



U.S. Army Corps  
of Engineers  
Alaska District

## **ALASKA BASELINE EROSION ASSESSMENT**

# **Erosion Information Paper – Sutton-Alpine, Alaska**

Current as of December 3, 2007

### **Community Information**

Sutton-Alpine, population 1,278, is a census-designated area encompassing about 151 square miles between mile 52 and mile 72 of the Glenn Highway. It is in the Matanuska-Susitna Borough approximately 11 miles northeast of Palmer and 45 miles northeast of Anchorage. The unincorporated community is bounded on the south by the Matanuska River, on the north by the Talkeetna Mountains, on the east by the Chickaloon community, and on the west by the City of Palmer. The community area is primarily large-lot single family residences, some agriculture operations, several gravel mining sites, and some local commercial development.

### **Description of Erosion Problem**

The Sutton-Alpine community is affected by Matanuska River erosion. Numerous areas along the community's 11-mile southern boundary are eroded. The river is a braided channel, moveable bed type watercourse fed by the Matanuska Glacier. Multiple river channels migrate on a seasonal basis, affecting different reaches of the banks. The banks range from gradual sloping beaches to vertical cliffs over 200 feet above the normal water level, and in some areas are susceptible to severe undercutting by the river. Erosion may continue at variable rates for months in the same location or shift to a different location in matter of hours and stop eroding that area for years. Losses have been reported that exceeded 50 feet inland in a 24-hour period along more than 1,000 feet of river. During the last 10 years in the vicinity of mile 63 of the Glenn Highway, the river has eroded more than 1,000 feet inland along a stretch of river more than 1/2 mile long.

### **Potential Damages**

From the early 1900's to the late 1960's, the Alaska Railroad protected the railroad tracks that ran along the northern river bank from Palmer to Sutton. In the late 1960's the railroad ceased use of the tracks and stopped erosion mitigation. Since then, the track improvements have largely been eroded into the river. Until about 20 years ago, riverbank erosion was mostly in undeveloped areas, pastures and agricultural land. More recently, residential development has increased along the river banks, and erosion has caused losses in existing and newer neighborhoods upstream of Sutton, and near the old Sutton town site. Based on communications with the staff from the Alaska Department of Transportation and Public Facilities, a series of projects involving primarily construction of riprap bank armoring and flow deflecting structures were completed in the late 1980s through early 1990s to address bank erosion problems along the Glenn Highway from Sutton to near Chickaloon. According to the 2003 Corps report: *Background Studies for Expedited Reconnaissance Study of Matanuska River Erosion*, between \$2,000,000 and

\$3,000,000 was spent during 1987 through 1996 on these projects. This report also states that 5 spur dikes were constructed in 1986 (at a cost of \$470,000) to protect homes and other property along the right bank of the Matanuska River upstream of Sutton. The Matanuska-Susitna Borough environmental planner reports that these dikes have eroded away, except for a small dike along the Matanuska River near its confluence with Kings River (milepost 65-66). Repeated bank armoring has been required over the years to protect the Glenn Highway; which is the only ground transportation route for the upper portions of the Matanuska valley, and also serves to connect the Anchorage area with much of Alaska. Several road locations are within 50 feet of being undercut by the river, and there are plans to relocate sections of the roadway. In 2006 and 2007, the Matanuska-Susitna Borough used U.S. Department of Agriculture Natural Resource Conservation Service floodplain easement program funds to purchase 4 homes and adjacent land threatened by erosion, and the houses were removed. Residential land and dwellings, associated structures, the Glenn Highway, and numerous utilities are threatened by Matanuska River erosion along a 10-mile stretch of the river in the vicinity of the Sutton-Alpine community.

### **Photos and Diagrams**

No photos of erosion have been provided by the community or other sources. The attached diagram depicts the linear extent of erosion in the community.

