

FINAL

NESTUCCA OIL SPILL

REVISED RESTORATION PLAN

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Nestucca Oil Spill Revised Restoration Plan

Executive Summary

On December 22, 1988, the tug, *Ocean Service*, collided with the barge, *Nestucca*, which spilled more than 230,000 gallons of No. 6 fuel oil into the Pacific Ocean near Grays Harbor, Washington. The resulting oil slick dispersed over 800 square miles from Grays Harbor north to Vancouver Island, British Columbia, Canada and south to Oregon. Shorelines were oiled within Grays Harbor and along 110 miles of the Washington State coast north of Grays Harbor and into the Strait of Juan de Fuca. Oil washed ashore on portions of Oregon State and Vancouver Island, British Columbia coasts. More than 13,000 oiled seabirds were collected by wildlife rescue and rehabilitation operations conducted during the spill. Estimates of actual migratory bird mortality from the spill ranged from 4 to 6 times greater than that collected.

In 1991, the United States of America settled claims for natural resource damages associated with the 1988 *Nestucca* oil spill under authority of the Clean Water Act. The court agreement states that "... settlement proceeds shall be used to compensate for injury, destruction, or loss of natural resources within the trusteeship of the U.S. Department of the Interior."

In April of 1995, the Service released the *Nestucca Oil Spill Restoration Plan* (Plan). The Plan focused restoration efforts on migratory birds, primarily common murres (*Uria aalge*) and secondly, other seabirds. The focus was on increasing common murre and other seabird breeding populations on the Washington and Oregon coasts and, if possible, determining important factors that influence common murre survival and reproduction in Washington.

The 1995 Plan included the following actions to restore natural resources lost as a result of the spill:

1. Educate pilots, boaters, fishermen, and other visitors to the Washington and Oregon coasts and National Wildlife Refuges (NWRs) about protected wildlife resources in these areas and explain the reasons for and methods of minimizing disturbance to seabirds and other wildlife;
2. Improve habitat conditions for burrow nesting seabirds by eradicating the introduced European rabbit (*Oryctolagus cuniculus*) from Destruction Island;
3. Evaluate alternative gear, identify and implement other measures to reduce the mortality resulting from the incidental take of seabirds in Washington net fisheries; and,
4. Monitor common murre attendance at Washington breeding colonies to determine if the selected restoration actions are successful and to identify detriments to the survival and reproductive success of common murres and other seabirds.

Implementation of several alternatives has been delayed. This delay has occurred due to resource limitations within the Western Washington Fish and Wildlife Office of the Service, work on other oil spills, new information regarding potential effectiveness of some alternatives, new information regarding potential costs of some restoration alternatives, and new

understandings within the state of seabird restoration from implementation of projects associated with the *Apex Huston* and *Tenyo Maru* restoration plans.

The Plan advised that implemented restoration alternatives be reviewed annually to determine if they were effective. The Revised Restoration Plan (RRP) provides a synopsis of the reviews and, as identified for in the 1995 Plan, proposes revisions where actions are not succeeding or other more effective alternatives are identified.

The review in the RRP provides the following synopsis. The net fishery and education alternatives have been effectively implemented. Funding from the *Nestucca* oil spill restoration program was not utilized to conduct the proposed common murre monitoring. The majority of the proposed monitoring was conducted utilizing funding from other sources. Funds previously allocated for monitoring are proposed for re-allocation to other alternatives in the RRP. Eradication of the introduced European rabbit (*Oryctolagus cuniculus*) from Destruction Island has not occurred. Due to high project costs, current negotiations with the U.S. Coast Guard to remove remaining debris from Destruction Island, and potential adverse affects to non-target species, this project has been removed from the RRP. Funds from this project are proposed for re-allocation to other alternatives in the RRP.

While the original plan focused on common murres, it is the intent of the RRP to focus on other seabirds impacted during the spill that have been listed under the Endangered Species Act and may have greater need of immediate restoration actions, as well as shorebirds. The *Tenyo Maru* restoration program has implemented projects to assist with the recovery of common murres and to assess the status of the common murre population in Washington. Due to differences in opinion regarding potential restoration opportunities for common murres, and the known need to implement recovery actions for listed species, the RRP focuses on marbled murrelets and shorebirds because of the potential that these birds were under represented following the *Nestucca* bird mortality recovery and assessment efforts.

The RRP describes the affected environment and illustrates potential restoration alternatives to restore, rehabilitate, replace, or acquire the equivalent of natural resources injured in the *Nestucca* oil spill and their environmental consequences. The preferred alternative selected by the Service is habitat-focused restoration. Under this alternative, projects would be designed to restore and enhance habitats that provide benefits to a range of natural resources injured from the *Nestucca* oil spill. The revised restoration plan proposes to restore injured resources by: 1) enhancing forest structure and promoting the development of additional nesting habitat for the federally threatened marbled murrelet in the South Willapa Bay Landscape, 2) increasing the quality of salt marsh habitat at Grays Harbor NWR for shorebirds and other migratory birds by reducing and/or eliminating *Phragmites australis* from lands within Grays Harbor estuary, 3) improving the quality and complexity of salt marsh habitat at Grays Harbor for shorebirds and other migratory birds by removing an artificial berm and improving tidal inundation, and 4) enhancing coastal habitats to provide nesting sites for western snowy plover, and reducing nest and chick predation by reducing and/or eliminating introduced beachgrass and controlling predators.

1.0 INTRODUCTION

1.1 Purpose and Need for the Proposed Action

The purpose of this Revised Restoration Plan and Environmental Assessment (RRP/EA) is to provide revisions to the *Nestucca Oil Spill Restoration Plan*, released in 1995. The original restoration plan provided provision for such revisions, suggesting that revisions to the plan be made “where actions are not succeeding or other more effective alternatives are identified”.

The restoration funds were recovered under Section 311(f) of the Clean Water Act, prior to the establishment of the Oil Pollution Act of 1990 (OPA). Prior to expenditure of funds, a restoration plan must be prepared. The 1995 *Nestucca Oil Spill Restoration Plan* was prepared under guidance, which is applicable to the Clean Water Act (CWA), for the restoration, replacement, or acquisition of equivalent resources, contained in 43 CFR Subtitle A, Section 11.93 of the Department of Interior Natural Resource Damage Assessment (NRDA) regulations.

This document revision has been prepared on behalf of the public by the U.S. Fish and Wildlife Service (Service), responsible for restoration implementation under terms of an Order of Dismissal and a Stipulation of Dismissal when the claims were settled. This RRP/EA was developed in accordance with the above NRDA regulations, and the National Environmental Policy Act (NEPA), 42 USC 4321-4370d, and its implementing regulations, 40 CFR Parts 1500-1508.

Internal scoping was conducted to develop plan revisions. Members of the *Nestucca* Oil Spill Restoration Planning Committee were consulted on the steps necessary to finalize the Revised Restoration Plan. Members of the Committee who assisted with formulating and drafting the *Nestucca* Oil Spill Restoration Plan included personnel from the U.S. Fish and Wildlife Service, Olympic National Park (ONP), the University of Washington Cooperative Fish and Wildlife Unit, and the Washington Department of Fish and Wildlife (WDFW). Committee members agreed that their review would be sufficient to finalize revisions to the plan.

1.2 Incident Background

On December 22, 1988, the tug, *Ocean Service*, collided with the barge, *Nestucca*, which spilled more than 230,000 gallons of No. 6 fuel oil into the Pacific Ocean near Grays Harbor, Washington. The resulting oil slick dispersed over 800 square miles from Grays Harbor north to Vancouver Island, British Columbia, Canada and south to Oregon. Shorelines were oiled within Grays Harbor and along 110 miles of the Washington State coast north of Grays Harbor and into the Strait of Juan de Fuca. Oil washed ashore on portions of Oregon State and Vancouver Island, British Columbia coasts. More than 13,000 oiled seabirds were collected by wildlife rescue and rehabilitation operations conducted during the spill. Estimates of actual migratory bird mortality from the spill ranged from 4 to 6 times greater than that collected.

In 1991, the United States of America settled claims for natural resource damages associated with the 1988 *Nestucca* oil spill. As part of the *Nestucca* damage settlement, the U.S.

Department of the Interior (Interior) received a total of \$500,000 in annual installments of \$50,000. Payments commenced December 1991. The court agreement states that "... settlement proceeds shall be used to compensate for injury, destruction, or loss of natural resources within the trusteeship of the U.S. Department of the Interior."

2.0 1995 RESTORATION PLAN

In April of 1995, the Service released the *Nestucca Oil Spill Restoration Plan* (Plan). The Plan was developed with the assistance of the *Nestucca* Oil Spill Restoration Planning Committee (Committee). The Committee members included personnel from the Service, the National Park Service, the U.S. Biological Survey, and the Washington Department of Fish and Wildlife (WDFW).

The Plan included the following actions to restore natural resources lost as a result of the spill:

1. Educate pilots, boaters, fishermen, and other visitors to the Washington and Oregon coasts and National Wildlife Refuges (NWRs) about protected wildlife resources in these areas and explain the reasons for and methods of minimizing disturbance to seabirds and other wildlife;
2. Improve habitat conditions for burrow nesting seabirds by eradicating the introduced European rabbit (*Oryctolagus cuniculus*) from Destruction Island;
3. Evaluate alternative gear, identify and implement other measures to reduce the mortality resulting from the incidental take of seabirds in Washington net fisheries; and,
4. Monitor common murre attendance at Washington breeding colonies to determine if the selected restoration actions are successful and to identify detriments to the survival and reproductive success of common murres and other seabirds.

The Plan advised that implemented restoration alternatives be reviewed annually to determine if they were effective. This Revised Restoration Plan (RRP) provides a synopsis of the reviews, and as identified for in the original Plan proposes revisions where actions are not succeeding or other more effective alternatives are identified.

Implementation of several alternatives has been delayed. This delay has occurred due to resource limitations within the Western Washington Fish and Wildlife Office of the Service, work on other oil spills, new information regarding potential effectiveness of some alternatives, new information regarding potential costs of some alternatives, and new understandings within the state of seabird restoration from implementation of projects associated with the *Apex Huston* and *Tenyo Maru* restoration plans.

