DAMAGE ASSESSMENT AND RESTORATION PLAN AND ENVIRONMENTAL ASSESSMENT FOR THE January 11, 2010 Adak Petroleum Diesel Spill

Prepared by:

The Adak Petroleum Diesel Spill Natural Resource Trustees

State of Alaska

Department of Environmental Conservation

Department of Fish and Game

Department of Natural Resources

Department of Law

U.S. Department of Commerce

National Oceanic and Atmospheric Administration

U.S. Department of the Interior

Fish and Wildlife Service

DAMAGE ASSESSMENT AND RESTORATION PLAN AND ENVIRONMENTAL ASSESSMENT (DARP/EA) FOR THE JANUARY 11, 2010 - ADAK PETROLEUM DIESEL SPILL

Lead Agency for DARP/EA: U.S. Department of Commerce, National Oceanic and Atmospheric Administration (NOAA)

Cooperating Agencies:
Alaska Department of Fish and Game
Alaska Department of Environmental Conservation
Alaska Department of Natural Resources
Alaska Department of Law
Department of the Interior, U.S. Fish and Wildlife Service

Abstract: This Damage Assessment and Restoration Plan and Environmental Assessment (DARP/EA) has been prepared by the Federal and State Natural Resource Trustees to address restoration of natural resources injured by the January 11, 2010 Adak Petroleum Diesel Spill (APDS) oil spill on Adak Island. The proposed restoration activities of the DARP/EA include enhancement activities to restore natural resource injuries resulting from the diesel fuel release into Helmet Creek and Small Boat Harbor.

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Copies: Copies are available at http://www.darrp.noaa.gov/
The draft DARP/EA was made available at local libraries and the Adak City Hall

Executive Summary

On January 11, 2010, up to 142,000 gallons of #2 diesel fuel was released from a 4.8 million gallon underground tank at the Adak Petroleum Bulk Fuel facility on Adak Island in the central Aleutian Islands of Alaska. Fuel was being transferred from a tanker at the adjacent loading dock when the tank was overfilled. The containment sump unit was overwhelmed and the fuel entered Helmet Creek which flows into the Small Boat Harbor in the Port of Adak. Most of the diesel was confined to the creek, and possibly more than a thousand gallons flowed out to Sweeper Cove. Following the spill, dead fish were collected from Helmet Creek, and diesel was observed in the creek as well as absorbed into the riparian habitat. It is also likely that pink salmon and Dolly Varden eggs, riparian habitat, and aquatic insects were affected in the creek and associated riparian area. The spill may also have affected marine shellfish. In addition, as many as eight marine birds may have died due to oil exposure and subsequent hypothermia.

Federal and State Natural Resource Trustees (Trustees) are pursuing claims for natural resource damages relating to this spill in accordance with the Oil Pollution Act of 1990 (OPA), 33 U.S.C. 270, *et. seq*. As part of this process, the Trustees have assessed the injuries caused by the spill and are working with Adak Petroleum to resolve its liability through the restoration and rehabilitation of natural resources injured by the oil discharge. Adak Petroleum will be responsible for implementing restoration at the Helmet Creek site in cooperation with the Trustees, who will be supervising this work.

This Damage Assessment and Restoration Plan and Environmental Assessment (DARP/EA) describes the impact of the oil spill on the environment in the Helmet Creek area, while outlining potential restoration alternatives considered by the Trustees and also examining the direct, indirect, and cumulative impacts of these alternatives on the human environment. The draft for this Restoration Plan and Environmental Assessment was presented to the public for comment by the Natural Resource Trustees.

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1.0 INTRODUCTION

1.1 Summary/Purpose

The purpose of this Damage Assessment and Restoration Plan and Environmental Assessment (DARP/EA) is to address restoration of natural resources injured by the Adak Petroleum Diesel Spill (APDS) into Helmet Creek and its associated wetlands, Sweeper Cove, and associated habitats on Adak Island, Alaska. This document has been prepared on behalf of the public by the Natural Resource Trustees (Trustees) responsible for restoration implementation associated with the APDS incident. The Oil Pollution Act of 1990 ("OPA,"), 33 U.S.C. §§ 2701 *et. seq*.) directs to certain state and federal government natural resource agencies, known as Natural Resource Trustees ("Trustees"), the responsibility for restoring natural resources and resource services injured or harmed by an oil spill. As a designated Trustee each agency is authorized to act on behalf of the public to assess and recover natural resource damages and to plan and implement actions to restore, rehabilitate, replace, or acquire the equivalent of the natural resources or services injured as a result of an unpermitted discharge of oil. The purpose of natural resource restoration is to make the environment and the public whole for natural resource injuries resulting from an oil spill by implementing restoration actions that offset the harm caused by the spill.

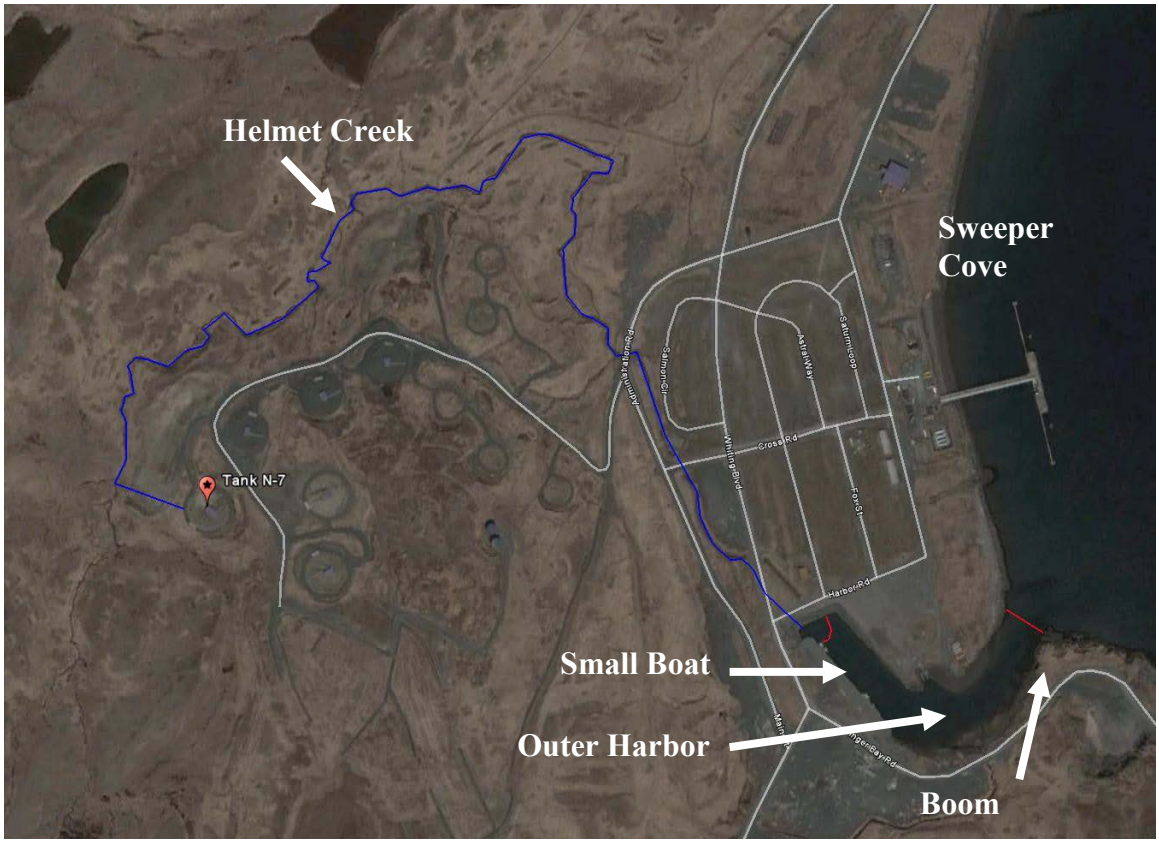
This document is also intended to address the requirements of the National Environmental Policy Act, (NEPA), 42 U.S.C. §§ 4321-4370d. NEPA requires that federal agencies analyze the potential direct, indirect and cumulative effects/impacts of proposed major federal actions and alternatives, and involve the public in the process. This DARP/EA was prepared on behalf of the public by the Natural Resource Trustees (Trustees) responsible for restoration implementation associated with the APDS incident. The DARP/EA describes the affected environment and illustrates restoration alternatives, while proposing preferred projects for public consideration. The Restoration Plan was developed in accordance with the Oil Pollution Act of 1990 (OPA), 33 U.S.C. § 2706(b) and its implementing regulations, 15 C.F.R. Part 990; as well as the National Environmental Policy Act (NEPA), 42 U.S.C. §§ 4321-4370d, and its implementing regulations, 40 C.F.R. Parts 1500-1508. This DARP/EA describes the affected environment and illustrates restoration alternatives, while proposing preferred projects for public consideration. The document was developed in accordance with OPA, 33 U.S.C. § 2706(b) and its implementing regulations, 15 C.F.R. Part 990; as well as NEPA, 42 U.S.C. §§ 4321-4370d, and its implementing regulations, 40 C.F.R. Parts 1500-1508.

On March 18, 2013, the Trustees made this document available to the public for comment on both this DARP/EA and the Trustees' proposed restoration actions. One comment was received. This comment and the Trustees' response are provided at Section 8.0, *Response to Public Comments*.

1.2 Incident Overview

On January 11, 2010, at the Aleut Enterprise facility, Adak Petroleum, on Adak Island, No. 2 diesel fuel was being pumped into underground storage tank N-7 in the Helmet Creek Tank Farm from the *Al Amerat*, moored at the fuel pier in Sweeper Cove. Because of over-filling, fuel escaped through one or more gaps in a seal between the tank's wall and roof into secondary containment surrounding the tank. Valves from the secondary containment to a drainage system leading to Helmet Creek had been left open. The fuel overwhelmed the tank system's oil/water separator and flowed into the drainage system, resulting in a fuel release to Helmet Creek. Up to 142,000 gallons of #2 diesel fuel was released from a 4.8 million gallon underground tank. The #2 diesel fuel flowed into Helmet Creek, the Adak Small Boat Harbor, and Sweeper Cove. Temporary containment measures were implemented in an attempt to minimize fuel moving into the Harbor. Responders on-site deployed three layers of containment boom across the entrance to the small boat harbor. Responders also placed containment and absorbent boom across the mouth of Helmet Creek at the harbor and at two points further up Helmet Creek toward the tank farm. Approximately 122 barrels (5,124 gallons) of diesel were recovered, and 1,010 pounds of oily absorbent materials were incinerated.

Figure 1. Project Area Map



1.3 Natural Resource Trustees and Authorities

Both federal and state laws establish liability for natural resource damages (NRDs) to compensate the public for injury, destruction, and loss of such resources and services resulting from oil spills. Natural Resource Trustees are authorized to act on behalf of the public to assess these injuries to natural resources. The Trustees are also empowered to bring legal action to address NRDs, while also planning and implementing restoration actions to restore natural resources injured and lost as a result of oil spills. These natural resources are defined as "land, fish, wildlife, biota, air, water, ground water, drinking water supplies and other such resources belonging to, managed by, held in trust by, appertaining to, or otherwise controlled by the United States, any State or local government or Indian tribe, or any foreign government". (33 U.S.C. § 2701.20)

The federal and state Trustees for this site include the National Oceanic and Atmospheric Administration (NOAA) of the Department of Commerce, the U.S. Fish and Wildlife Service (FWS) of the Department of the Interior, Alaska Department of Fish and Game (ADFG), Alaska Department of Natural Resources (ADNR), Alaska Department of Law (ADOL), and Alaska Department of Environmental Conservation (ADEC). Collectively these government agencies are referred to as the "Trustees" or the "Natural Resource Trustees." Each of the agencies acts as a Natural Resource Trustee pursuant to OPA (33 U.S.C. 2706 *et. seq.*).

