proposed projects should result in no significant impact to *water quality*. Habitat modification activities in or next to streams or rivers, could have short-term water quality impacts through temporary increases in sedimentation and turbidity. Any impacts resulting from restoration construction activities will be mitigated by using techniques such as the use of sediment curtains or other technologies designed to reduce sediment transport. Any construction equipment would be monitored to ensure diesel, gas, or oils are not released into waters at or next to the project site. The Committee believes that restoration activities would result in insignificant effects to this resource.

No long-term adverse effects to *sediment quality, soils, or geologic conditions* are anticipated under this restoration plan. The Trustee Committee does not anticipate any temporary or permanent *visual impacts* from any of the projects and none of the proposed restoration actions should have a significant impact on *energy consumption*, although minor increases in the consumption of fuel will likely result from emergency response vessel operations. No projects would directly or indirectly affect *wetlands or flood plain areas*. Furthermore, the *Tenyo Maru* Trustees do not believe any of the proposed restoration projects would have a significant impact on the *coastal zone*, but specific projects in the coastal zone will undergo the appropriate coastal zone consistency review requirements.

The project sites are wilderness areas, areas surrounded by water or areas under water. Restoration work should not have any *social or economic impacts* upon the neighborhoods or community cohesion for various groups from proposed projects. Property values should not be decreased, nor will there be any separation of the communities' residents from community facilities. Due to the nature and purpose of the Restoration Plan, there are no anticipated human relocation issues. Stationing of the emergency response vessel at Neah Bay may result in a short-term increase in economic activity in that community.

General *land use patterns* and *aesthetic qualities* should not be adversely affected under the preferred alternative for the following reasons. Open space and recreational uses are scattered throughout the study area and forested areas. Land ownership may be affected if direct land purchase is required, however this should not affect the overall balance of ownership patterns within the study areas. Land management practices will not be affected since the pertinent local plans and ordinances, and state planning regulations, encourage the preservation and restoration of the area's vital natural resources.

Public access to natural resources could be affected. The proposed public education project includes interpretive signs that should make the public more aware of the environment that they are viewing. Subsequently, this could draw more frequent human visitors, however, the number is anticipated to be insignificant. The signs are intended to educate those present, to increase awareness, and not to attract. It is the intent of the Trustees to balance the goals of public access and habitat restoration whenever possible. Recreation and tourism will not be negatively affected by the proposed projects, however, the public may be more educated on how to avoid impacts to seabirds while recreating or touring on or near islands that support seabird colonies.

Specific restoration sites and their perceived potential impact upon *water-oriented commerce* would be addressed on a site-by-site basis, as would be their eligibility for the *National Historic Register of Historic Places*. Since all site-specific projects would be designed to identify historic properties, potential effects on *tribal treaties* and *archaeological preservation* and mitigate for any potential impacts, it is not anticipated that historic properties would be affected under any of the proposed actions. Information on prime and *unique agricultural lands* will be solicited from the United States Department of Agriculture upon selection of specific *Tenyo Maru* restoration sites.

No significant negative impacts to *threatened or endangered species* are expected to result from the integrated approach. Consultation under the Endangered Species Act would occur prior to any on the ground activities that may affect listed species. If actions under this alternative are determined to adversely affect federal or state-listed species, the project would be redesigned, relocated or abandoned. The chance of any *Tenyo Maru* restoration project having a negative impact on *fish and wildlife* is insignificant, limited only to the duration of construction and other activities. The anticipated overall environmental effect on fish and wildlife is to restore and maintain species diversity and abundance in Washington and Oregon.

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Appendix A: Coordination with Other Programs, Plans, and Regulatory Authorities

A.1 Overview

Two major federal laws guiding the restoration of the injured natural resources and services from the *Tenyo Maru* oil spill are OPA and NEPA. OPA and its regulations provide the basic framework for natural resource damage assessment and restoration. NEPA sets forth a specific process of impact analysis and public review. In addition, the Trustees must comply with other applicable laws, regulations and policies at the federal, state and local levels. The potentially relevant laws, regulations and policies are set forth below.

In addition to laws and regulations, the Trustees must consider relevant environment or economic programs or plans that are ongoing or planned in or near the affected environment. The Trustees must ensure that their proposed restoration activities neither impede nor duplicate such programs or plans. By coordinating restoration with other relevant programs and plans, the Trustees can enhance the overall effort to improve the environment.

A.2 Key Statutes, Regulations and Policies

Oil Pollution Act of 1990 (OPA), 33 U.S.C. 2701, et seq.; 15 CFR Part 990

OPA establishes a liability regime for oil spills which injure or are likely to injure natural resources and/or the services that those resources provide to the ecosystem or humans. Federal and state agencies and Indian tribes act as trustees on behalf of the public to assess the injuries, scale restoration to compensate for those injuries and implement restoration. Section 1006(e)(1) of OPA (33 U.S.C. 2706 (e)(1)) requires the President, acting through the Under Secretary of Commerce for Oceans and Atmosphere, (NOAA) to promulgate regulations for the assessment of natural resource damages resulting from a discharge or substantial threat of a discharge of oil. Assessments are intended to provide the basis for restoring, replacing, rehabilitating, and acquiring the equivalent of injured natural resources and services.

National Environmental Policy Act (NEPA), 42 U.S.C. 4321, et seq. 40 CFR Parts 1500-1508

Congress enacted NEPA in 1969 to establish a national policy for the protection of the environment. NEPA applies to federal agency actions that affect the human environment. NEPA established the Council on Environmental Quality (CEQ) to advise the President and to carry out certain other responsibilities relating to implementation of NEPA by federal agencies. Pursuant to Presidential Executive Order, federal agencies are obligated to comply with the NEPA regulations adopted by the CEQ. These regulations outline the responsibilities of federal agencies under NEPA and provide specific procedures for preparing environmental documentation to comply with NEPA. NEPA requires that an Environmental Assessment (EA) be prepared in order to determine whether the proposed restoration actions will have a significant effect on the quality of the human environment.

Generally, when it is uncertain whether an action will have a significant effect, federal agencies will begin the NEPA planning process by preparing an EA. The EA may undergo a public review and comment period. Federal agencies may then review the comments and make a

determination. Depending on whether an impact is considered significant, an environmental impact statement (EIS) or a finding of no significance (FONSI) will be issued.

