

Request for Exxon-Valdez Restoration funding:

Unalaska Lake Watershed Restoration \$150K

The Unalaska Lake watershed is located in the City of Unalaska (Dutch Harbor) in the Aleutian Islands. Dutch Harbor is a major port and home to the largest shore-based seafood processing facilities in Alaska. The Unalaska Lake watershed includes mile-long Unalaska Lake which receives water from steep hillsides and drains into Iliuliuk River and on to Iliuliuk Harbor. The Unalaska Lake watershed has been subject to considerable environmental pressures beginning with military presence during World War II, which resulted in heavy erosion and sedimentation to the lake and degradation to wetlands and streams. In addition, the lake was used by the military as a dumping ground for hazardous materials and debris. Recent industrial and residential development associated with expansion of the seafood processing industry has increased development pressure in the watershed, which is anticipated to continue to increase.

The high rainfall and highly erodible soils, combined with development upstream and along the shoreline of Unalaska Lake and the Iliuliuk River has resulted in serious sedimentation problems and loss of lake, riverine, riparian and wetlands habitats. Much of the rich Coho rearing habitat, particularly in the upper reaches of the lake, has been lost. Fish production in the watershed is well below that of other similar systems in the region and is a concern to Alaska Fish & Game biologists. The high school now operates a small fish hatchery on Iliuliuk River. A March 1996 study by the City, *Evaluation of Mitigation Opportunities in Unalaska* identified twenty-five (25) potential projects that could be implemented to compensate for future development activities in wetland and coastal areas. Potential projects include lake, creek and wetlands restoration, improving fish passage, wetlands preservation and site cleanup.

In June 1996 a workshop was held in Unalaska that included state biologists, water quality and engineering specialists, City of Unalaska staff, land owners and local citizens to determine the sources of water quality and aquatic habitat degradation, and to identify corrective actions that could be implemented to address the problems. The team identified thirty-five (35) primary locations and causes of degradation and arrived at a list of BMPs and mitigations that could be implemented to control sources of sedimentation and habitat degradation. The majority of the restoration activities involve implementing standard BMPs such as sediment traps and other storm water and erosion controls, bank stabilization, etc. The workshop, funded under a grant from the Coastal NPS (Section 6217) program was critical to developing a mutual understanding of the problems and "voluntary" solutions. However the City of Unalaska needs financial assistance to actually implement the controls to restore and protect the watershed. This grant would provide funds to the City perform restoration and to install the controls needed to limit further water quality and aquatic habitat degradation. Some funding would also be needed to enable state resource agency staff to travel to the site to provide technical assistance to the city, as the agencies no longer maintain staff in Unalaska. Additional funding may also be available through the state's Section 319 nonpoint source control program.

This project has strong stakeholder involvement, including support from the City of Unalaska, local seafood processors, landowners and state resource agencies. The City of Unalaska would

manage the project, with assistance from staff at the Departments of Environmental Conservation and Fish & Game.

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walk downstream from fish pass

MEMORANDUM

STATE OF ALASKA

To: Glen Seaman
From: Pat Holmes
CC: Wayne Donaldson, Jim McCullough, Rance Morrison
Subject: Possible visitation sites for Unalaska watershed meeting:

Date: June 14, 1996

I sent a draft copy of this memo to the Dutch Harbor staff for feedback. and have include their comments to date. Here is an initial list of sites to visit and 2 figures identifying their locations. This can be modified as needed.

- 1). Senior Citizen's Center: Overburden placed in riparian zone, no revegetation or attempt to prevent silt and mud from entering the stream. Probably negative impacts to pink salmon eggs and fry down stream.
- 2). Coho salmon rearing area among sedges at outlet of lake. Are there buried culverts to ballfield pond? Lost rearing habitat? View siltation and oil trap (atta boy to the city), need to have regular maintenance, need to avoid pumping trap into the lake.
- 3). Road crossings of lake: possibly plugged culverts at lake crossing lost rearing habitat. Did the stream on the NE end of Iliuliuk pond at one time have coho?
- 4) a&b. Southeast lake shore: lost spawning sockeye habitat at the lake inlet? Need to do transects to determine depth of silt and fines. Glen Davenport (ADF&G retired) and some village elders recall seeing sockeye spawn along this shore in the 60's and 70's. Possible site to rehabilitate.
- 5) Shop creek: needs sedimentation traps or pools, revegetation, slide area; stream appears to be a major source of silt into the lake? Particularly the runoff ditch in front of public works. Locate sediment trap or sedimentation pools?
- 6) Inlet stream to Lake reported to have had a run of sockeye salmon until early 1960's? What happened to these salmon is open to question. Possible future ADF&G experiment to try instream incubation of Unalaska Lk. shore spawning sockeye to see if they would imprint in the stream. This would be effective only if the rearing capacity of the lake could be enhanced. Possibility to involve HS kids in monitoring incubator site and assist in doing additional lake limnology. Might be possible to add resting pools along the stream at other sites to improve rearing habitat and provide added protection for adult coho salmon spawners.
- 7) a,b,c Present sockeye lake shore spawning sites; need protection from siltation, especially 5a and area with upwelling.
- 8) Gravel pit: Stream encroachment, armor rock., possible source of silt run off. There needs to be a long term monitoring of the site. Siltation ponds or silt dams to prevent runoff into stream.

Other tasks: We need to develop a list of other sites of silt run off into stream and lake and design methods to reduce that siltation. Possible toxic W.W.II chemicals dumped into the lake requires US Army Corps. of Engineers examination and sampling of lake bottom.