1.3.1 Restoration Planning

OPA requires that the Natural Resource Trustees develop Restoration Plans and provide the public with an opportunity to review and comment on these plans. The Trustees jointly prepared this Damage Assessment and Restoration Plan and Environmental Assessment (DARP/EA), in accordance with OPA requirements and applicable regulations, as well as with guidance concerning restoration planning and implementation. (*See*, 33 U.S.C. 2706 *et seq.*; 15 C.F.R. Part 990 (Department of Commerce natural resource damage assessment regulations). This DARP/EA documents the information and analyses that support the Trustees' evaluation of:

_ Injuries to natural resources and natural resource services caused by the Adak Petroleum Diesel spill;
_ Proposed restoration alternatives; and
_ Rationale for the Trustees' preferred restoration alternative.

In accordance with NEPA requirements, the draft DARP/EA was made available for public comment before the document was finalized. For more information on this process, see Section 8.0, *Response to Public Comment*.

This document also serves, in part, as the agencies' compliance with NEPA. (*See*, 42 U.S.C. § 4371 *et seq.* and its implementing regulations, 40 C.F.R. Parts 1500-1508).

1.4 Overview of Fish and Wildlife Resources and Natural Resource Injuries

On January 11, 2010, a diesel fuel spill from the Adak Petroleum Helmet Creek Tank Farm oiled approximately 2 kilometers of Helmet Creek and associated riparian area, 2 acres of the Small Boat Harbor and 7 acres of the Outer Harbor. Following the spill, dead fish were collected from Helmet Creek, while oil was absorbed into nearby riparian habitat and associated wetlands. Diesel fuel also entered the nearby Sweeper Cove, oiling shoreline in the Small Boat Harbor and outer harbor. The Natural Resource Trustees assessed the injuries caused by this spill. Under OPA, an injury to natural resources is defined as: "an observable or measurable adverse change in a natural resource or impairment of a natural resource service." (15 C.F.R. § 990.30) After considering the impacts of the Helmet Creek spill, the Trustees determined that both direct and indirect injuries had occurred and were likely to continue to occur to fish and their immediate habitat, including possible injuries to freshwater aquatic invertebrates, marine invertebrates, wetlands and associated riparian areas. It is also likely that this spill injured pink salmon and Dolly Varden eggs, and marine shellfish. Helmet Creek serves as spawning and rearing habitat for pink salmon (Oncorhynchus gorbuscha and Dolly Varden (Salvelinus malma) and three spined stickleback (Gasterosteus aculeatus). The largest anadromous inputs are even year pink salmon runs. The stream supports juvenile life stages as well as spawning habitat. Likewise, Sweeper Cove is documented habitat for blue mussels and rock sole. It is also likely habitat for Pacific Ocean Perch, Pacific Herring, ling cod, and assorted rockfish.

In addition, birds were seen swimming in the sheen in the Small Boat Harbor during the day of the spill. Trained observers noted five black scoters (*Melanitta americana*) displaying aberrant behavior that was consistent with exposure to oil. At least two cormorants (unidentified species) and one long-tailed duck (*Clangula hyemalis*) were also observed to be oiled but still alive. The calls of marine birds were also heard in the Small Boat Harbor, where sheen was present. Successful bird hazing operations began in the Small Boat Harbor on January 16. However, by the time the bird capture and rehabilitation plan was approved and teams were ready to attend to oiled live birds (January 17), the weather became uncooperative and the rescue teams were not able to locate the oiled birds again. As even very small amounts of oil on the plumage of marine birds can be deadly, particularly in cold water environments, due to the oil's detrimental effect on the insulating properties of feathers, one can reasonably assume that the observed oiled birds eventually died due to hypothermia caused by the oil.

Estimates of the natural resource injuries are summarized at Table 1 below:

Table 1. Summary of Reported Natural Resource Injuries

Resource	Injury Estimate
Riparian Habitat	~ 2km of Helmet Creek and 2.5 acres of associated riparian habitat
Small Boat Harbor	~ 2.4 acres
Outer Harbor	~ 6.8 acres
Fish & other aquatic and semi-aquatic species	Diesel contamination was observed in water and streambanks throughout the lower 2 km of Helmet Creek, including documented pink salmon and Dolly Varden habitat. Chronic exposure of Helmet Creek and its aquatic species is expected to continue via the contaminated wetlands and riparian areas for five years post spill.
Marine Birds	At least eight birds likely died due to exposure to oil.

1.5 Trustee Coordination with Responsible Parties

Under section 1002 of OPA, each party responsible for a vessel from which oil is discharged, or which poses a substantial threat of a discharge of oil, is liable for natural resource damages resulting from the incident involving such discharge or threat. The Responsible Party (RP) for this spill is Adak Petroleum. The Trustees and Adak Petroleum have worked together cooperatively to address natural resource issues for the Adak Petroleum Diesel Spill. Both parties have worked cooperatively on assessing damage from the spill as well as possible restoration options. Information collected by all parties was shared among the Trustees and Adak Petroleum. This cooperative approach is consistent with OPA regulations and is intended to provide the opportunity for settlement of damage claims without litigation and to provide efficient restoration of injured resources.

In addition, State and Federal natural resource damage assessment (NRDA) regulations require the Trustees to invite the RP to participate in the NRDA process. (*See*, 15 C.F.R. Part 990 and AS §§ 46.03.780, 46.03.820). The Trustees invited Adak Petroleum to review and discuss the progress of the injury assessment and restoration planning efforts. Also, both parties conducted field visits to Helmet Creek to determine extent of damage of the spill as well as follow up visits to determine lingering presence of oil. The RP and the Trustees reviewed injury data and proposed restoration alternatives together. By working together, restoration of injured resources and services may be achieved rapidly and cost-effectively. But, although the RPs may contribute to the process in many ways, final authority to make determinations regarding injury and restoration rests solely with the Trustees.

1.6 Trustee Oversight of Restoration:

As the Responsible Party, Adak Petroleum plans to undertake the permitting and restoration of Helmet Creek -- as defined in the restoration section of this DARP/EA. This restoration will be performed by Adak Petroleum under supervision by the Trustees through the Adak Diesel Spill Restoration Committee (AdakRC). The AdakRC consists of representatives from NOAA, FWS, ADFG, ADEC, ADOL, and ADNR. The objective for the AdakRC is to oversee the planning, design, coordination, and implementation of the projects outlined in this Restoration Plan. The Trustees' Preferred Alternative is intended to restore, rehabilitate, replace, and/or acquire equivalent natural resources to those resources injured by the Helmet Creek oil spill. Trustees will be notified of the RP's restoration progress and kept up to date with reports.

1.7 Public Involvement and Plan Implementation

Public review of this DARP/EA is an integral component to the restoration planning process. The OPA and NOAA Damage Assessment Regulations (15 C.F.R. Part 990 *et. seq.*), as well as NEPA and its implementing regulations (40 C.F.R. Parts 1500-1508). These regulations require that the public be provided an opportunity to review and comment on oil spill restoration plans. The Trustees sought public comment on the projects being proposed to restore injured natural resources from the Adak Petroleum Diesel Spill. The draft Restoration Plan for the Adak oil spill was made available for public review and comment on March 18, 2013 with a notice in the Federal Register. A newspaper release announcing the availability of the Draft DARP/EA was also distributed. In addition, copies of the draft DARP/EA were made available at the NOAA website http://www.darrp.noaa.gov/, along with related information on the Adak oil spill. Supplemental instructions for sending comments to the DARP/EA were also posted at the NOAA website. The draft DARP/EA was likewise made available at the following libraries:

UAA Consortium Library ARLIS
Library Building, Suite 111
3211 Providence Drive
Anchorage, AK 99508
Reference Desk
(907) 27-ARLIS

Z. J. Loussac Public Library
3600 Denali Street
Anchorage, AK 99503

Reference Desk
(907) 343-2975

A copy of this document was also posted at:

Adak City Hall
100 Mechanic's Way
Adak, Alaska 99546

NOAA offered to make additional copies of this document available free of charge by contacting Ian Zelo, Oil Spill Coordinator, NOAA - Assessment and Restoration Division, 7600 Sand Point Way NE, Seattle, WA 98115, 206.526.4599 (office), 206.526.6329 (fax) or at: ian.j.zelo@noaa.gov

The Draft DARP/EA was made available for public comment for over thirty (30) calendar days from March 18, 2013 until April 30, 2013. One comment was received. This comment and the Trustees' response are provided at Section 8.0, *Response to Public Comments.* Because this comment did not provide substantive recommendations on the Trustees' restoration proposals, the Trustees' restoration plans will be made final and project implementation will begin.

1.8 Summary of the Preferred Restoration Project Alternative:

The primary purpose of this DARP/EA is to inform the public and guide restoration implementation. The Trustees' objective at this site is to: (1) improve Helmet Creek, restore juvenile and adult fish passage, (2) improve water quality, and (3) allow for improved habitat for salmonid species. The Trustees considered various alternative projects to address these restoration goals, which are outlined in this DARP/EA. After reviewing these alternatives, the Trustees agreed that the preferred restoration alternative could best meet their objectives. The Preferred Alternative includes the following projects in Helmet Creek:

1) Remove two trash racks from culverts in Helmet Creek,
2) Restore grade of creek for fish passage,
3) Improve low flow passage inside the Creek's culvert and above the tank farm,
4) Remove debris from the creek and floodplain, and
5) Revegetate banks to minimize disturbance and provide bank stability.

2.0 AFFECTED ENVIRONMENT AND NATURAL RESOURCES OF CONCERN

The Trustees' restoration project is intended to address injuries caused by the Adak diesel fuel spill. This section summarizes the physical and biological environment in this area where the spill occurred.

2.1 Physical Environment of the Spill Area in Helmet Creek and Sweeper Cove

The Adak diesel fuel spill impacted an approximate 2 km of river miles and associated riparian habitat, while affecting approximately 9.2 acres of marine habitat. Information for the physical environment was taken from various reports undertaken by the U.S. Navy in their Environmental Assessment of the area, which are available at the Navy's webpage or CERCLIS Number.

Adak Island Overview: Adak Island was created in the last 60 million years and consists mostly of volcanic rocks with some sedimentary rocks. In the low lying areas of downtown, ground

water occurs from 5 to 30 feet below ground surface and likely overlies denser saltwater that intrudes the aquifer from Sweeper Cove (http://www.adakupdate.com/envset.html). Surface soils consist of silt/clay sands, gravel and volcanic ash (Costal Hazardous Waste Site Review/NAS Adak CERCLIS #AK7170090099). The steep slopes that characterize the Adak coastline continue below the water's surface. Water is extremely deep off shore. The island is ice-free and open to navigation all year. A breakwater at the entrance to Sweeper Cove creates a protected harbor. Depths within the cove range from 132 feet at the entrance to 36 feet about 300 yards from the shore (http://www.adakupdate.com/envset.html). Perennial freshwater flow is maintained by snowmelt in the mountains and seepage from the shallow surficial soils. Numerous lakes and sediment deposits occur along streams. (http://www.adakupdate.com/envset.html)

Helmet Creek: Helmet Creek flows about 2.7 kilometers from a small kettle lake southwest of the tank farm to the small boat harbor at the head of Sweeper Cove. The upper reaches of the creek have a deeply incised, narrow channel (less than 1 m across), and a low gradient. The middle sections of the creek are wider (generally about 4 to 5 m in width). Gradient increases in these reaches. Good spawning gravels are present in the middle reaches. The lower sections of the creek have been channelized. There are five culverts in the area affected by the spill. They are located in the developed area of Adak downstream of the tank farm. Streams near Helmet Creek have been described as presumed to support numerous estuarine infaunal invertebrates typical of sub-boreal latitudes, with beach wild rice as the predominant vegetation along channels (Costal Hazardous Waste Site Review/NAS Adak CERCLIS #AK7170090099).