The Trustees have integrated this restoration plan with the NEPA process to comply with those requirements. This integrated process allows the Trustees to meet the public involvement requirements of OPA and NEPA concurrently. This DRP/EA is intended to accomplish partial NEPA compliance by:

- summarizing the current environmental setting;
- describing the purpose and need for restoration action;
- identifying alternative actions;
- assessing the preferred actions' environmental consequences; and,
- summarizing opportunities for public participation in the decision process.

Project-specific NEPA documents will need to be prepared for those proposed restoration projects not already analyzed in an environment assessment or environmental impact statement.

Park System Resource Protection Act, 16 U.S.C. 19jj

Public Law 101-337, Park System Resource Protection Act (16 U.S.C.19jj), requires the Secretary of the Interior to assess and monitor injuries to park system resources. The Act specifically allows the Secretary of the Interior to recover response costs and damages from the responsible party causing the destruction, loss of or injury to park system resources. This Act provides that any monies recovered by the NPS may be used to reimburse the costs of response and damage assessment and to restore, replace or acquire the equivalent of the injured resources.

Clean Water Act (CWA) (Federal Water Pollution Control Act), 33 U.S.C. 1251, et seq.

The CWA is the principal law governing pollution control and water quality of the nation's waterways. Section 404 of the law authorizes a permit program for the disposal of dredged or fill material into navigable waters. The Army Corps of Engineers (Corps) administers the program. In general, restoration projects which move significant amounts of material into or out of waters or wetlands -- for example, hydrologic restoration of marshes -- require 404 permits. Under section 401 of the CWA, restoration projects that involve discharge or fill to wetlands or navigable waters must obtain certification of compliance with state water quality standards. Generally, restoration projects with minor wetlands impacts (*i.e.*, a project covered by a Corps general permit) do not require 401 certification, while projects with potentially large or cumulative impacts do.

Coastal Zone Management Act (CZMA), 16 U.S.C. 1451, et seq. 15 CFR Part 923

The goal of the CZMA is to preserve, protect, develop and, where possible, restore and enhance the nation's coastal resources. The federal government provides grants to states with federally-approved coastal management programs. The State of Washington has a federally-approved program. Section 1456 of the CZMA requires that any federal action inside or outside of the coastal zone that affects any land or water use or natural resources of the coastal zone shall be consistent, to the maximum extent practicable, with the enforceable policies of approved State management programs. It states that no federal license or permit may be granted without giving the State the opportunity to concur that the project is consistent with the State's coastal policies. The regulations outline the consistency procedures.

To comply with the CZMA, the Trustees intend to seek the concurrence of the State of Washington that their preferred projects are consistent to the maximum extent practicable with the enforceable policies of the state coastal program.

Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA), 42 U.S.C. §§ 9601, et seq.

CERCLA provides the basic legal framework for clean up and restoration of the nation's hazardous substances sites. Generally, parties responsible for contamination of sites and the current owners or operators of contaminated sites are liable for the cost of clean up and restoration. CERCLA establishes a hazard ranking system for assessing the nation's contaminated sites with the most contaminated sites being placed on the National Priorities List (NPL).

To the extent that restoration projects are proposed for areas containing hazardous substances, the Trustees will avoid exacerbating any potential risk posed by such substances and will undertake no actions which might constitute “arrangement for disposal of hazardous substances.” At this time, the Trustees are not aware of any potential hazardous substance problem associated with the areas where proposed restoration projects will occur.

Endangered Species Act (ESA), 16 U.S.C. 1531, et seq.

The ESA directs all federal agencies to conserve endangered and threatened species and their habitats and encourages such agencies to utilize their authorities to further these purposes. Under the Act, the DOC through NOAA and the DOI through the FWS publish lists of endangered and threatened species. Section 7 of the Act requires that federal agencies consult with these departments to minimize the effects of federal actions on endangered and threatened species. Prior to implementation of any project potentially affecting an endangered or threatened species, the Trustees would conduct Section 7 consultations.

Magnuson-Stevens Fishery Conservation and Management Act, 16 USC 1801 et seq.

The Magnuson-Stevens Fishery Conservation and Management Act as amended and reauthorized by the Sustainable Fisheries Act (Public Law 104-297) established a program to promote the protection of essential fish habitat (EFH) in the review of projects conducted under federal permits, licenses, or other authorities that affect or have the potential to affect such habitat. After EFH has been described and identified in fishery management plans by the regional fishery management councils, federal agencies are obligated to consult with the Secretary of Commerce with respect to any action authorized, funded, or undertaken, or proposed to be authorized, funded, or undertaken, by such agency that may adversely affect any EFH.

The Trustees believe that the proposed restoration projects will have no adverse effect on the EFH units defined in the Pacific Groundfish Fishery Management Plan. The projects will promote the protection of fish resources in EFH areas. Prior to implementation of any restoration projects that may potentially create a potential adverse impact to EFH, the Trustees will consult with the National Marine Fisheries Service.

Endangered Species Act and Essential Fish Habitat

Consultation with the U.S. Fish and Wildlife Service and the National Marine Fisheries Service under the Endangered Species Act and the Magnuson-Stevens Fishery Conservation and Management Act will occur prior to any on-the-ground projects that may adversely affect listed species or habitats.

Fish and Wildlife Coordination Act (FWCA), 16 U.S.C. 661, et seq.

The FWCA requires that federal agencies consult with the U.S. Fish and Wildlife Service, the National Marine Fisheries Service and State wildlife agencies for activities that affect, control or modify waters of any stream or bodies of water, in order to minimize the adverse impacts of such actions on fish and wildlife resources and habitat. This consultation is generally incorporated into the process of complying with Section 404 of the Clean Water Act, NEPA or other federal permit, license or review requirements.

Rivers and Harbors Act, 33 U.S.C. 401, et seq.

The Rivers and Harbors Act regulates development and use of the nation's navigable waterways. Section 10 of the Act prohibits unauthorized obstruction or alteration of navigable waters and vests the Corps with authority to regulate discharges of fill and other materials into such waters. Restoration actions that require Section 404 Clean Water Act permits are likely also to require permits under Section 10 of the Rivers and Harbors Act. However, a single permit usually serves for both. Therefore, the Trustees can ensure compliance with the Rivers and Harbors Act through the same mechanism.

