03/23/06

INFORMAL INTERAGENCY SECTION 7 CONSULTATION

Liberty Bay Substrate Enhancement Project
PROJECT TECHNICAL INFORMATION

Brief

To enhance Olympia oyster settlement, Puget Sound Restoration Fund has proposed 3-5 days of barge-based shell placement in an intertidal area of Liberty Bay, using a gas-powered pump and hose for placement. Bald eagle may be present in the vicinity of the project area; a nest has been identified 800-1000 feet from the project work site. The local WDFW bald eagle biologist was consulted and mitigation measures adopted. Should the nest be occupied, the pump noise is not anticipated to disturb the nest, and work will occur while fledglings are feathered and "less sensitive" to disturbance.

Suggested Determination

Bald Eagle – May affect, not likely to adversely affect
Marbled Murrelet – No Effect
Bulltrout – No Effect

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Project Proponents
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Project Location

Washington Department of Fish & Wildlife tidelands in Liberty Bay, near Scandia, WA
Section 22, T26N, R1E
47 43' 14.54" N, 122 39' 1.63" W (approximate location)

Project Description

Puget Sound Restoration Fund (PSRF) proposes to enhance habitat for native Olympia oysters (*Ostrea conchaphila*) in Liberty Bay by placing 300 yards of Pacific oyster shell. Project activities will create a complex, three-dimensional native oyster bed on 1 acre of tidelands where oyster population density is limited by substrate.

Timing is critical to obtaining good oyster set. Oyster larvae settle out of the water column in mid-June, depending on the timing of larval release. Shell placement before or after this window increases fouling of shell substrate by competing organisms, primarily barnacles.

The scope of work includes:

(1) Demarcating site boundaries with small buoys and/or GPS measurements.

(2) Transporting clean Pacific oyster shell material (free of fine sediments and marine organisms, as determined by permits issued by WDFW) to the enhancement site by barge, from a loading site at Keyport Naval Undersea Warfare Center.
(3) Distributing shell material on site at high tide with a high-pressure hose over a period of approximately 3 days. Offloading at the project site will take approximately 5-7 hours each day.
(4) Monitoring results of project to ensure that shell was spread evenly – to a depth of 6-8 inches – and within the boundaries of the site.
(5) Monitoring to estimate the rate of native oyster colonization and the community structure of restored reef habitat.

Project Area

Potential impacts may occur in an area surrounding the shell off-loading site. Substrate enhancement will result in placement of 4-12 inches of shell over a 1-acre intertidal footprint (Figure 2).
Liberty Bay adjoins the City of Poulsbo and contains three large marinas servicing 100's of private boats. The nest is located within a largely cleared ~2 acre/unit rural residential shoreline (see figure 1).

Protected Species within the Project Area

Bald Eagle - A Bald Eagle nest is located within 800-1,000 feet of the project site, in a live Douglas fir tree, approximately 100 feet upland of the shoreline (S. Ament, pers. comm.). Washington Department of Fish and Wildlife biologists identified this nest site during aerial surveys in April of 2005. It is unknown at this time if the nest will be occupied this nesting season. Mangement measures to mitigate potential impacts are discussed below should the nest be occupied.

Marbled Murrelet – Boat-based surveys have been completed for this region under the Forest Plan. Data suggest 'low use' (i.e. ~1 bird/square mile) of the project area for both winter and summer foraging. There is no marbled murrelet nesting habitat in the vicinity of the project area. The project is unlikely to affect marbled murrelet foraging outside the project area due to project-related increases in water turbidity; during previous shell placement efforts turbidity was short-lived and localized with no observed plume. No effect on marbled murrelets populations is anticipated.

Bulltrout – There are no natal streams located in the vicinity of Liberty Bay. Stream habitat on the Kitsap peninsula is typically not supportive of bulltrout populations. No bulltrout are anticipated being present in the project area, and so no effect on bulltrout populations are anticipated.

Potential Effects to Bald Eagle

All potential effects are from noise disturbance from a small 6-8 HP water pump used to push shell material off the barge into the bay. Anticipated pump operation would not exceed 5-7 hours a day for three days. Noise impact analysis on nesting bald eagles involves two considerations: the sensitivity of the nesting pair to noise disturbance, and the degree to which the noise exceeds ambient noise. Noise impacts could include:

(1) Temporary displacement of foraging eagles in the vicinity of project site.
(2) Disturbance or flushing of adult and/or young eagles at nest site.

The periods of greatest sensitivity to noise is during nesting when interruption of egg our young chick incubation can cause chick stress or mortality, and during late pre-fledging, when chicks could be encouraged to leave the nest before controlled flight is assured. The planned project period likely coincides with a time of nesting when chicks are feathered, and are frequently left alone by parents, but before chicks would consider leaving the nest.

