



U.S. Army Corps  
of Engineers  
Alaska District

## **ALASKA BASELINE EROSION ASSESSMENT**

### **Erosion Information Paper – Point Hope, Alaska**

Current as of March 10, 2008

#### **Community Information**

Point Hope, population 704, is near the seaward end of Point Hope peninsula, a large gravel spit that surrounds Marryat Inlet, a large freshwater lagoon. The peninsula forms the western-most extension of the northwest Alaska coast. Point Hope is 330 miles southwest of Barrow. The community is incorporated as a 2nd class city in the North Slope Borough (NSB).

#### **Description of Erosion Problem**

Point Hope peninsula is vulnerable to periodic storm surge flooding and erosion. The original Point Hope town site was damaged by with flooding and erosion before the mid 1970s. Annual storms during the 3-4 month open-water period raised the water level, eroded the beaches and beach ridges, and occasionally flooded the community. The community moved 2 miles farther inland and east on the peninsula to its present site with assistance from the NSB in the mid 1970s.

The Corps' 1972 *Point Hope Beach Erosion Report* states that the Point Hope peninsula has been building up on the south and eroding on the north. The average annual erosion loss was estimated to be about 8 feet per year in the 1972 report. No erosion was identified during the 2002 Corps visit.

Ice jams during spring break up can raise inlet water levels considerably rising water level in caused by ice blockage. Ice blocking the natural outflow from Marryat Inlet in the spring of 2006 caused water to rise in the inlet, which breached a short section of 7-Mile Road and threatened to flood Point Hope. That event was declared a state disaster by the governor. The natural barrier that separates Marryat Inlet from the Chukchi Sea was intentionally breached to create a new outlet and lower flood waters. A 2006 Corps of Engineers *Trip Report* states the initial breach became enlarged by erosion from the outflow of Marryat Inlet. The breach channel was eroded to dimensions of approximately 300 feet long, 150 to 200 feet wide at the outlet, and 600 feet wide at the inlet.

#### **Potential Damages**

No structures or facilities are considered to be at risk from erosion at the current community site. The previous community site known as "Old Tiagara" is being eroded. Fifty ice cellars in this area were used for meat storage, but only 20 remain. On the north beach, 10 percent of the old site has been lost to erosion, with only 50 to 60 sod houses (ancient barabaras) remaining. Another at-risk area is the old cemetery site where remains were buried in mass graves during the 1920's. The area along the airport is at risk. The NSB constructed a rock revetment on about 275

feet of the coast east of the runway, at a cost of about \$2 million in 1997. This is reportedly preventing or slowing erosion in the area.

7-Mile Road, along the southern shore of the lagoon, is the access road to community's waterline and pump and is the only road off the peninsula. It has been occasionally covered by 2 to 3 feet of water from Marryat Inlet, which is fed by the Kukpuk River and is occasionally eroded.

The NSB plans to raise "7-Mile Road" about 5 feet. The Corps 2002 *Trip Report* indicated that large sand bags and tubes placed along the section of the road threatened by erosion appear to be working. The cost of opening and later repairing the intentional Marryat Inlet breach was estimated in a Corps 2006 *Trip Report* at nearly \$433,000. The breach repair was accomplished by the placement of poly bags – or "super sacks" (4.5 feet by 4.5 feet in size).

### **Photos and Diagrams**

Attached photos are from the June 2006 *Trip Report*. The attached diagram shows the linear extent of erosion.

### **References**

**USACE. 1972.** *Point Hope Beach Erosion Point Hope, Alaska*. Alaska District, U.S. Army Corps of Engineers.

**USACE. 2002.** *Point Hope Section 103 Trip Report*, July 1st and 2nd, 2002. Alaska District, U.S. Army Corps of Engineers.

**USACE. 2006.** *Point Hope Field Trip Report*. Alaska District, U.S. Army Corps of Engineers.

**USACE. 2008.** *Alaska Community Erosion Survey, OMB approved number 07100001*, expires September 30, 2009 administered to Alzred "Steve" Oomittuk, Point Hope mayor, on March 10, 2008.

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### **Additional Information**

This information paper, as well as those for other communities, can be accessed on the internet at [www.alaskaerosion.com](http://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](mailto:Alaska.Erosion.POA@usace.army.mil)



**Photo 1: A view of the breach from the Marryat Inlet entrance, 2006.**



**Photo 2: A panoramic view of the manmade breach looking east from the west bank of the breach, 2006.**



**Photo 3: Material washed out of the roadbed by rising waters of Marryat Inlet, 2006.**



**Photo 4: Road embankment at the point of the washout, 2006.**



**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