2.1 Description and Status of Original Restoration Plan Alternatives

2.1.1 Education

Goal: The goal of the education alternative was to increase seabird reproduction through decreased human disturbance. This was to be accomplished by educating pilots, boaters, fishermen, and other visitors to the Washington and Oregon coasts and coastal NWRs about protected wildlife resources in these areas and to explain the reasons for and methods of minimizing disturbance to seabirds and other wildlife. This alternative was expected to improve seabird reproductive success by decreasing human disturbances on and adjacent to Washington's and Oregon's coastal NWR islands.

Actions:

1. Develop and produce educational brochures and posters which describe the wildlife using the coastal NWR islands, why these islands and wildlife are protected, and how to avoid disturbing the wildlife on these islands. These informational materials will be disseminated to commercial and recreational fishermen, tribal fishermen and Olympic National Park visitors.
2. Educational interpretive 3 by 5 foot panels containing the same information will be posted at five boat launch sites on the Washington coast.
3. Additionally, 4 by 8 foot signs will be posted on Destruction and Ozette Islands that advise boaters to stay a minimum of 200 meters away from the islands.

Status: Most elements of this alternative have been or will soon be implemented.

Discussion: Panel design was finalized in the fall of 2003. The panels will be fabricated in 2004 and installed in the winter or following spring (2004/2005). Replacement signs will also be fabricated with a projected need in approximately 2008. The poster design was completed in spring 2004 and will be produced and distributed by the end of 2004. The brochure is in the design stage and will be completed and produced by early 2005, when distribution will begin. Due to environmental and Washington Maritime NWR Complex comprehensive planning (CP) issues, the 4 by 8 foot signs have not been posted on Destruction and Ozette Islands. With completion of the Refuge's CP, it is anticipated that signs will be posted on Destruction Island in 2004. It is unknown at this time when signs will be posted on Ozette Island.

Results from other projects indicate that the goal of educating the public and decreasing human disturbance to seabirds and other wildlife should be met. The restoration plan for the *Tenyo Maru* oil spill provided funding for the Oregon Education Project. That project included the design, production, and installation of large interpretive panels at 11 ports along the Oregon coast. The public response to the interpretive panels was immediate. Before installation of the panels was complete, two commercial fishermen from Tillamook Bay contacted the Service after seeing the panel at the Port of Garibaldi. They wanted to obtain further information about restrictions near seabird and marine mammal colonies. Within 24 hours of installation of the Port Orford panel, a call was received from a sport fisherman reporting harassment of marine

mammals on the Orford Reef (Lowe 2003).

2.1.2 Destruction Island Habitat Improvement

Goals: Restore the native island ecosystem, and increase and stabilize seabird habitat on Destruction Island through the elimination of the European rabbit, an introduced species.

Actions: Zinc-phosphide poison, in conjunction with mechanical means (shooting, trapping, or snaring), was to be used to eradicate the rabbits.

Status: This alternative has not been implemented. Due to a number of concerns this alternative has been removed from the RRP.

Discussion: In the original restoration plan, Nisqually NWR was identified with the responsibility for coordinating implementation of this alternative. Since that time, Nisqually NWR has been de-complexed and Destruction Island is now managed by the Washington Maritime NWR Complex. This refuge is responsible for management of Flattery Rocks NWR, Quillayute Needles NWR, and Copalis NWR, located off the Washington coast in Clallam, Jefferson, and Grays Harbor Counties. Destruction Island is located on the southern end of Quillayute Needles NWR, in Jefferson County.

European rabbits were introduced on Destruction Island during the early 1970's. The rabbits construct extensive tunnels and warrens and keep the island's herbaceous vegetation, primarily turf grasses, closely cropped. Aubrey and West (1984) noted that these activities were accelerating erosion of the island and rabbits were destroying or occupying the breeding habitat of burrow nesting seabirds such as the tufted puffin and the rhinoceros auklet. The potential benefits that were expected from elimination of rabbits included soil stabilization and a resulting decrease in burrow collapse and overall increase in burrowing habitat for nesting seabirds.

During development of the original restoration plan, the proposal was developed utilizing information from several rodent eradication projects in New Zealand. The New Zealand eradications were the result of intensive poisoning programs. Information from the New Zealand projects resulted in a doubling of the estimated budget for eradication of rabbits from Destruction Island (Momot 1995).

On Anacapa Island, in Channel Islands National Park, California, eradication of rats was proposed as a restoration action in the *Restoration Plan for Seabirds Injured by the American Trader Oil Spill* (American Trader Trustee Council 2001). Rats were successfully eradicated from the approximately 120 acre island using the rodenticide brodifacoum, at a cost of approximately \$1.5 million (American Trader Trustee Council 2003). The actual cost of eradicating rabbits from Destruction Island would be more expensive than budgeted for in the original restoration plan (Ryan, K., personal communication 2003).

Since the mid-1970's, various rabbit control measures have been implemented on Destruction Island. A zinc-phosphide poisoning program was conducted during 1978. A 97 percent reduction in the rabbit population was achieved. However, follow-up to the program was

insufficient and the rabbit population returned to pre-control levels. The actual rabbit population is unknown. It is estimated to vary between 40 and 300 or more rabbits in a given year.

Refuge staff are currently coordinating with the U.S. Coast Guard to remove the remaining debris from Destruction Island. Debris on the island is seen as potential hiding places for rabbits and a hindrance to implementing control measures (Ryan, K., personal communication 2003). Success of the control program proposed in the restoration plan would be compromised if only a small number of rabbits remained following implementation, as in prior efforts.

Species of concern that use the island include the bald eagle (*Haliaeetus leucocephalus*), a listed threatened species, and the Destruction Island shrew (*Sorex trowbridgii destructioni*), a candidate species for protection under the Endangered Species Act (ESA) of 1973, as amended. The proposed poisoning program may have had some adverse impacts on these non-target species.

Due to high costs, current negotiations with the U.S. Coast Guard, and potential adverse affects to non-target species, this project has been removed from the RRP. Funds for this project will be re-allocated to more effective alternatives.

2.1.3 Net Fishery

Goal: To develop and implement a strategy to reduce or eliminate incidental take of seabirds in Washington net fisheries.

Actions:

1. Evaluate experimental alternative gear for drift gillnet fishery.
2. Prepare a report which identifies other options for reducing or eliminating seabird mortality; develop an overall strategy for implementing changes in fisheries which would eliminate, reduce and/or mitigate losses; and provide a budget for implementing proposed strategy.

Status: A study was conducted by Washington Sea Grant on gear modifications and fishery practices during the 1995 sockeye fishery, utilizing funding from the *Nestucca* Restoration Program. The study was continued in 1996 by Washington Sea Grant, utilizing funding from a grant by the National Marine Fisheries Service (NMFS). The goal of the study was to test methods to eliminate or significantly reduce the incidental capture of seabirds in drift gillnet fisheries without significantly reducing the fishing efficiency of the nets.

Following each year of study, reports were prepared identifying options for reducing seabird mortality. Results of the study were utilized to make recommendations in fishing regulations. This alternative was successfully implemented and completed in 1997.

Discussion: In both years, the study was coordinated by the Washington Sea Grant Program, in cooperation with the Puget Sound Gillnetters' Association (PSGA) and the WDFW. This

research study was based on the results of a pilot study conducted during the 1994 non-treaty Puget Sound sockeye drift gillnet fishery. Seabird and marine mammal entanglement rates and fish catch were compared in up to three experimental gear treatments and a control (nylon monofilament netting) and among three time-of-day categories during the 1995 and 1996 sockeye fishery in Management Area 7 (San Juan Islands vicinity of north Puget Sound).

Most sockeye nets are 200 meshes (60 feet) deep. When deployed or “set” the net remains attached to the vessel throughout the set. Sets vary in length, but average 2 hours. Experimental nets incorporated either visual or acoustic alerts into traditional nylon monofilament gear. Visual barrier nets were monofilament nets with highly visible netting in the upper quarter (50 Mesh) or upper eighth (20 Mesh) of the net. The assumption tested was that birds can readily see this material and possibly avoid the net, and that salmon dive to avoid the more visible netting and are captured in the nearly invisible monofilament netting below the heavy twine. An additional modification, tested in 1996, included acoustic alerts (pingers), which are low frequency sound-emitting devices attached to the corkline (Melvin *et al.* 1996; Melvin *et al.* 1997).

Ambient light was speculated to have a potential impact on seabird bycatch. The study evaluated the differences in bycatch during daytime, nighttime, or morning or evening change-of-light. Change-of-light was defined as a 3-hour period that includes 1.5 hours before and after sunrise or sunset.

Results from the 1995 study found that seabird bycatch rates and salmon catch rates decreased significantly as the depth of the visual barrier increased. Seabird entanglement rates were reduced by 43 percent (20 Mesh) to 93 percent (50 Mesh), and sockeye salmon catch rates by 8 percent to 36 percent less than with traditional nets. Seabird entanglement rates were greatest near sunrise and salmon catch rates varied little by time of day, but neither of these differences was statistically significant (Melvin *et al.* 1996).

The number of seabirds using Puget Sound fluctuated widely among years. During the 1996 study, common murre were 59 times more abundant and rhinoceros auklets were almost 3 times more abundant than during the 1995 study. The inter-annual and in-season variation of seabird abundance in Puget Sound was viewed as the most important factor in determining the rate of seabird entanglements during the study. This variance in seabird abundance was seen as a great opportunity for improved management of the fishery (Melvin *et al.* 1997). Seabird bycatch could be greatly reduced by limiting fishery openings to periods of high fish abundance, thereby reducing the number of nets deployed to catch the allotted number of fish.

Results from the 1996 study found that seabird entanglement was similar during morning and evening change of light and least during the day. Rhinoceros auklet entanglement rates were significantly greater near sunrise and common murre entanglement rates were significantly greater near both sunrise and dusk. Entanglement rates and catch rates of sockeye varied significantly among the experimental gears. Pinger, 20 mesh and 50 mesh gears entangled seabirds at rates 58 percent, 55 percent, and 50 percent (respectively) of the monofilament control; sockeye catch rates were 85 percent, 88 percent and 39 percent respectively (Melvin *et al.* 1997).

Results of the study identified three complementary tools to reduce seabird bycatch in Puget Sound salmon drift gillnet fisheries: abundance-based fishery openings or ecosystem management, alternative gear, and time of day restrictions. It was confirmed that the 20 mesh gear significantly reduced entanglement rates without reducing fishing efficiency. It was tested and proved in multiple fisheries, and was conceived and endorsed by the PSGA. Although pingers have the greatest potential to reduce seabird entanglement in a wide range of gillnet fisheries, they were not recommended at this time as results need to be duplicated, the prototype is not commercially available and the device can still be improved (Melvin *et al.* 1997). The time of day that gillnets are fished significantly affects seabird entanglement rates. It was found that elimination of sunrise fishing was likely to reduce most rhinoceros auklet entanglements and significantly contribute to reducing common murre entanglements (Melvin *et al.* 1997).

