



**U.S. Army Corps
of Engineers**
Alaska District

ALASKA BASELINE EROSION ASSESSMENT

Erosion Information Paper - Bettles, Alaska

Current as of November 20, 2007

Community Information

Bettles (BET-ullz, also known as Bettles Field), population 25, is on the south bank of the Koyukuk River, adjacent to the community of Evansville, about 180 air miles and 250 road miles northwest of Fairbanks. Bettles is just north of the Kanuti National Wildlife Refuge and 35 miles north of the Arctic Circle. The community is incorporated as a 2nd class city within the unorganized borough. Bettles is accessible during summer by the Koyukuk River, but no commercial barge is available. During a few winter months the 30-mile long Hickel Trail, also called the Bettles winter trail, connects Bettles to the Dalton Highway and therefore to Fairbanks. Boat ramps, snowmachine crossings, processing catch, beachcombing, and driftwood collection are uses of the riverbank.

Description of Erosion Problem

Based on the community survey, Bettles experiences seasonal erosion associated with the Koyukuk River; a main tributary of the Yukon River. Natural river flow, heavy rains, flooding, ice jams, spring breakup, and melting permafrost are conditions causing and contributing to the riverine erosion. The community estimates the bank height in the erosion area to be 15 to 20 feet, with ongoing erosion occurring at about 10 feet per year.

According to the 1996 *Koyuk Flood Response and Recovery Audit Report*, Bettles reported just over 6 inches of rainfall from a heavy rainstorm in August 1994. The storm resulted in flooding and erosion on the Koyukuk River. The flood deposited sedimentary material in the river and destroyed the usability of this stretch of the river for float plane moorage, landings and takeoffs. The 1994 flood also destroyed the Bettles-Evansville landfill and liquid waste facility and large portions of a frontage road that runs parallel to the river. The Alaska Department of Transportation and Public Facilities abandoned its operations on the river and relocated the float plane operations at Bettles from the river to VOR Lake. A 2.5-mile road was built to access VOR Lake and the site of the new solid and liquid waste facility. The Federal Emergency Management Agency funded \$1.9 million for the floatplane basin, approximately \$890,000 for the community waste facility road, and the Bureau of Indian Affairs funded approximately \$734,000 for roads.

Potential Damages

According to the community survey, some sections of the frontage road less than 100 feet from the eroding riverbank are the only structures at risk in Bettles. The relative importance of this road to the livelihood or safety of the community was not stated in the survey. The portion of the state-owned Bettles airport closest to the river is about 2,000 feet away, according to the survey respondent.

Photos and Diagrams

A photo of Bettles from the air is attached. It is provided by the U.S. Fish and Wildlife Service Alaska image library. Also attached is a diagram depicting the linear extent of erosion along the shoreline of Bettles. The linear extent of erosion along the shoreline of the adjacent Evansville community is provided in a separate Erosion Information Paper.

References

DLA. 1996. *Audit Report Department of Military and Veterans Affairs Koyukuk Flood Response and Recovery.* Prepared by State of Alaska, Division of Legislative Audit.

USACE. 1977. *Flood Data: Evansville/Bettles/Bettles Field.* Alaska District, U.S. Army Corps of Engineers.

USACE. 2007. *Alaska Community Erosion Survey, OMB approved number 07100001,* expires September 30, 2009 administered to Rachel Hanft, Bettles city clerk who also works as the Evansville tribal council family youth services social worker, on November 30, 2007.

USFWS. 2007. *Alaska image library online at* http://images.fws.gov/default.cfm?library_id=r7

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: Evansville in foreground & Bettles in background near the airport; USFWS photo, September 2005.



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--- Linear Extent of Erosion



Alaska Baseline Erosion
Bettles, Alaska