

OUTSTANDING GEOLOGIC FEATURE OF PENNSYLVANIA

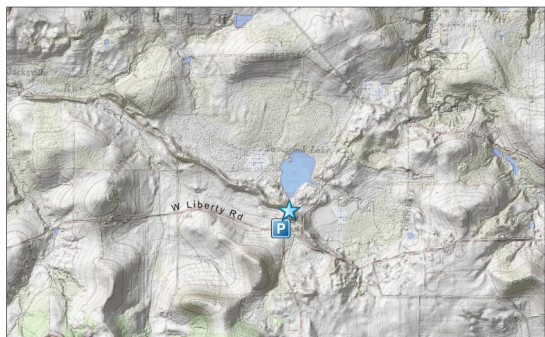
JACKSVILLE ESKER, BUTLER COUNTY

Stuart O. Reese, 2016



Location

Western PA Conservancy, 2.5 miles north of Moraine State Park, Butler Co., Worth Twp., lat: 41.00663, lon: -80.08591 (parking); Slippery Rock 7.5-minute quadrangle



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Geology

The Jacksville Esker, also locally known as the West Liberty Esker and the Miller Esker, is probably the best remaining example of an esker in Pennsylvania. Eskers are ridge-shaped sand and gravel deposits formed during the melting of a glacier. This particular glacial deposit took shape during the peak of the late Wisconsin Kent glaciation, about 23,000 years ago. Remnants of the esker have been detected over 9 miles.

The esker's configuration gives clues to its formation and the thickness of the glacier. The winding ridge of sand and gravel was deposited as meltwater dropped sediment inside a tunnel at the base of the glacier. Upstream where the ice was thicker, the esker is more sinuous. Toward the front of the glacier where ice was thinner, the esker is straighter. This is because surface fractures extending through the ice to the base of the glacier controlled the orientation of the "tunnel." At the end of the esker lies fan-shaped glacial deposits of sand and gravel. These deposits are the result of the melting glacier dumping sediment as a delta into a glacial lake.



View of the Jacksville Esker from West Liberty Road. Photograph by Richard Campbell, Pennsylvania Geological Survey intern.

Recommended Reading

Fleeger, G. M., Bushnell, K. O., and Watson, D. W., 2003, Moraine and McConnells Mill State Parks, Butler and Lawrence Counties—Glacial lakes and drainage changes, *with an addendum on Muddy Creek oil field* by Carter, K. M., and Sager, Kelly (2010): Pennsylvania Geological Survey, 4th ser., [Trail of Geology 16-004.0](#), 18 p.

Sevon, W. D., Fleeger, G. M., and Shepps, V. C., 1999, Pennsylvania and the ice age (2nd ed.): Pennsylvania Geological Survey, 4th ser., [Educational Series 6](#), 30 p.

[Moraine State Park](#) web page of DCNR.

[Western Pennsylvania Conservancy Properties](#) web page of The Western Pennsylvania Conservancy website [see links under Butler County, Miller Esker].