



**UNITED STATES DEPARTMENT OF COMMERCE**  
**National Oceanic and Atmospheric Administration**

*National Marine Fisheries Service*

*P.O. Box 21668*

*Juneau, Alaska 99802-1668*

*December 31, 2003*

Carl Schrader, Habitat Biologist  
Alaska Department of Natural Resources  
Office of Habitat Management and Permitting  
400 Willoughby Avenue, 4<sup>th</sup> Floor  
Juneau, AK 99801-1796

Dear Mr. Schrader:

Please find enclosed a proposal from the National Marine Fisheries Service (NMFS), Auke Bay Laboratory (ABL) for water quality and habitat monitoring associated with the Cascade Point marine terminal facility. The Cascade Point marine terminal facility is being evaluated for potential environmental impacts as a component of the Kensington Mine project's environmental impact statement, per the National Environmental Policy Act (NEPA) process. As you are aware, the construction of the Cascade Point marine terminal facility poses significant environmental concerns regarding potential impacts to marine resources. The proposed facility is located in known spawning habitat for the depressed Lynn Canal stock of herring, and presents the possibility of both direct impacts to herring spawning habitat from fill, and indirect impacts from incidental release of hydrocarbons that may degrade area water quality and harm herring rearing. NMFS believes that ABL's proposed project monitoring will provide valuable data for both scientific and management benefits. Scientific benefits include the opportunity to track water quality and submerged aquatic vegetation changes over time. This part of the monitoring would include a baseline to be collected in the spring and summer of 2004. Management benefits will include a feedback mechanism to assess how well dock best management practices are protecting water quality.

The ABL proposal will complement monitoring proposed by the Alaska Department of Fish and Game (ADF&G) to monitor herring spawning activity in Berners Bay, and track re-colonization of the breakwater. As discussed between NMFS staff (Linda Shaw) and yourself, please combine this proposal with that of ADF&G's for a joint interagency monitoring plan to be submitted to the applicant, Coeur, Alaska, Inc. The combined proposals will cover both specific and general concerns regarding environmental impacts to the Cascade Point facility. We agree that monitoring should occur annually for five years, and then at year ten and year twenty.

If you have any further questions, please contact Linda Shaw of my staff at 907-586-7510.

Sincerely,

James W. Balsiger  
Administrator, Alaska Region



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Linda Shaw  
December 29, 2003  
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## Water Quality Monitoring at Proposed Cascade Point Terminal: Polycyclic Aromatic Hydrocarbons and Fisheries Habitat

A variety of hydrocarbon inputs could be released into the waters near Cascade point from such activities as construction, refueling, and boating, including recreational use of 2 stroke engines. The purpose of this water quality monitoring proposal is to document the polycyclic aromatic hydrocarbon (PAH) inputs over a seasonal time course for several years, starting prior to construction. The bay has sensitive habitats is used at critical times by several species, and is arguably a very critical habitat for the upper Lynn Canal ecosystem with its herring and eulachon runs that provide a forage basis for other fish, marine mammals and birds. This monitoring proposal has two themes: water quality monitoring of PAH, and habitat monitoring (mapping) of eel grass and kelp beds. Both monitoring themes will be conducted to account for season changes as well as inter-annual trends.

**PAH sampling:** Polycyclic aromatic hydrocarbons are often of low concentrations or enter the environment in pulses that are difficult to encapsulate with conventional periodic water samples. Yet they can be toxic to fish and invertebrates eggs and larvae at part per billion concentration if exposure occurs over month-long time spans. . Passive integrative sampling technology is the only practical means of monitoring spatial and temporal input trends of these contaminants to a water body. The Auke Bay Laboratory of the Alaska Fisheries Science Center has developed and extensively tested polyethylene strips as an alternative to conventional SPMD passive samplers. Deployed for 30 days, the strips sequester PAH present in the water column, giving an accurate picture of changes in PAH input over time. Some limited direct water sampling and mussel archivals will also be done.

**Geographical sampling:** Approximately 10 sample sites within Berner's Bay will be sampled using primarily passive sampling techniques. Several sites will be in and around the proposed Cascade Point area, as well as in adjacent areas acting as reference sites. In addition, Echo Cove will be sampled to determine worst case impacts from recreational use. Most of the sampling will be in the top meter of the water column.

**Seasonal sampling:** Sampling will initially be conducted twice per year; (a) early spring, and (b) mid-summer. These two sampling periods will cover the expected range of water quality: early spring sampling should be the best water quality, and will coincide with the time period of highest biological importance when herring/eulachon runs, while peak summer sampling will coincide with highest recreational use and will coincide with mapping of eel grass and kelp beds.

**Temporal sampling:** We expect water quality sampling to continue over several years, before and during construction and during use.

Strips will be deployed in early March and retrieved a month later to measure inputs associated with spring thaw and a second set will be deployed and retrieved in the month of July when activity in the Cove is at a peak. Deployment in spring and summer of 2004 will establish a baseline which we anticipate revisiting annually as construction and use activity at the Cascade Point facility increases. Strips will be deployed by skiff, with field blanks taken as quality control measures. If PAH levels are detected in the field blanks, the samples are assumed to be likewise corrupted.

In addition, we will measure PAH levels in 3 sediment samples and 3 mussel tissue collections from the Cascade Point will be archived for future analyses if needed. A temporal time series will be collected.

#### Habitat sampling and mapping:

Coupled with hydrocarbon sampling and analysis, we will map with GPS the shoreline extent of submerged aquatic vegetation (SAV) from the Echo Cove launch facility to Cascade Point. Eelgrass meadows and under-story kelps serve as critical habitat for a wide variety of juvenile fishes in southeastern Alaska, including several species important in commercial fisheries. Fish assemblages will be inventoried in each habitat type using beach seines, jigs, and an ROV to assess species richness, relative abundance, and distribution. Sampling will be once per year, in early June 2004– all sampling will be done during daylight and within 2 hours of low tide (range +1.0 to -1.5 m below MLLW). Periodic re-sampling of these sites will allow resource managers to monitor gains or losses in SAV and associated fish communities that may result from human or natural disturbance. Sampling in June is scheduled because of maximum growth of grass/kelps, and that sampling period is compatible with similar measurements at many other sites in southeast Alaska.

#### Sampling Frequency:

We anticipate sampling for PAH and habitat change annually for the first 5 years to determine inter-annual variability, then reassessing the frequency based on the data. Similar studies collect long-term data every 3 years after the 5 year baseline is established.

#### Annual Cost

We expect this project to be relatively low key for a long time period, and see it as a chance to monitor a developed site over a long time course, resulting in valuable habitat information and publications. The costs here are primarily for out of pocket costs.

22 Passive Samplers @ \$300 per sampler for deployment, analysis, and interpretation  
3 direct water measurements @ \$300 per sample (summer only)  
3 Mussel Tissue Samples @ \$400 per tissue  
3 Sediment Sample @ \$400 per sample

#### Habitat Mapping

2 days of boat time @ \$100 per day for supplies  
Contract Labor: \$5000  
Total Project Costs for First Year: 15.1K

Expected products: Annual progress reports will be finished by end of the work year (April 1). We expect after several years of data that a formal scientific publication combining habitat and water quality measurements will be completed.