

Geology of Lake Shetek State Park

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Lake Shetek State Park is located about three miles northwest of Currie and 10 miles southwest of Tracy in Murray County. It consists of about 243 acres along the south and east shores of Lake Shetek, one of the few large natural lakes in the southwestern corner of the State.

The lake is about eight miles long but due to its many inlets and islands it has a shoreline of nearly a hundred miles. It is a very shallow lake with a gravelly, bouldery bottom and shores. Few places in it are more than 12-14 feet deep. Boulders, mostly granites, washed out of its banks by wave action are so numerous that they have been hewn into building stones and used in the construction of several Park buildings. They are very attractive due to the variation in color of the boulders.

A divide, trending northwest-southeast, crosses Murray County about a mile northeast of Lake Shetek. It separates the drainage of the Minnesota River from that of the Des Moines River. In fact, the outlet of

Lake Shetek joined by Beaver Creek about a mile west of Currie together form the source of the Des Moines River. The crest of the divide is about 1500 feet above sea-level in the Park area. Another ridge, some 300 feet higher, roughly parallels it across the southwestern corner of Murray County.

Both of these ridges, which extend many miles northwestward into South Dakota and southeastward into Iowa, represent moraines of the last, or Wisconsin glacier. This glacier is believed to have advanced and retreated (melted back) four distinct times. These have been named, from earliest to latest, the Iowan, the Tazewell, the Cary and the Mankato sub-ages of the Wisconsin glacial age.

The ridge first mentioned is called the Altamont moraine. A slight local offset in this moraine provides the basin and forms Lake Shetek. The higher ridge to the southwest is known as the Bemis moraine. The names Altamont and Bemis are derived from towns in Deuel County, South Dakota, which are located one on each of these ridges. Both of these, together with a few other moraines farther northeast, cross a generally high bed-

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rock area in this corner of the State. The elevation of this area, known as Coteau des Prairies, is due first of all to relatively high bedrock structure. Upon this was laid a relatively thick layer of drift from the earlier glaciers and, still higher, the series of moraines of the later ones, just described.

Until recently it was believed that the Bemis and Altamont moraines were both produced by the Mankato advance of an ice lobe which moved southeastward from Manitoba. The Bemis moraine was regarded as the terminal moraine and the Altamont as the first recessional moraine. The terminal moraine of a glacier is the ridge of debris (rock fragments mixed with sand and clay) left at the margin at the time of its farthest advance. A recessional moraine is a ridge formed within the terminal moraine during a time of general retreat when, for a time, the ice margin is stationary or re-advancing slightly. Recent work in the area, however, has indicated that the Bemis moraine and the Altamont moraine are terminal moraines of the Cary and Mankato advances respectively.

Heretofore the Cary sub-age had been recognized by drift in Minnesota only in the northern and eastern parts of the State produced by an ice lobe which advanced from the Lake Superior region. Discovery of Cary drift in southwestern Minnesota implies an advance of the ice from the northwest at about the same time as

that from the northeast. Radiocarbon dating has indicated the time of the last glaciers as much more recent than had previously been supposed—about 13,000 years ago for the Cary and about 10,000 for the Mankato.

No natural lakes are found southwest of the Bemis moraine in Minnesota, or for some distance beyond. This fact adds to the importance and popularity of Lake Shetek State Park since it serves not only a large area of southwestern Minnesota but considerable adjoining portions of South Dakota and Iowa as well. The absence of lakes in the area just mentioned does not imply that it was never glaciated, but merely that it was not covered by either of the two most recent advances. Erosion has had sufficient time to erase the lakes formed by the older glaciers.

The thickness of glacial drift varies considerably over Murray County, ranging from 100-400 feet. A well drilled on Keeley Island, in Lake Shetek, on property formerly within the Park, passed through over 375 feet of glacial drift without penetrating bedrock.

The uppermost bedrock of this vicinity is a light-colored sandstone or sandy shale of Cretaceous age. It was deposited in a sea that apparently advanced from the west over most of the State some 75-100 million years ago. The sea spread over a fairly flat terrain, or peneplain, the bedrock of which in southern Minnesota was

granite in some places and quartzite in others. In seven or eight of the southwestern counties, including Murray, it was quartzite. Both the granite and the quartzite above it are extremely old, perhaps in the order of a billion years.

It seems probable that the Cretaceous sea was too shallow to cover completely the higher quartzite hills, or monadnocks, in this area. At least, at present the Cretaceous sediments are found surrounding, but not covering, large areas of quartzite. This permits the glacial drift to rest directly on the quartzite in these places. This is the condition in the southeastern corner of Murray County, though not at Lake Shetek. Neither the Cretaceous sediments nor the Sioux quartzite, as it is called, is to be seen in Murray County due to the thick coverage of glacial drift here. The Cretaceous can, however, be seen farther east near Springfield and New Ulm in Brown County. The Sioux quartzite outcrops at Pipestone on the west and near Storden in Cottonwood County on the east. The granite, mentioned above, is to be seen along the Redwood River near Seaforth in Redwood County as well as in numerous places along the Minnesota River.

Loon Island, a short distance off shore to the northwest of the developed area on the mainland, is preserved in its natural state as a bird sanctuary. It is connected to the mainland by a foot trail over an artificial causeway near the parking area.

Two fish rearing ponds, totalling about 20 acres, are maintained on the east side of the Park on some recently acquired property. Here fish are reared for stocking not only Lake Shetek but other lakes of the State.

A nice stand of timber surrounds the lake and covers most of the Park area. The trees are mostly burr oak, white oak, basswood, elm, ash, ironwood, hackberry and box elder, with an undergrowth of hawthorn and wild cherry.

Near the entrance, at the southeast corner of the Park, a monument has been erected to commemorate the massacre of a white family during an Indian uprising in the late summer of 1862.

Although the Park has been acquired only relatively recently (1937) it has been quite well developed and provides fine facilities for fishing, bathing, boating, picnicking, hiking and camping.