### **References**

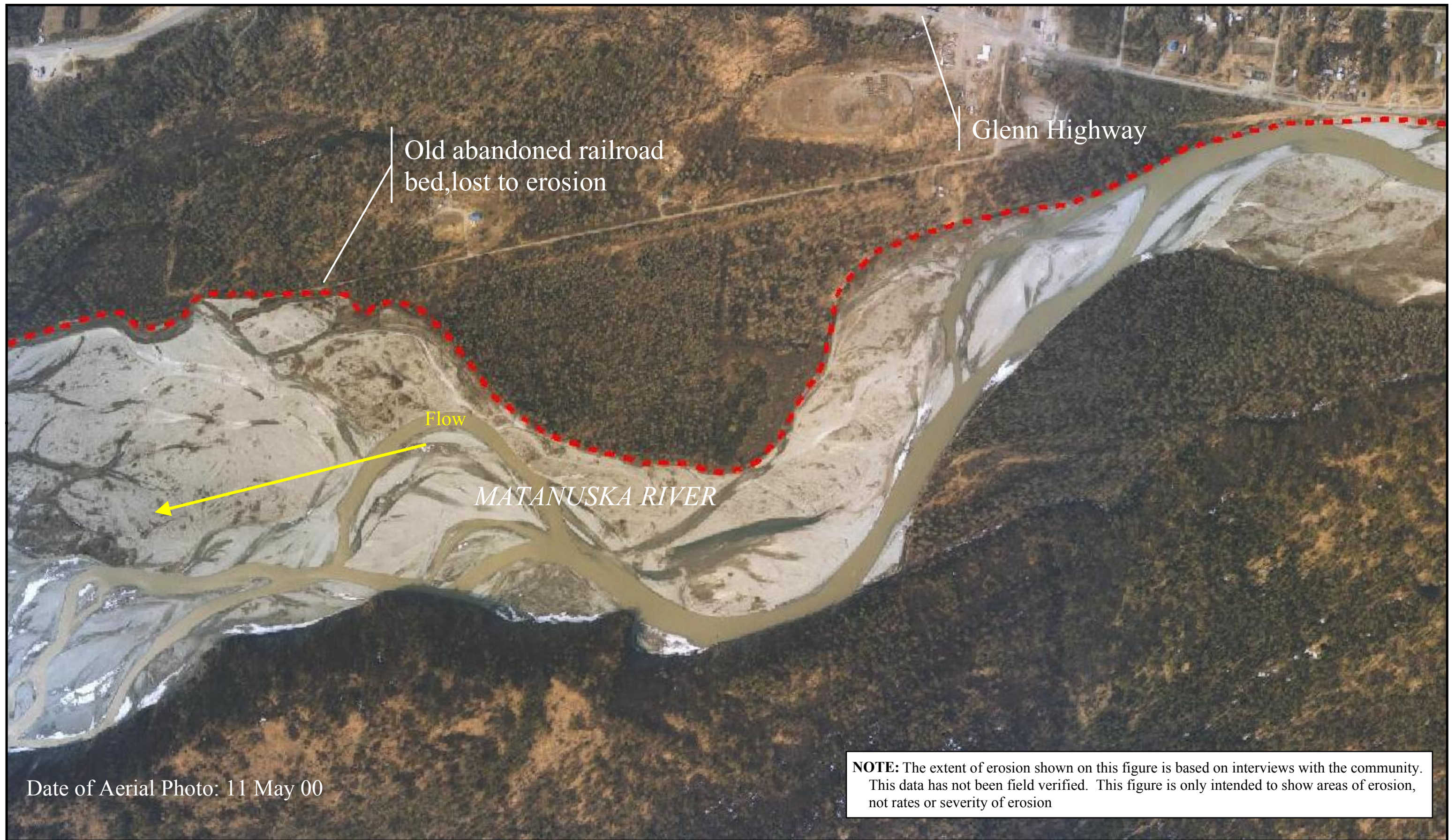
- MSB. 2007.** *Matanuska-Susitna Borough online reports* <http://www.matsugov.us/CodeCompliance/>
- SOADCCED. 2007.** *Community website* [www.commerce.state.ak.us/dca/commdb/CIS.cfm](http://www.commerce.state.ak.us/dca/commdb/CIS.cfm)
- SOADES. 1992.** *Matanuska River Erosion Task Force Interim Report.* Prepared by State of Alaska Division of Emergency Services.
- USACE. 1972.** *Matanuska and Little Susitna Rivers Flood Control, Alaska.* Alaska District, U.S. Army Corps of Engineers.
- USACE. 1992.** *Matanuska River Erosion Task Force Interim Report.* Alaska District, U.S. Army Corps of Engineers.
- USACE. 2003.** *Background Studies for Expedited Reconnaissance Study of Matanuska River Erosion.* Prepared for Alaska District, U.S. Army Corps of Engineers, by Tetra Tech Inc.
- USACE. 2007.** *Alaska Community Erosion Survey, OMB approved number 07100001,* expires September 30, 2009 administered to Lynne Woods, MSB assembly person on October 15, 2007, and Frankie Barker, MSB environmental planner on August 31, and Dec. 3, 2007.