Executive Order 12898 - Environmental Justice

On February 11, 1994, President Clinton issued Executive Order 12898, Federal Actions to Address Environmental Justice in Minority Populations and Low-Income Populations. This Executive Order requires each federal agency to identify and address, as appropriate, disproportionately high and adverse human health or environmental effects of its programs, policies and activities on minority and low income populations. EPA and the Council on Environmental Quality (CEQ) have emphasized the importance of incorporating environmental justice review in the analyses conducted by federal agencies under NEPA and of developing mitigation measures that avoid disproportionate environmental effects on minority and low-income populations. The Trustees have concluded that there are no low income or ethnic minority communities that would be adversely affected by the proposed restoration activities.

Executive Order 11988 -- Construction in Flood plains

This 1977 Executive Order directs federal agencies to avoid to the extent possible the long and short term adverse impacts associated with the occupancy and modification of Flood plains and to avoid direct or indirect support of development in Flood plains wherever there is a practicable alternative. Each agency is responsible for evaluating the potential effects of any action it may take in a flood plain.

Before taking an action, the federal agency must determine whether the proposed action will occur in a flood plain. For major federal actions significantly affecting the quality of the human

environment, the evaluation will be included in the agency's NEPA compliance document(s). The agency must consider alternatives to avoid adverse effects and incompatible development in Flood plains. If the only practicable alternative requires siting in a flood plain, the agency must: 1) design or modify the action to minimize potential harm; and, 2) prepare and circulate a notice containing an explanation of why the action is proposed to be located in the flood plain.

Model Toxics Control Act (MTCA), Ch. 70.105D RCW (1989) and Ch. 173-340 WAC (1992)

MTCA, Washington's toxic cleanup law, mandates that site cleanups protect the state's citizens and the environment. The regulations established cleanup standards, which provide a uniform, statewide approach to cleanup that can be applied on a site-by-site basis; and requirements for cleanup actions, which involve evaluating the best methodology to achieve cleanup standards at a site.

State Environmental Policy Act (SEPA), Ch. 43 RCW

Adopted in 1971, and revised several times, SEPA requires state agencies and local governments to analyze proposed projects and plans for potentially significant impacts to the environment. Regulations implementing SEPA and providing guidance for state and local governments have been adopted (CH. 197-11 WAC). Specific resource areas which must be considered under SEPA include earth, air, water, vegetation, wildlife, public health, and shorelines. The SEPA review process may be initiated at the local government level through the development application review procedures. Local regulations identifying and protecting critical or sensitive environmental areas help ensure compliance with SEPA regulations. State agencies also prepare documents in response to proposals for state agency action.

A.3 Other Potentially Applicable Laws and Regulations

This section lists other laws that potentially affect any proposed restoration activities. The statutes or their implementing regulations may require permits from federal or state permitting authorities.

Archaeological Resources Protection Act, 16 U.S.C. 470, *et seq.*

Clean Air Act, 42 U.S.C. 7401, *et seq.*

Marine Mammal Protection Act, 16 U.S.C. 1361, *et seq.*

Migratory Bird Treaty Act, 16 U.S.C. 703, *et seq.*

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

National Park Act of August 19, 1916 (Organic Act), 16 U.S.C. 1, *et seq.*

Olympic Coast National Marine Sanctuary, 15 CFR Part 922

Appendix B: Summary of public comments on the Draft and Revised Draft Restoration Plan/Environmental Assessment

The following issues, concerns, and suggestions were received during the public comment periods of the Draft Restoration Plan/Environmental Assessment (DRP/EA) from February 1, 1999 through April 12, 1999, and the Revised Draft Restoration Plan/Environmental Assessment (RDRP/EA) from January 7, 2000 through February 7, 2000. Comments are summarized below and are categorized according to subject. The number following the comment corresponds to the number of similar public comments received. A response to the comments is provided by the Trustee Committee.

General Comments of the overall Draft Restoration Plan/Environmental Assessment

Comments:

Support for the DRP/EA as developed by the Trustee Committee. (2)

Urge support for the preferred Alternative D: An Integrative Approach to Restoration. (2)

Request that the Trustee Committee select Alternative C: Habitat Focused Restoration as the preferred alternative. (1)

The restoration plan should include restoration efforts for other seabirds, such as Cassin's and rhinoceros auklets, and tufted puffins. (2)

Why wasn't quantification of injuries to fish, shellfish, and fisheries resource, including injury to fishery associated habitats pursued as part of the damage assessment? (1)

Make funds available for other types of studies that would improve damage assessment for future spills. (1)

The public comment period for the RDRP/EA was insufficient and should be extended. (4)

Extensive baseline data was lacking in the revised draft and should be included in the final plan. This would generate more meaningful predictions for No Action/Natural Recovery which should be more clearly documented in the plan. (1)

Quantifiable goals should be more clearly defined so alternatives can be reviewed in terms of their effectiveness in meeting those goals. (1)

Siltation, and preventative measures, such as the towing vessel and the oiled wildlife rehabilitation center, is a result of another influence and should be pursued under a separate project. These projects are not part of the consent decree and would significantly reduce the amount of funds available for the true purpose of the settlement. (1)

The final plan should include an ecosystem-based alternative to be compared with other alternatives in terms of effectiveness toward meeting clearly stated goals. (1)

Specific budgetary information relevant to the proposed projects should be made available to the public. (2)

Restoration efforts should be focused on common murre, tufted puffins, and marbled murrelets. (1)

Failure to restore tufted puffins is negligent with respect to the criteria on page 3-2, as well as on the part of the agencies. (1)

It is an apparent conflict of interest for all proposed projects to be accomplished in-house by trustee agencies. (1)

A scientific oversight committee should be formed to review all projects. At least half of the members of the oversight committee should be from agencies, organizations, or universities independent of the trustees. (1)

Each funded project should be put out for a public request for proposal, with independent review of all proposals by the aforementioned scientific committee. Criteria for acceptance should include expertise, implementation feasibility, and budget. (1)

Return funds which would have been spent on declined projects to a central repository for future use, including additional projects and/or projects elements, as determined by the expert review committee in consultation with the trustees. (1)

Response:

The Trustees considered four alternatives in their selection of the preferred alternative. All of the alternatives evaluated had ecosystem-level benefits. However, the preferred alternative, an integrative restoration approach, was chosen after consideration of public comment, partly because of its encompassing array of potential projects that offered the greatest opportunity to integrate projects into a comprehensive ecosystem-level restoration, benefitting the greatest number of species. The *Tenyo Maru* spill primarily affected the marine environment. The integrative restoration approach allows for terrestrial habitat improvements for marbled murrelet nesting and conservation of kelp as well as restoration of marine nesting seabirds, including common murre, Cassin's auklets, and tufted puffins.

