



About the Dahlen Esker

By Lorraine A. Manz

First described in detail by Jack Kume in 1967, the Dahlen esker is the one of the best examples of its kind in North America.

Eskers are long, sinuous, steep-sided ridges consisting of sediments (mainly sand and gravel with lesser amounts of silt and glacial till) deposited by meltwater streams flowing through tunnels or ice-walled channels at the base or within a stagnant or retreating glacier. When the ice melted these sediments were preserved more-or-less in place as ridges that mark the course of their parent stream, so like the compaction ridges described on page 17, eskers are topographic reversals.

The Dahlen esker is located in northeastern North Dakota between the towns of Dahlen and Fordville. It is clearly visible as a prominent ridge from State Highway 32, which crosses its eastern end about half a mile north of the Grand Forks-Walsh County line. The esker was deposited approximately 12,000 years ago by a stream flowing in an ice-floored tunnel near the base of a stagnating glacier. It is roughly 400 feet wide at its base and Kume (1967) estimated its length at about four miles. The crest of the ridge rises to a maximum height of 80 feet and although it is generally level, numerous gaps give it an irregular appearance. The gaps, which have been widened and deepened by modern stream erosion, were probably formed at the same time as the esker, most likely by sediment collapse as the underlying ice melted.

In this color-enhanced, high-resolution aerial image, the Dahlen esker's steep, winding profile contrasts sharply with the low-relief till plain on which it stands. The star marks the point from which the cover photo was taken.

Reference

Kume, Jack, 1967, The Dahlen esker of Grand Forks and Walsh Counties, North Dakota: Proceedings of the North Dakota Academy of Science, v. 20, p. 119-124, reprinted as North Dakota Geological Survey Miscellaneous Series 32.

