

Weber River Watershed Management Unit Water Quality Assessment

The Weber River rises in Summit County near Reids Peak (11,708 ft), then flows west to Oakley, Utah, then turns and flows in a northwesterly direction to the Great Salt Lake (4200 ft). The Weber River is approximately 125 miles long; one-half of which lies in Summit County, 25 miles in Morgan County, and 30 miles in Weber County. The Ogden River, the major tributary to the Weber River, lies within Weber County and enters the Weber River about 12 miles upstream from its mouth. The other major

tributaries to the Weber River are East Canyon Creek, Lost Creek, Chalk Creek, and Beaver Creek. Two smaller tributaries that can affect the water quality of the Weber River are Echo Creek and Silver Creek.

Water quality samples were collected from fifty-seven sites from July 1998 through June 1999. Samples were collected twice a month during the spring runoff period and then monthly during the remainder of the survey. The water chemistry data from these samples were compared to the standards that the state has established to protect the beneficial uses of the rivers and streams in the Weber River watershed. Beneficial uses include drinking water, recreation, fishing, boating, irrigation, stock watering, and supporting aquatic wildlife. Stream structure and stream bank habitat were also used to assess beneficial use support in several smaller watersheds within the basin. The quality of water was assessed as "fully supporting" (good to excellent water quality), "partially supporting" (meets the standards most of the time), and "not supporting" (frequently the water quality standards are not met).

There are approximately 1,065 perennial stream miles within the management unit. Of these, 845 (79.3%) stream miles were assessed for aquatic life and agricultural use support. Seven-hundred fifty-seven (757) stream miles were assessed as a source of drinking water. Of the approximately 845 miles assessed, 66.7% were assessed as fully supporting all of their assessed beneficial uses, 27.1% were assessed as partially supporting at least one beneficial use and 6.2% were found to be not supporting at least one beneficial use (Figure 1).

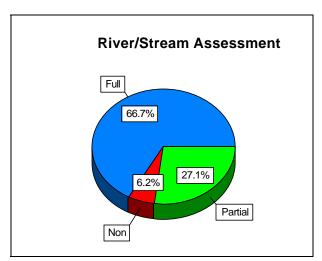


Figure 1. Overall beneficial use support.

The relative impact of various causes and sources of pollution for the 280 miles of stream that were assessed as either partially or not supporting their beneficial uses are shown in Figures 2 and 3. The major causes of water quality impairment in the watershed were nutrients (total phosphorus), sediments, habitat alterations, and dissolved oxygen. The major sources of pollution were agricultural activities, resource extraction, hydrological modification, habitat modification, and natural sources.

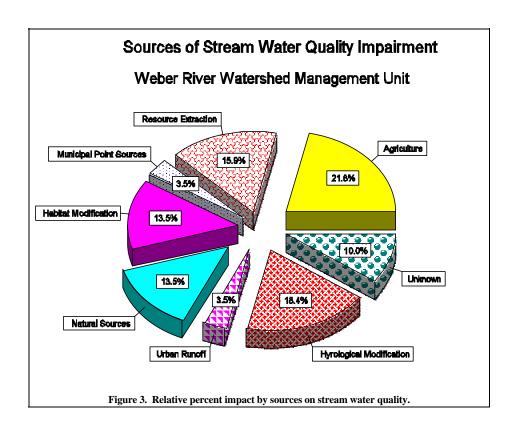
All streams assessed in the Ogden River watershed except the North Fork of the Ogden River were determined to be supporting all of their beneficial use designations that were evaluated. Watersheds that were assessed as still having water quality impairments were Echo Creek, Chalk Creek, East Canyon Creek, and Silver Creek.

The major causes of water quality impairment in the Chalk Creek watershed were high levels of nutrients (total phosphorus) and sediment. The major sources of nutrients and sediments in Chalk Creek were agricultural practices, oil and gas exploration, and stream channel degradation. The causes of impairment East Canyon Creek were low dissolved oxygen and nutrients. The East Canyon wastewater treatment plant discharges significant amounts of total phosphorus into East Canyon Creek, which eventually enters East Canyon Reservoir, causing impacts to both the

stream and lake fishery. In addition, construction, storm water runoff and agricultural practices add total phosphorus to the system. Elevated concentrations of zinc and cadmium were the cause for Silver Creek being assessed as not fully supporting its Class 3A (cold water fishery), Class 1C (source of drinking water) and Class 4 (agricultural use). Heavy sediment loads from Echo Creek were caused by hydrologic modification of the stream. With the building of the interstate highway, much of the storage capacity of stream riparian habitat was eliminated and now the stream channel has become degraded because it cannot hold the amount of runoff that enters the stream. Some agricultural practices have also impacted the stream causing sediment to wash into the stream.

Silver Creek, Echo Creek, Fort Creek, the lower portion of Beaver Creek, the lower portion of East Canyon Creek and several segments of the Weber River were also identified as having elevated levels of total phosphorus. These levels can be an indicator of water quality problems and further assessment is needed to determine if any water quality problems exist that affect aquatic life, recreation, or the use of the water as a source for drinking water. These waters will be listed, along with others in the State, and prioritized as to which ones need to be evaluated sooner than others.

If you have questions about the report or wish to obtain a copy, it can be found at the Division of Water Quality's home page or by requesting a copy from Tom Toole, (801) 538-6859 or e-mail ttoole@deq.state.us.ut.



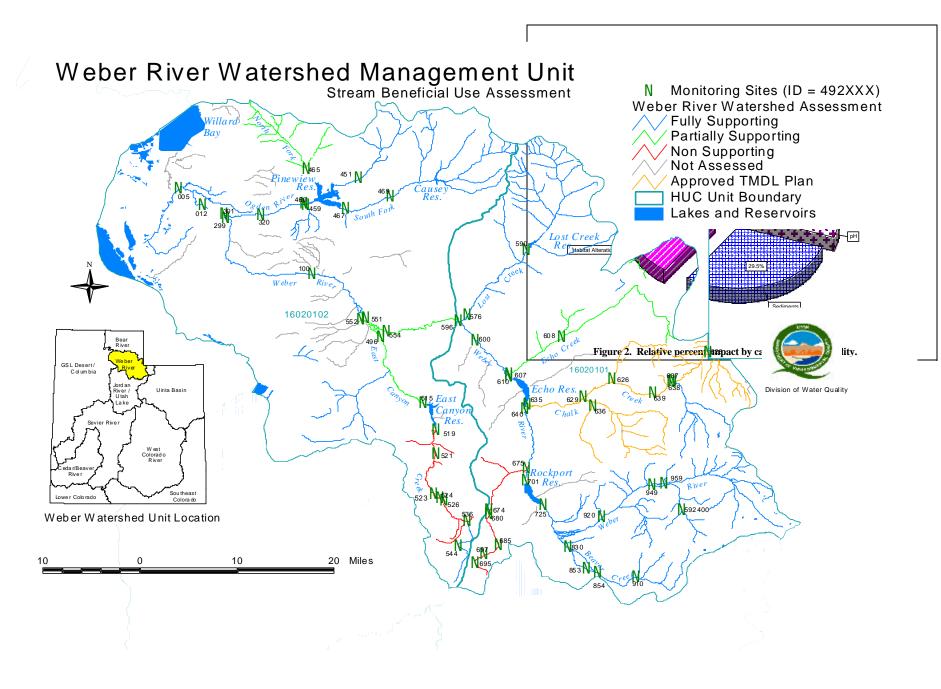


Figure 4. Beneficial use support assessment for the Weber River Watershed Management Unit.