

OUTSTANDING GEOLOGIC FEATURE OF PENNSYLVANIA

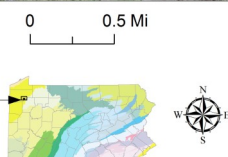
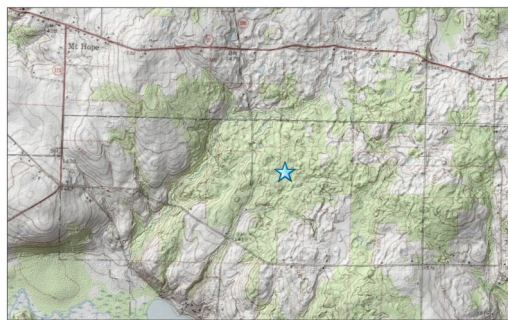
DEAD-ICE TERMINAL MORaine, CRAWFORD COUNTY



Stuart O. Reese, 2016

Location

Pa. Route 27, Crawford Co., Wayne Twp., lat: 41.58,
lon: -79.93; Sugar Lake 7.5-minute quadrangle



Geology

The Dead-Ice terminal moraine, just northwest of the Crawford-Venango County line, is an exemplary exposure of a terminal or end moraine in western Pennsylvania. This named feature actually consists of Kent end moraine deposits, a poorly sorted mixture of boulders, gravel, silt, and sand dropped by “dead ice,” a glacier in a stagnant condition. The Kent deposits represent the furthest southward advance of a Wisconsin glacier in western Pennsylvania, and the end moraine was deposited by the outermost stand of the ice.

The topography of the Dead-Ice terminal moraine is irregular and can be described as “hummocky.” The paused Kent glacier dumped sediments that became “knobs” and as it retreated left behind large blocks of ice that became buried by glacial outwash. The blocks of ice eventually melted to form depressions known as “kettles.” The knob-and-kettle terrain can be seen on topographic maps and on hillshade relief maps.



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The Kent end moraine has been mapped as a 3- to 4-mile-wide swath across Warren, Crawford, and Venango Counties. It was mapped across a wider area in Mercer, Butler, and Lawrence Counties to the south. The map on the left is derived from Shepps and others (1959) and draped over a hillshade image. It shows the region of the Dead-Ice terminal moraine. The smaller index map shows the extent of the Wisconsin glacialation in northwestern Pennsylvania in blue and the Kent end moraine in red. As you would expect, Wisconsin glacier deposits extend over the entire northwest corner of the state.

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.

Shepps, V. C., White, G. W., Droste, J. B., and Sitler, R. F., 1959, Glacial geology of northwestern Pennsylvania: Pennsylvania Geological Survey, 4th ser., [General Geology Report 32](#), 59 p.

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

