



U.S. Army Corps
of Engineers
Alaska District

ALASKA BASELINE EROSION ASSESSMENT

Erosion Information Paper - Noatak, Alaska

Current as of September 10, 2007

Community Information

Noatak (NO-uh-tack), population 470, is on the west bank of the Noatak River, 55 miles north of Kotzebue and 70 miles north of the Arctic Circle. It is an unincorporated community in the Northwest Arctic Borough. It is the only settlement on the 396 mile-long Noatak River and is between the Noatak National Preserve and the Cape Krusenstern National Monument. The community is on high ground 10 to 30 feet above the Noatak River. The shoreline is used for boat storage and hunting access. There is no barge access to the community because the Noatak River is too shallow.

Description of Erosion Problem

The Noatak River is eroding the riverbank at Noatak. According to information provided by the Noatak tribal administrator, the main factor causing the erosion is melting permafrost. Other factors are reported to be: natural river flow; fall flooding; spring breakup; and land vehicle and boat traffic. The Alaska Department of Transportation and Public Facilities (DOT&PF) *Task Force on Erosion Control Final Report* confirmed the river is migrating westward at Noatak. The Noatak is a braided river that has a fairly heavy bed of medium-sized gravel. Ice-rich silt on the west bank can be transported downstream more easily than gravel on the river bottom. The most serious problem is the area adjacent to the airport runway (see attached diagram).

The tribal administrator estimated that gradual, ongoing erosion may be about 10 feet per year, but no accurate measuring system has been set up. In 1993, spring breakup caused 30 feet of erosion adjacent to the old cemetery, and high water in the autumn of 1994 flood further threatened the cemetery.

Potential Damages

The tribal administrator identified the following specific erosion risks at the community: (a) About half of the former community solid waste landfill site has eroded into the river and the remainder is threatened. At least part of the remaining refuse has been moved to the new solid waste disposal facility west of the airport. No imminent environmental threats were mentioned, but it is unclear what remains at the old landfill or what risk is posed by potential further erosion. (b) One home downstream of the Armorform Revetment is at threatened. (c) Three roads at risk are: the airport road parallel to and about 20 feet from the river; the road to the old riverbed gravel extraction site; and the road to the old landfill. (d) A well on a small island about 200 feet from the boat launching area, described in a Corps 1998 trip report as “protected by tree trunks driven into the ground,” may be threatened. It may have been given additional protection through a 2003 Alaska Native Tribal Health Consortium grant for “gabion reinforced well-head

protection,” according to the Division of Community Advocacy (DCA) online capital projects database.

Various types of protective measures have been constructed to slow or stop Noatak River erosion. In 1980-1981 a 1,500-foot Armorform Revetment System (grout-filled polypropylene bags cabled together) was constructed on a gravel dike at a cost of approximately \$3.4 million of Alaska Legislative appropriations, according to the DOT&PF erosion task force report and *State Legislative Appropriations for Flood and Erosion Control*. The tribal administrator reports that this structure has partially collapsed. The upper blanket of grout-filled polypropylene bags slid down the incline face of the gravel dike, causing wrinkles in the concrete mat, but it has successfully prevented erosion along the length where it is installed. The U.S. Department of Agriculture funded construction of a treated-wood retaining wall constructed in the 1990's. It was destroyed during spring breakup the year after it was constructed (Corps of Engineers 1998).

The state-maintained gravel airstrip is 4,400 feet long, with erosion adjacent to the full length. Plans are in place for a new airport away from the river. Funding to begin construction of a new airport may be available as early as 2010. The community moved 200 graves to save them from erosion. The remainder of the old cemetery is 1,500 feet from the river and erosion is not a threat, according to the tribal administrator.

