



U.S. Army Corps
of Engineers
Alaska District

ALASKA BASELINE EROSION ASSESSMENT

Erosion Information Paper - Cordova, Alaska

Current as of November 15, 2007

Community Information

Cordova (core-DOH-vuh), population 2,211 (includes Eyak), is at the southeastern end of Prince William Sound in the Gulf of Alaska, 150 miles southeast of Anchorage and 410 miles northwest of Juneau. The community is on Orca Inlet, at the base of Eyak Mountain. Cordova is a home rule city in the unorganized borough. Eyak is along the Eyak River, 5.5 miles southeast of downtown Cordova.

Description of Erosion Problem

Persistent flooding and erosion in these communities is caused by recent inflows of Scott River into Eyak River. These inflows have raised the water surface above normal elevations of both Eyak River and Eyak Lake. Eyak River is a small, clear-water river that drains Eyak Lake and empties into Prince William Sound. Eyak River is along the western edge of the Scott River delta and the eastern edge of the Heney Range. The Scott River delta is a long, broad delta with considerable topographic relief extending from the Scott Glacier to Prince William Sound. The Scott River is a glacial outwash river that is characterized by a substantial sediment load and a multi-channeled, braided stream channel system extending across its previously glaciated valley. Flow paths are highly variable within the delta as stream channels move, are abandoned for lower grade channels, or are captured by larger flows. In recent years, the Scott River has moved across its delta toward and into the Eyak River at 2 breaches within 600 feet of each other, about 1.5 miles downstream of the Copper River Highway. The breaches increased stream flow volume in the Eyak River and have deposited silts and sands in the Eyak River channel. This has caused continuously high water surface elevations in the Eyak River and in Eyak Lake. The increased water elevations have caused flooding (with accompanying erosion) along the Eyak River and around Eyak Lake 3 times in the last 12 years. Other streams along the Copper River Highway and near the two city airports also are eroding during flood events.

Potential Damages

Residences, outbuildings and sheds, water tanks and lines (Eyak Water Plant), fuel tanks, food storage, drying racks, smoke houses, boat launches, sewer lines, cultural and archeological sites, the Eyak Lake airport, and the city's solid waste bailer are structures, facilities, and infrastructure along the shores of Eyak Lake and banks of the Eyak River threatened by erosion. Houses in this area could now be more susceptible to flooding and erosion damage along the shore. The city's hydroelectric generating facilities along Humpback and Power Creeks were severely damaged by erosion. The Copper River Highway and local roads have also been damaged by erosion. Information addressing the length and height of eroding areas and the distances from structures was not available from the City. During August and October of 2006 there were 2 significant

storm events that caused erosion damage to city roads, the Copper River Highway, water lines, Eyak Lake airport runway, and the 2 hydroelectric generating facilities. City damage estimates are \$100,000 for waterlines, \$100,000 for city roads, and \$10,000,000 for the 2 hydroelectric facilities. Valuable Eyak Lake and Eyak River salmon habitat could be impacted by erosion, but damage potential has not been quantified. Structural and nonstructural protective measures that have been used by the community include: (a) riprap and gabions along Eyak Lake and the Eyak River, (b) chip sealing of roads, (c) root wads and willow plantings, and (d) dikes, and (e) local development ordinances that require 20-foot setbacks from Eyak Lake and re-vegetation of disturbed areas. These protective measures have been effective, but are damaged during storm events and require maintenance.

Photos and Diagrams

Photos are provided by the city of Cordova showing the flooded area where erosion occurred along Eyak lake. Also, attached is a diagram showing the approximate linear extent of erosion along the end of the Merle K. "Mudhole" Smith Airport.

References

Lyon and Associates. *Feasibility Study, Eyak Lake Water Level Stabilization, Cordova, Alaska.* Prepared for the State of Alaska.

Professional Fishery Consultant. 1985. *Eyak Lake Area Meriting Special Attention, Cooperative Management Plan.*

USDA. 1983. *Evaluation of Recent Channel Changes on the Scott River Near Cordova, Alaska*

USDA. 2001. *Scott River Dike Project Status Report.*

USHUD. 1978. *Flood Insurance Study, City of Cordova, Alaska.*

USACE. *Eyak Section 205 Continuing Authorities Program Report.* Alaska District U.S. Army Corps of Engineers.

USACE. 2007. *Alaska Community Erosion Survey, OMB approved number 07100001, expires September 30, 2009 administered to Jim Goossens, Cordova City planner in August 31, 2007.*

Additional Information

This information paper, as well as those for other communities, can be accessed on the internet at www.alaskaerosion.com. For more information please contact the Corps of Engineers project manager at (907) 753-5694 or email Alaska.Erosion.POA@usace.army.mil



Photo 1: Shoreline erosion near Cordova's Eyak Lake Airport is a concern, December 2002.



Photo 2: Eyak Lake Airport and other areas along shoreline of Eyak Lake have had some erosion as a result of flooding, 2006.



Merle K. "Mudhole"
Smith Airport, mile 13.5
Copper River Highway

NOTE: The extent of erosion shown on this figure is based on interviews with the community. This data has not been field verified. This figure is only intended to show areas of erosion, not rates or severity of erosion

Date of Aerial Photo: 29 June 02



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--- Linear Extent of Erosion



Alaska Baseline Erosion
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