The Trustee Committee has added language for the consideration of a tufted puffin project if Phase II of the Restoration of Common Murre Colonies in Copalis National Wildlife Refuge (NWR) (Section 3.2.2.1) is not pursued.

Fish surveys were conducted as part of the injury assessment for the *Tenyo Maru* oil spill. This was primarily an offshore spill, and with the exception of kelp beds, there were negligible impacts to other nearshore environments. No adverse effects to fishery resources were documented. Thus, the final restoration plan addresses the restoration of seabirds and kelp (those resources documented to have been injured by the oil spill). The fisheries resource, as part of the kelp-associated ecosystem, may indirectly benefit from the conservation and recovery of kelp beds.

The use of restoration funds is guided by Natural Resource Damage Assessment (NRDA) under the Oil Pollution Act (OPA) of 1990. The Trustee Committee does not have the ability to authorize expenditures on studies purely for future injury assessment. Restoration funds must be used to restore, rehabilitate, replace and/or acquire the equivalent of natural resources injured by the *Tenyo Maru* oil spill.

Public comment was solicited on the DRP/EA from February 1 through April 12, 1998. In response to comments received on the DRP/EA, the document was modified slightly by adding a project proposal to provide partial funding to station an emergency towing vessel at the entrance to the Strait of Juan de Fuca and by deleting a project proposal to reduce seabird by-catch in coastal set net fisheries. The Trustees felt that the Plan was revised significantly enough that an

additional public comment period should be pursued. The Trustees resubmitted a RDRP/EA for a 30-day public comment period from January 7 through February 7, 2000, consistent with the National Environmental Policy Act (NEPA), the OPA, and the NRDA regulations.

Unfortunately, as is the case for many spill situations, extensive pre-spill baseline data were lacking for the *Tenyo Maru* oil spill. The Trustees funded some pilot projects with interest funds earned from the restoration fund to aid in the selection of a preferred restoration alternative, and to help establish baseline that could be used to evaluate the progress of any potential restoration efforts. Some of these projects included a survey of common murre colonies in Washington and Oregon, evaluation of productivity and reproductive success on Tatoosh Island off the Washington coast, a seabird prey-base study, and at-sea distribution of common murres and marbled murrelets.. As a result of the pilot project data, the Trustees chose an integrative restoration approach as the most efficient and effective alternative in restoring the environment and reaching the primary goal of the restoration plan, which is to compensate the public for injuries by restoring, rehabilitating, or replacing specific populations of seabirds and kelp beds (including their associated communities). The primary objective is to provide a functioning and sustainable ecosystem where specific populations of seabirds and kelp beds are enhanced to provide a net gain of habitat function beyond existing conditions.

In addition to primary goals and objectives, each project proposal has specific project goals that will be used in monitoring and measuring the progress of the project. Estimated budget and schedules are provided for each project proposal in Section 4 of the Plan. Several restoration projects will be defined in greater detail through the development of scopes of work, work plans, specific budgets, and time-lines to measure the success and progress of the project. These projects will have work committees likely consisting of Trustee and non-Trustee expertise. Some of the actual work activities are expected to be contracted out by the work committee through a proposal process. This process would include selection criteria, such as, expertise, implementation feasibility, and budget. However, per NRDA under OPA, Trustees will have oversight of project implementation and the overall restoration progress.

Kelp was a natural resource with documented injury as a result of the spilled oil. Siltation has a serious impact on the health and recruitment of kelp beds. The Trustees believe that restoration projects that facilitate the growth of kelp, such as projects that would reduce the amount of siltation load on kelp beds, will aid in the recovery of this ecosystem and the species associated with it. Improving the success of rehabilitation and subsequent release of wildlife would likely provide a positive effect on restoration through population stabilization and recruitment, especially for rare and endangered species.

Public comments received on the draft plans have revealed that the marbled murrelet habitat protection project is favored as a restoration tool to recover marbled murrelet populations and benefit other species that interact with marbled murrelet habitat. The Trustee Committee has dedicated any remaining funds from some of the projects to protecting marbled murrelet habitat.

Restoration of Common Murre Colonies in Copalis National Wildlife Refuge

Comment

Allowing for the natural repopulation of this habitat is far superior and sustainable option than is being proposed in the plan. (1)

Will reference sites be monitored during Phase I and II? (1)

- Will colonies be accessed to determine physical/habitat limitations to population growth and recovery? (1)
- Define "adequately monitored" in "Phase II of this plan will be implemented if restoration sites can be adequately monitored." (1)
- Demographic analyses is needed prior to this project. (1)
- Additional studies are needed on the possible benefit of decoys and sound playback effect. (1)
- There needs to be specific criteria set for determining when and if the project will advance from Phase I (feasibility) to Phase II. (1)
- The presence of a small group of breeders should not preclude Phase II of the project. (1)
- How will it be determined that there is a cause-effect relationship between eagle fly-overs and other natural or anthropogenic activities and population declines of murre? Define "other natural" problems more clearly. (1)
- The decision of logistical feasibility should be made by an inspection of the sites by people who have previously installed such equipment and know when technical climbing and boat accessibility are feasible. (1)
- Do not see the value of a second year feasibility study. (1)
- Appears to meet the criteria for inclusion. (1) Recommendations for restoration implementation:
 - a) Inclusion of chick diet and/or forage rate sampling;
 - b) Coordination of ongoing PNCERS, GLOBEC, and BPA nearshore research designed to address production changes in coastal Oregon and Washington;
 - c) Formation of a team of independent experts to review the causes of murre population decline at the conclusion of Phase I. Experts should be appointed across the trustee agencies, with at least half coming from agencies, organizations, or universities independent of the trustees;
 - d) Additional reference sites in Oregon, or at the very least coordination with existing data collection efforts of the Oregon Coastal Refuges office in Newport, OR;
 - e) There is evidence to suggest populations are decolonizing Copalis National Wildlife Refuge; independent scientific review committee should evaluate criteria for moving to Phase II of this plan. (1)
 - f) If Phase II is implemented, continued monitoring of both Copalis Rocks and the reference sites should be conducted to determine whether murre can successfully breed and are not being drawn into a demographic sink and whether this immigration is causing significant decline in other Washington murre colonies.
- Concern with human intervention in the restoration of common murre on the Copalis National Wildlife Refuge. (1)

Response:

Phase I of the project will include assessing the colony sites to determine whether the use of social attraction methods are needed and appropriate. Adequate monitoring of the restoration project is defined as the ability to determine an index or measurement that can be used to assess the effectiveness of social attraction techniques. Please refer to Section 3.2.2.1 - Proposed Activities - Phase I - Feasibility Study.

