

**FY2011 Chief of Naval Operations (CNO)
Environmental Awards
Natural Resources Conservation (Small Installation)**

INTRODUCTION

History

The Fleet Logistics Center – Puget Sound (FLC-PS) Fuel Department is a 234-acre site in eastern Kitsap County, Washington. It contains approximately 2 miles of Puget Sound shoreline at Orchard Point. The facility is divided into two separate areas by a county road and Little Clam Bay, a 26-acre lagoon that separates the base into 108 acres east of Little Clam Bay and 100 acres west of Little Clam Bay. The Fuel Department property has been in military service for over 100 years and has been serving the US Navy as the Northwest Fuels Facility since 1941.



**Fleet Logistics Center – Puget Sound
Fuel Department**

Mission

The FLC-PS Fuel Department is a Defense Fuel Support Point (DFSP) for the Defense Logistics Agency (DLA), under the command of NAVSUP Fleet Logistics Center-Puget Sound. The Fuel Department's primary mission is to receive, store, and issue on-specification aviation and marine petroleum products in support of Department of Defense (DoD) operations, with appropriate controls to ensure safety, quality, inventory control, and environmental protection. Fuel storage tanks are located both above and below ground with effective safety and security precautions in place due to the flammable nature of the various fuel products stored and handled. The main operational customers are the DoD, U.S. Coast Guard, National Oceanic and Atmospheric Administration, and Canadian Naval forces. Consequently, the Fuel Department's mission requires use of both terrestrial and marine areas within and immediately adjacent to the property.

Along with providing fuel to the Armed Forces and other government agencies, stewardship of our environment and natural resources at FLC-PS's Fuel Department is priority one. Protection and preservation of these precious natural resources continues to be a top priority as the Fuel Department has been provided a wide assortment of natural resources in a very small area. The small size of the base, proximity to populated neighborhoods, and the mission of storing volatile petroleum products render it impractical for hunting opportunities. However, saltwater fishing, camping, and woodland hiking activities are readily available, particularly for military personnel. The base has a small workforce of 39 civilians and 2 military personnel. It has been recognized as a leader in environmental stewardship having been selected as the Navy's Best Industrial Installation for Environmental Quality in 1978, 1987, 1996, and 2005, as well as a runner-up in Natural Resources Conservation for Small Installations in 1994. This strong environmental ethic

has translated into strong employee and management support for all natural resources that have been placed in the care of the Fuel Department and the US Navy.

BACKGROUND

FLC-PS Fuel Department has had an Integrated Natural Resource Management (INRMP) plan since 2002 and predecessor planning documents for natural resource management (NRM) plans since 1994. These plans guided Fuel Department management and enhancement of natural resources through projects and agreements with local environmental agencies. We continuously met our obligations to our natural resources while meeting our military mission under constrained financial and personnel resources. Historically, our INRMP and predecessor NRM plans identified projects such as:

- Salmonid Fish Feeding.
- Beaver Creek Legacy Program Grants
- Tank Farm Reforestation
- Olympia Oyster Restoration
- Cooperative Agreements with State and Federal Agencies
- Student Support of the Station Natural Resource Program
- Christmas Bird Count

These projects and agreements led to the current INRMP and natural resource management goals.

The existing INRMP was completed and incorporated into the FLC-PS Environmental Management System in July 2009. Through this plan, the Fuel Department has cooperative agreements with the following agencies:

- US Fish and Wildlife Service (USFWS)
- Washington State Department of Fish and Wildlife (WDFW)
- National Oceanic and Atmospheric Administration (NOAA)
- NOAA Northwest Fisheries Science Center - Manchester Research Station

These cooperative agreements and the Fuel Department natural resource management plan continue to have considerable support from the community and the command. As examples, the Puget Sound Restoration Fund (PSRF) has partnered with the Fuel Department for continued support of Olympia oyster restoration efforts within the confines of Little Clam Bay, and the local Audubon Society conducts an annual Christmas Bird Count event with the Fuel Department and has done so for over 20 years.