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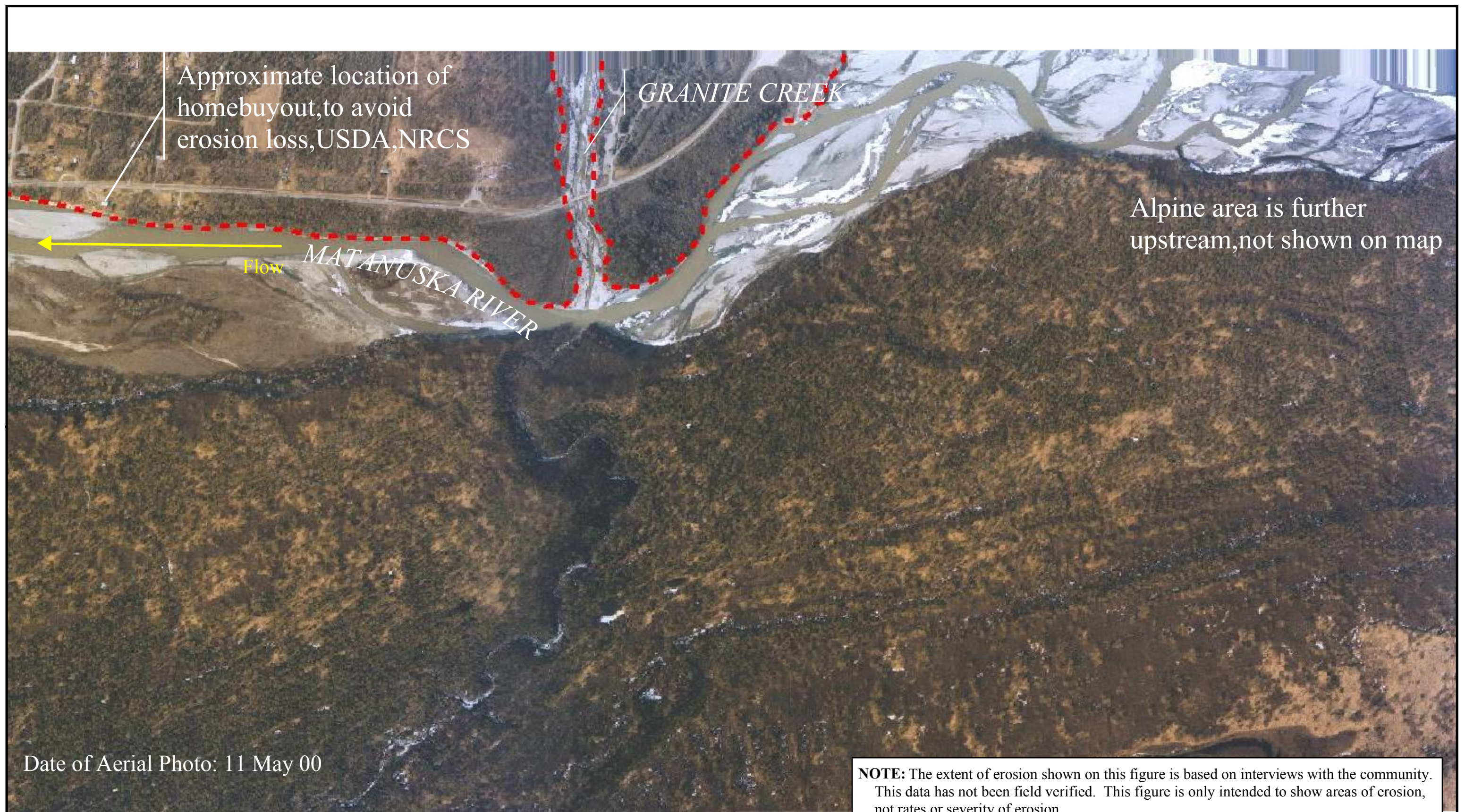
### **Additional Information**

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)









Alaska District  
Corps of Engineers  
Civil Works Branch

--- Linear Extent of Erosion  
Part 2



Alaska Baseline Erosion  
Sutton-Alpine, Alaska