Sweeper Cove: Sweeper Cove is an estuary with a surface area of approximately 450 acres and receives drainage from approximately 4,511 terrestrial acres. Sweeper Cove is the most actively used water body at Adak because it is adjacent to the main industrial portion of the Downtown Area. The western portion of Sweeper Cove includes a shallow inlet that was developed into a small boat harbor. Helmet Creek flows into this small boat harbor. The northern shoreline has been altered by construction activities begun by the military in 1942. South Sweeper Creek and Mitt Creek are the primary drainages into Sweeper Cove.

Shoreline Resources: The shoreline geology varies from sandy beaches to rocky beaches. There appear to be natural depositional areas of sands where some streams discharge into Sweeper Cove. Shorelines in remaining areas are rocky, such as the exposed bedrock found on the southern shoreline of Sweeper Cove, or boulder riprap bulkheads constructed during the military development of the northern shoreline. The subtidal region is almost entirely sand, with an increasing percentage of fine material as the distance from shore increases (http://www.adakupdate.com/ICs/sweepercove_example.html). Diving surveys of Sweeper Cove performed prior to Harbor dredging documented sea cucumber on the soft sediments, abundant marine life on rocky reefs and breakwaters, as well as the presence of the commercially important species Atka Mackerel (*Pleurogrammus monopterygius*).

2.2 Biological Resources

The area impacted by the Adak oil spill is biologically important, and these affected resources are considered in the restoration planning. As part of the natural resource damage assessment and restoration planning process, a choice must be made to assess what can be effectively studied under the given circumstances, and with reasonable costs, in order to develop a good case for restoring the injuries and making the public whole. Although the potentially affected biological resources in the ecosystem can vary greatly with time of year and other conditions at the time of the exposure, the focus on which resources to investigate must be narrowed down. A decision is made as to the appropriate level of investigation and expenses, and is objectively based on the size and resource significance of the spill, and on the Trustee's expertise in making these judgments.

Helmet Creek is listed in the Alaska Department of Fish and Game's Catalog of Waters Important for the Spawning, Rearing or Migration of Anadromous Fishes (known as the Anadromous Waters Catalog). The creek ecosystem supports aquatic plant life, macro invertebrates, as well as vertebrate species. The riparian area hosts native plant species, invertebrate and vertebrate riparian-dependent species. The marine area impacted hosts vertebrate and invertebrate species, as well as marine avian species.

2.2.1 Fish

Helmet Creek serves as spawning and rearing habitat for pink salmon (*Oncorhynchus gorbuscha),* Dolly Varden (*Salvelinus malma*) and three-spined stickleback (*Gasterosteus aculeatus*). Coho salmon (*Oncorhynchus kisutch)* are also present. The largest anadromous inputs are even year pink salmon runs. The stream supports juvenile life stages, as well as spawning habitat. Sweeper Cove is documented habitat for blue mussels and rock sole. It is also likely habitat for Pacific Ocean Perch, Pacific Herring, ling cod, and assorted rockfish.

2.2.2 Vegetation

It is likely that the dominant vegetation in the riparian area is tundra species such as crowberry (*Empetrum).* Neighboring streams were recorded as having Beach wild rice *(Elymus arenarius).* The major habitat is tundra vegetation with meadow-type plant communities in river valleys (Heusser 1978). A survey in 1978 identified the following meadow community makeup: Grasses (*Calamagrostis Canadensis*), *Heracleutr lanattun, Anygelica lItcida, Pedicutlaris chamissonis, Geunt calthifoliurm, Aconiticur maximutm, Epilobittm angustifoliumn* subsp. macro-phyllurm, *Fritillaria camschatcensis*, and *Erigeron peregrints*. The vegetation in the riparian area did contain some invasive species such as dandelion (*Taraxacum officinale*).

2.2.3 Marine Mammals

Marine mammals such as the Stellar sea lion (*Eumetopias jubatus*), northern sea otter (*Enhydra lutris kenyoni)* and harbor seal (*Phoca vitulina*) likely use Sweeper Cove (http://www.adakupdate.com/ICs/sweepercove_example.html). Under the federal Endangered Species Act, the Stellar sea lion is protected as an endangered species, and the northern sea otter (southwest Alaska distinct population segment) is protected as a threatened species.

2.2.4 Riparian Habitat

The riparian habitat of Helmet Creek has been altered from its natural state and the lower reaches are likely in a different location than originally, as suggested by the linear nature of the lower sections of the creek. The stream currently has some areas with thick mud banks but also has many areas with overhanging vegetation.

2.2.5 Birds

The enclosed bay of Sweeper Cove provides habitat for many common species of wintering Aleutian marine birds. Table 2 lists bird species that were observed (but apparently not oiled) during spill-related bird surveys. In addition, Adak Island is home to bald eagle (*Haliaeetus leucocephalus*), common raven (*Corvus corax*), song sparrow (*Melospiza melodia*), gray-crowned rosy-finch (*Leucosticte tephrocotis*), and snow bunting (*Plectrophenax nivalis*), all of which were also observed during spill-related bird surveys.

Table 2: Marine birds observed in vicinity of Sweeper Cove during spill-related bird surveys

greater scaup (*Aythya marila*)	glaucous-winged gull (*Larus glaucescens*)
harlequin duck (*Histrionicus histrionicus*)	pigeon guillemot (*Cepphus columba*)
green-wing teal (*Anas crecca*)	emperor goose (*Chen canagica*)
black scoter (*Melanitta americana*)	marbled murrelet (*Brachyramphus marmoratus*)
long-tailed duck (*Clangula hyemalis*)	common loon (*Gavia immer*)
bufflehead (*Bucephala albeola*)	black oystercatcher (*Haematopus bachmani*)
common goldeneye (*Bucephala clangula*)	unidentified cormorant species
red-breasted merganser (*Mergus serrator*)	unidentified murre species

3.0 INJURED ECOSYSTEM AND RESOURCES

During the spill, diesel fuel entered Helmet Creek which flows into the small boat harbor in the Port of Adak. Most of the diesel was confined to the creek and possibly more than a thousand gallons flowed out to Sweeper Cove. Approximately 2 km of Helmet creek and 2.5 acres of associated riparian habitat experienced direct impacts. In addition to Helmet Creek, diesel fuel also spilled into Sweeper Cove affecting approximately 9.2 acres of marine habitat and shoreline in the small boat harbor and outer harbor. Dead fish were collected at the spill site and oiled birds were observed. Direct and indirect injuries to aquatic invertebrates occurred, as well as possible injuries to riparian associated species, marine invertebrates and marine mammals. However, not all the known potentially injured resources could be assessed for damages due to time constraints, weather, available staff and equipment and reasonable costs necessary to do the assessment.

3.1. Ephemeral Data Collection

The remote location of Adak delayed natural resource damage assessment (NRDA) efforts. NRDA responders were able to be on location by January 14, 2010. At this time, responders collected short-lived data to form an accurate picture of the resources injured by this spill.

3.1.1 Stream and Fish Observations

The majority of the diesel spill from the tank farm was confined in Helmet Creek and travelled downstream approximately 2 kilometers to Sweeper Cove. Diesel fuel was observed throughout the creek and subsurface oil was suspected immediately adjacent to the outfall of the concrete catchment basin from which the diesel had overflowed. On return visits in 2011, sheens were still observed in Helmet Creek. Dead fish were collected from Helmet Creek following the spill and live fish (species unknown) were seen in the creek in restoration scoping visits in October/November 2010 and September 2011. Diesel fuel also entered Sweeper Cove oiling shoreline in the Small Boat Harbor and outer harbor. Aquatic resources affected by the spill include pink salmon (*Oncorhynchus gorbuscha),* Dolly Varden (*Salvelinus malma*) and three-spined stickleback (*Gasterosteus aculeatus*). The stream also supports juvenile life stages as well as spawning habitat.

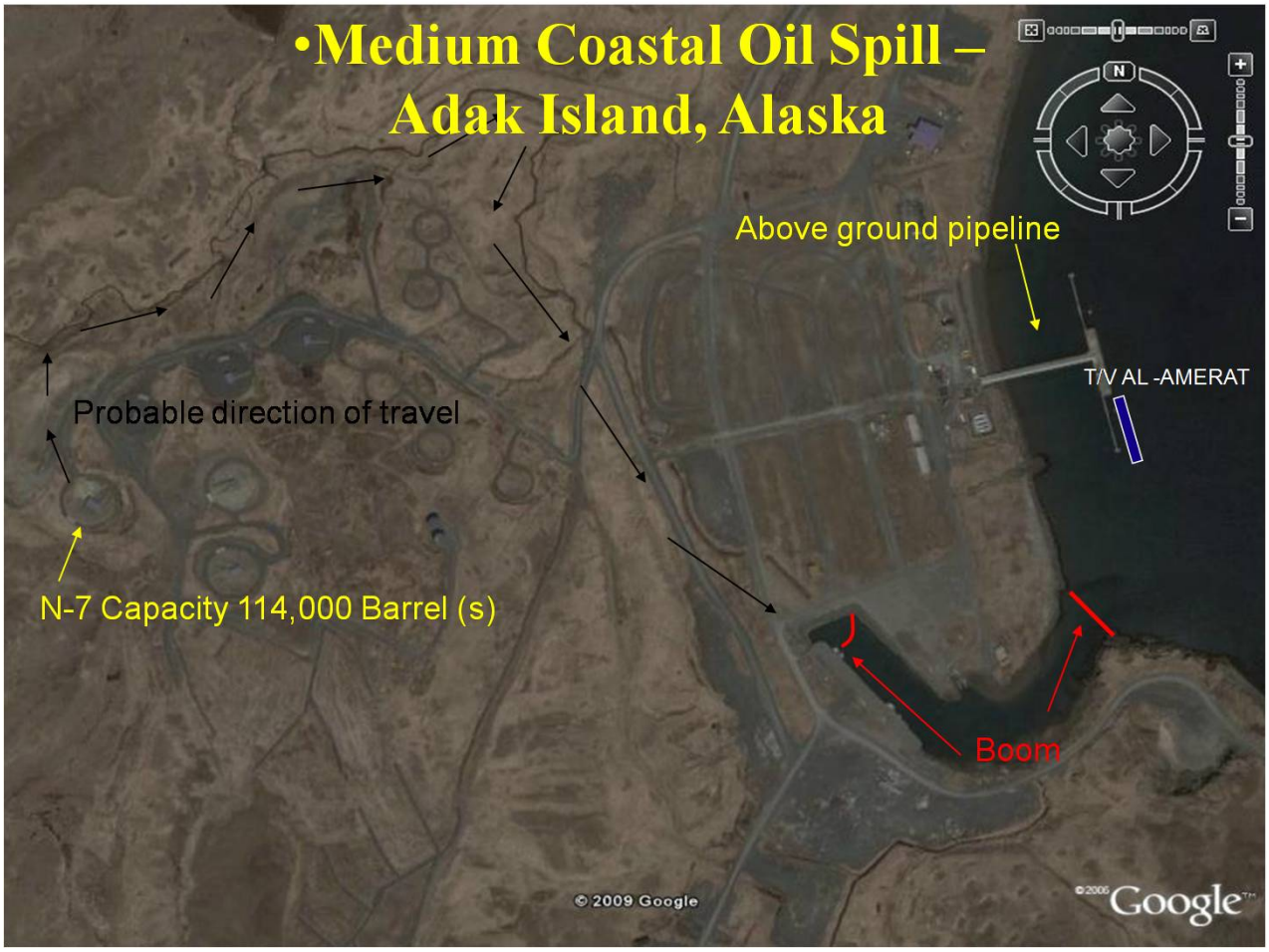
3.1.2. Vegetative Community Documentation

The vegetation observed in the riparian area was healthy, providing overhanging vegetation for the creek, allowing for creek movement and filtration of water inputs.

