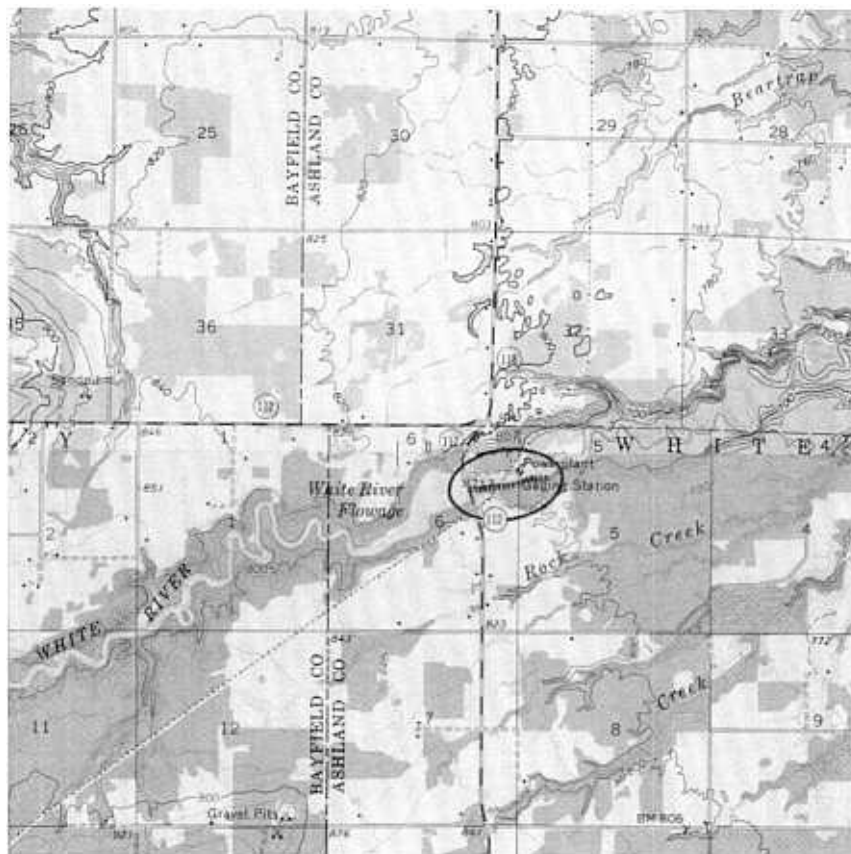


Title: White River

Location: Exposures in banks and bed of White River below reservoir dam and on both sides of bridge on Highway 112 about 4.3 miles south of Ashland in NE $\frac{1}{4}$ , Sec. 6, T.46N., R.4W., Ashland County (Marengo 15-minute topographic quadrangle 1967).



Author: M. E. Ostrom (modified from Myers, 1971)

Description: Exposures of gently-dipping Freda Sandstone Formation. The Freda Sandstone is the upper formation of the Oronto Group of the "Lake Superior Sandstone" which is called the Upper Keweenawan Series. In ascending order the Upper Keweenawan consists of the Outer Conglomerate, the Nonesuch Shale, and the Freda Sandstone which in this area has an estimated total thickness of 12,000 feet (Thwaites, 1912). A description of strata exposed downstream from the dam is:

PRECAMBRIAN SYSTEM

Keweenawan Series

Oronto Group

Freda Sandstone Formation (+8.0 feet)

6.5' - 8.0'	1.5'	Sandstone, pebbly; basal contact sharp; appears to be cross-bedded, feldspathic, poorly sorted.
4.5' - 6.5'	2.0'	Siltstone, grayish red; well cemented; birdseye leaching.
0.0' - 4.5'	4.5'	Sandstone, grayish red locally leached light olive gray, medium grained, with interbeds of siltstone. Mudcracks having lengths up to 3"; width of crack 2 mm.

Significance: Although only 8 feet of a very thick formation is present it can be used for interpretation of both environmental, historical, and structural interpretation.

Examine lithology and mineralogy. What do they signify? What sedimentary structures can you identify? What do they signify? Measure dip and strike of the beds. What do these mean in terms of structural history? What is the origin of the red color? What caused the bleached areas?

References: Thwaites, 1912; Myers, 1971.