

Geology of Lac qui Parle State Park and Watson Scenic Wayside

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LAC QUI PARLE STATE PARK is located about ten miles northwest of Montevideo in Lac qui Parle and Chippewa Counties. It consists of about 457 acres of heavy, hardwood timber land along the Lac qui Parle and Minnesota Rivers at the lower end of Lac qui Parle Lake. It is accessible from U. S. Highway No. 59 and State Trunk Highway No. 7, both of which are marked along the same route northwest of Montevideo.

Watson Scenic Wayside is about eight miles from Montevideo in the same general direction but a little more north than west. It is one mile north and a quarter mile east of the village of Watson. This places Watson Wayside about four miles east of Lac qui Parle State Park. It consists of 17 acres of woodland on the Chippewa River.

These two parks are discussed together not simply because of their proximity but because of the relation of each to the Lac qui Parle Flood Control Project. Each is related to the project by the fact that it is situated on a tributary of the Minnesota River near its juncture with the latter. The Lac qui Parle River joins the Minnesota from the south side

just below Lac qui Parle Lake while the Chippewa River flows into it from the north side at Montevideo.

Those familiar with the Minnesota River Valley know it as a broad valley from its beginning in Big Stone Lake to its juncture with that of the Mississippi at Ft. Snelling. An unusual fact about this valley is its breadth, compared to the small river that occupies it, coupled with the fact that some of its broadest parts are near its source. The valley seems altogether too wide and deep to have been eroded by the stream it carries, in the time that has elapsed since the last glaciation of the area.

The explanation of these unusual features is believed to be that the major part of the erosion of the valley was done, not by the river we see today, but by its much larger predecessor which for a long time drained Glacial Lake Agassiz. Glacial Lake Agassiz was an enormous lake which occupied what we now know as the Red River Valley country. It covered western Minnesota, eastern North Dakota and an even larger area in Canada. By some, it is estimated to have been larger than all our present Great Lakes combined. This mighty predecessor of the Minnesota River is known to geologists as

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the Glacial River Warren, so named because General G. K. Warren, in the 1860's, first described and explained the unusual features mentioned above. Thus Glacial River Warren received most of its water from the lake source and comparatively little from its tributaries. Therefore, its erosive power was about the same near its headwaters as near its mouth.

Lac qui Parle Lake, which is about eight miles long and generally less than a mile wide, occupies a low portion of the valley floor. A dike was built at its lower end to raise the

water level about eight feet higher than the natural lake level. As such it serves as the reservoir for the Lac qui Parle Flood Control Project. It was mentioned earlier that the Chippewa River does not join the Minnesota until it reaches Montevideo, some ten miles downstream from the reservoir. This would seem to mean that the reservoir could not serve to impound water from the Chippewa, but it does.

The explanation of this brings out the interesting way in which engineering has taken advantage of the un-



The Lac Qui Parle Mission, reproduced in 1941 after the original adobe brick chapel which was constructed in 1835, was destroyed.

usual geologic setting here. Whereas the Chippewa does not join the Minnesota until several miles downstream it does enter the old, broad valley of Glacial River Warren near Watson. Extending up-valley from Watson to Lac qui Parle Lake-Reservoir is a fairly straight, abandoned channel known locally as the "Watson Sag." It is separated from the present Minnesota River by a bench or table-land which must have been an island in Glacial River Warren, at least part of the time.

The down-valley slope in the Watson Sag is so slight that it was possible to dig a diversion channel within it which slopes about a foot per mile in the opposite direction! A dam was built in conjunction with the highway bridge over the Chippewa River at Watson Wayside. In time of flood this dam is used to raise the level of the water in the Chippewa enough so that the excess overflows into the Watson Sag diversion channel and, by gravity, flows up the valley and into Lac qui Parle Lake-Reservoir, a distance of about five miles. It isn't often that a valley contains two streams flowing in opposite directions, even if one of them is partly artificial.

Thus Lac qui Parle Lake-Reservoir serves to impound excess water during flood time both from the Minnesota and the Chippewa Rivers. Lac qui Parle River joins the Minnesota River about a mile below the reservoir and apparently no feasible means has been found to divert its excess water into the reservoir. Consequently a dam was built on the Minnesota

just below the juncture at the highway bridge just outside the Lac qui Parle Park boundary. Although there is no well-defined basin, there exists above the dam low ground adjacent to both rivers which does accommodate considerable water and serves to prevent flooding of valuable farm land downstream, except in times of severe floods.

No bedrock outcrops are known to occur within the confines of either of the two parks, although small ones do occur nearby, as will be mentioned shortly. Glacial drift and river alluvium compose the surface here. A few miles from the Minnesota River, on either side, Cretaceous shales and sandstones are found beneath 100-200 feet of glacial drift. These are the uppermost bedrocks of much of the southwestern and western parts of the State. It is presumed that they covered the Minnesota River Valley also, but were removed by the Glacial River Warren as it eroded its valley floor from 100-150 feet below the general level of the surrounding till plain. In removing the Cretaceous rocks the glacial river exposed and flowed over the next lower set of rocks which, for most of the distance between its source and the big bend at Mankato, were Precambrian granites and related rocks. When the transporting power of the river decreased, alluvium was spread over most of the rocky valley floor. The higher parts escaped burial and constitute numerous outcrops now found scattered up and down the valley and in which numerous stone quarries are located. A small granite outcrop

is found in the Watson Sag about 3½ miles northwest of Watson and several other small ones are located near the lower end of Lac qui Parle Lake.

Lac qui Parle State Park is composed of three units acquired at different times. The first unit, 17 acres, was acquired in 1931 as a place on which to restore and commemorate the Chippewa-Lac qui Parle Presbyterian Mission, first established in 1835. This mission had the first church bell in the state and here too was manufactured the first cloth in Minnesota. The restoration was completed in 1941. A second part, 438 acres on the south side of the Minnesota River, was added in 1936 in connection with the flood control project just described. A stone building was constructed near the parking area and a 45-foot scale model of the entire flood control project was built in it. A considerable part of the Minnesota River Valley above Montevideo is included.

A clear picture of the operation of the project may be obtained by studying the model for a few minutes. A trip to the Park is well worthwhile for this purpose alone. The third part, consisting of 2.2 acres, includes the Renville Stockade, an early trading

post operated by Joseph Renville. The large tract is in Lac qui Parle County while the other two are on the north side of the Minnesota River in Chippewa County. In addition to the interest surrounding the flood-control project visitors find adequate facilities for picnicking, hiking and boating.

The name "Lac qui Parle" is of French origin and means "Lake that speaks." The reason for the application of the name seems not to be well agreed upon. One version attributes it to an Indian legend about echoing voices heard over the lake; another that it is due to the noise made by boulders on shore grating over each other when pushed by the expansion and contraction of the ice; while still another holds that the name refers to some sort of musical echo produced by waves beating against the shore when the wind is in a certain direction.

Watson Scenic Wayside was established in 1938 to provide recreational facilities on the Chippewa River at the site of the dam previously mentioned. Here, too, one may gain an idea of the flood control project by studying the sketch on a bronze plaque on the east end of the highway bridge.

Conservation of the natural resources is not an annual, a five-year or a decade long job — it is generation to generation, with continuing effort year after year.