

OUTSTANDING GEOLOGIC FEATURE OF PENNSYLVANIA

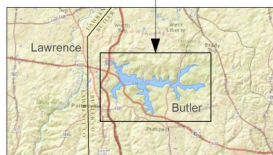
LAKE ARTHUR, BUTLER COUNTY

Stuart O. Reese, 2016



Location

Moraine State Park, Butler Co., Muddy Creek Twp., lat: 40.950, lon: -80.085; Prospect 7.5-minute quadrangle



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Geology

Lake Arthur is a smaller, man-made version of glacial Lake Watts, which was approximately 70 feet higher in elevation and therefore covered a much greater area. The Lake Arthur dam was constructed in 1968 close to where an ice dam once blocked Muddy Creek during the last glacial episode. The glacial lake received fine-grained sediments near its center, where today the Pa. Route 528 bridge crosses Lake Arthur. When the bridge was under construction, 90 feet of saturated silt and clay was encountered. Because these sediments would not support the bridge, it had to be redesigned.

Most of the bedrock in the area formed over 300 million years ago. Common rock types include sandstone, shale, limestone, and coal of the Pottsville and Allegheny Formations. From these sedimentary layers, resources such as lime, oil, and iron were extracted. Lake Arthur covers much of the former Muddy Creek oil field. Oil drilling occurred in the Muddy Creek area from the 1870s until the 1930s, and coal was mined there before the 1960s.



Lake Arthur at Moraine State Park. 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.

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