Throughout the nesting period, and during the brief project period, the nest will be exposed to rural residential ambient noise levels. Likely sources of episodic noise including private and commercial motors (riding lawn mowers, two-stroke engines on push mowers and leaf blowers), as well as any home construction or home workshop noise located in the vicinity of the nest. A sub-urban arterial is located around 700 feet from the nest. If a nesting pair uses this nest, they will likely be acclimated to this level of ambient and acute noise pollution.

WA DOT provides guidance for analysis of noise impacts, in this case from a 6-8 HP pump located 800' from a nest. Noise measurements at 50' distance from a construction pump range from 68 to 80 decibles. Pumps are typically in the quieter end of this range. WA DOT recommends calculating point source attenuation of noise over distance by subtracting 6 db for every doubling of distance; pump generating 70 dB at 50' would generate 46 dB at 800'.

For comparison, estimated noise emissions of a single medium truck traveling at 50 mph on nearby Viking Way is estimated to produce 56 dB, or 44 dB for a single automobile. Traffic noise from multiple vehicles would increase noise by 3-6 dB. A two stroke gas engine or a chainsaw operating on a residential property in the vicinity of the nest could produce substantially higher noise levels, around 80 - 90 dB. The site is across liberty bay from Paulsbo, and three major marinas supporting 100s of recreational watercraft; sub-urban/residential noise baseline is estimated at 45-51 dB.

It is assumed that Eagles selecting this site for nesting will be acclimated to a baseline of no less than 45 dB with automobile traffic peaks of 47-58 dB, and occasional use of residential tools creating noise in the 80 dB range. According to WDOT, disturbance thresholds for spotted owls in wild forest settings have been set at 51 dB. Although the pump noise will likely be detectable at the nest site, the estimated project noise level of 46 dB is unlikely to result in take.

Measures to Avoid/Minimize Impacts

In order to avoid and/or minimize impacts to Bald Eagles, Washington Department of Fish and Wildlife Eagle Biologist Shelly Ament recommends that Puget Sound Restoration Fund carry out project work with the following restrictions (pers. comm. 2/23/06):

(1) Work on site should occur for no more than 7 hours per day – approximately between 10am and 5pm – in order to leave ample foraging time at the project site for eagles during the morning and evening hours.
(2) Project work should be postponed if the nest is occupied AND eggs have not hatched by May 23rd. As eggs have typically hatched by May 1st, this situation is not expected to occur.
(3) PSRF and its project biologist should monitor the nest site in April 2006 to determine whether it is occupied this season. If it is not occupied by May 1st, Shelly recommends foregoing the restrictions identified under (1) and (2).

In addition to following Shelly's recommendations, PSRF will take these supplementary measures to further minimize the impacts of its work:

(4) PSRF will discuss with its contractor the possibility of muffling the pump so as to minimize noise throughout the work period. If safety and functionality are not compromised, the pump will be covered or baffled at all times while turned on.
(5) All work will be completed between May 22-June 2, defined as a "less sensitive" time period by Washington Department of Fish and Wildlife within which "(t)he chicks are feathered and able to feed themselves…so are more easily able to survive periods when the adult is off the nest due to temporary disturbance" (WDFW, 'Bald Eagle Protection in Washington').

Long-Term Benefits

Oyster reefs provide numerous ecological benefits in the lower intertidal zone. Beyond enhanced nutrient cycling and improved filtration, oyster reefs also provide critical habitat for a wide variety of fishes and invertebrates in the Atlantic and Gulf coasts as a consequence of greatly increased structural relief associated with reefs as compared to other types of intertidal habitats. Similar ecological benefits of oyster reefs may have been important on the US west coast due to the presence of large assemblages of Olympia oysters prior to their large-scale destruction in the last century. Improving habitat for a variety of fish and invertebrates certainly has the potential to indirectly contribute to the foraging success of Bald Eagles that depend on those species for prey.

Figure 1– location of project (box) in relation to nest site (star) and Viking Way (line)