Employing all available tools, fishing 20 mesh nets at times of high fish abundance during openings that include either daytime and dusk or daylight only fishing, would have the potential to reduce seabird bycatch by up to 70 percent to 75 percent in years similar to 1996 (Melvin *et al.* 1997).

The Service sought the assistance of other natural resource trustees, particularly the NMFS, the then separate Washington Department of Fisheries and Washington Department of Wildlife, the Tribal Fisheries, and the Bureau of Indian Affairs (BIA) in conducting the net fishery investigation, developing and implementing the strategy for reducing seabird bycatch, and making recommendations for new fishery regulations.

The Washington Fish and Wildlife Commission took actions based on this study to reduce seabird bycatch in the Fraser River sockeye fishery in north Puget Sound. With the support of the PSGA, the Commission adopted regulations for the nontreaty fleet that eliminated dawn fishing and required the use of nets modified with a 20 mesh visual barrier. The authority was also provided to manage the fishery based on the abundance of birds and fish. These regulations do not apply to the U.S. treaty-tribe gillnet fleet or the Canadian gillnet fleet. Together, these two fleets caught 99 percent of the Fraser River sockeye catch in 1996. As a result of this inequity, non-treaty U.S. gillnet fishers sought and obtained a temporary injunction against the new regulations, which was later lifted on appeal by the WDFW (Melvin *et al.* 1999).

The Service has utilized the results of the net fishery study in past ESA consultations with the BIA and the National Oceanic and Atmospheric Administration (NOAA), and anticipates utilizing the information in future consultations.

2.1.4 Monitoring

Goals: The primary goal of this alternative was to document the changes in the number of common murres to determine if implementation of the net fishery and education alternatives

were effective. Factors impacting seabirds, such as disturbances and spills, in the census area were also to be recorded.

Actions:

1. Common murres attending traditional colony sites located on the Washington coast were to be censused four times during the breeding season. Observers or time lapse photography were to be used to monitor selected common murre colonies.
2. Additionally, seabird colony disturbance data was to be collected from the shore and during aerial surveys.

Status: Funding from the *Nestucca* oil spill restoration program has not been utilized to conduct the proposed monitoring. The majority of the proposed monitoring was conducted utilizing funding from other sources.

Discussion: Much of the proposed monitoring of common murre colonies has been conducted through other mechanisms. The restoration plan for the *Tenyo Maru* oil spill included funding for conducting monitoring of common murre colonies. Washington Maritime NWR Complex has also increased their monitoring efforts in recent years. Multiple surveys have been conducted since 1994 on Washington common murre colonies on National Wildlife Refuge islands (Wilson 2003).

It was expected that implementation of recommendations developed in the net fishery alternative would result in a greater survivorship of seabirds. Many factors may contribute to an increase or decrease in the population of common murres. El Nino events are a major factor determining murre colony attendance on outer coast refuge islands. Many colonies are deserted for one or more years following severe El Ninos. Human related disturbances (oil spills, gillnet mortality, and U.S. Navy practice bombing) complicate interpretation of the effect of El Nino events on common murres (Wilson 1991). Changes as a result of net fishery recommendations cannot be separated from these other larger scale environmental factors.

It was also expected that implementation of the education alternative would prevent and/or reduce disturbance of seabird colonies. Since the education alternative has only recently been implemented, the ability to monitor the effect of these actions has been delayed. In ensuing years, since development of the *Nestucca* restoration plan, it has become apparent that many factors may contribute to an increase or decrease in the population of common murres. While many agree that implementation of these education measures will benefit seabirds, there is also agreement that attempting to document the positive effect through population monitoring is not statistically feasible. It would be impossible to document the change in seabird numbers related

to implementation of the education alternative and separate that change from other factors effecting changes in the population.

Due to additional common murre population monitoring occurring through funding from Washington Maritime NWR Complex and the *Tenyo Maru* oil spill restoration, delays in

implementing the education alternative, the inability to document that changes in population size would be directly attributable to implementation of either the net fishery or education alternatives, and the potential to benefit other seabirds by funding on the ground habitat restoration projects, the monitoring alternative has been removed from the RRP, and these funds will be re-allocated to more effective alternatives.

3.0 NATURAL RESOURCES OF CONCERN

3.1 Focus of Original Restoration Plan

The original plan focused on “increasing common murre and other seabird breeding populations on the Washington and Oregon coasts, and if possible, determining important factors that influence common murre survival and reproduction in Washington”. Several projects have been implemented that benefit common murres. It is assumed that implementation of the net fishery and education alternatives have benefitted populations of common murres and other seabirds.

3.2 Focus of Revised Restoration Plan

While the original plan focused on common murres, it is the intent of the RRP to focus on other seabirds impacted during the spill that have been listed under the ESA and may have greater need of immediate restoration actions, as well as shorebirds. The *Tenyo Maru* restoration program has implemented projects to assist with the recovery of common murres and to assess the status of the common murre population in Washington. Findings from the *Tenyo Maru* work have resulted in differing opinions regarding both the potential recovery of the common murre population and opportunities available to enhance population recovery. There is some evidence that the common murre population may be recovering (Wilson 2003). There is no lack of suitable nesting habitat for murres and the breeding populations are increasing on a number of on and off refuge coastal islands. Due to differences in opinion regarding potential restoration opportunities for common murres, and the known need to implement recovery actions for listed species, the RRP focuses on marbled murrelets and shorebirds because of the potential that these birds were under-represented following the *Nestucca* bird mortality recovery and assessment efforts.

Mortality of marbled murrelets due to oil pollution is considered one of the major threats to murrelet populations. When the full impacts of oil pollution are considered, lethal and sublethal impacts may have profound effects on local populations, especially when added to other anthropogenic factors effecting populations. Population impacts are difficult to demonstrate due to the need for detailed pre-event baseline data, careful injury determination, and detailed follow-up data after an event. When oiling mortality is considered as a cumulative effect with other

anthropogenic factors and affects small declining populations of murrelets, the relative effects of oil pollution become greater and recovery may not be possible (Carter and Kuletz 1995).

Due to the small size of both marbled murrelets and shorebirds, they are less likely to be recovered during an oil spill. After an oil spill, only a fraction of the birds killed are recovered.

Many birds die at sea and sink, a few crawl into secluded spots on land, and some are eaten by predators. The likelihood of retrieving a carcass decreases with the decreasing body size of the bird (Carter *et al.* 2000). Marbled murrelets' small size would make it unlikely to be found dead. It is likely that high levels of beach scavenging of murrelets also contributes to low carcass retrieval. In a recent study, four out of five small bodied birds were removed in a few hours by common ravens. Nocturnal mammals also remove many carcasses from beaches (Carter *et al.* 2000).

Following the *Nestucca* spill, 2 marbled murrelets, 4 ancient murrelets, and 11 unidentified murrelets were recovered. It has been found that low recovery rates of murrelets after pollution events potentially result from improper identification of murrelet carcasses that resemble other small alcid; undercounting of carcasses on beaches due to small carcass size, incomplete coastal coverage, and burial in beach substrates; high rates of carcass removal by predators on shore and at sea; and carcass loss due to sinking at sea (Carter and Kuletz 1995).

Little information is available regarding food habits of murrelets in Washington, Oregon, or California. More information is available for British Columbia and the Gulf of Alaska. While the information is limited, Pacific sand lance (*Ammodytes hexapterus*) is the most common food of the murrelet across its range (Burkett 1995). Sand lance, as well as other murrelet forage species, are intertidal spawners and are more susceptible to oil pollution than pelagic spawners. The oil spill may have affected forage fish populations, though this was not assessed following the spill.

Seven shorebirds were recovered following the *Nestucca* spill. However, Larsen and Richardson (1990) observed 3,574 oiled shorebirds in and adjacent to Grays Harbor that were mobile despite being oiled. Their fate was undetermined. Larsen and Richardson assumed that the total shorebird mortality was higher than the seven birds recovered because the effects of oil ingestion and oiled plumage may include behavioral and internal aberrations that rendered the shorebirds more susceptible to predation, disease, and starvation. As stated above, due to their small size shorebirds are less likely to be recovered during an oil spill.

3.3 Species Descriptions

The following species discussions provide information as to why the populations of the following species are of particular interest in Washington.

Common Murres. The overall murre population in Washington significantly declined between 1979 and 1995, by 13.3% per annum (Carter *et al.* 2001). There are differing opinions regarding the stability of the common murre population along the Washington coast. Recent monitoring has shown increases in numbers of murres recruiting to a number of refuge islands. While these numbers are still substantially lower than 1979-1980 numbers, they could possibly be indicative of recovery. Another interpretation of these data is that there is no recovery and that the apparent variability in intra-annual counts indicates instability within these colonies (TMTC 2003). One analysis of the 1990-2002 murre population data for all Washington refuge colonies shows that there is no significant trend in the numbers of murres. This lack of a significant trend is thought to suggest that the population is stable and at carrying capacity (Wilson 2003). There

is no lack of suitable nesting habitat for murrees and the breeding populations are increasing on a number of on and off refuge coastal islands.

Marbled Murrelets. The Washington, Oregon, and California populations of marbled murrelets were listed as threatened under provisions of the 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).

In the early 1990's, the size of the listed population of the murrelet in Washington, Oregon, and California was estimated at 18,550-32,000 (Ralph *et al.* 1995). The large range in the population estimate was the result of two widely divergent population estimates in Oregon. Population trend monitoring for the murrelet, as part of effectiveness monitoring for the Northwest Forest Plan (NWFP), began in 2000 (Bentivoglio *et al.* 2002).

Given that it is premature to detect biologically meaningful trends in population size with only 2 years of systematic monitoring, the best available information on range-wide population trends is the summary in the murrelet Recovery Plan (USFWS 1997). Ralph *et al.* (1995) and the Marbled Murrelet Recovery Team (1994) concluded that the listed population appears to be in a long-term downward trend. Best estimates show that the population may be declining at a rate of 4 to 7 percent per year, and perhaps as much as 12 percent per year (Beissinger 1995 as referenced in the Recovery Plan).