The monitoring of a reference site will be detailed further in scope of work documents and project methodologies developed for this project. The Trustee Committee is limited as to how much "investigation" i.e., demographic analyses, may be done that does not directly restore the resources injured in the *Tenyo Maru* oil spill. The Trustee Committee is utilizing current information and expertise gained in the similar restoration efforts on Devil's Slide Rock in California as part of the Restoration Plan for Seabirds Injured by the Apex Houston Oil Spill (U.S. Fish and Wildlife Service 1995) as an example of the potential success of restoring common murrelets injured in an oil spill. As Phase I of the project develops, we will continue to use the expertise gained in the Apex Houston project for implementation and evaluation of Phase I.

The Trustee Committee added criteria to several of the projects in the RDRP/EA and this project is one of them. Please refer to Section 3.2.2.1 - Proposed activities: Project Criteria for specific criteria to aid the Committee in the evaluation of Phase I.

This restoration plan provides the general concept of the projects. The project coordinators for each project will provide the specific design of their project to the Trustee Committee for evaluation, potential modification, and approval. The specific project designs will be consistent with the restoration plan but provide more detail in methods, work plans and detailed scopes, schedules, and budgets. The work committee charged with implementation of this project will consider comments received regarding project implementation in the development of the specific design of this project. The appropriate environmental documents and applicable permits will be prepared for review and adoption by the Trustee Committee before implementation of any project.

The Trustee Committee has allowed two years for Phase I of the project for flexibility in the plan to allow for weather and other potential unforeseen problems. The Trustee Committee will have close oversight of all phases of the project and will closely monitor the funding allocations for Phase I of the project.

Oiled Wildlife Rehabilitation Center

Comment:

- Oppose restoration funds being spent on a wildlife rehabilitation center. (5)
- Question the usefulness and the Puget Sound location of a wildlife rehabilitation center. (2)
- Support funding a wildlife rehabilitation center with *Tenyo Maru* restoration monies. (41 - many of which appeared to be variations of a form letter)

Response:

The Trustee Committee believes that improving rehabilitation techniques in the State of Washington will aid in the recovery of injured species. Improving the ability to return injured individuals back to their natural environment will supplement population recruitment and recovery, especially for threatened and endangered species. Partial funding of the establishment of a rehabilitation center in Washington may help to improve rehabilitation techniques that would be especially valuable for endangered and rare species and may provide a public education forum for seabird and kelp ecology. The *Tenyo Maru* restoration settlement provides a minor portion of the overall cost of establishment of a rehabilitation center. The total cost associated with the actual rehabilitation of wildlife as a result of a recognized incident would continue to be the responsibility of the spiller.

Per recommendations by experts in the field of wildlife rehabilitation, the Final Restoration Plan/Environmental Assessment states that a primary care facility would be provided on the coast to stabilize animals for transport to the South Puget Sound area where equipment, supplies, and 24-hour staffing are more readily available.

Public Education Signs and Brochures

Comments:

The education of the public regarding human disturbances of nesting seabirds should not be funded by this restoration project, but by the NWR system, the Olympic National Park, or the Olympic Coast National Marine Sanctuary. (1)

It may be more cost productive to increase education for personnel operating freights, oil tankers, and other large ships. (1)

- Support the use of \$100,000 for education programs (2)

Response:

This education project will build upon existing multi-agency cooperation in current education programs in the U.S. Fish and Wildlife Service (FWS), Washington State Parks, Olympic National Park, and the Olympic Coast National Marine Sanctuary (OCNMS). It will complement FWS education efforts underway with the *Nestucca* oil spill restoration funds and other current education efforts to reduce impacts from aircraft overflights. This project will not fund current education programs, rather, it is a cooperative venture to educate the recreational users that access ports along the Oregon Coast, Tatoosh Island, and the OCNMS. Signs will be posted at marinas and not on the National Wildlife Refuges. Brochures will be printed for recreational users as well as commercial users of the nesting seabird areas.

Marbled Murrelet Habitat Protection and River Silt Reduction

Comments:

- Support efforts to acquire habitat for affected resources. (3)
- Suggest purchasing commercial logging rights or acquiring holdings within the Lake Ozette Watershed for marbled murrelet habitat and to reduce siltation and aid in the recovery of Lake Ozette sockeye stocks. (2)

- If Trustees are limited to only purchasing occupied marbled murrelet habitat, consider purchasing development rights on the Makah's primary reservation instead of around Lake Ozette. (1)
Significantly increase the funding allocated to protection and recovery of marbled murrelet nesting habitat. (4)
No *Tenyo Maru* funds should be spent on reduction of stream siltation. A huge amount of resources is already available for the restoration of salmonid populations. (1)
Strongly consider the release of a portion of the *Tenyo Maru* oil spill restoration funds to purchase Teal Slough property in Pacific County, Washington. (1)
Pleased that the largest sum of restoration funds is being allocated to habitat-focused restoration. (2) However, there is concern with lack of effort to identify habitats for purchase.
Consider purchasing habitat, other than marbled murrelet habitat. (1)

Response:

Marbled murrelet surveys as well as Phase I of the river silt reduction component will identify projects that comply with the criteria established by the Trustee Committee for protection and recovery of marbled murrelet nesting habitat and river silt reduction. These surveys and investigations will include the Lake Ozette Watershed and the Teal Slough property in Pacific County, Washington. The DRP/EA and RDRP/EA provided general restoration project suggestions to the public for consideration. Following consideration of public comments, the Trustee Committee will make decisions regarding the final acceptance of projects. Specific restoration implementation activities will be conducted on final accepted projects based on criteria developed by the Trustee Committee, such as the selection of habitats for protection. Habitat selection must be based on the benefit to those species that were documented as injured from the spill.

Section 4 - Proposed Project Schedules and Estimated Budgets provides that any unused portions of funding from several projects in the plan will increase allocations to marbled murrelet habitat protection and river silt reduction, i.e., Restoration of Common Murre Colonies in Copalis NWR, Oiled Wildlife Rehabilitation Center, and the Stationing of an Emergency Towing Vessel at the Entrance to the Strait of Juan de Fuca.