3.1.3 Wildlife Observations

Surveys for oil-impacted wildlife in the spill area were conducted January 13 through 19, 2010. Several bird species were present (Table 2), and a total of eight birds were observed to be oiled but still alive (five black scoters, one long-tailed duck, and two cormorants). No observations of oiled marine mammals or terrestrial animals were reported.

Figure 2. Oil Spill Direction Map



3.1.4 Oil Exposure and Resource Injury Determination

As a result of the Adak spill, diesel contamination was detected throughout the lower 2 km of Helmet Creek and in Sweeper Cove. Following the spill, dead fish were collected from the stream and oiled birds were documented (Responselink incident#8175, entry #525438). Contamination included polycyclic aromatic hydrocarbons (PAHs) which originate from petroleum and combustion products. PAHs, particularly the higher molecular weight compounds, tend to adsorb to organic or inorganic matter in sediments, where they can remain, resulting in potential long-term exposure risks to biota. There is also a potential for the uptake of PAHs by resident benthic fish through diet, exposure to contaminated water in the benthic boundary layer, and through direct contact contaminated sediment. Benthic invertebrate prey are a particularly important source of PAH exposure for fishes, as PAHs are bioaccumulated in many invertebrate species (Varanasi et al., 1989, 1992; Meador et al., 1995). While metabolism serves mainly as a mechanism for detoxification of PAHs, some of the metabolites that are intermediates in this process possess carcinogenic, mutagenic and cytotoxic activity (Johnson et al. 2002). Accordingly, the Trustees determined that direct and indirect injuries occurred to fish

at the site of the Helmet Creek spill and their related habitat. Only PAHs in fish were sampled, due to the size and scale of the injury, and salmonids were identified as the primary resource that the public was concerned about.

Low levels of diesel and associated PAHs are assumed to remain in wetland sediment. Predictions by DEC indicate that these contaminants will decrease over time but will not be completely gone until five years post spill. While some chronic exposure of Helmet Creek and its aquatic species is expected to continue via the contaminated wetland and riparian areas, the Trustees do not believe that additional damage assessment is warranted. Consequently, the wetland and much of the riparian area of Helmet Creek will be left to recover naturally.

At least eight birds were observed oiled (or suspected to be oiled based on behaviors consistent with being oiled). Birds were seen swimming in the sheen in the Small Boat Harbor during the day. Trained observers noted five black scoters displaying aberrant behavior that was consistent with exposure to oil. At least two cormorants and one long-tailed duck were also observed to be oiled but still alive. The calls of marine birds were also heard in the Small Boat Harbor, where sheen was present. As even very small amounts of oil on the plumage of marine birds can be deadly, particularly in cold water environments, due to the oil's detrimental effect on the insulating properties of feathers, one can reasonably assume that the observed oiled birds eventually died due to hypothermia caused by the oil.

Although a quantifiable natural resource injury occurred to birds, the magnitude of the injury does not justify a bird-specific restoration activity. In accordance with the general practice of the field of natural resource damage assessment, appropriate restoration options should be reasonable, cost-effective, and scaled to equally offset the magnitude of the injuries. Example bird-specific restoration projects for the bird species affected by the Helmet Creek spill include activities to enhance species-specific nesting habitat or to prevent the premature death of adults. The costs to implement these kinds of projects would be disproportionately large compared to the magnitude of the bird injury in this case. However, projects to improve and enhance the aquatic habitat in the Sweeper Cove watershed as compensation for aquatic natural resource injury would also generate habitat benefits to the affected bird species. Therefore, this Restoration Plan focuses on alternatives to offset the injuries associated with aquatic natural resources, and these activities would suffice as compensation for the bird injuries in this case.

3.1.5 Scaling the Natural Resource Injury

Once natural resource injuries are determined, the harm posed to these resources must be measured. A restoration project must equally offset the amount of natural resource injury. Thus, the benefits to be gained by implementing a restoration project must also be estimated. Ultimately, the size of the restoration project must be designed or "scaled" so that the benefits gained appropriately offset the amount of injury. To scale injuries that resulted from the diesel fuel spill, the Trustees used a method consistent with the OPA regulations. (15 C.F.R. § 990.55) The Trustees estimated the magnitude of the natural resource injury resulting from the incident by using available information, expert scientific judgment, and information generated throughout the response activities, and literature on the fate and effects of oil spills. While in certain

instances collecting more information may increase the precision of the estimate of impacts, the Trustees believe that the type and scale of restoration alternatives would not change substantially as a result of more assessment studies. The Trustees sought to balance the desire for more information with the reality that further study would delay the implementation of the restoration projects, at the expense of the local environment and the public that benefits from the area's natural resources.

The Trustees used a Habitat Equivalency Analysis (HEA) approach to scale the preferred restoration project. HEA is a service-to-service approach to scaling. It assumes that proposed restoration actions will provide natural resource services that are of the same type and quality, and of comparable value, as those lost due to the spill. (http://www.darrp.noaa.gov/library/pdf/heaoverv.pdf). The HEA also provides a mechanism to account for injuries accruing over time as well as restoration benefits generated over time, so that the total accrued benefits appropriately offset the total accrued injury. For the Adak case, the Trustees estimated the amount of injured aquatic habitat (e.g., # acres of streambed and marine habitat) and the duration of such injury. The Trustees investigated restoration projects that would enhance aquatic habitat of the same type and value as that which was injured. This Restoration Plan evaluates a reasonable range of alternatives for accomplishing that goal. The HEA was used to ensure that the size of the restoration alternatives were not disproportionate to the injury.

4.0 RESTORATION PLANNING

The Trustees developed this DARP/EA under OPA's regulations. The goal of the restoration process is to restore injured natural resources and compensate for interim lost use of those resources. OPA requires that this goal be achieved by focusing on returning injured resources to baseline conditions (i.e., the condition that would have existed had the oil spill not occurred) and by compensating for interim losses of natural resources during the period of recovery to these baseline conditions.

4.1 Restoration Strategy

In developing this DARP/EA, the Trustees focused the evaluation and selection of restoration planning on projects that would meet the goals set forth in OPA. Restoration actions under the OPA regulations are either primary or compensatory. Primary restoration is taken to return the injured natural resources and services to baseline on an accelerated time frame. As one form of primary restoration, the OPA regulations require that Trustees consider natural recovery of the resource. Trustees may select natural recovery under three conditions: 1) if feasible; 2) if cost-effective primary restoration is not available; or 3) if injured resources would recover quickly to baseline without human intervention. Primary restoration alternatives can range from natural recovery, to actions that prevent interference with natural recovery, to more intensive actions expected to return injured natural resources and services to baseline faster or with greater certainty than natural recovery alone.

Compensatory restoration includes actions taken to compensate for the interim losses of natural resources and/or services pending recovery. The type and scale of compensatory restoration

depends on the nature of the primary restoration action and the level and rate of recovery of the injured natural resources and/or services, given the primary restoration action. When identifying compensatory restoration alternatives, Trustees must first consider actions that provide services of the same type and quality and that are of comparable value as those lost. If a reasonable range of compensatory actions of the same type and quality and comparable value cannot be found, Trustees then consider other compensatory restoration actions that would provide services that are of a comparable type and quality as those lost. Compensatory restoration alternatives must be scaled to ensure that the size or quantity of the project reflects the magnitude of the injuries from the spill.

4. 2 Selection Criteria for Project Alternatives

OPA regulations require that the Trustees state their preferred project alternatives and explain the basis for their selection or rejection of other alternatives. To consider restoration alternatives, the Trustees considered the uncertainty of the injury measured during a logistically challenging assessment and potential continued contamination of Helmet Creek from wetland and riparian areas with residual oil contamination. Potential restoration projects were selected and evaluated by their ability to restore, rehabilitate, replace, and/or acquire the equivalent of natural resources injured (known, potential, and unknown) from the discharge of diesel fuel.

The Trustees considered only projects that met the criteria for the use of OPA regulations at 15 C.F.R. Part 990.54(a) discussed below.

4.3 Evaluation Criteria

The OPA regulations require that Trustees develop a reasonable range of primary and compensatory restoration alternatives and then identify the preferred alternatives based on the six criteria listed in the regulations. The following criteria, presented in the order given in the OPA regulations at 15 CFR Part 990.54(a), were used to evaluate potential restoration projects:

1. The cost to carry out the alternative.
2. The extent to which each alternative is expected to meet the Trustees' goals and objectives in returning the injured natural resources and services to baseline and/or compensating for interim losses.
3. The likelihood of success of each alternative.
4. The extent to which each alternative would prevent future injury as a result of the incident, and avoid collateral injury as a result of implementing the alternative.
5. The extent to which each alternative benefits more than one natural resource and/or service.
6. The effect of each alternative on public health and safety.

During the alternatives development stage, the Trustees considered a variety of different proposed restoration projects. Please refer to Table 3 for a list of all project proposals that were considered and ranked. The highest-ranking restoration proposals were considered most appropriate to restore injured resources.

To reduce transaction costs and avoid delays in restoration, the OPA regulations encourage the Trustees to consider the impacts of proposed restoration actions. This is being done to meet the

requirements of the National Environmental Policy Act (NEPA). This analysis was undertaken concurrently with the development of this Restoration Plan. Discussion of the Trustees' NEPA analysis can be found at Section 6.0.

4.4. Evaluation Method – Scaling Approach

In order to evaluate the restoration alternatives, the Trustees undertook a process known as scaling. The restoration scaling was based on the area affected, known injury documentation, the uncertainty of detailed injury assessment and potential continued contamination of Helmet Creek.

Instead of stating natural resource damage claims in dollar terms, the Trustees' settlement proposal relies upon a process called *habitat equivalency analysis (HEA*). This analysis was used to determine how much restoration activity is needed to resolve the RP's natural resource damage liabilities. HEA equates the losses resulting from the injuries and the amount of restoration needed to compensate for the losses by using some aspect of the affected environment as a sort of yardstick. Because of the central role that Helmet Creek plays in the total habitat affected, the Trustees have decided to quantify natural resource injuries for settlement purposes in terms of affected habitat rather than numbers of individual species impacted. To determine how much habitat restoration needs to be developed to compensate for diesel spill-related injuries to Helmet Creek, the Trustees use the concept of *ecological services*. The Adak Diesel Spill HEA calculates the amount of ecological services lost as a result of the spill, and the amount of ecological services that would be gained from example restoration projects, making past and future losses and gains comparable by applying a discounting factor. The results of the calculations are stated in terms of *discounted service acre-years (DSAYs).*

Injury estimation in the HEA was based on the following variables:

- amount of time for complete recovery,
- a general discounting rate of 3%
- number of injured acres
- level of services that habitat provides after injury
- level of services that habitat provided without injury
- habitat value

Due to limited information on the environment, a range of DSAY values were generated for the total injury for all four estimation areas: 2.96-9.37.