The loss of nesting habitat (old-growth/mature forest) has generally been identified as the primary cause of the murrelet population decline and disappearance across portions of its range (Ralph *et al.* 1995). Primary threats to murrelets in the marine environment are entanglement in nearshore fisheries nets, and marine pollution including oil spills (USDI 1992).

Shorebirds. Because shorebirds concentrate in limited areas in large numbers during critical periods of their life cycles, habitat loss and degradation is a major threat. Of primary concern for shorebird conservation is the loss of wetland habitat. The Northern Pacific Coast Regional Shorebird Management Plan identifies restoration and protection activities of primary concern for shorebird conservation. Actions include restoration of tidal regimes to diked wetlands in estuaries, and removing exotic species and planting native vegetation in both estuarine and freshwater areas (Drut and Buchanan 2000).

Of the 50 shorebird species recognized by the U.S. Shorebird Conservation Plan (administered by the Manomet Center for Conservation Sciences with funding assistance from the Service) as occurring within the United States, 40 occur regularly within the Northern Pacific Region (NPR), which represents western Washington and Oregon. Several of these species occur in very low abundance (e.g., rare migrants). Nineteen species (including species such as Black Oystercatcher, Common Snipe, Dunlin, Greater Yellowlegs, and Sanderling) were identified regionally as species of high concern due to their regional importance. Only one species, the Snowy Plover, was considered to be highly imperiled at national and regional scales (Drut and Buchanan 2000).

Grays Harbor estuary is renowned for high concentrations of shorebirds in late April. By hosting over 500,000 shorebirds every year, it is one of 16 shorebird staging areas of hemispheric significance that make up the Western Hemisphere Shorebird Reserve Network, an international conservation program that identifies key shorebird sites for protection throughout the Americas. To protect this key site, Grays Harbor National Wildlife Refuge was established in 1990 in the northeast corner of the estuary. During their annual migration, shorebirds travel up to 8,000 miles from their wintering sites in South America to their breeding grounds on the Alaskan tundra. Over two dozen species of shorebirds use the Grays Harbor Estuary during spring and fall migration and some dunlin populations overwinter there. A wide array of wetland types serve as shorebird staging sites by providing migratory birds with a chance to rest and refuel before continuing on their journey. At Grays Harbor estuary, shorebirds particularly prefer the intertidal mudflats for feeding and the salt marsh for resting.

Western Snowy Plover. On March 5, 1993, the Pacific coast population of the western snowy plover (*Charadrius alexandrinus nivosus*) was listed as threatened under provisions of the ESA (16 U.S.C., 1531-1544). In Washington State, the western snowy plover was listed as endangered under Washington Department of Game Policy #402 in 1981. The state endangered status was reaffirmed in 1990 by the Washington Wildlife Commission (Washington Administrative Code 232-12-014). Three breeding areas currently exist along the southwest coast of Washington. During recent breeding seasons, fewer than 25 plovers and 12 nests have been found (USFWS 2001).

Habitat degradation caused by human disturbance, urban development, introduced beachgrass (*Ammophila* spp.), and expanding predator populations have resulted in a decline in the size of the breeding and wintering populations (USFWS 2001). The Northern Pacific Coast Regional Shorebird Management Plan identifies 3 species (out of 40) as having a high need for recovery including the Snowy Plover. The plan also identifies removal and control of introduced beachgrass as a priority task.

The geographic area impacted by the *Nestucca* oil spill includes the entire extent of the Washington snowy plover population and important feeding and stopover sites for hundreds of thousands of migrating shorebirds. Snowy plovers reside along the Washington coast year-round. Breeding sites are located immediately adjacent to Grays Harbor, both north and south along the coast.

4.0 DESCRIPTION OF RESTORATION PLAN REVISION ALTERNATIVES, PROPOSED PROJECTS, AND ENVIRONMENTAL CONSEQUENCES

4.1 Development of Restoration Alternatives

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

draft restoration plan. Since this document provides revisions to an approved restoration plan, and proposes new on-the-ground restoration, NEPA is being applied to the proposed revisions.

To comply with the requirements of NEPA, the Service 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 RRP/EA, the appropriate context for considering potential significance of the action is regional, as opposed to national or worldwide.

The primary goal of restoration is to meet the statutory objective to compensate the public for injuries to natural resources from the *Nestucca* oil spill. Injury was clearly documented for seabirds and shorebirds from this incident. Therefore, the goals provided in this RRP are to restore, replace, rehabilitate, and/or acquire the equivalent resources of seabirds and shorebirds (including their associated communities). The primary objective is to provide a functioning and sustainable ecosystem where specific populations of seabirds and shorebirds are enhanced to provide a net gain of habitat function beyond existing conditions.

Details for on the ground work are limited at this juncture. Detailed scopes of work will be developed following approval of the RRP. The NEPA review provided in this RRP is programmatic in nature. It should serve to provide a point of departure for subsequent project-specific NEPA and State Environmental Policy Act (SEPA) documents. Project coordinators will be responsible for conducting all site-specific environmental review, including but not limited to NEPA and SEPA review, ESA consultation, and compliance with the National Historic Preservation Act (12 USC 470 et seq.).

4.2 Proposed Alternatives and Potential Projects

To restore natural resources lost as a result of the *Nestucca* oil spill, the following alternatives have been developed:

1. No action/ Natural Recovery (required by the NEPA process)
2. Habitat-focused Restoration

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 Service before implementation of any project. The alternatives are defined and a selected alternative is named in Section 5. Project proposal schedules and estimated budgets are provided in Section 5.1.

The *Nestucca* restoration funds are in an interest bearing account, thus the amount of funding may change over time. The opportunity to cost-share with other funding sources may also increase the funding available for project implementation. The RRP provides a menu of restoration options. The number of projects selected for implementation will be based upon

available funding. Section 5.1 lists projects in prioritized order for implementation.

4.2.1 Alternative A: No-Action/Natural Recovery

NEPA requires the Service to consider a “no action” alternative. Under this alternative, the Service would take no direct action to restore injured natural resources or compensate for lost services pending environmental recovery. Instead, the Service 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, or other adverse environmental conditions in the affected area, and the risk of already small declining populations not being able to recover without assistance.

4.2.2 Alternative B: Habitat-Focused Restoration

Habitat is broadly defined as both the biological and physical environment in which individual seabirds and shorebirds 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 *Nestucca* 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, enhanced or otherwise made available. For example, the manipulation of seabird and shorebird habitats may positively affect seabird and shorebird population parameters by increasing the number of breeding adults, increasing reproductive success, and/or increasing survival of individuals of all age classes.

Specific project proposals consistent with the habitat-focused restoration alternative are identified in Sections 4.2.2.1 and 4.2.2.2. Although these projects propose 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 ESA will be pursued for projects that may affect federally listed species.

Project specific NEPA compliance and reviews will evaluate whether there may be inadvertent environmental impacts affecting the quality of the human environment.

4.2.2.1 Marbled Murrelet Habitat Restoration

Project Goals: To enhance forest structure and promote the development of additional nesting habitat for the federally threatened marbled murrelet in the South Willapa Bay Landscape.

Potential project coordinators: U.S. Fish and Wildlife Service, Willapa National Wildlife Refuge, and The Nature Conservancy of Washington.

Project description: According to the Recovery Plan for the Marbled Murrelet (USFWS 1997), the major factors contributing to the threatened status of murrelets 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 nearshore marine environment, but fly inland to nest in mature conifers. Besides protecting marbled murrelet nesting habitats, nesting habitat quality can be improved by protecting forest stands adjacent to nesting habitats. The recovery plan for marbled murrelets recommends decreasing habitat fragmentation by increasing the size of forest stands to provide a larger area of interior forest conditions as a long-term strategy. It also recommends the protection of “recruitment habitats” (stands currently 80 years old or older) to enlarge existing stands and buffer occupied sites from predators and wind damage that can gradually degrade the stand.

Coastal old-growth coniferous forest habitats in the Pacific Northwest have been extensively converted to young even-aged stands over the last century as a result of commercial timber harvest. These young managed forest stands contain highly simplified forest structure and composition, and are generally found to provide poor, if any, nesting habitat for many species, such as the marbled murrelet, that are dependent on late-seral forest habitats (Scientific Analysis Team 1993). In southwest Washington, less than 1 percent of the original extent of natural forests remain. The existing murrelet population in southwest Washington is critical to the overall viability of the species as this area forms a distributional gap in the range of the species and contains little quality nesting habitat.

A unique opportunity currently exists to collaborate with The Nature Conservancy (the Conservancy) in a landscape-scale forest restoration project. Willapa NWR lands directly link with the Conservancy’s 7,000 acre preserve in the adjacent Ellsworth Creek watershed, forming a contiguous landscape-scale conservation area that allows for large-scale forest restoration. These lands, together with nearby Natural Resource Conservation Areas managed by the Washington Department of Natural Resources, create a core functional landscape in South Willapa Bay (over 15,000 acres of forested terrestrial habitat) that dramatically increases long-term ecological integrity and connectivity within the area (Figure 1). These areas are collectively referred to as the South Willapa Bay Conservation Area. Protection and restoration of these forest habitats would both increase the suitability of existing murrelet nesting habitat (e.g., decrease

fragmentation, edge effects, and nest predation) and dramatically increase the total amount of nesting habitat available over time.

Less than 10 percent of the forests within the South Willapa Bay Conservation Area remains in an old-growth condition (Figure 2), with most forest stands now being between 5 and 50 years of age. As stated in the recovery plan for marbled murrelets, “The majority of suitable nest stands currently exist as small islands within a matrix of younger forest.” This exemplifies the situation in the South Willapa Bay Conservation Area. The recovery plan goes on to say that these stands

are vulnerable to wildfire and windthrow, and perhaps a higher abundance of avian predators. The recovery plan recommends that research be conducted to develop silvicultural techniques to hasten development of large trees and decrease vulnerability of habitat fragments to fire, wind, and perhaps predators. One objective of the Conservancy's Ellsworth Creek Preserve is to provide such research at a watershed scale.

Recent scientific research concludes that it is possible to accelerate forest complexity and habitat development through the application of carefully applied silvicultural practices (Lindenmayer and Franklin 2002; Carey and Bristol 2002). Techniques such as variable density thinning, underplanting, and the creation of large woody debris (snags and downed logs) have been shown to accelerate the development of complex habitat conditions in young managed forest stands.