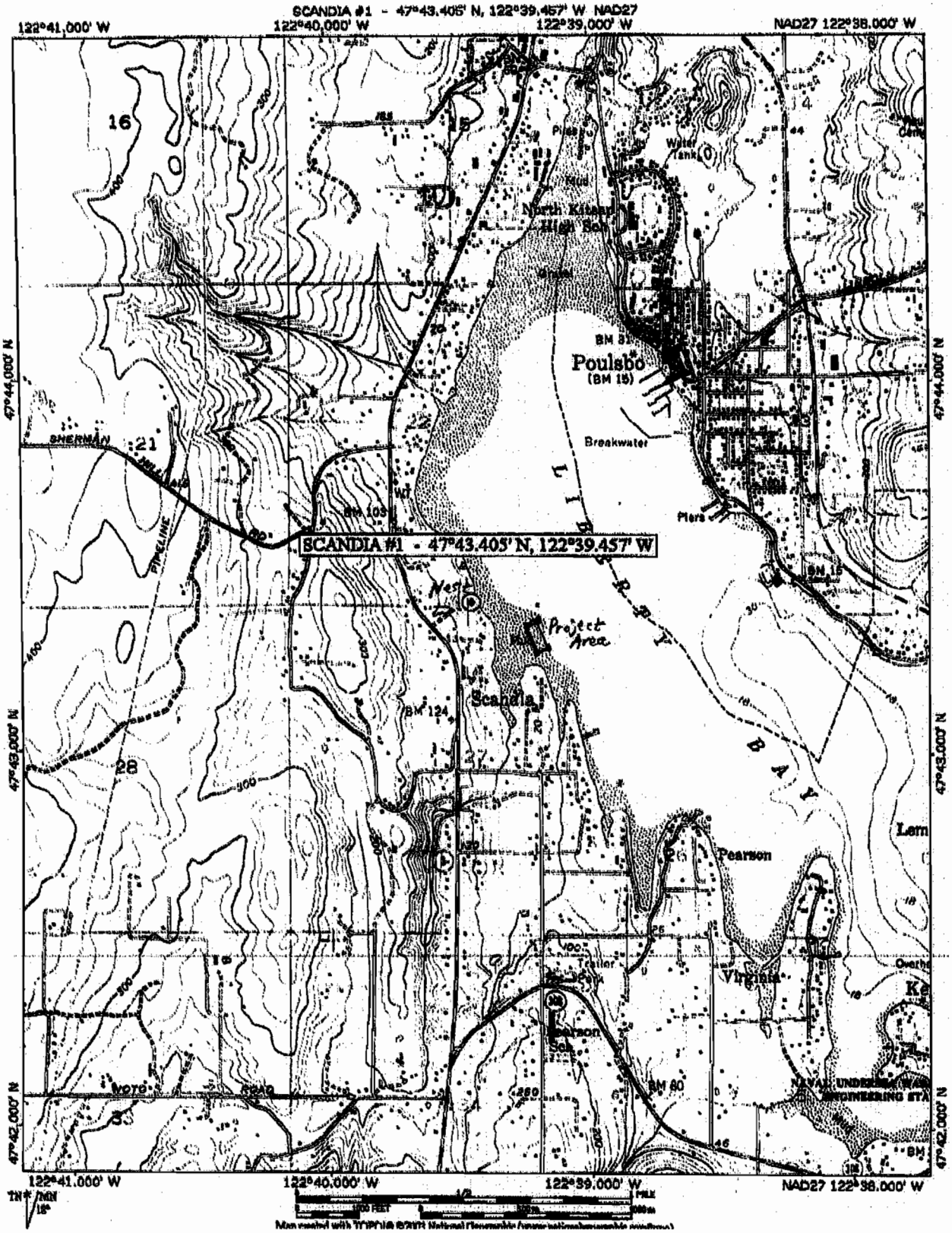

Figure 2 – location of project in relation to nest site and the City of Poulsbo.

UNITED STATES DEPARTMENT OF COMMERCE
National Oceanic and Atmospheric Administration
NATIONAL MARINE FISHERIES SERVICE
Damage Assessment Restoration Center NW
7600 Sand Point Way N.E., Bldg 1, Seattle, WA 98115

3/23/06

Mr. Ken Berg
U.S. Fish and Wildlife Service
510 Desmond Dr. SE, Ste. 102
Lacey, WA 98503-1273

RE: Request for informal ESA consultation for LIBERTY BAY SUBSTRATE ENHANCEMENT 2006

Dear Mr. Berg,

NOAA's Restoration Center provides funding for a number of small-scale Community-based Restoration projects in Washington State. These projects are implemented through a variety of partnerships with non-profit organizations and local governments. NOAA provides technical assistance and oversees completion of these projects.

Puget Sound Restoration Fund, has proposed a project to enhance Olympia oyster populations in Liberty Bay, Washington through intertidal placement of Pacific oyster shell. Previous work indicates that oyster populations in this vicinity are currently limited by appropriate settling substrate. Oyster population recovery has been limited since historic over-harvest and pollution decimated Puget Sound populations. NOAA Restoration Center is providing partial funding for this project. These actions will create high quality spawner communities, directly and indirectly restoring habitat functions for NOAA trust resources. Please see the attached technical summary which provides additional information on project specifications and potential impacts to USFWS trust species.

NOAA Fisheries Restoration Center Northwest (RC-NW) has prompted Puget Sound Restoration Fund to provide the maximum long-term habitat benefits, while minimizing potential short-term impacts to threatened and endangered species and their critical habitat associated with construction. After reviewing the proposed project specifications and methods and reviewing site specific conditions, RC-NW has concluded that the planned actions are "not likely to adversely affect" bald eagle and will have "no effect" on marbled murrelet and bulltrout. No other species or their habitats are anticipated to be present. Please feel free to contact me (206-526-4670; Paul.R.Cereghino@noaa.gov) if you have any questions.

Sincerely,

Paul R. Cereghino
Restoration Ecologist
NOAA Restoration Center Northwest