5.0 EVALUATION OF PROPOSED RESTORATION ALTERNATIVES

The Adak Diesel Spill Restoration Committee evaluated four different alternatives for restoration:

- Alternative 1. No-Action Alternative
- Alternative 2. Mitt Creek Fish Passage
- Alternative 3. Leone Creek Fish Passage
- Alternative 4. Preferred Alternative -- includes projects that would restore aquatic injuries within Helmet Creek.

In developing this list, the Trustee Committee consulted with resource management experts within the Trustee agencies and ranked projects according to the criteria listed in Section 4.3. Table 3 outlines details about the two projects that were considered for implementation, though were not preferred because of limitations in design and benefits. The Preferred Alternative (Number 4), is summarized at Table 4, followed by a more detailed NEPA analysis for this Alternative. At the end of this analysis is a table that compares the direct, indirect and cumulative impacts anticipated for all project alternatives, including those not proposed for implementation. (*See*, Table 6)

5.1 No-Action Alternative

Although this alternative would not meet the OPA requirements to compensate the public for the losses caused by the oil spill, NEPA requires analysis of the environmental impacts of a "no action" alternative. Likewise, the OPA regulations require consideration of the "no-action" equivalent -- the natural recovery option. Under this alternative, the Trustees would take no direct action to restore injured natural resources or compensate for lost services pending environmental recovery. Instead, the Trustees would rely on natural processes for recovery of the injured natural resources. This alternative was not selected because, under the no-action alternative, the public would not be compensated for losses suffered by the oil spill. These losses were suffered during the period of recovery for the spill. OPA establishes Trustees responsibility to seek compensation for these interim losses. This responsibility cannot be met through the no-action alternative. Also, technically feasible and cost effective alternatives exist to compensate for losses caused by the spill. Accordingly, the Trustees have rejected the no-action alternative and have determined that compensatory restoration is required to address these interim losses.

Direct, Indirect and Cumulative Impacts:

Although the Trustees have rejected the "no action" alternative, NEPA requires that the impacts of this proposed approach be addressed. In comparison to the Preferred Alternative, over the near term, the no-action alternative would have no direct negative impacts and fewer indirect beneficial ecological impacts. Over the long term -- as natural recovery occurred in the absence of the proposed restoration -- the local/regional impacts would be similar to, but somewhat less beneficial, than the Preferred Alternative. However, as mentioned above, this alternative was not selected because it cannot compensate the public for losses related to the oil spill.

5.2 Alternative 2 – Mitt Creek Fish Passage:

Mitt Creek flows into the mouth of the Small Boat Harbor for Adak and contains a 70-foot concrete culvert. This culvert is a barrier to fish passage and it also blocks tidal inundation upstream. The Trustees considered a possible restoration project involving the replacement of

this culvert. This project could include either a bridge or a larger culvert that would not constrict the channel, allowing for juvenile fish passage. To consider this alternative, the Trustees undertook investigations into the bedrock, waterflow and site conditions at Mitt Creek to allow for enhanced spawning and fish-rearing habitat. Species to benefit would be Dolly Varden, sockeye salmon and coho. But because the outlet of Mitt Creek is near the small boat harbor and a recently dredged area, the Trustees concluded that this area would not provide high value estuarine habitat. Also, the amount of restoration proposed was deemed insufficient. Likewise, due to the natural barriers in the stream, it is unlikely that restoration would provide for a substantial increase in rearing or spawning habitat in salmon or trout populations. Further, restoration of fish passage through the culvert would increase fish habitat by only 0.56 acres. Other options were considered, such as lowering the culvert to allow for tidal influences. This change would provide greater osmoregulation, assisting with fish spawning. However, due to the proximity of the natural barriers to fish passage from the waterfalls at the mouth of Mitt Creek, this project was determined to not be economically or environmentally worthwhile. (For more information on this Alternative, see Table 3 below).

Direct, Indirect and Cumulative Impacts:

Although this project was not proposed for selection based on lower ecological value, NEPA requires that that the Trustees consider this alternative's direct, indirect and cumulative impacts. This proposed alternative involved the replacement of a 70-foot concrete culvert in Mitt Creek. Proposed construction would involve a bridge or a non-restrictive culvert. Direct impacts of such construction would include a localized increase in turbidity and sedimentation downstream, following the removal of the concrete culvert. This alternative could also cause construction-related disruption, due to the need to remove the existing culvert with heavy machinery. Machinery and equipment used during construction and other restoration activities could generate sound that could temporarily negatively disturb wildlife and humans near the construction activity. The work area would be closed to the public during construction to preserve public health and safety. The project area is not located in a heavily used recreation area and the construction phase would be short in duration. Adverse effects to recreational activities would be slight and temporary. No substantial adverse effects are anticipated to soil, geologic conditions, energy consumption, wetlands, or floodplains. Likewise, this alternative would have no adverse social or economic impacts on local neighborhoods or communities. The cumulative impacts of this alternative would be largely positive and could include increased osmoregulation and greater opportunity for fish spawning. Social and economic impacts could provide a long-term benefit by increasing fish populations. However, given nearby barriers to fish passage, this benefit would be tightly constricted to this one section of Mitt Creek and the ecological value of this proposal would be very limited.

5.3 Alternative 3 -- Leone Creek Fish Passage:

Leone Creek, located a few miles from Mitt Creek, includes a channel surrounded by overgrown vegetation and grassy banks, which is confined by hills on either side. The Trustees considered this site for a 20-foot area of habitat creation where fish could rest before proceeding downstream. Species to benefit could be Dolly Varden, sockeye salmon and coho. However,

this creek leads directly into culverts made of a circular pipe of corrugated steel, as well as rapid waterfalls that crash into large boulders. Both serve as a formable barrier to fish passage. These natural barriers meant it is unlikely that restoration would provide for a substantial increase in rearing or spawning habitat in both the salmon or trout populations. The Trustees also considered the possible replacement of one culvert, but even with this improvement, the falls would not be passable without a fish ladder. In addition, habitat in this area was determined to not be suitable for spawning, due to highly angular rock in the stream. As a result, the habitat gain from possible restoration would be negligible. Additionally, making fish passage improvements upstream was not viewed as viable because the creek leads to a complete barrier dam retaining Leone Lake. Even if the fish survived their passage downstream, they would be completely confined by the dam. Removal of the dam was determined to be impracticable. The dam is 8.5 feet to substrate and 6.3 feet to current water surface. Removal of the dam might cause a loss of fish habitat in the lake. This loss would not be offset by the proposed 20 feet of marginal habitat creation. As a result, this proposal was not considered worthwhile for continued evaluation. (For more information on this Alternative, see Table 3 below).

Direct, Indirect and Cumulative Impacts:

Although this project was not proposed for selection based on lower ecological value, NEPA requires that that the Trustees consider this alternative's direct, indirect and cumulative impacts. This site was examined by the Trustees for the possible development of a small resting area for fish coming downstream, though the severe limitations of this area meant that fish spawning opportunities would be limited. Should this option have been pursued, the direct impacts could include a localized increase in turbidity and a temporary negative disturbance to wildlife and humans near the site caused by the sound of machinery and equipment used during construction and other restoration activities. The work area would be closed to the public during construction to preserve public health and safety. The project area is not located in a heavily used recreation area and the construction phase would be short in duration. Adverse effects to recreational activities would be slight and temporary. No substantial adverse effects are anticipated to soil, geologic conditions, energy consumption, wetlands, or floodplains. This alternative would have no adverse social or economic impacts on local neighborhoods or communities. The cumulative impacts of this alternative would be largely positive, by providing fish with an opportunity to rest before continuing downriver. However, given natural and manmade barriers at this site, the proposed enhancements would not be likely to create greater spawning opportunities.

Table 3. Other Restoration Projects Considered:

Leone Creek Fish Passage Project:

A culvert in the upper reaches of Leone Creek was identified as falling under the "red" category under Alaska Department of Fish and Game's criteria for juvenile and adult coho. This culvert was identified as a possible restoration alternative. Habitat in this area was determined to not be suitable for spawning due to highly angular rock which was in the stream due to direct proximity to a road. Prior to the fish passage barrier there is a set of natural falls that are likely a fish passage barrier at certain water levels and possibly at all water levels. Additionally upstream of the culvert there is approximately 20 feet of habitat until a complete barrier dam retaining Leone Lake. The dam is 8.5 feet to substrate and 6.3 feet to current water surface. It was determined that removal of the dam might cause a loss of fish habitat in the lake and that 20 feet of marginal habitat was not worthwhile for continuing evaluation for restoration.

Mitt Creek Culvert Replacement:

The primary restoration on this stream would be replacement of the bottom culvert with either a larger culvert or a bridge. A replacement culvert should not constrict the channel, should maintain a low grade for juvenile fish passage, and should include natural substrate within the culvert. Investigations must be made into the location of bedrock to determine if an open bottom culvert is an option. The culvert should also be lowered to allow for tidal influence. Species to benefit would be Dolly Varden, sockeye salmon and coho

Restoration of this culvert could lead to 800 meters of rearing habitat with an estimate of ~300 meters of the stream near the waterfall, which could be suitable for spawning. Prior to the falls, the average OHW is 2.85 meters. Area rearing habitat gained: ~7376m; of that 2766m could be used for spawning. Restoration of the culvert would increase fish passage for

0.56 acres. Assuming 6 years to a fully-functioning habitat, which currently exists at 60%, habitat area will be elevated to 90%, yielding 5.21 DSAYs. This amount of restoration was determined to be insufficient to serve as sufficient compensation for losses caused by the spill.

5.4 Alternative 4 – *Preferred Alternative* -- Restoration Projects that Restore Aquatic Injuries within Helmet Creek

The Preferred Alternative involves the following, which are discussed in greater detail below:

1) Remove two trash racks from culverts in Helmet Creek,
2) Restore grade of creek for fish passage,
3) Improve low flow passage inside the Creek's culvert and above the tank farm,
4) Remove debris from the creek and floodplain,
5) Revegetate banks to minimize disturbance and provide bank stability.

The Preferred Alternative involves the restoration of habitat, fish passage, and flow in Helmet Creek. This project would benefit all aquatic trust species, overall aquatic habitat and water quality of the creek, as well as pink salmon, Dolly Varden, and other native salmonids. Helmet Creek Helmet Creek was nominated to the Alaska Department of Fish and Game Anadromous Water Catalog in September 1994 under the survey name Basin Creek (AWC # 306-70-10223) due to observed pink salmon. In recent surveys of the stream salmonids were also observed in the stream thought to be resident trout. The restoration will allow for increased passage and sediment transport in the stream. In addition it is anticipated that the stream will also benefit from water quality improvements.

Table 4. Summary of Projects Involved with Preferred Alternative

Project	Project Objective	Natural Resource Benefit
Trash Rack Removal	Restore fish passage for pink and coho salmon as well as juvenile salmonids.	All aquatic trust species would benefit, including Chinook salmon, bull trout, and other native salmonids.
Debris/Barrel removal	Repair and restore Chinook salmon rearing pond capabilities	Benefit would be to overall aquatic habitat; all aquatic species would benefit
Cap of upstream barrel culverts	Restore flow to stream, create a low flow channel	Benefit would be to overall aquatic habitat; all aquatic species would benefit

The Trustee Council may evaluate and select additional individual projects if the preferred projects become unavailable or additional funds remain. Such projects would be required to meet OPA and NEPA requirements.

