

OUTSTANDING GEOLOGIC FEATURE OF PENNSYLVANIA

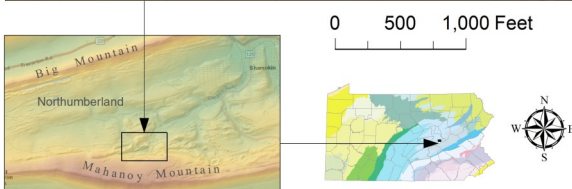
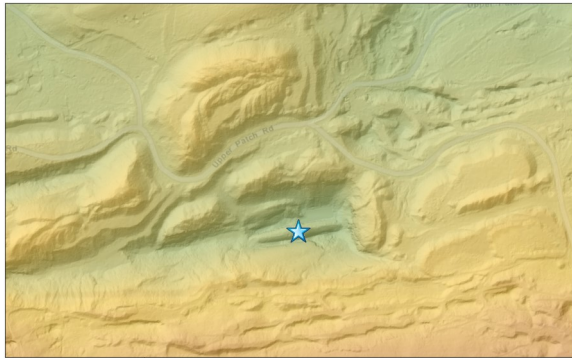
WHALEBACK, NORTHUMBERLAND COUNTY

Stuart O. Reese, 2016



Location

Bear Valley strip mine, near Shamokin, Northumberland Co., Coal Twp., lat: 40.7639, lon: -76.5955; Shamokin 7.5-minute quadrangle



Geology

The Whaleback is an anticline, a folded sandstone bed of the Pennsylvanian Llewellyn Formation, that was beneath the Mammoth coal seam at the Bear Valley strip mine. It is a rare outcrop—one of the best three-dimensional exposures of folded rocks in the nation and a classic field example of style and mechanics of structural development of the central Appalachians. Joints, cleavage, slickenlines, lineations, folds, and three types of faults have been documented at this site, providing evidence for six of the seven stages of Alleghanian deformation in the Ridge and Valley physiographic province.

Recommended Reading

Nickelsen, R. P., and Cotter, Edward, 1983, Stop 3, Bear Valley strip mine, *in* Nickelsen, R. P., and Cotter, Edward, eds., *Silurian depositional history and Alleghanian deformation in the Pennsylvania Valley and Ridge: Annual Field Conference of Pennsylvania Geologists*, 48th, Danville, Pa., [Guidebook](#), p. 128–140.

[Anthracite Outdoor Adventure Area](#) website.

The Whaleback anticline as viewed to the southwest. Note the people on top for scale. Photograph by Gary Fleegeer, Pennsylvania Geological Survey.



The closed mine site is privately owned; however, part of the Whaleback is visible from the adjacent ATV park. The ATV overlook cannot be accessed by hiking; ATV rates and rules apply for the trails.