Since FLC-PS has no dedicated natural resources staff, all natural resources management efforts are carried out as collateral duties on the part of the Deputy Director, Chief Engineer, and the Deputy Environmental Director. Fuel Department employees also consistently volunteer their own time to enhance the natural resource assets at the FLC-PS Fuel Department. This unique synergy of projects, agreements, collateral duties, and volunteer work resulted in a truly integrated INRMP with unparalleled benefits for the environment and the local community.

PROGRAM SUMMARY

The FLC-PS Fuel Department INRMP has a number of features that make it unique and notable. The goals are to integrate the program requirements into how we do our business as well as how well we pursue projects for local environment enhancement. Our INRMP objectives include:

- Ensuring the sustainability of ecosystems encompassed by the installation
- Ensuring no net loss of capability to support the DOD fuel mission

In addition, we use personnel from Naval Facilities Command - Northwest (NAVFAC NW) to help execute this mission while meeting our primary fueling mission. We strive to protect and enhance the watersheds, soils, forests, fish, wildlife, and other natural resources while also working with local government to identify potential impacts from offsite locations to maximize the viability of the Fuel Department ecosystem. The continuous oversight by department personnel, the support of outside experts, and the financial support of NAVSUP has allowed us to develop and implement projects to meet these goals.

Many of the natural resource project recommendations currently outlined in the Manchester INRMP are underway or have been completed within the 2010-2011 period. Projects include the fourth phase of restoration efforts on Beaver Creek, shoreline forage fish and juvenile salmonid surveys, a near-shore eelgrass habitat survey, and shoreline ephemeral data collection plan of deer population health.

Beaver Creek Restoration, Phase 4, is nearing completion of this final stage in a continued effort to restore the creek to natural, pre-WWII, salmon-bearing stream conditions. The work included multiple large scale projects moving thousands of tons of earth to provide for natural sediment flow and facilitate fish migration. With adequate sediment distribution and movement downstream, the breeding habitat for Coho, Chum, and Steelhead salmon as well as Sea-run Cutthroat trout will be re-established for the first time since 1939.

Forage fish are an important fish species in the State of Washington. They are critical as the prey base for a large variety of other marine organisms. These fish are also popular recreational fishing bait and play a significant role in commercial and subsistence fisheries. The perpetual survey of forage fish and juvenile salmonids along the Fuel Department shoreline was an effort to establish a baseline for future efforts to enhance fish habitat in the Puget Sound. Herring, sand lance, and surf smelt were identified as species that spawn in the eelgrass habitat near Fuel Department shorelines. Identification and protection of these important habitat areas will allow for better management and protection, thus benefiting the salmon and other fish species that feed on forage fish species. These studies conducted at the Fuel Department have indicated the success of the INRMP with our shoreline being recognized as one of the most productive habitats for forage fish in the entire Puget Sound.



Beaver Creek near Little Clam Bay

Eelgrass beds are an important habitat found along much of the FLC-PS Fuel Department sub and intertidal areas around the Puget Sound. This aquatic plant species provides sanctuary for many marine invertebrate and vertebrate species. The project to perform a survey of the eelgrass located near the Fuel Department was completed to obtain a baseline gauge of the available marine habitat in the near-shore areas. The results confirmed the cleanliness and clarity of waters in the FLC-PS Fuel Department natural environment.

The development of an ephemeral data collection and sampling plan was the first step in determining the work needed to restore the shoreline area to pristine condition if an oil spill or another similar event with significant environmental impact were to occur. The Fuel Department has implemented the collection of baseline data by obtaining samples and is committed to testing those samples throughout the future. The first element of this plan is a survey of deer species at the department that is underway and will be completed in September 2012. The deer survey is just one sample that will be used to compare current wildlife population with historical figures. The overall effort will develop a wildlife management plan and improve the habitat for wildlife at the Fuel Department.

ACCOMPLISHMENTS

The period of 01 October 09 through 30 September 2011 has been a very successful one for the FLC-PS Fuel Department with respect to natural resource management. We have completed or are near completion of multiple projects to enhance the health and habitat of fish and wildlife species in addition to improving the esthetics and quality of life for DoD personnel, our neighbors, and the general public.