5.4.1 Helmet Creek Restoration -- Preferred Alternative -- Project Description

The following sections describe the restoration projects that make up the Preferred Alternative that promote aquatic restoration and salmon recovery in Helmet Creek. Work plans, with details

regarding scope of work, schedules, budgets and other applicable information are not presented here, but would be prepared before the implementation of any project.

5.4.2 Trash Rack Removal

The overall project objective for this portion of the restoration alternative is to restore fish passage for juvenile and adult salmonids.

Project Components:

- *Silt and sediment control*
- *Removal of the trash racks*
- *Regrade of the streambed*
- *Re-vegetation of disturbed areas with native plants.*

Several life stages and species of salmon, trout, and char would benefit from the improved habitat with the completion of this project. This work is expected to benefit injured resources by removing barriers to fish passage that currently block access to the stream for juvenile and adult fish. The project will also remove debris within the stream to improve the overall habitat quality for fish and suitability for fish rearing.

5.4.3 Barrel/Debris Removal

The overall project objective is to remove debris from Helmet Creek for improved creek function, habitat and water quality improvements. Removing the barrels, riparian and stream debris, as well as riparian pilings, will allow for the stream to have a more natural channel, improving spawning and rearing habitat. Removal of debris and pilings from riparian area will improve water quality in the stream. Also, to avoid the development of invasive species in disturbed soil, the Trustees outlined scheduled seeding with an approved seed mixture (See Table 5). The in-stream debris at this site includes barrels that appear to have been placed deliberately by the Navy to act as a diversion. The barrel heads and bottoms were removed prior to placement, so they are not expected to have residual content, other than built-up sediment. Shallow barrels along the streambank also appear to have been deliberately placed to allow for bank hardening. As a precaution, sediment will be tested prior to removing these barrels. It is not anticipated that the barrels would contain hazardous substances, as the Helmet Creek was not listed in Navy's surveys identifying past contamination or disposal locations. However sediment testing would ensure that any unexpected contaminants are nor remobilized by the restoration work. Should sediment be discovered that test above mutually agreed on thresholds for soil (e.g. Effects Range Low or Permissible Exposure Limits), the Navy will be notified to address the situation.

Project Components:

- *Soil contaminant sampling from barrel locations*
- *ADF&G recommendations for in-water work*
- *Removal of barrels, general debris, and pilings located in the riparian area*
- *Stabilize banks and revegetate disturbed area with the vegetation mix approved by the Trustees*

Table 5: Approved Vegetation Mix

Percent	*Common Name*	*Scientific Name*
60	'Norcoast' Bering Hairgrass	*Deschampsia beringensis*
20	'Boreal'Red Fescue	*Festuca rubra*
15	'Arctared" Red Fescue	*Festuca rubra*
5	Annual Ryegrass	*Lolium multifloum*

5.4.4 Cap of Upstream Barrel Culverts

The overall project objective is to remove hazards associated with fish passage through the upstream barrel culverts and to return flow to the main channel of Helmet Creek. This work would include:

- *ADF&G recommendations for in-water work*
- *Capping of barrel culvert area and*
- *Redirecting flow to main channel.*

5.4.5 Scaling Analysis

The DSAYs gained in restoration were calculated for restoring fish passage and debris removal in Helmet Creek. The area to be restored is Helmet Creek calculated to be ~1.02 acres. Restoration projects include fish passage barrier removal in Helmet Creek from trash racks as well as restoration of the habitat from in-stream debris and low flow. In addition to this, oil sheens were evident throughout the stream. Conversations with AK DEC revealed that removal of the remaining oil by mechanical methods is not recommended as it would result in further damage (John Brown AK DEC pers comm). Instead, the recommended action is natural dissipation, which is anticipated to take 5-6 years. This was included into the DSAY restoration calculation by setting the year to fully-functioning habitat to 11 years. With these assumptions, the restoration of Helmet Creek yields a range of 6-10 DSAYs.

5.4.6 Estimated Project Costs

Under the terms of this Restoration Plan, the Trustees plan to undertake specific actions to restore injured natural resources injured and to recover natural resource services lost as a result of the oil spill. These losses include harm to fish species, riparian and marine habitat, and bird species.

The total cost for restoration construction was estimated by the Adak Petroleum to cost between $90,000 to $190,000. (The Trustees have not estimated project costs.) This large cost range is due to uncertainties in the availability of local contracts to undertake the required work versus off-island contracts. Estimates will also be affected by the availability of heavy equipment and personnel on the island. Costs will increase if equipment and manpower must be imported. In

addition, cost estimations for work on Adak are difficult to quantify because there are many variables unique to the location. Examples of these variables include the need for an unexploded ordnance (UXO) guide during operations.

If project construction is not undertaken by the RP, a new assessment of costs would need to be determined.

The cost estimated by Adak Petroleum is for its implementation of the preferred restoration alternative. The cost of Trustee oversight and monitoring will be an additional cost to be borne by Adak Petroleum under the restoration scenario outlined in this DARP/EA.

5.4.7 Restoration Goals

The primary goal of the Helmet Creek restoration projects is to improve fish passage, water quality and in-stream flow in a salmonid-bearing stream, as well as enhance salmon rearing capabilities, while improving water quality and habitat benefits to other fish and wildlife. Success would be measured by completion of necessary project work and by post-project implementation monitoring.

5.4.8 Probability of Success

The Trustees believe that the probability of success for these projects is acceptable. The removal of debris and obstacles blocking the creek will demonstrate immediate results. Also, the restoration work undertaken would be monitored over four years to ensure that project meets performance goals. Components of the monitoring plan would include checking on control structures, ensuring that culverts remain unclogged, and that culvert plugging is in place to ensure the stream maintains a natural flow, without excessive erosion.

5.4.9 Beneficial Environmental and Socio-Economic Consequences

The restoration projects are not expected to have any significant adverse environmental impacts. Habitat restoration would benefit aquatic species by restoring natural habitat functions and augmenting salmonid rearing capabilities. These restoration actions would provide positive benefits for human recreational use. These restoration actions would likely not restrict future development. Enhancing salmon populations may also provide positive impacts to the fishing industry and local economy.

5.4.10 Prevention of Future or Collateral Injury

This section addresses the extent to which each alternative would prevent future injury as a result of the incident, and avoid collateral injury as a result of implementing the alternative. The projects involved with the Helmet Creek Restoration Alternative are expected to address the possibility of future or collateral injury by removing barriers to fish passage, as well as improving stream banks. This will be accomplished by removing degrading barrels and possible sources of stream contamination. Also, this Alternative is expected to improve fish passage, availability of overwintering habitat and water quality. Current conditions in Helmet Creek

could trap juvenile fish in areas unsuitable for rearing. The removal of unstable bank material protects against future degradation of the stream. Testing of the soil and removal of contaminated soils will likewise prevent this contamination from entering the stream at a later date.

5.4.11 Preserving Public Health and Safety

There are no anticipated effects of the restoration project on public health and safety. Prior to any removal of soil and during the proposed restoration, the Trustees will require that sampling be undertaken in both the stream bank and the creek. Also, any work in the area will be performed following the U.S. Navy's protocol regarding precautions for work in areas that may contain possible UXO (unexploded ordnance). In general, this protocol requires all work to stop if a suspicious object is found, so that a Navy UXO expert can be consulted to determine if the object may pose a hazard. Once any hazard is removed, an all-clear will be instituted to allow for the restoration work to commence.

6.0 ENVIRONMENTAL IMPACT OF UNDERTAKING THE PREFERRED RESTORATION ALTERNATIVE – DETEMINATIONS UNDER THE NATIONAL ENVIRONMENTAL POLICY ACT

This section addresses the potential overall impacts and other factors to be considered under the National Environmental Policy Act (NEPA) regulations. 42 U.S.C. § 4321; 40 C.F.R. Parts 1500-1508. NEPA requires that the environmental impacts of a proposed federal action be considered before implementation. Generally, when it is uncertain whether an action would have a significant impact, federal agencies would begin the NEPA planning process by preparing an environmental assessment (EA). Federal agencies may then review public comments prior to making a final determination. Depending on whether an impact is considered significant, an environmental impact statement (EIS) or a Finding of No Significant Impact (FONSI) would be issued.

In undertaking their NEPA analysis, the Trustees evaluated the potential significance of proposed actions, considering both context and intensity. For the actions considered in this DARP/EA, the appropriate context for considering potential significance of the action is at the local or regional level, as opposed to national, or worldwide. This DARP/EA is intended to accomplish NEPA compliance by:

1. Summarizing the current environmental setting of the proposed restoration,
2. Describing the purpose and need for restoration action,
3. Identifying alternative actions, assessing the preferred actions' environmental consequences, and
4. Providing opportunities for public participation in the decision process.

This DARP/EA is designed to allow the Trustees to meet the public involvement requirements of OPA and NEPA concurrently.

NEPA regulations (40 C.F.R. § 1508.27) require consideration of ten factors in determining significance of a proposed action:

1. Likely impacts of the proposed project.
2. Likely effects of the project on public health and safety.
3. Unique characteristics of the geographic area in which the project is to be implemented.
4. Controversial aspects of the project or its likely effects on the human environment.
5. Degree to which possible effects of implementing the project are highly uncertain or involve unknown risks.
6. Effect of the project on future actions that may significantly affect the human environment.
7. Possible significance of cumulative impacts from implementing this and other similar projects.
8. Effects of the project on National Historic Places, or likely impacts to significant cultural, scientific, or historic resources.
9. Degree to which the project may adversely affect endangered or threatened species or their critical habitat.
10. Likely violations of environmental protection laws.

After considering NEPA requirements, the Trustees believe that the projects selected in this DARP/EA would not cause significant negative impacts to the environment, or to natural resources or the services they provide. Further, the Trustees do not believe the selected projects would adversely affect the quality of the human environment or pose any significant adverse environmental impacts. Instead, habitat restoration would benefit aquatic species by restoring natural habitat functions and augmenting salmonid rearing capabilities. Likewise, the selected restoration actions would provide positive benefits for human recreational use. Enhancing salmon populations may provide positive impacts to the fishing industry and local economy. A summary of the Trustees' analysis is located below.

6.1 Direct/Indirect Impacts Considered by Trustees—Overall, the preferred restoration alternative and selected restoration projects included in this DARP/EA would enhance the functionality of the ecosystem and provide long-term protection to environmentally sensitive areas and habitats used by threatened salmonids. There could be some short-term and localized negative impacts, though not significant, from the selected restoration project(s) such as:

- ***Construction, Sound and Air Pollution***—Machinery and equipment used during construction and other restoration activities could generate sound that could temporarily negatively disturb wildlife and humans near the construction activity. Also, as discussed in more detail in the previous sections, there could be short-term negative impacts on fish and wildlife species as a result of construction activities. In accordance with State and Federal permit conditions, in-water work would be timed to

minimize impacts to fish species, and during regulated time periods when no major fish runs occur. Also pre-project soil contamination tests will be undertaken to ensure that contaminants will not be re-released during restoration. Impacts on mobile species (*e.g.*, birds, mammals) is expected to be minor, consisting of short-term displacement. Overall, the construction of the fish habitat projects as part of the Preferred Alternative would provide long-term benefits to fish and wildlife species dependent on these types of habitat.