Figure 1. Map of the South Willapa Bay Conservation Area

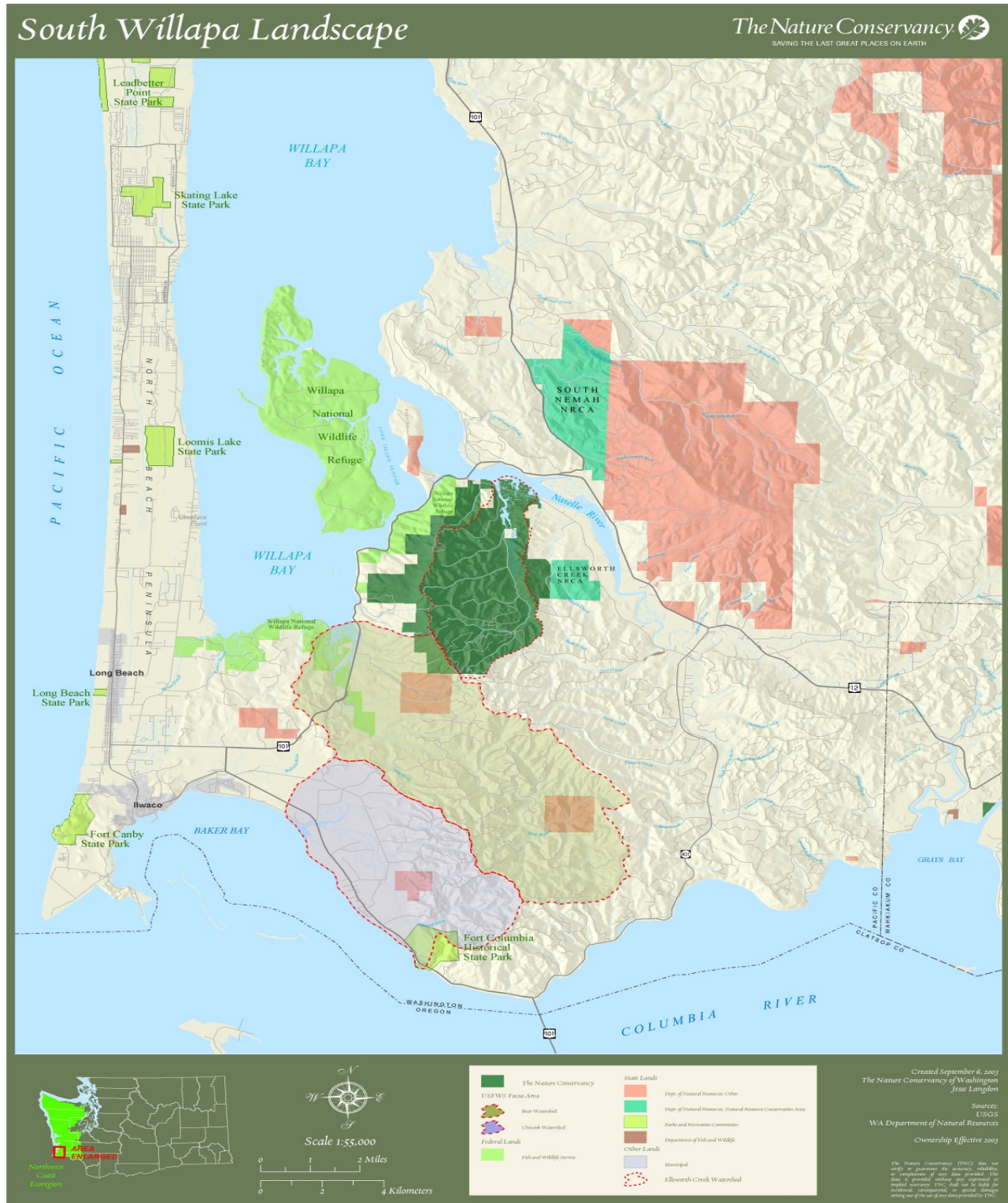
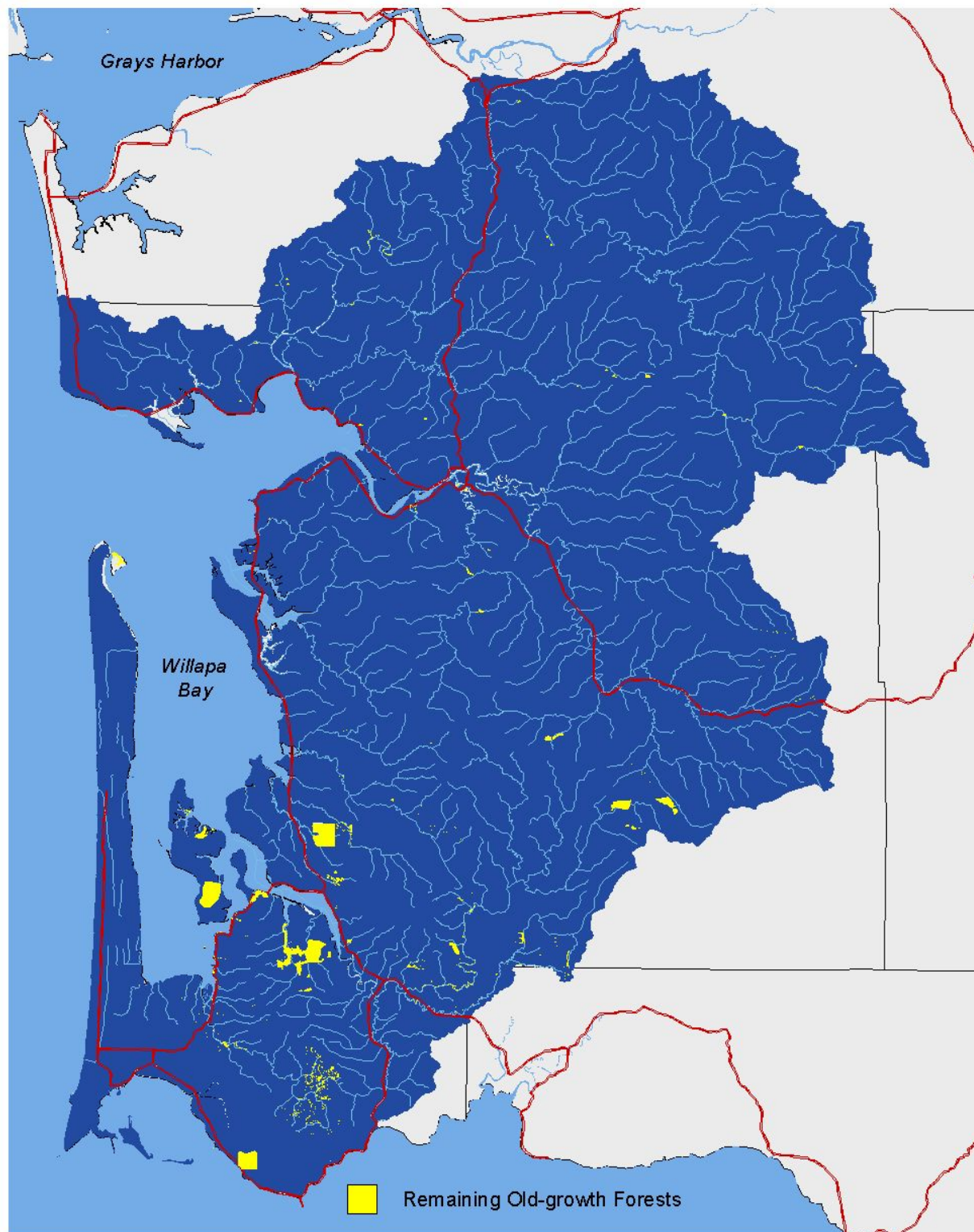


Figure 2. Map of the Willapa Bay watershed showing approximate extent of remaining growth forest habitat.



Habitat manipulation around isolated legacy trees that remain in young managed forest stands may also enhance the forest canopy structure required by murrelets for nesting. Such techniques can be used to promote the development of trees with nesting platforms and canopy characteristics preferred by the murrelet while also benefitting other species of concern.

An initial inventory of forest stands within the Conservancy's Ellsworth Creek Preserve has been conducted (Figure 3). The goals of the marbled murrelet habitat restoration proposal are to conduct inventories on all Willapa NWR forest lands and to cooperatively develop and implement a forest restoration strategy for these forest lands. Implementation of such a strategy is expected to dramatically increase the amount of suitable nesting habitat available for murrelets within the South Willapa Bay landscape.

Proposed activities: Forest restoration in South Willapa Bay requires an integrated program of forest inventory, management planning, implementation of restoration actions, and monitoring.

Forest Inventory: Forest consultants with extensive knowledge in forest mensuration and ecological restoration concepts will conduct forest stand inventories on NWR lands that compliment inventories on the Conservancy's Ellsworth Creek Preserve. Inventories will quantify forest structural parameters and habitat variables such as: large snags and downed logs, mistletoe brooms, large branches, general canopy structure and crown-class differentiation, and other stand characteristics known to be associated with murrelet nesting.

At the conclusion of these inventories, a seamless map of the Conservancy and NWR lands will be produced showing the ecological condition of the area's forests and existing murrelet habitat suitability across the landscape.

Management Planning: Cooperative forest restoration planning will provide both stand and landscape level restoration prescriptions that are designed to hasten the development of late-seral forest structures throughout the landscape. Restoration prescriptions on NWR lands will focus specifically on improving habitat for marbled murrelets.

Restoration actions: Will target those stands within the landscape where the greatest potential exists to:

1. Accelerate the development of complex forest structure and composition to increase the extent of suitable murrelet nesting habitat and to benefit other late-seral forest dependent species.
2. Reduce forest fragmentation and edge effects within mature forest stands that are occupied by murrelets during the nesting season.