Fish and Wildlife-

Beaver Creek Restoration: Beaver Creek Restoration, Phase Four, completes the FLC-PS Fuel Department project to return what was once considered merely a “drainage ditch” to the meandering salmon stream that existed prior to the Navy occupying the property. The project encompassed the removal of weirs, replacement of existing undersized culvert with properly sized culvert, reconfiguration of the stream-bed and shoreline banks, and the installation of large woody debris. Upon completion of this final phase in December 2011, the environmental impacts on the spawning periods of multiple fish species will be minimized. The project restores habitat and usable spawning gravels for Coho (*Oncorhynchus kisutch*), Chum (*O. keta*), and Steelhead (*O. mykiss*) salmon as well as Sea-Run Cutthroat (*O. clarki*) trout. The National Marine Fisheries Service (NMFS) listed the Puget Sound distinct population segment (DPS) of Steelhead as “Threatened” and the segment of Coho salmon as a “Species of Concern”. This restoration provides vital habitat and an environment for sustained reproductive success for salmon species that are on the brink of endangerment.



Construction of the Replacement Culvert at Beaver Creek

Eelgrass Survey: Eelgrass is an important habitat for many marine invertebrate and vertebrate species. Performing an eelgrass survey is a measure to determine the health and quality of habitat for lower organisms such as forage fish (sand lance and herring), which are consumed by higher organisms like salmon and marbled murrelet. Health and suitable habitat for the lower organisms has a direct effect on the health of higher organisms. Consequently, eelgrass studies provide a tool for establishing a baseline inventory and identifying trends for the protection, conservation, and management of shoreline habitat.



Sea Star in Eelgrass Bed

Surveys and mapping of existing eelgrass meadows were performed in FLC-PS Fuel Department waters to ascertain the health of Puget Sound eelgrass beds in the vicinity of the department. The survey was performed using Washington Department of Fish and Wildlife (WDFW) Eelgrass/Macroalgae Habitat Interim Survey Guidelines. This included recording GPS coordinates of eelgrass beds and counts of eelgrass shoots. The survey was conducted around the entire perimeter of the Fuel Department from the southern property line to the northern property line and under the entire fuel pier. After comparing the results of the 2010

eelgrass survey with results of an eelgrass survey completed in 1993, the eelgrass beds have increased by over 25% and are located in significantly deeper waters than anywhere else in the Central Puget Sound. With eelgrass identified as an indicator flora species, this was significant and demonstrated both the superior water quality and the clarity of the nearshore waters at the FLC-PS Fuel Department.

Bald Eagle Nesting: Bald eagles are protected federally under the Bald and Golden Eagle Protection Act and the Migratory Bird Treaty Act. They are also protected in Washington State by the Bald Eagle Protection Rules. Bald eagles feed primarily on waterfowl and fish. They prefer to use large trees and snags near shorelines for perching and roosting. Bald eagles are regularly observed feeding and roosting within the Fuel Department perimeter. There is one confirmed bald eagle nest platform on Fuel Department property and another known nest approximately one half mile from the department perimeter. These nests are monitored annually for occupancy during the nesting and fledgling season. During the 2011 nesting season, a pair of bald eagles was observed nesting in the Fuel Department nest.



Bald Eagle Perched in Tree at Fuel Department

At that same time, critical repairs were being performed on two underground storage tanks nearest the bald eagle nest. Work was immediately stopped and diverted to different project locations to avoid disturbing the nesting activity. Concerted efforts were also made to assure that human disturbances, like foot and vehicle traffic, were eliminated or greatly minimized around the nest site during the nesting season.

Deer Survey: The large-game species that occurs most abundantly within FLC-PS Fuel Department is the Columbian black-tailed deer (*Odocoileus hemionus columbianus*). Deer are



**Columbian Black-tailed Deer on the Beach
near FLC-PS Fuel Pier**

regularly seen feeding throughout the facility and female deer are consistently seen with multiple fawns every spring. As one of the initial projects within the ephemeral data collection and sampling plan, the Fuel Department funded a deer survey in March 2010. Preliminary results indicated that the permanent population had increased from 22 in 1993 to 29 in 2011, an increase of 31.8%. The deer population survey will continue through August 2012 with a final report to be completed in September 2012. Expected results have initiated a wildlife management plan that is in development at Fuel Department to ensure suitable conditions for stable deer and other wildlife populations.