Injury to kelp was documented as part of the natural resources injured in the *Tenyo Maru* oil spill. The Trustee Committee has addressed this with the river silt reduction component of the habitat focused restoration portion of the selected Integrated Restoration Approach Alternative. The feasibility portion of the river silt reduction project must be completed within six months of the notice of availability of a final restoration plan. After consideration of public comment, the Trustee Committee has developed strict criteria for the selection of river silt reduction projects. These criteria identify and preclude any projects that have current or potential protection through regulation or other conservation activities. Please refer to Section 3.2.3.1 Marbled Murrelet Habitat Protection and River Silt Reduction - Project Criteria for River Silt Reduction.

Protection of Marine Environments by Stationing an Emergency Towing Vessel at the Entrance to the Strait of Juan de Fuca

Comment:

Lease a rescue tug for Neah Bay during the year it takes the State and coast Guard to complete their oil spill risk assessment. (9)

Strongly reject use of restoration funds to fund oil spill prevention measures, specifically to station a stand-by rescue tug at Neah Bay, WA. (7)

The timing of the tug trial should not be limited to the deliberations of the North Sound Risk Panel. (1)

- The June deadline for the rescue tug funds should be extended. (1)
- Correct the plan to note that the tug is not just for winter or high risk vessels. (1)

Response:

The Natural Resource Trustees for the *Tenyo Maru* oil spill are proposing to dedicate a portion (\$400,000) of the recovered natural resource damages to contribute to the cost of stationing a rescue tug at Neah Bay during the 1999-2000 storm season. Application of a portion of the natural resource damage recoveries as seed money for the tug's deployment is an appropriate expenditure as part of the restoration plan developed by the Trustees, and under the unique circumstances presented. Partial funding for the tug represents a small but important component of a more comprehensive plan aimed at benefitting the natural resources impacted by the oil spill. The stationing of the tug during the period of greatest risk of a vessel grounding will help to lessen the risk of further oil spills in the affected area, thereby increasing the likelihood of success for the other measures in the restoration plan. While the direct benefits of a single storm season's deployment of the tug will necessarily be of limited duration, the deployment will serve as a stop-gap measure while other administrative processes regarding rescue tug stationing are being completed, and will also provide important additional data for those processes to consider in addressing the issue of long-term rescue tug deployment for response purposes.

The *Tenyo Maru* Consent Decree provides that the recovered damages are to be "used only for restoring, rehabilitating, replacing or acquiring the equivalent of injured natural resources as provided in 33 U.S.C. § 2706(f)." Consent Decree ¶ 23.f (The cited statutory section is the source of the requirement that recovered damages may only be used to restore, rehabilitate, replace or acquire the equivalent of affected natural resources.) The *Tenyo Maru* spill impacted marine and avian natural resources along the outer coast of the Olympic Peninsula. The Trustees have developed a proposed restoration plan involving actions that would benefit species of seabirds and kelp communities harmed by the oil spill through habitat acquisition, preservation and enhancement, seabird colony enhancement efforts, contribution to the funding of oiled wildlife rehabilitation facilities, and public outreach and education. In response to public comments received on the proposed restoration plan, the Trustees have proposed to include as a plan element the partial funding for the rescue tug. The tug would be available to help prevent vessel groundings and resulting oil spills associated with loss-of-power and loss-of-steering events in the western Strait of Juan de Fuca and on the outer coast. Incidentally, it would also help to mitigate the injuries to natural resources resulting from spills due to other events, by serving as a oil spill response platform.

In addition to public comments proposing and supporting funding for the tug deployment, the Trustees also received comments opposed to the proposal and questioning the legality of expending natural resource damages for this purpose. After evaluating the proposal and supporting factual information, and taking into consideration information recently developed by agencies evaluating marine safety issues in the area, the Trustees have concluded that the proposed funding is consistent with legal requirements. By providing the funding in conjunction with and in support of the overall plan for restoring the injured natural resources, the Trustees' actions will restore, replace, rehabilitate and acquire the equivalent of the injured natural resources as required by the Oil Pollution Act and the Consent Decree.

The aim of contributing to stationing the tug is to help increase the likelihood of success of the restoration projects that are the primary focus of the restoration plan. The natural resources and habitats impacted by the *Tenyo Maru* spill have likely experienced some level of natural recovery in the years since the spill. That level of natural recovery presents a base upon which the other projects in the plan will build in providing benefits to the target resources. Further spills will erase or set back the natural recovery achieved to date and will diminish the beneficial effect of the proposed restoration efforts. By helping to prevent or to lessen the effect of oil spill events, the tug will help to increase the likelihood of success for the other projects and actions included in the restoration plan. While the commitment of funds to the tug deployment is relatively small (less than 7.5 percent of the recovered damages), by helping to provide an enhanced level of protection for the natural resources of the outer Olympic Peninsula area impacted by the oil spill the tug element serves as an important component of a comprehensive plan for restoring the injured resources.

Currently available information indicates that the western Strait of Juan de Fuca and the outer Olympic Peninsula coastline are at significant risk from future oil spills. A study conducted by the John Volpe National Transportation Center for the U.S. Coast Guard, Scoping Risk Assessment: Protection Against Oil Spills in the Marine Water of Northwest Washington State (1997) (the "Volpe Study"), examined the likelihood of accidents and the environmental consequences of a given spill. The Volpe Study judged the outer Olympic Peninsula coastline among the study areas having the highest likelihood of accident involving an oil spill, a high sensitivity to an oil spill, and a low capability for response to a spill. While a number of initiatives have attempted to address these concerns, including an industry-led international tug of opportunity system (ITOS), indications are that the risks remain high. A 1999 study by the U.S. Coast Guard, Analysis of the Geographic Coverage Provided by the International Tug of Opportunity System from November 1998 - May 1999, found that the ITOS provided only a 42 percent probability of coverage for the western half of the Strait of Juan de Fuca and offshore areas. For the southern approaches to the Strait, the probability of coverage was only 14 percent. These areas are among those most directly impacted by the *Tenyo Maru* spill and of greatest concern to the Trustees, especially the Makah Tribe. A tug stationed at Neah Bay dedicated to the rescue mission would increase the coverage for the affected areas to 100 percent.

Permanent stationing of a rescue tug beyond this interim measure implemented in conjunction with other restoration activities would not be an appropriate use of these restoration dollars.

