



White River Chain of Lakes - Missouri

In Missouri, the White River chain of lakes includes Table Rock, Taneycomo and the upper portion of Bull Shoals lakes, and includes their tributaries and the watersheds that feed them.

Table Rock Dam was completed in August 1958 and has a surface area of approximately 43,100 acres, a 2.5 million acre watershed and a population in that watershed of nearly 300,000 people. The majority of the lake is in Missouri along with about 40 percent of its watershed. Lake Taneycomo and almost 100 percent of the watershed that feeds it is located in Missouri. Taneycomo was created in 1913 and consists of approximately 1,730 acres. Bull Shoals Lake was completed in July 1951, and has approximately 45,440 total surface acres. Although all but 9,000 acres of the lake lie in Arkansas, about 65 percent of the watershed is in Missouri.

The Table Rock and Bull Shoals dams and lakes are owned and controlled by the U. S. Army Corps of Engineers. Empire Electric Company privately owns Power Site Dam that forms Lake Taneycomo. This company holds a license to continue operations of the dam and its hydroelectric plant until the year 2022. Lake Taneycomo is the source of the majority of the city of Branson's public drinking water supply. The lake is renowned as an excellent rainbow and brown trout fishery. The state record brown trout was caught in Lake Taneycomo in 1994.

All three lakes offer a variety of recreational activities including fishing, hiking, sightseeing, hunting, skin diving and other water sports such as swimming, boating and water skiing. In Missouri, tourism has the largest economic impact in the area surrounding these lakes. In 1998, approximately 6.4 million visitors came to the area and spent over \$1.2 billion.

Major water quality impacts that affect all three lakes are nutrients from municipal wastewater treatment plants and nonpoint sources, such as stormwater runoff from pastures, cropland and sites where animal manures are land applied. Lake Taneycomo and Table Rock Lake are also impacted by urban stormwater discharges. Lake Taneycomo is presently listed as an impaired water by the Missouri Department of Natural Resources due to low dissolved oxygen concentrations due to hydropower discharges from Table Rock Dam. Sedimentation from land disturbance activities has also adversely affected both Lake Taneycomo and Table Rock Lake. Data collected by the Lakes of Missouri Volunteer Monitoring Program indicated that special attention to the trophic status of Lake Taneycomo and Table Rock Lake was needed. Phosphorus was determined to be the nutrient of concern. A rule limiting the point source discharge of phosphorus into the Taneycomo watershed was approved by the Missouri Clean Water Commission and became effective in 1994. A similar rule was approved for the Table Rock watershed in Missouri and became effective in 1999. Both rules limit total phosphorus to no more than 0.50 mg/l in effluent discharged by wastewater facilities with design flows of greater than 22,500 gallons per day. Table Rock Lake is presently listed as an impaired water due to excessive suspended algae growth. James River, the major tributary to these lakes in Missouri, is listed as an impaired water on the Missouri 303(d) list and its watershed is in the top five in Missouri's Unified Watershed Assessment.

The first phase of the James River nutrient TMDL is scheduled to be submitted to EPA by December 31, 2000. Loads of phosphorus and nitrogen that lead to excessive amounts algae is being determined by a spreadsheet model using average loading rates by flow class. The local James River Partnership has been formed and consists of local interests, and state and federal agencies that could be affected by the TMDL. Continued and improved monitoring is planned to increase the effectiveness of the TMDL.

The Missouri Department of Natural Resources requires permits for large concentrated animal feeding operations, land application of biosolids, and land disturbance activities, based on the size of the activity. These regulated operations are required to meet minimum set back distances, maintain buffer zones and conduct operations in such a manner that pollution of waters of the state do not occur. The department provides assistance through the Technical Assistance Program and field staff to facilitate implementation of strategies to improve water quality.