Other Natural Resources-

FLC-PS Fuel Department, due to small size and unique mission of storing fuel, has limited opportunities for extensive outdoor recreation. However, opportunities have been created for camping, hiking, wildlife viewing, and recreational shell fishing. A nature trail is maintained at the facility for use by facility personnel, their families, and other government employees. This multi-use trail combines exercise opportunities, wildlife/scenic viewing, and interpretive areas. A pamphlet was published that lays out the interpretive program with numbered descriptions that correlate with numbered plaques along the trail. Additional efforts to enhance this trail are underway with improved foot paths, additional interpretive signs, and a GPS survey to include on interpretive maps.

With panoramic and scenic views of the Puget Sound, the Cascade Mountain range, and wildlife in its natural habitat, FLC-PS employees utilize existing trails and roads to walk, jog, and bicycle. The majority of routes used by personnel is relatively flat and easily traversed within a lunch or break period. Additionally, Fuel Department personnel are developing an area in the former housing area for use as a camping and picnic area.



**FLC-PS Fuel Department
Nature Trailhead**

Current facilities include electrical hookups, a fire pit, picnic tables, and playground equipment with future additions to include potable water hookups and a sewer pump station. This location is particularly attractive for overnight camping and single day events because of the spectacular views of the Puget Sound, Mount Rainier, and the Seattle skyline.

Community Relations-

FLC-PS regularly hosts local scout troops and other service organizations for projects as part of the natural resource management program because of the rich natural environment at the Fuel Department. In FY10/11, these projects included beach cleanups (Cub Scouts), re-establishment of a picnic shelter and flora planting (Sea Scouts), tree planting at Beaver Creek (local high school Natural Resource Class and Boy Scouts), and other projects that involved local community groups (Kiwanis Club, Rotary Club, Audubon Society) in the Manchester Natural Resource Preservation Mission.

Natural Resources Compliance Program-

FLC-PS Fuel Department established an Ephemeral Data and Sample Collection Plan in an effort to be proactive environmental stewards. The Ephemeral Data and Sample Collection Plan was developed in concert with the Washington State Department of Fish and Wildlife and encompasses ephemeral (time-sensitive) data and sample collection activities that require immediate action by the Natural Resources Damage Assessment (NRDA) team in the event of an oil spill originating from, or impacting sites, in the vicinity of the Fuel Department.

Ephemeral data is, by definition, short-lived and the key to the successful oil spill response. These data points and samples are those that will be lost if not collected prior to and immediately after an oil spill. Ephemeral data plans aid in the understanding of environmental conditions prior to oil contamination and identifying the scope of subsequent environmental sampling and injury assessment. Examples of ephemeral data and samples include: oil distribution on water surface; oil concentrations in water and sediment prior to oil spills; and oil concentrations dispersed in the water column. The Fuel Department plan describes locations, sampling design, and sampling methods for source oil, intertidal sediments, surface water, and intertidal shellfish. It also describes the procedures for sample and data documentation, preservation, and shipping. Ultimately, the Fuel Department data plan facilitates this process by establishing a collection strategy prior to a spill occurring and developing a plan for the early stages of a NRDA response.

Natural Resources Funding-

Natural resources funding has been provided to the FLC-PS Fuel Department by NAVSUP as part of their annual Maintenance Real Property & Environmental Compliance funding distribution. In addition, NAVFAC NW has programmed funding for natural resource management projects. While FLC-PS does not have personnel funding support for the Natural Resource Management program, these activities have been accomplished as collateral duties. As a result, the FLC-PS Fuel Department is reliant on departmental employees to develop potential natural resource projects, identify corrective actions, and mitigate potential environmental impact the Navy fuels mission has on the rich natural resources of the Puget Sound.