Long-term decisions and commitments to a rescue tug, and the funding required, are the responsibility of other agencies and response-related programs. The U.S. Coast Guard, in communication with other agencies and parties, is continuing to examine the issue of the need for further marine safety efforts in the area, and is in the process of conducting an analysis of alternative approaches, including stationing a dedicated rescue tug such as the one proposed at Neah Bay. Through implementation of this proposal, the Trustees would be providing interim protection for the natural resources affected by the *Tenyo Maru* spill until the agencies with the programmatic responsibility can complete their decision making processes. Incidentally, deployment of the tug this season will also help to generate additional data on the need for and effectiveness of a permanent dedicated rescue tug that those agencies can use in reaching their decisions.

Seabird By-Catch Reduction in Coastal Set Net Fisheries

Comment:

- Skepticism of the benefit of the reduction of seabird by-catch in set net fisheries because of reduced fishing vessels in coastal set-net fisheries. (1)
- There is little or no indication that auditory cues affect the foraging of seabirds. Therefore, the benefit of this restoration project is questionable. (1)
- It is impossible to select the best restoration option for common murres and other seabirds in Washington State because appropriate analyses are lacking, such as demographic analyses for Washington murres, auklets, and murrelets showing the relative effects of oil-spill and gill-net mortality to the well-being of Washington's seabird populations. If gill net mortality is significant, then funds should be allocated for studies of the foraging range and dispersion of birds using radio telemetry or aerial or shipboard surveys. (1)
- Monitoring the Tatoosh Island murre population as a means of determining the utility of pingers in dissuading murres from foraging near nets does not seem well-founded in logic. Too many factors affect the Tatoosh colony to make this aspect of the project a sufficiently sensitive indicator of success or failure. Monitoring the Tatoosh Island murre population should continue, and be paid for with *Tenyo Maru* restoration funds, but not justified as a means of determining the success or failure for a pinger/gill-net by-catch reduction project. (1)
- The estimated budget for the set-net fishery project seems high. (1)
- Disapprove of the deletion of the seabird by-catch reduction project in the RDRP/EA. (2)

Response:

After consideration of public comments, the Trustees deleted the Seabird By-Catch Reduction in Coastal Set-net Fisheries project from the RDRP/EA. No coastal set-net fisheries are currently being conducted on the north Washington coast and such fisheries are not likely to be resumed in the foreseeable future. The Trustees determined that the feasibility and any restoration benefits associated with this project were questionable enough for the project to be eliminated from the Final Restoration Plan/Environmental Assessment.

APPENDIX C: Department of the Interior Finding of No Significant Impact under the National Environmental Policy Act for the Final Restoration Plan/Environmental Assessment for the *Tenyo Maru* Oil Spill

Finding of No Significant Impact under the National Environmental Policy Act

FINDING OF NO SIGNIFICANT IMPACT FINAL RESTORATION PLAN AND ENVIRONMENTAL ASSESSMENT FOR THE *TENYO MARU* OIL SPILL

**DEPARTMENT OF THE INTERIOR
U.S. FISH AND WILDLIFE SERVICE
North Pacific Coast Ecoregion
Western Washington Office**

PROPOSED ACTION

The U.S. Fish and Wildlife Service (FWS) and the National Oceanic and Atmospheric Administration (NOAA) currently participate as federal Trustees in the natural resource damage assessment restoration planning for the *Tenyo Maru* oil spill. The *Tenyo Maru* Natural Resource Trustees include the Makah Indian Tribe, the State of Washington (Department of Ecology, Department of Fish and Wildlife, and Department of Natural Resources), the U.S. Department of Commerce (NOAA), and the U.S. Department of the Interior (FWS, National Park Service, and the Bureau of Indian Affairs).

On July 22, 1991, the Japanese fishing vessel *Tenyo Maru* and Chinese freighter *Tuo Hai* collided within Canadian Territorial waters approximately 20 miles northwest of Cape Flattery. The *Tenyo Maru* sank at collision. It initially leaked a large amount of oil and undetermined amounts were reported leaking for more than a month after the collision. Beaches were fouled with oil from Vancouver Island, British Columbia to northern Oregon.

Claims for natural resource damages were settled by consent decree under the Oil Pollution Act of 1990 (OPA), 33 U.S.C. 2701 *et seq.* Under the consent decree the defendants agreed to pay approximately \$5.2 million to restore, rehabilitate, replace or acquire the equivalent of natural resources injured by the oil discharge.

Following claims settlement the trustees conducted internal and public scoping to initiate the development of a Restoration Plan. Scoping was also used to initiate development of an Environmental Assessment (EA) of the proposed restoration, pursuant to the National Environmental Policy Act of 1970 (NEPA). The goal of the EA was to determine whether the proposed projects would result in significant impacts on the quality of the human environment, and thereby require the development of an Environmental Impact Statement. A combined Restoration Plan and Environmental Assessment (RP/EA) document was subsequently developed, which is incorporated here by reference. The RP/EA presents an analysis of four alternatives, including a No Action Alternative, Population-Focused Restoration, Habitat-Focused Restoration, and an Integrative Approach. The draft RP/EA was made available to the public in February 1999, for a 60-day review and comment period, and the revised draft RP/EA

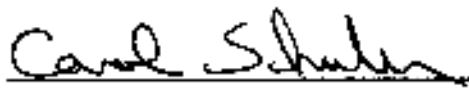
was made available to the public in January 2000, for a 30-day review period.

Following consideration of public comments, the Trustees selected an integrative restoration approach as their preferred alternative in restoring injured resources. This approach integrates natural recovery, population enhancement, and habitat restoration for seabirds and kelp injured in the oil spill. It offers five restoration projects that restore populations injured by the *Tenyo Maru* oil spill and integrates the structural components of whole ecosystems (e.g., physical habitats, food webs) that are to be preserved and enhanced. The alternative selection was based on the ability of the five restoration projects to restore injured natural resources while minimizing any negative impact to the environment, their cost-effectiveness, and their functional connection to injured resources.

The RP/EA will restore injured resources by: 1) restoring common murre or potentially restoring tufted puffin colonies in Copalis National Wildlife Refuge, 2) contributing funds to an oiled wildlife rehabilitation center, 3) educating the general public on human disturbance of nesting seabird colonies, 4) protecting marbled murrelet habitat and reducing silt deposit in rivers and kelp bed systems, and 5) protecting injured resources from further impacts of oil spills via a rescue tug.