Restoration actions utilizing *Nestucca* funds will follow the guidance provided in the recovery plan for marbled murrelets. Specific guidance in the plan includes:

Ellsworth Creek Watershed 2001

This map illustrates the Ellsworth Creek Watershed in 2001. It features a complex network of streams and rivers, with major ones labeled as Brook 1, Brook 2, Brook 3, Brook 4, and Brook 5. The watershed is divided into numerous sub-catchments, each identified by a number (e.g., 1, 2, 3, 4, 5, 6, 7, 8, 9, 10, 11, 12, 13, 14, 15, 16, 17, 18, 19, 20, 21, 22, 23, 24, 25, 26, 27, 28, 29, 30, 31, 32, 33, 34, 35, 36, 37, 38, 39, 40, 41, 42, 43, 44, 45, 46, 47, 48, 49, 50, 51, 52, 53, 54, 55, 56, 57, 58, 59, 60, 61, 62, 63, 64, 65, 66, 67, 68, 69, 70, 71, 72, 73, 74, 75, 76, 77, 78, 79, 80, 81, 82, 83, 84, 85, 86, 87, 88, 89, 90, 91, 92, 93, 94, 95, 96, 97, 98, 99, 100). The map uses a color-coded system to represent different land use types and elevation zones. A legend on the left side provides a key for these symbols and colors. A scale bar at the bottom left indicates distances in feet (0 to 3000). A north arrow is located in the top right corner. The map is titled 'Ellsworth Creek Watershed 2001' at the top center.

Legend

- 2nd to 4th Survey
- 1996-01, 1996-02, 1996-03, 1996-04, 1996-05, 1996-06, 1996-07, 1996-08, 1996-09, 1996-10, 1996-11, 1996-12, 1997-01, 1997-02, 1997-03, 1997-04, 1997-05, 1997-06, 1997-07, 1997-08, 1997-09, 1997-10, 1997-11, 1997-12, 1998-01, 1998-02, 1998-03, 1998-04, 1998-05, 1998-06, 1998-07, 1998-08, 1998-09, 1998-10, 1998-11, 1998-12, 1999-01, 1999-02, 1999-03, 1999-04, 1999-05, 1999-06, 1999-07, 1999-08, 1999-09, 1999-10, 1999-11, 1999-12, 2000-01, 2000-02, 2000-03, 2000-04, 2000-05, 2000-06, 2000-07, 2000-08, 2000-09, 2000-10, 2000-11, 2000-12, 2001-01, 2001-02, 2001-03, 2001-04, 2001-05, 2001-06, 2001-07, 2001-08, 2001-09, 2001-10, 2001-11, 2001-12
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1. Maintain and enhance buffer habitat surrounding occupied habitat. Buffer widths should be a minimum of 300-600 feet and should consist of whatever age stand is present.
2. Silvicultural techniques may be appropriate to increase the area of suitable nesting stands and the rate at which they develop. Thinning will be conducted not only to accelerate tree growth, but to select trees that will grow large moss-covered, or mistletoed branches with the objective of providing nest platforms.
3. Human activities (for the purpose of conducting forest management activities) near nesting areas should be timed to avoid disruption of marbled murrelet activities such as courtship, mating, and nesting. Additionally, human activities should be modified to reduce attraction of predators (specifically corvids) to forest areas occupied by murrelets, and forest enhancement actions should be conducted in areas that will have limited ongoing human activity.

Benefits: Conducting a forest inventory and developing a forest management plan to hasten the development of late-seral forest structures throughout the landscape will improve the long-term quantity and quality of murrelet nesting habitat. Improving the long-term quantity and quality of murrelet nesting habitat will assist with filling the current distributional gap for murrelets in southwest Washington.

Environmental consequences: The protection, acquisition, and enhancement of fish and wildlife habitats have been relatively successful in restoring or maintaining certain fish and wildlife populations. Enhancement of forest habitats would reduce fragmentation over time. Fragmented forests are cited as a major reason for the decline of the marbled murrelet (USFWS 1997).

Potentially negative impacts that may result from forest manipulations conducted under this alternative could occur with some activities, such as thinning and planting. These actions may have short-term adverse impacts on the environment due to noise and air quality disturbances from equipment use, human disturbances to wildlife and attraction of corvids. Aside from the attraction of corvids, these potentially adverse effects are expected to be temporary, and can be minimized with timing restrictions and best management practices. The abundance and predation rates of avian predators, especially some species of corvids, can be affected by edge and areas of low forest cover (Hannon and Cotterill 1998; Tewksbury et al. 1998). These aspects of forest manipulation will need to be evaluated on a site-specific basis. ESA consultation and project-specific NEPA review will be conducted for all on the ground actions.

4.2.2.2 Shorebird Habitat Enhancement

Several shorebird habitat enhancement projects are included in the RRP. Projects are listed in prioritized order. The final number of funded projects will depend upon the ability to form partnerships to provide cost-share opportunities to increase the total amount of funding available.

4.2.2.2.1 Phragmites Removal and Salt Marsh Restoration at Grays Harbor NWR (Invasive Species Control for Shorebirds)

Project goals: To increase the quality of salt marsh habitat at Grays Harbor NWR for shorebirds and other migratory birds by reducing and/or eliminating *Phragmites australis* from lands within Grays Harbor estuary.

Potential project coordinators: Nisqually National Wildlife Refuge, Grays Harbor NWR.

Project description: As noted in Section 3.3, Grays Harbor estuary is 1 of 16 shorebird staging areas of hemispheric significance that make up the Western Hemispheric Shorebird Reserve Network. At Grays Harbor estuary, shorebirds particularly prefer the intertidal mudflats for feeding and the salt marsh for resting. Both of these habitats are severely threatened by a non-native invasive plant, *Phragmites australis* (Phragmites).

Phragmites is a large perennial rhizomatous grass that is native to most of North America; however, non-native haplotypes of this species have also become established across the continent and threaten freshwater and tidal wetlands. Phragmites spreads predominantly through vigorous vegetative reproduction and can quickly form large monotypic stands that displace native vegetation and often alter the structure and function of the wetlands it invades. The non-native haplotype of Phragmites occurs on approximately 13 acres of salt marsh at Grays Harbor NWR, and as large stands on neighboring lands. On the Refuge, it has become established in four separate areas as near monotypic stands. Over the past few years, these stands have spread rapidly, are taking over areas that once were high quality salt marsh, and are fast approaching the intertidal mudflats further out in the basin. The salt marsh habitat at Grays Harbor NWR is a very important component of the Refuge because it provides food, resting and roosting sites, and cover from predators for migratory shorebirds, waterfowl, seabirds, and waterbirds.

Phragmites has little wildlife value because it forms very dense stands that impede wildlife movements and provides little food value. In addition, Phragmites invasion alters the structure and function of the salt marsh habitat by changing the species composition, sedimentation rates, nutrient cycles, and hydrological regime. The build up of litter from the aerial shoots within stands may prevent or discourage native species from germinating and becoming established.

Areas that have been invaded by Phragmites have an excellent potential for recovery. A combination of mechanical and chemical control methods has proven effective, along with long-term monitoring to prevent or immediately halt re-invasion. Three years of aggressive treatment is expected to greatly reduce and control the stands at Grays Harbor NWR. Phragmites also occurs on adjacent lands and unless controlled will be a continuous source for new Phragmites infestations on the Refuge. After the completion of the 3-year project, effective management of this invasive species on Refuge lands would require periodic monitoring and small-scale treatments to keep the plant in check. Future efforts would be needed to eliminate Phragmites on neighboring lands by working more closely with adjacent landowners as well as state and county agencies involved in invasive plant control in the area.

Proposed activities: This project consists of 3 years of mechanical and chemical treatments on

approximately 13 acres of monotypic *Phragmites australis* infestations at Grays Harbor NWR. Areas that are only accessible by airboat (two clones in the open area) will be treated with the herbicide glyphosate in late August or September, during the tasseling stage. All other areas will first be cut with brush cutters in late July and then treated with herbicide in late August or September. After cutting, cut plant material that lies within a tidal area will be gathered by hand and either piled up on a dry upland site or disposed of in a nearby landfill, to reduce the possibility of the cut shoots sprouting and forming stolons. These treatments would be repeated for the next 2 years. All infestations would be measured and mapped using GPS and GIS in June prior to any treatment, and again the following 2 years in June prior to subsequent treatments.

Benefits: Salt marsh vegetation is expected to return to the treated sites after *Phragmites* is reduced. The salt marsh habitat is a very important component of the Refuge because it provides food, resting and roosting sites, and cover from predators for migratory shorebirds, waterfowl, seabirds, and waterbirds. At Grays Harbor estuary, shorebirds particularly prefer the intertidal mudflats for feeding and the salt marsh for resting. The adjacent mudflats will be protected from invasion by *Phragmites* under this proposal.

Environmental consequences: Potentially negative impacts may result from herbicide application. These would be short-term impacts that would be mitigated through integrated pest management (IPM) techniques. Mechanical removal followed by herbicide application is proposed for a majority of the site. A combination of treatments is necessary for success of the long-term plan to eliminate *Phragmites* from the site. A wipe-on application will reduce herbicide impacts. A backpack sprayer will be used in areas not accessible by an ATV mounted wipe-on applicator. These application methods will reduce drift of herbicide. A National Pollutant Discharge Elimination System (NPDES) permit specifically for discharges associated with the control of noxious vegetation in Washington will be acquired under the direction of Washington Department of Agriculture prior to each year's herbicide treatments, all activities will be conducted in accordance with the State's Freshwater Emergent IPM plan, and all Service policies will be followed.

Potentially adverse impacts may result from mechanical (brushcutters) removal of *Phragmites*. These actions would have short-term adverse impacts on the environment due to noise and air quality disturbances from equipment use, and human disturbances to wildlife.

These potentially adverse effects are not anticipated to have long-term significance, and can be minimized with timing restrictions and best management practices. Project-specific impacts will be evaluated on a case-by-case basis.

4.2.2.2.2 Berm Removal and Salt Marsh Restoration at Grays Harbor NWR

Project goals: To improve the quality and complexity of salt marsh habitat at Grays Harbor for shorebirds and other migratory birds by removing an artificial berm and improving tidal inundation.

Potential project coordinators: Nisqually National Wildlife Refuge, Grays Harbor NWR.

Project description: As noted in Section 3.3, Grays Harbor estuary is 1 of 16 shorebird staging areas of hemispheric significance that make up the Western Hemispheric Shorebird Reserve Network. Over two dozen species of shorebirds use the Grays Harbor Estuary during spring and fall migration; some dunlin populations will also stop to spend their winters there. The saltmarsh habitat at Grays Harbor NWR is a very important component of the Refuge. It provides food, resting and roosting sites, and cover from predators for migratory shorebirds, waterfowl, seabirds, and wading birds.