- ***Federally Threatened, Endangered, and Candidate Species—*** The U.S. Fish and Wildlife Service has determined that the selected restoration activity will likely have no adverse affects on Endangered Species Act (ESA) listed northern sea otter (*Enhydra lutris kenyoni*) and Aleutian shield fern (*Polystichum aleuticum*) and candidate species, yellow-billed loon (*Gavia adamsii*), which use Adak Island or its surrounding waters as habitat. The Aleutian shield fern is not known to occur in the area that may be affected by the selected restoration project. The northern sea otter and yellow-billed loon will not be directly affected by project construction activity, as the construction will occur upstream in Helmet Creek. Temporary disturbances to water quality that may occur during the construction will be contained and attenuated by the time the Creek's waters enter Sweeper Cove, and thus are not expected to indirectly adversely affect protected species. The Trustees also noted that other marine mammals, such as the federal ESA-listed Stellar sea lion and Pacific harbor seal, may use Sweeper Cove – which is in the vicinity of the Helmet Creek restoration. Trustees agreed that there would be a requirement in the implementation plan that if these species are seen in the restoration project area during construction, activities will be postponed; however, this is unlikely because restoration work will occur well upstream of Sweeper Cove and is therefore outside the normal habitat for these species. Further, although the project site provides Essential Fish Habitat (EFH) for specific species, the Trustees believe that the selected restoration projects would have no adverse impact. Rather, the projects would promote the protection of fish resources. Additionally, the restoration work is covered under a programmatic EFH consultation (NOAA's August 20, 2012 Memorandum, *Essential Fish Habitat Programmatic Consultation for Restoration Center Program Activities in Alaska). The Trustees will submit the EFH Affect Determination Questionnaire to NOAA's National Marine Fisheries Service's Alaska Regional Office and implement the Best Management Practices contained in the programmatic consultation to minimize impacts.)*

- ***Water and Sediment Quality—***There could be temporary and localized adverse impacts as a result of increases in sedimentation and turbidity related to the restoration projects. However, the use of best management practices along with other avoidance and mitigation measures required by the regulatory agencies would be employed to minimize any adverse water quality and sedimentation impacts. For example, silt fences will be used whenever it is determined that restoration work may increase the turbidity of water entering into Sweeper Cove.

- ***Visual—***There may be temporary and localized adverse visual impacts during implementation of the selected restoration projects associated with construction

activities. Once the projects are completed, long-term beneficial aesthetic impacts would then extend to the users of these areas.

- ***Public Access/Recreation***—Public access could be temporarily restricted during proposed construction activities, but since the preferred projects are not located in heavily used recreation areas, any adverse effects would be minimal. In addition, implementation time for these projects would be relatively short and any negative impact on recreational activities would be slight and temporary. Restoration would likely not restrict future development.

- ***Archaeological and Cultural Resources***— The former Adak Army and Naval Operations Base is a National Historic Landmark. The Trustees consulted with the State Office of Archeology and Historical Preservation (SHPO) about the possible archaeological or cultural impacts of the project. The SHPO confirmed that there are no known sites within the project area and that the restoration would not adversely affect any known archaeological sites or sites of cultural significance.

- ***Other (e.g., economic, historical, land use, transportation)***—No significant adverse effects are anticipated to soil, geologic conditions, energy consumption, wetlands, or floodplains. The selected restoration projects would have no adverse social or economic impacts on local neighborhoods or communities. Social and economic impacts could provide a long-term benefit by increasing salmon populations.

Cumulative Impacts—Since the Trustees selected projects in the Preferred Alternative that primarily improve recovery of injured natural resources and services; the cumulative environmental consequences of the proposed action are expected to be beneficial. These cumulative impacts include restoration of the injured ecosystem by increasing and improving fish, invertebrate and wildlife habitats. The selected projects could also provide educational opportunities. All the anticipated adverse impacts would be short-term and localized, would occur during project construction, and would be minimized by using mitigation described in the DARP/EA. Any unanticipated negative cumulative adverse effect identified prior to project implementation would result in reconsideration of the project by the Trustees.

6.2 NEPA Comparison of All Restoration Alternatives Considered by Trustees

To assist with review of this document, Table 6 (below) is provided to outline a comparison of the direct, indirect and cumulative impacts anticipated for each of the restoration alternatives considered by the Trustees, including both the no-action alternative and the Preferred Alternative. The direct and indirect impacts of the alternatives that were not proposed for selection are similar to the Preferred Alternative. However, the selected restoration at Helmet Creek provided the greatest amount of cumulative benefit.

Table 6. Summary of Direct, Indirect and Cumulative Impacts of All Project Alternatives

Alternative	Direct / Indirect Impacts	Cumulative Impacts
No Action Alternative	No immediate change in status quo, resulting in few, if any, direct and indirect impacts.	Because no work is proposed under the "no-action" alternative, the cumulative benefit would be limited.
Mitt Creek Fish Passage	Direct/Indirect impacts could include some increase in turbidity and sedimentation, due to removal of concrete culvert. Heavy machinery used for this project could cause minor impact to site use, noise and disruption. The site would be closed for public use during culvert replacement, assuring safety to passersby.	Cumulative benefit to fish is possible, though very limited, due to impasses in nearby areas.
Leone Creek Fish Passage	Direct/Indirect impacts could include some increase in turbidity as part of proposed habitat creation. Heavy machinery used for this project could cause minor impact to site use, noise and disruption. The site would be closed for public use during culvert replacement, so safety would be assured.	Cumulative benefit to fish is possible, though very limited, due to nearby man-made and natural barriers to fish passage.
Hemet Creek–Preferred Restoration Project	Direct/Indirect impacts could include some increase in turbidity and sedimentation, due to removal of concrete culvert. Heavy machinery used for this project could cause minor impact to site use, noise and disruption. There could be short-term negative impacts on fish and wildlife species as a result of construction activities. In accordance with State and Federal permit conditions, in-water work would be timed to minimize impacts to fish species, and during regulated time periods when no major fish runs occur. Federally-listed Stellar sea lion, sea otter and Pacific harbor seal are not expected to be significantly impacted unlikely because restoration work will occur well upstream of Sweeper Cove. Silt fences will be used whenever it is determined that restoration work may increase the turbidity into Sweeper Cove. Implementation time for these projects would be relatively short and any negative	The cumulative benefit is expected to be positive. Overall, the construction of the fish habitat projects as part of the Preferred Alternative would provide long-term uplift to fish and wildlife species dependent on these types of habitat. These cumulative impacts include restoration of the injured ecosystem by increasing and improving fish, invertebrate and wildlife habitats. The selected projects could also provide educational opportunities. In addition, social and economic impacts could provide long-term benefits by increasing salmon populations.

	impact on recreational activities would be slight and temporary. Restoration actions would likely not restrict future development.	

Given these findings, the Trustees concluded that it was appropriate to issue a Finding of No Significant Impact (FONSI) under NEPA.

6.3 NOAA NEPA Checklist for Helmet Creek Restoration Action

Who will be the lead federal agency for this project: NOAA in coordination with DOI/FWS and the State of Alaska

No	Maybe	Yes	
_X_	___	___	1. Have significant effects on public health or safety? *Pending Spoil Contamination Test
_X_	___	___	2. Affect the unique characteristics of the geographic area?
_X_	___	___	3. Have effects on the human environment which are likely to be highly controversial?
_X_	___	___	4. Have highly uncertain or unique or unknown risks?
_X_	___	___	5. Establish a precedent for future actions with significant efforts or represent a decision in principle about a future consideration?
_X_	___	___	6. Have individually insignificant but cumulatively significant impacts?
_X_	___	___	7. Adversely affect entities listed in or eligible for listing in the National Register of Historic Places, or cause loss or destruction of significant scientific, cultural, or historic resources?
_X_	___	___	8. Adversely affect endangered or threatened species, or their critical habitat as defined under the Endangered Species Act of 1973?
_X_	___	___	9. Violate a Federal, state, or local law for environmental protection?
_X_	___	___	10. Result in the introduction or spread of a nonindigenous species?

* *Further review is needed to determine the answer, see determination numbers 3 and 4 below*

NEPA Recommendation (check one):

1. __x_ The action will have no significant effects as identified above, and is completely covered by the analysis within the Programmatic Final EA (PEA). It requires no further environmental review and a FONSI memo will be prepared, that will include the NEPA significance criteria considerations the Restoration Coordinator (RC) used for supporting documentation.

2. ___ The action will have no significant effects as identified above, and will be completely covered by a Categorical Exclusion (CE) since there are no relevant exceptions (see NAO 216-6 section 5.05c). It requires no further environmental review, and a CE memo will be prepared to describe how it meets the criteria (see NAO 216-6, sections 5.05c and 6.03a-f). Identify the applicable CE type from the abbreviated list below:

   ____ NAO 216-6 6.03a.3(b)(1 to 2) *Management Plan Amendments*
   ____ NAO 216-6 6.03b.2(a-d), and 6.03b.3(a-c) *Restoration Actions*
   ____ NAO 216-6 6.03c.3(a-i) *Projects*
   ____ NAO 216-6 6.03d.4(a-b) *Fisheries Management Actions (per MSA)*
   ____ NAO 216-6 6.03e.3(a-d) *ESA Actions*
   ____ NAO 216-6 6.03f.2(a-c) *MMPA Actions*

3. ___ The action may have significant effects as identified above. However, the potential effects were analyzed in the Programmatic Final EA for the CRP (PEA), and these effects would be avoided or substantially minimized with the use of DOC's Financial Assistance Standard Terms and Conditions, NOAA's Administrative Standard Award Conditions, and the NOAA RC's Programmatic Special Award Conditions. A FONSI memo will be prepared that will include the NEPA significance criteria considerations the RC used for supporting documentation.

4. ___ The action may have significant effects as stated above but is not categorically excluded or covered by the analysis within the PEA. It will require preparation of an individual EA to determine the significance of the potential effects.

5. ___ The action would have significant effects and will require preparation of an environmental impact statement.

___Erika Ammann_____ _____May 15, 2013_____
Signature of CRP Review Staff Date

7.0 COORDINATION WITH OTHER PROGRAMS, PLANS AND, REGULATORY AUTHORITIES

7.1 Overview

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

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

7.2 Key Statutes, Regulations and Policies

Oil Pollution Act of 1990 (OPA), 33 U.S.C. § 2701, *et seq.*; 15 C.F.R. Part 990
OPA establishes a liability regime for oil spills that injure or are likely to injure natural resources and/or the services that those resources provide to the ecosystem or humans. Federal and state agencies and Indian tribes act as trustees on behalf of the public to assess the injuries, scale restoration to compensate for those injuries and implement restoration. Section 1006(e)(1) of OPA (33 U.S.C. §.2706 (e)(1)) requires the President, acting through the Under Secretary of Commerce for NOAA to promulgate regulations for the assessment of natural resource damages resulting from a discharge or substantial threat of a discharge of oil. Assessments are intended to provide the basis for restoring, replacing, rehabilitating, and acquiring the equivalent of injured natural resources and services.

