



U.S. Army Corps
of Engineers
Alaska District

ALASKA BASELINE EROSION ASSESSMENT

Erosion Information Paper - Buckland, Alaska

Current as of September 20, 2007

Community Information

Buckland (BUCK-lund), population 457, is about 75 miles southeast of Kotzebue on the west bank of the Buckland River. It is 30 miles upriver from the mouth of Eschsholtz Bay, which opens into Kotzebue Sound. Buckland is a 2nd class city in the Northwest Arctic Borough. The banks of the Buckland River are used for numerous community activities, including pedestrian, snowmobile, and ATV travel; boat launching and storage, and fishing.

Description of Erosion Problem

Much of Buckland is in the Buckland River floodplain. Erosion processes include natural river flow, flooding, ice jams, spring break-up, and melting permafrost. Bank soils consist primarily of loamy sand, and water depth is 10 to 15 feet along the riverbank. The west bank has moved inland approximately 140 feet since 1972. An analysis of U.S. Survey 4482 confirmed the Buckland River has eroded an average of 4 feet per year. In some areas, erosion has been recorded at a rate of up to 11 feet per year. In the 2002 *Buckland Environmental Infrastructure Environmental Assessment Report*, the Corps estimated that erosion ranges from 3.5 to 5 feet per year. The Buckland River is reported to lose about 10 feet of the west bank (city side) each year due to flood-induced erosion.

Potential Damages

Flooding in 1971 and in 1987 caused much damage, including erosion damage. In the *Buckland Environmental Assessment Report* the Corps estimated that within 30 years (from 2002), the advancing bank erosion will impact the post office, several homes and the main access road to the Mountain View subdivision on the south side of the city. The Buckland city administrator reported that the erosion has encroached to less than 100 feet from a number of community structures, including outbuildings and sheds, drying racks, smoke houses and other food storage facilities, utility poles and lines, boardwalks and important pathways, and some subdivisions. The community survey also reported that encroaching erosion along the southeast side of the river is only about 60 feet away from 5 homes. In 1993, the pump house at the river's edge was

relocated at a cost of \$5,000. According to the community survey, the community has undertaken several protective measures over the years to control the erosion, but none have been successful.

Photos and Diagrams

The City of Buckland administrator, Darlene Hadley provided the attached erosion photos. Also, attached are diagrams depicting the linear extent of erosion in the community.

References

Dames and Moore, Larson Consulting Group. 1999. *Buckland Community Master Plan*. Prepared for U.S. Army Corps of Engineers.

University of Alaska. 1976. *Buckland*.

USACE. 1987. *Trip Report, Flood Hazard Mitigation for Buckland*. June 26, 1987. Alaska District, U.S. Army Corps of Engineers.

USACE. 1993. *Trip Report, Buckland, Shungnak, and Kobuk*. Alaska District, U.S. Army Corps of Engineers.

USACE. 2007. *Alaska Community Erosion Survey, OMB approved number 07100001*, expires September 30, 2009 submitted by Darlene B. Hadley, city administrator, City of Buckland, September 10, 2007.

USACE, USDOT, FHWA. 2002. *Environmental Infrastructure Environmental Assessment - Buckland, Alaska*. Alaska District, U.S. Corps of Engineers and U.S. Department of Transportation, Federal Highway Administration.

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: Buckland River bank, September 2007.



Photo 2: Erosion along Buckland River, September 2007.



Photo 3: Buckland Riverbank, September 2007.



Photo 4: House threatened by Buckland River erosion, September 2007.



Date of Aerial Photo: 13 June 96



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----- Linear Extent of Erosion



Alaska Baseline Erosion
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