Photos and Diagrams

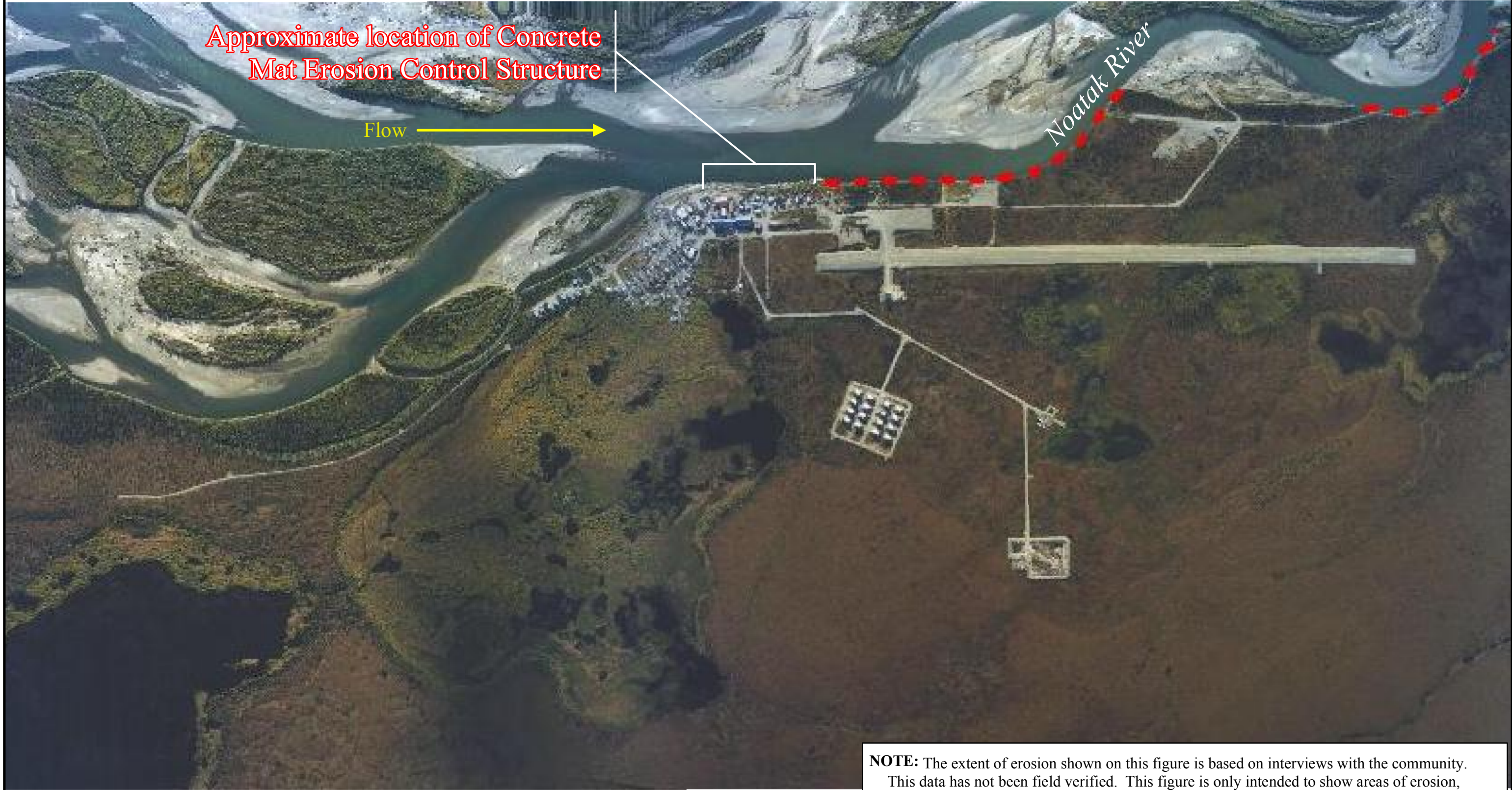
No photos were provided by the community or other sources. See attached diagram showing linear extent of erosion.

References

- DCCED, DCA. 1972-1991.** *State Legislative Appropriations for Flood and Erosion Control*. Department of Commerce, Community and Economic Development, Division of Community Advocacy.
- DCCED, DCA.** *Capital Projects Database*, Department of Commerce, Community and Economic Development, Division of Community Advocacy. http://www.commerce.state.ak.us/dca/commdb/CF_BLOCK.cfm
- USACE. 1977.** *Letter to Dennis Tiepelman from Jay Soper*. Alaska District, U.S. Army Corps of Engineers.
- USACE. 1994.** *Memorandum on Section 14 Emergency Bank Protection, Noatak*. Alaska District, U.S. Army Corps of Engineers.
- USACE. 1998.** *Noatak Trip Report*, Alaska District, U.S. Army Corps of Engineers.
- USACE. 2007.** *Alaska Community Erosion Survey*, OMB approved number 07100001, expires September 30,2009 completed by Herbert Walton, Native Village of Noatak tribal administrator on 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



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



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- - - - - Linear Extent of Erosion



Alaska Baseline Erosion
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