The artificial berm proposed for removal currently prevents full tidal penetration and evacuation of salt marsh habitat except during the highest high tides and flood events. This inhibition of tidal flow reduces the quality and complexity of saltmarsh habitat, contributes to deep channelization of the slough, and may create a ponding problem when the flood waters recede, trapping fish and other aquatic organisms. Over time, as the berm becomes increasingly vegetated with upland trees and shrubs, it may act as a greater barrier even during the highest high tides and storm flood events. It also may inhibit movement of other wildlife across the salt marsh.

Proposed activities: This project will involve removal of an artificial berm that occurs near the east end of the Refuge. The berm runs northwest to southeast and occurs in two sections, separated by the main slough that runs through the Refuge. The south section is approximately 900 feet long, 13 feet wide, and 3 feet high. The north section is similar in width and height, and approximately 500 feet long. Low ground pressure equipment would be used to remove the berm down to grade to allow for full tidal penetration and maximum saltmarsh habitat restoration. Berm materials (approximately 1,350 cubic yards) will likely need to be hauled off site.

Benefits: Berm removal would allow a natural ebb and flow of tidal waters, enhancing the habitat value of this part of the Refuge for thousands of migratory shorebirds, waterfowl, seabirds, and wading birds. This project will improve tidal circulation to approximately 25 areas of saltmarsh habitat.

Environmental consequences: Overall, this project should have a positive or neutral effect on water quality. There may be temporary increases in turbidity or sedimentation resulting from construction activities. The current situation, where deep channelization of the slough occurs, should be ameliorated with removal of the berm. Construction activities could have short-term adverse impacts on the environment. These potentially adverse effects are not anticipated to have long-term significance. Project-specific impacts will be evaluated on a case by case basis.

4.2.2.2.3 Dune Management for Snowy Plovers

Project goals: The goal of this project is to enhance coastal habitats to provide nesting sites for western snowy plover and reduce nest and chick predation. This would be accomplished by reducing and/or eliminating introduced beachgrass and excluding predators by the use of nest enclosures.

Potential project coordinators: Willapa National Wildlife Refuge.

Project description: According to the Western Snowy Plover Pacific Coast Population Draft Recovery Plan (USFWS 2001), the major factors contributing to their threatened status include habitat degradation and expanding predator populations.

One of the most significant causes of habitat loss for coastal breeding snowy plovers has been encroachment of introduced beachgrass. Foredunes dominated by introduced beachgrass have replaced the original, low, rounded, open mounds sparsely vegetated with the native American dunegrass (*Leymus mollis*). Introduced beachgrass has reduced the amount of unvegetated area above the tideline, decreased the width of the beach, and increased its slope. These changes have reduced the amount of potential snowy plover nesting habitat on many beaches and may hamper brood movements. The introduced beachgrass community may provide habitat for predators. This would have been precluded historically, due to a lack of cover in the native dune community (USFWS 2001).

Corvids may frequent beaches in increasing numbers, attracted by the presence of human activities (improper trash disposal, etc.). Common ravens and crows are known predators of snowy plover clutches at many locations. Elevated predation pressures result from landscape level alterations in coastal dune habitats. These areas now support increased predator populations within the immediate vicinity of nesting habitat for snowy plovers.

After only 1 year of exclosure use on Point Reyes National Seashore beaches, the breeding population of snowy plovers doubled during the 1997 season. Use of nest exclosures at Coos Bay North Spit in Oregon, during the 1991 breeding season, resulted in 69 percent nesting success compared to only 9 percent for unprotected nests. High chick fledging rates relative to other coastal sites have been documented following construction of exclosures to protect plover nests (USFWS 2001). The fledgling success rate in Oregon in 2003 was 46 percent, nearly 10 percent better than average. The higher number of fledglings are attributed to a combination of good weather, habitat improvement projects, cooperation from the public in avoiding nesting areas, and better chick survival.

The draft snowy plover recovery plan recommends removing or reducing vegetation that is encroaching on breeding habitat or obstructing movement of chicks from oceanside nesting areas to bayside feeding flats, with particular attention to the eradication of introduced beachgrass within coastal dunes. It further recommends preventing excessive predation of snowy plovers by a number of mechanisms, including erecting predator exclosures to reduce predation, and removing predators where warranted and feasible. The plan also suggests providing intensive management and protection of snowy plovers on all federal and state lands.

Dune restoration at Leadbetter Point, on Willapa NWR, was initiated in 2002 and is expected to continue as needed. Work included mechanical removal of introduced beachgrass, followed by herbicide treatment with glyphosate, discing, and placement of oystershell. One nest was discovered within the restoration area in 2002 and two in 2003. Unfortunately these nests failed, most likely due to predation. These pilot projects have provided information for a larger effort, but were too small to adequately improve habitat conditions for plovers. Predation risks are

expected to be alleviated somewhat by enlarging the restoration area.

Proposed activities: Proposed activities include expansion and maintenance of the previously cleared area and creation of other large habitat patches behind the foredune. Mechanical clearing followed by chemical control and discing may be enhanced in the future with the addition of prescribed burning. Mini-exlosures will be installed to prevent egg loss to predators.

Benefits: This continuing effort is expected to assist tremendously in recovery efforts for the federally threatened western snowy plover as well as benefit other species of concern, including the streaked horned lark. In addition, by curtailing reestablishment of exotic beachgrasses, representatives of the native plant community may become established, and will provide concealment areas for nesting plovers.

Environmental consequences: The 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).

Potentially negative impacts that may result from coastal dune restoration conducted under this alternative could be the redistribution of sand and a change in the processes that affect erosion and deposition. These would be slight short-term impacts that may include a temporary increase in sand movement during and following construction which would ultimately result in a return to historic conditions. Construction impacts may include short-term adverse impacts on the environment due to noise and air quality disturbances from equipment use.

Potentially negative impacts may result from herbicide application. These would be short-term impacts that would be mitigated through integrated pest management techniques. Other methods of control including mechanical removal and discing are currently utilized on the site. In the most heavily infested areas, these methods used alone are not anticipated to result in eradication of beachgrass. Thus, a combination of treatments is necessary for success of the long-term plan to eliminate beachgrass from the site. Discing and glyphosate would be used to treat resprouting beachgrass (due to remaining rhizomes) following mechanical removal. Glyphosate would be applied using backpack sprayers or an ATV mounted sprayer to reduce the possibility of drift. It is likely that avoiding the temporary use of herbicides in this case will lengthen the time required to restore heavily degraded areas and increase the cost of restoration dramatically. These potentially adverse effects are not anticipated to have long-term significance. However, project-specific impacts will be evaluated on a case-by-case basis. All activities will be conducted in accordance with Service policies.

5.0 SELECTION OF THE PREFERRED ALTERNATIVE

The Service has selected Alternative B, Habitat-Focused Restoration, as the preferred alternative for the *Nestucca* revised 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.

Although some natural recovery is expected, it is the Service's opinion that direct intervention is required to address potential acute and sub-lethal injuries to the natural resources resulting from the spill. In addition, only partial benefits would be realized from the settlement (from actions completed under the 1995 plan) to recover injured resources and the obligations of the Order of Dismissal and Stipulation of Dismissal would not be fully met. For these reasons, the no-action alternative was not selected as an effective restoration option.

Alternative B: 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.

The proposed projects listed under this alternative will potentially increase the amount of protected nesting and foraging habitats available to marbled murrelets and shorebirds and improve nesting conditions for murrelets at existing occupied stands.

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. Enhancement and protection of nesting habitat could help reduce the rate of decline of snowy plovers in Washington. Restoration of estuarine mudflats and salt marsh could help with the conservation

and recovery of shorebirds.

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 (Simenstad 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.

5.1 Proposed Project Schedules and Estimated Budgets

Projects selected for funding require the project cooperator to complete all site-specific environmental compliance prior to project implementation, to provide interim annual reports during the life of the project, and submit a final report following project completion.

Marbled Murrelet Habitat Restoration

Schedule: Upon final approval of the project; a specific work plan will be generated by the project coordinator(s). Forest inventories will be initiated in early 2004. Forest management planning will follow the completion of inventories and is expected to conclude in the spring of 2005. Forest restoration treatments are anticipated to begin in 2005 and span a number of years.

Estimated budget: \$270,000

Shorebird Habitat Enhancement Projects:

Phragmites Removal and Salt Marsh Restoration at Grays Harbor NWR

Schedule: Upon final approval of the project; a specific work plan will be generated by the project coordinator(s). In 2005 permits will be obtained and mapping efforts may begin. In early summer of 2006, all areas to be treated will be measured and mapped using GPS and GIS. In summer of the following 3 years, similar measurements and mapping will take place to show the efficacy of treatments. In late July of 2006-2008, Phragmites will be cut and cut shoots will be removed to a dry upland site. In August or September of 2006-2008, Phragmites will be treated with herbicide.

Estimated budget: \$60,000

Berm Removal and Salt Marsh Restoration at Grays Harbor NWR

Schedule: Upon final approval of the project; a specific work plan will be generated by the project coordinator(s). Several permits will be required for this project. Permits and restoration work would be done by contract. A contract would be initiated in 2005, with construction anticipated for 2006. Construction would take approximately 5-6 weeks.

Estimated budget: \$90,000

Dune Management for Snowy Plovers

Schedule: Upon final approval of the project; a specific work plan will be generated by the project coordinator(s). Work would tie off of previous work conducted in 2002 and 2003.

Exclosures were used in 2004 and will continue to be used in subsequent years. Expansion of the already cleared area and creation of other large habitat patches would occur in the winter and spring of 2004-2005 and 2005-2006. Monitoring would occur at least one day/week during nesting season.

Estimated budget: \$32,500

6.0 ENVIRONMENTAL CONSEQUENCES

To revise the original *Nestucca* oil spill RP, the Service examined the following restoration alternatives:

1. no action/natural recovery
2. habitat-focused restoration

The habitat-focused restoration approach is the alternative selected by the Service. The Service intends to avoid or reduce negative impacts to existing natural resources and services to the greatest extent possible. However, actions could be undertaken 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. Additional site-specific NEPA review will be completed prior to any on the ground activity. This section addresses the potential overall cumulative, direct, and indirect impacts, and other factors to be considered in the NEPA regulations.

The inventory portion of the marbled murrelet restoration project and the monitoring component of the snowy plover dune management project qualify for categorical exclusion under NEPA. The Department of Interior Manual, 516 DM 2 Appendix 1, Section 1.6, states that non-destructive data collection, inventory (including mapping) and monitoring qualify for categorical exclusion pursuant to 516 DM 2.3A(2).