Alaska Oil Pollution Laws, AS 46 *et. seq.*
Alaska has several statutes relating to the discharge of oil or petroleum products. Pollution of air, land, subsurface land, or water of the State is prohibited by AS 46.03.710. The discharge of oil or petroleum products into or upon the land or waters of the State is prohibited by AS 46.03.740. Civil penalties are assessed for the discharge of petroleum products into the environment of the State pursuant to AS 46.03.758 and, for the discharge of crude oil, pursuant to AS 46.03.759. Under AS 46.03.760 the State may collect civil damages for various forms of pollution including the discharge of petroleum products. Under AS 46.03.760 and AS 46.03.780, the State may collect damages for injuries to the environment and the cost of restoring the environment to its pre-spill condition. Strict liability for the discharge of hazardous materials, including petroleum products, is imposed pursuant to AS 46.03.822. Additional State statutes governing the discharge of oil and recovery of damages resulting therefrom are located at AS 46.04. Spending accounts for oil spill response and clean up have been established under AS 46.08. The discharge of oil into state waters also violates Alaska's water pollution statutes, AS 46.03.050 et seq., and regulations, 18 AAC 70.

National Environmental Policy Act (NEPA), 42 U.S.C. § 4321, *et seq*. 40 C.F.R. Parts 1500; 1508

Congress enacted NEPA in 1969 to establish a national policy for the protection of the environment. NEPA applies to federal agency actions that affect the human environment. NEPA requires that an Environmental Assessment (EA) be prepared in order to determine whether the proposed restoration actions would have a significant effect on the quality of the human environment. Generally, when it is uncertain whether an action would have a significant effect, federal agencies would begin the NEPA planning process by preparing an EA. The EA may undergo a public review and comment period. Federal agencies may then review the comments and make a determination. Depending on whether an impact is considered significant, an environmental impact statement (EIS) or a Finding of No Significant Impact (FONSI) would be issued.

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

1. Summarizing the current environmental setting,
2. Describing the purpose and need for restoration action,
3. Identifying alternative actions, assessing the preferred actions' environmental consequences, and
4. Summarizing opportunities for public participation in the decision process.

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

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

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

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

Fish and Wildlife Coordination Act (FWCA), 16 U.S.C. § 661, *et seq.*
The FWCA requires that federal agencies consult with the FWS, the National Marine Fisheries Service and State wildlife agencies for activities that affect, control or modify waters of any stream or bodies of water, in order to minimize the adverse impacts of such actions on fish and wildlife resources and habitat. This consultation is generally incorporated into the process of complying with Section 404 of the Clean Water Act, NEPA, or other federal permit, license, or review requirements.

Rivers and Harbors Act of 1899, 33 U.S.C. § 401, *et seq.*
The development and use of the nation's navigable waterways are regulated through the Rivers and Harbors Act. Section 10 of the Act prohibits unauthorized obstruction or alteration of navigable waters and vests the Corps with authority to regulate discharges of fill and other materials into such waters. Restoration actions that require Section 404 Clean Water Act (CWA) permits are likely also to require permits under Section 10 of the Rivers and Harbors Act. However, a single permit usually serves for both. Therefore, the Trustees could ensure compliance with the Rivers and Harbors Act through the same mechanism.

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

Executive Order 11988 - Construction in Flood Plains
This 1977 Executive Order directs federal agencies to avoid to the extent possible the long and short-term adverse impacts associated with the occupancy and modification of flood plains and to avoid direct or indirect support of development in flood plains wherever there is a practicable alternative. Each agency is responsible for evaluating the potential effects of any action it may take in a flood plain.

Before taking an action, the federal agency must determine whether the proposed action would occur in a flood plain. For major federal actions significantly affecting the quality of the human environment, the evaluation would be included in the agency's NEPA compliance document(s). The agency must consider alternatives to avoid adverse effects and incompatible development in flood plains. If the only practicable alternative requires placing a site in a flood plain, the agency must: 1) Design or modify the action to minimize potential harm; and 2) prepare and circulate a notice containing an explanation of why the action is proposed to be located in the flood plain. The Trustees have reviewed and determined that the proposed restoration projects would not

have adverse effects to the flood plains. The proposed restoration projects plan to restore flood plain functions.

7.3 Other Potentially Applicable Laws and Regulations

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

Archaeological Resources Protection Act, 16 U.S.C. § 470, *et seq*.
Clean Air Act, 42 U.S.C. § 7401*, et seq*.
Migratory Bird Treaty Act, 16 U.S.C. § 703*, et seq.*
National Historic Preservation Act, 16 U.S.C. § 470, *et seq.*
Permission from Land Owner, Aleut Enterprises, LLC
Adak Dig Permit (U.S. Navy)
Alaska Department of Fish and Game Fish Habitat Permits
Protocol for Addressing Unexploded Ordnance (U.S. Navy)
NOAA Memorandum on Consultation, Essential Fish Habitat in Alaska, August 20, 2012

8.0 RESPONSE TO PUBLIC COMMENTS

Public review of this DARP/EA is an integral component to the restoration planning process. The OPA and NOAA Damage Assessment Regulations (15 C.F.R. Part 990 *et seq*.), as well as NEPA and its implementing regulations (40 C.F.R. Parts 1500-1508). These regulations require that the public be provided an opportunity to review and comment on oil spill restoration plans. The Trustees sought public comment on the projects being proposed to restore injured natural resources from the Adak Petroleum Diesel Spill. The Draft DARP/EA was made available for public comment for over thirty (30) calendar days from March 18, 2013 until April 30, 2013. One comment was received:

COMMENT:

"ADAK LET 142,000 GALLONS FALL INTO AN ALASKA CREEK. THE EXECS SHOUDL GO TO JAIL FOR 3 YEARS. THE COMPANY SHOULD BE PUT OUT OF BUSINESS. THE STOCKHOLDERS SHOUDL LOSE THEIR SHIRTS AND NOT HAVE ANY ITNEREST ABOVE $1.00 IN SHARES. THE FINES SHOULD BE $2 BILLION. WHAT ADAK HAS PROPOSED SHOWS THAT THESE OIL PROFITEERS JUST DONT GET IT. WE ARE SICK AND TIRED OF THEM DOING DAMAGE TO OUR WORLD. WE KNOW THERE IS NO REASON FOR THESE SPILLS. WE KNOW THAT THEY THINK THEY CAN KEEP GETTING AWAY WITH IT SO THEY KEEP BEING NEGLIGENT AND CARELESS. WE NEED TO HAVE MORE PUNISHMENT FOR THIS NEGLIGENT ACT OF POLLUTION TO EARTH. THAT CREEK THEY POLLUTED WAS WORTH $10,000,000. THE DEAD BIRDS ARE WORTH $10,000,000 IN VALUE TO EARTH. THE DEAD FISH ARE WORTH $10,0000,000. AND THEY NEED TO HAVE A PENALTY ON TOP OF THE $30 MILLION DAMAGE THEY DID. THIS CANNOT CONTINUE. WE NEED TO SEND A STRONG MESSAGE. BP, ADAK, THESE GUYS ARE JERKS AND CERTAINLY NOT

COMPETENT TO DO BUSINESS IN AMERICA. THEY ARE NEGLIGENT AND INEPT. THIS COMMENT IS FOR TH EPUBLIC RECORD."

JEAN PUBLIC

TRUSTEES' RESPONSE:

We appreciate receiving comment from the public on all proposed restoration plans. The Trustees reviewed this comment and we are placing it into the administrative record by incorporation into the final DARP/EA. The commenter suggested that the level of injury caused by the Adak spill warranted over $30 million in damages. When undertaking our restoration analysis, the Trustees assessed the harm caused by the spill and believe that this level of harm would be fully offset by the Preferred Restoration Alternative. Also, the comment did not provide specific recommendations as to how the proposed restoration actions may be revised. As a result, the Natural Resource Trustees will continue with the project plans as outlined in the DARP/EA. The Preferred Restoration Alternative will be made final and project implementation will begin.

9.0 PREPARERS, AGENCIES AND PERSONS CONSULTED

9.1 Adak Petroleum Diesel Spill Trustee Committee Members

The following Trustee representatives on the Adak Petroleum Diesel Spill Committee were involved with the preparation of this document and with the selection of the Preferred Alternative.

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9.2 Other People Consulted

The following people were consulted and provided technical support in the development of this document.

John Brown (ADEC)
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10.0 REFERENCES

Alaska Department of Fish and Game.2009 Aleutian Island and Atka-Amlia Island Management Areas Salmon Annual Management Report. Fishery Management Report No.10-20

Byrd,G.V, Gibson, D.D., Johnson,D.L., The Birds of Adak Island, Alaska.1974. The Condor 76: 288-300.

Johnson L.L., T. Collier, J. Stein. 2002. An Analysis in Support of Sediment Quality Thresholds for Polycyclic Aromatic Hydrocarbons (PAHs) to Protect Estuarine Fish. Aquatic Conservation: Marine Freshwater Ecosystems 12: 517–538.

Maron J.L et al. 2006. An Introducted Predator Alters Aleution Island Plant Communties By Thwarting Nutrient Subsidies. Ecological Monographs, 76(1) pp. 3-24.

Meador J.P., J.E. Stein, W.L. Reichert, U. Varanasi. 1995. A Review of Bioaccumulation of Polycyclic Aromatic Hydrocarbons by Marine Organisms. Reviews in Environmental Contamination and Toxicology 143: 79–165.

Naval Facilities Engineering Command, Department of the Navy. 2010 Land Use Controls and Insitutional Controls Repair/Improvement Work Plan.

Palmer, Douglas 1995. Survey of the fishery resources on Adak Island, AlaskaMaritime National Wildlife Refuge, 1993 and 1994. Alaska Fisheries Technical Report number 29. 1994.

USFWS. Waterfowl, Seabird and incidental wildlife Monitoring at Adak Island During 1992 and 1993, interim report. 1993.

USFWS Alaska Maritime National Wildlife Refuge, Aleutian Island Unit. Wildlife Inventory Plan. 1995

Varanasi, U., J.E. Stein, M. Nishimoto. 1989. Biotransformation and Disposition of PAH in Fish. In Metabolism of Polycylic Aromatic Hydrocarbons in the Aquatic Environment, Varanasi U (ed.). CRC Press: Boca Raton, FL; 93–149.

Varanasi U, J.E. Stein, W.L. Reichert, K.L. Tilbury, M.M. Krahn, S.L Chan. 1992. Chlorinated and Aromatic Hydrocarbons in Bottom Sediments, Fish and Marine Mammals in U.S. Coastal Waters: Laboratory and Field Studies of Metabolism and Accumulation. In Persistent Pollutants in Marine Ecosystems. Walker, C.H. and D.R. Livingstone (eds). Permagon Press: New York; 83–115.

11.00 LIST OF ACRONYMS AND ABBREVIATIONS

ADF&G- Alaska Department of Fish and Game
ADEC-Alaska Department of Environmental Conservation
ADNR-Alaska Department of Natural Resources
ADOL- Alaska Department of Law
CFR- Code of Federal Regulations
DOC - Department of Commerce
DOI - Department of the Interior
EA – Environmental Assessment
EFH - Essential Fish Habitat
EIS - Environmental Impact Statement
EA – Environmental Assessment
ESA - Endangered Species Act
FWCA – Fish and Wildlife Coordination Act
FWS – U.S. Fish and Wildlife Service
NEPA - National Environmental Policy Act
NOAA- National Oceanic and Atmospheric Administration
NRDA - Natural Resource Damage Assessment
NRDAR – Natural Recourse Damage Assessment and Restoration
NRDs – Natural Resource Damages
OPA- Oil Pollution Act of 1990
Adak RC – Adak Restoration Committee
DARP/EA – Damage Assessment and Restoration Plan/Environmental Assessment
TRUSTEES – Natural Resource Trustees
USFWS - U.S. Fish and Wildlife Service