DETERMINATION

Based on FWS review and evaluation of the information contained in the incorporated reference cited below, it is my determination that the proposed restoration projects do 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. Accordingly, the preparation of an environmental impact statement is not required.



for David Wesley
Assistant Regional Director, North Pacific Coast Ecoregion

3/16/00
Date

References:

Restoration Plan and Environmental Assessment for the *Tenyo Maru* Oil Spill

UNITED STATES FISH AND WILDLIFE SERVICE

ENVIRONMENTAL ACTION STATEMENT

Within the spirit and intent of the Council on Environmental Quality's regulations for implementing the National Environmental Policy Act (NEPA), and other statutes, orders, and policies that protect fish and wildlife resources, I have established the following administrative record and determined that the action of restoration of seabird and kelp injured in the 1991 *Teruo Maru* oil spill:



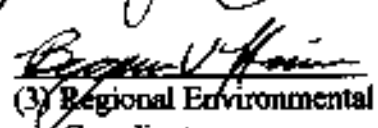

Check One:

- is a categorical exclusion as provided by 516 DM 2, Appendix 1 and 516 DM 6, Appendix 1 section. No further NEPA documentation will therefore be made.
- is found not to have significant environmental effects as determined by the attached environmental assessment and finding of no significant impact.
- is found to have significant effects and, therefore, further consideration of this action will require a notice of intent to be published in the Federal Register announcing the decision to prepare an EIS.
- is not approved because of unacceptable environmental damage, or violation of Fish and Wildlife Service mandates, policy, regulations, or procedures.
- is an emergency action within the context of 40 CFR 1 506.1 1. Only those actions necessary to control the immediate impacts of the emergency will be taken. Other related actions remain subject to NEPA review.

Other supporting documents:

- 1) Restoration Plan and Environmental Assessment for the *Teruo Maru* Oil Spill
- 2) Finding of No Significant Impact for the Final Restoration Plan and Environmental Assessment for the *Teruo Maru* Oil Spill

Signature Approval:

	3/15/00		3/16/00
(1) Originator	Date	(2) ARD-NPCE	Date
	3/17/00		3/16/00
(3) Regional Environmental Coordinator	Date	(4) Regional Director	Date

**APPENDIX D: National Oceanic and Atmospheric Administration
Finding of No Significant Impact under the National Environmental Policy
Act for the Final Restoration Plan/Environmental Assessment of the *Tenyo
Maru* Oil Spill**

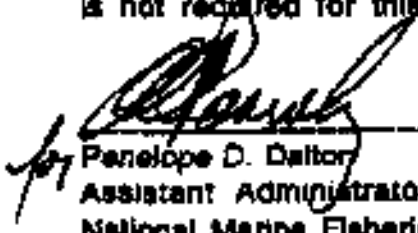
**FINDING OF NO SIGNIFICANT IMPACT
TENYO MARU OIL SPILL RESTORATION PLAN and ENVIRONMENTAL
ASSESSMENT**

The National Oceanic and Atmospheric Administration (NOAA) is a cooperating federal agency for National Environmental Policy Act (NEPA) compliance for the proposed Restoration Plan and Environmental Assessment (RP/EA) for the Tenyo Maru Oil Spill. The RP/EA was prepared by the Natural Resource Trustees (Trustees) responsible for restoration implementation under a consent decree and includes the U.S. Department of the Interior (Fish and Wildlife Service, National Park Service, Bureau of Indian Affairs), U.S. Department of Commerce (NOAA), Makah Indian Tribe, and the State of Washington (Departments of Ecology, Fish and Wildlife, and Natural Resources).

The RP/EA describes the affected environment and evaluates potential restoration alternatives and their environmental consequences. The public has been afforded several opportunities to review and provide input on the alternatives. The Trustees evaluated four alternatives and concluded that the preferred alternative is Alternative D: An Integrated Restoration Approach. The preferred alternative fosters comprehensive restoration of injured resources at both the population and ecosystem levels, and provides the greatest flexibility and the most options for restoring, replacing, rehabilitating, and/or acquiring the equivalent of injured natural resources.

DETERMINATION: Based upon an environmental review and evaluation of the Restoration Plan and Environmental Assessment for the Tenyo Maru Oil Spill, 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.

MAR 30 2000



Penelope D. Dalton
Assistant Administrator for Fisheries
National Marine Fisheries Service
National Oceanic and Atmospheric Administration

Date

APPENDIX E: Washington State Environmental Policy Act Compliance

**DETERMINATION OF NONSIGNIFICANCE
AND ADOPTION OF EXISTING
ENVIRONMENTAL DOCUMENT**

Description of current proposal Final restoration plan for the 1991 Tenyo Maru oil spill near Neah Bay

Proponent Tenyo Maru Trustee Council

Location of current proposal US Fish & Wildlife Service, 510 Desmond Drive SE, Suite 102 Lacey, WA 98503, phone (360) 753-4324

Title of document being adopted Final Restoration Plan & Environmental Assessment for the Tenyo Maru Oil Spill

Date adopted document was prepared March 2, 2000

Description of document (or portion) being adopted Final restoration plan and associated documentation. NEPA document adopted by Tenyo Maru Restoration Committee

If the document being adopted has been challenged (WAC 197-11-630), please describe:
Document has not been challenged to date.

The document is available to be read at (place/time) US Fish & Wildlife Service, 510 Desmond Dr. SE, Suite 102, Lacey WA 98503 also http://www.r1.fws.gov

The lead agency for this proposal has determined that it does not have a probable significant adverse impact on the environment. An environmental impact statement (EIS) is not required under RCW 43.21C.030(2)(c). This decision was made after review of a completed environmental checklist and other information on file with the lead agency. This information is available to the public on request.

- There is no comment period for this DNS.
- This DNS is issued under WAC 197-11-340(2); the lead agency will not act on the proposal for 14 days from the date below. Comments must be submitted by _____

We have identified and adopted this document as being appropriate for this proposal after independent review. The document meets our environmental review needs for the current proposal and will accompany the proposal to the decision-maker.

Name of agency adopting document Washington Department of Ecology

Contact person, if other than responsible official _____
Phone _____

Responsible official DICK WERN

Position/title NRDA COORDINATOR Phone 360 4076971

Address P.O. Box 47600

Date 3/11/00 Signature *Dick Wern*