The Service believes that the projects selected in this restoration program will not cause significant long-term negative impacts to natural resources or the services they provide. Further, the Service does 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 ecosystem by improving nesting habitat conditions for seabirds and shorebirds, including increasing the amount and quality of protected habitats for these birds, thus increasing the number of individual seabirds and shorebirds that reproduce. Significant cumulative adverse effects from a proposed project will result in the project being redesigned to minimize and/or mitigate for those impacts.

Indirect Impacts: Environmental consequences would not be limited to the project location. Indirect beneficial impacts would also occur throughout populations and habitats. Cumulative

impacts at the project locations, and in the surrounding area, are expected to increase populations of marbled murrelets and shorebirds and provide improved habitats for a variety of fish and wildlife. 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 may aid in replenishing the resources injured in the *Nestucca* oil spill. The restoration projects will help protect natural recovery of affected resources, and will aid in replenishing natural populations by increasing productivity levels. Specifically, forest inventory and resulting enhancement of forest structure will promote the development of additional nesting habitat for marbled murrelets, enhancing coastal habitats by reducing or eliminating introduced beachgrass and controlling predators will provide nest sites for western snowy plover and reduce nest and chick predation, and improving the quality of salt marsh habitat by improving tidal circulation and reducing or eliminating *Phragmites* will improve habitat for both shorebirds and waterfowl.

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; 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.

Projects that involve short-term construction activities 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.

Implementation of the proposed projects should result in no significant impact to *water quality*. Habitat modification activities in estuaries 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 Service believes that restoration activities would result in insignificant adverse effects to this resource. Project specific environmental assessments will be conducted and include the extent of any impact.

No long-term adverse effects to *sediment quality, soils, or geologic conditions* are anticipated under this restoration plan. The Service 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*.

Implementation of the proposed projects should result in no significant impact to *wetlands or flood plain areas*. Habitat modification activities in estuaries could have short-term wetland

impacts through temporary disturbance of ecological processes. No long-term adverse effects are anticipated. The overall result would be a beneficial effect to this resource. Furthermore, the Service does 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.

No significant negative impacts to *threatened or endangered species* are expected to result from the proposed projects. Consultation under the ESA would occur prior to any on the ground activities that may affect listed species. The chance of any 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.

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APPENDIX A

REVIEW AND RESPONSE TO COMMENTS

Members of the *Nestucca* Oil Spill Restoration Planning Committee were consulted on the steps necessary to finalize the Revised Restoration Plan. Members of the Committee who assisted with formulating and drafting the *Nestucca* Oil Spill Restoration Plan included personnel from the U.S. Fish and Wildlife Service, Olympic National Park (ONP), the University of Washington Cooperative Fish and Wildlife Unit, and the Washington Department of Fish and Wildlife (WDFW). Committee members agreed that their review would be sufficient to finalize revisions to the plan. Cat Hoffman, at ONP, requested that the Olympic Coast National Marine Sanctuary also review the document. Her rationale was that they were not in existence at the time of the spill, but are tasked with responding to spills.

The draft *Nestucca* Revised Restoration Plan was sent to Committee members and the Sanctuary on May 20, 2004. One comment letter was received from the WDFW.

WDFW Comment Letter



State of Washington
DEPARTMENT OF FISH AND WILDLIFE

Mailing Address: 600 Capitol Way N - Olympia, Washington 98501-1091 - (360) 902-2200, TDD (360) 902-2207
Main Office location: Natural Resources Building - 1111 Washington Street SE - Olympia, WA

June 11, 2004

Ms. Judy Lantor
United States Fish and Wildlife Service
510 Desmond Drive Southeast
Suite 102
Lacey, Washington 98503

Dear Ms Lantor:

The Washington Department of Fish and Wildlife (WDFW) would like to thank you for the opportunity to review and provide comments on the Draft *Nestucca* Revised Restoration Plan.

General Comments:

There continues to be a need to improve and restore Common Murre populations and their habitats. Earlier proposed projects related to other spill settlements have met logistical and interagency problems that have unfortunately resulted in their elimination. WDFW remains interested in working with the United States Fish and Wildlife Service (USSERVICE) on Common Murre restoration.

Project-Specific Comments:

1) *Enhancing forest structure and promoting the development of additional nesting habitat for the federally threatened Marbled Murrelet in the South Willapa Bay Landscape.*

It is the opinion of WDFW that the highest priority and greatest immediate need for murrelet conservation and restoration is to locate occupied stands in currently suitable habitat by conducting forest stand surveys for the species. Once those stands are found, regulatory protection can be applied to them for immediate protection. This protection is through current federal and state processes under the Endangered Species Act (ESA) sections on takings, federal court case law regarding take under ESA, Habitat Conservation Plans, Washington State Forest Practices Act Rules, acquisitions, and conservation easements. It is of lower priority for

murrelet conservation to invest large amounts of resources in attempting to create new murrelet habitat over decades when there is as urgent need to locate and save existing sites.

WDFW has reviewed this proposed project in a modified earlier proposal submitted to the Tenyo Maru Oil Spill Trustees and has evaluated it as a lower priority for marbled murrelet conservation and recovery. The Nature Conservancy (TNC) site, in combination with the Teal Slough Acquisition of the Willapa National Wildlife Refuge, currently have a small amount of quality occupied murrelet habitat primarily in three relatively small stands. Those stands had already been protected for several years, first under Washington State Forest Practices Rules and ESA, then later under the ownership of TNC and USFWS.

The balance of the forest in those parcels is young aged former commercial forest. This proposal would provide for a strategy to apply an experimental long-term restoration by accelerating an older age structure. It must be stressed that it would be experimental, especially for murrelets, since the forest stand attributes they need are not necessarily equated simply with stands with older structure. WDFW suggests that if this proposal is pursued, a reduced level of funding be assigned, commensurate with its lower resource value. As an alternative, if the opportunity exists, WDFW is interested in submitting a proposal for a survey within the Nestucca impact zone, which they find greatly needed.

2) Increasing the quality of salt marsh habitat at Grays Harbor NWR for shorebirds and other migratory birds by reducing and/or eliminating Phragmites australis from lands within Grays Harbor estuary.

WDFW finds value with this proposal, but suggests that if funding is limited, Proposal (3) below has a higher resource and immediacy value.

3) Improving the quality and complexity of salt marsh habitat at Grays Harbor for shorebirds and other migratory birds by removing an artificial berm and improving tidal inundation.

WDFW finds value with this proposal and suggests that if funding is limited, this proposal be prioritized over proposal (2) above, which has a lower resource and immediacy value due to the loss of the former wetlands of the upper basin.

4) Enhancing coastal habitats to provide nesting sites for western snowy plover, and reducing nest and chick predation by reducing and/or eliminating introduced beachgrass and controlling predators.

WDFW finds value with this proposal and judges it as a high priority for the species. WDFW, USFWS, and Washington State Parks already are in the process of implementing some of the

proposed enhancement methods on a limited scale. The USFWS experiments with small plot rehabilitation have promising results to date.

Thank you for the opportunity to provide comments on the Draft *Nestucca* Revised Restoration Plan. Please contact me at (360) 902-8123 if I can be of further assistance.

Sincerely,

A handwritten signature in black ink, appearing to read "Eric M. Larsen". The signature is fluid and cursive, with a long horizontal stroke at the end.

Eric M Larsen
Oil Spill Team Section Manager
Washington Department of Fish and Wildlife

EL:lw

cc: David Mudd
Rocky Beach
Sue Patnude
Jack Smith
Stephan Kalinowski
Eric Cummins
Dan Doty
Ken Warheit

USFWS Response Letter



United States Department of the Interior

FISH AND WILDLIFE SERVICE

Western Washington Fish and Wildlife Office
510 Desmond Drive SE, Suite 102
Lacey, Washington 98503



JUL 22 2004

Eric M. Larsen
Oil Spill Team Section Manager
Washington Department of Fish and Wildlife
600 Capitol Way N
Olympia, Washington 98501-1091

Dear Mr. Larsen:

Thank you for your comments on the Draft *Nestucca* Oil Spill Revised Restoration Plan. Funding for implementation of this plan is based on a "settlement to compensate for injury, destruction, or loss of natural resources within the trusteeship of the U.S. Department of the Interior." The State of Washington reached a separate settlement under the Clean Water Act for compensation of state natural resources injured in the *Nestucca* Oil spill.

With regard to your general comments, we share your interest in improving and restoring common murre populations and their habitats. At this time there does not appear to be agreement on what actions should be taken or locations where actions should occur. We prefer to move forward on the current proposals and look forward to working with you on future common murre projects once agreement is reached on needed actions and locations for those actions.

With regard to your project-specific comments:

- 1) The WDFW believes that locating occupied stands by conducting forest stand surveys for marbled murrelets is of higher priority than the proposal to enhance forest structure to promote the development of additional nesting habitat for marbled murrelets.

The Service recognizes that there are competing needs for marbled murrelet conservation. Surveys for marbled murrelets are important in identifying habitats for additional protections, however, other funding sources could be available to conduct these surveys (i.e., section 6 funding under the Endangered Species Act).

Adequate funding is not currently available to conduct forest land management actions identified in the Recovery Plan for Marbled Murrelets. Actions identified in the Recovery Plan and incorporated in the existing proposal include, decreasing the risk of fire and windthrow (a

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concern in the South Willapa Bay Landscape); increasing the amount, quality and distribution of nesting habitat; decreasing fragmentation; protecting "recruitment" habitat; and providing replacement habitat through silvicultural techniques. We believe these are important actions for which there are not other funding sources available.

- 2) The WDFW suggests that we re-order the priority of our shorebird enhancement projects in Grays Harbor.

We believe it is prudent to maintain our current priority. The *Phragmites* control project is currently ready for implementation and will provide immediate improvements for shorebird habitats. We agree that the berm removal project will improve habitats in the upper basin; however, that project design is not yet complete and permits still need to be acquired before the project can begin.

- 3) The WDFW finds value in the coastal habitat enhancement project for western snowy plover.

We agree with your assessment of the western snowy plover habitat enhancement project.

Again, thank you for your comments on the Draft *Nestucca* Oil Spill Revised Restoration Plan. If you have questions, please contact Judy Lantor at (360) 753-6056.

Sincerely,



604/ Ken S. Berg, Manager
Western Washington Fish and Wildlife Office

