NONPOINT SOURCE SUCCESS STORY

Utah

Partners Work to Reduce Pollutant Loading in Chalk Creek

Waterbody Improved

In 1987 Chalk Creek was assessed, and it was determined that the creek did not meet the standards for a cold water fishery due to elevated levels of phosphorous and sediment. It was later listed for being biologically impaired as a result of the high sediment levels. In 1990 the Utah Division of Water Quality began funding water quality improvement projects in the Chalk Creek watershed and continued through 2017. Since restoration efforts began, there has been a noticeable decrease in both the phosphorous and sediment loading into Chalk Creek. As a result, the Chalk Creek segment above the confluence with the South Fork of Chalk Creek and the East Fork of Chalk Creek were removed from Utah's list of impaired waters for biological impairments in 2016.

Problem

The Chalk Creek watershed is in Summit County and is a tributary to the Weber River system, which provides municipal, industrial, agricultural and recreational water to several hundred thousand water users (Figure 1). The watershed encompasses more than 176,000 acres of rangeland, forest, irrigated crop and pasture, meadow pasture and small urban areas. Land ownership is more than 99 percent private, with less than 1 percent controlled by the federal government. The beneficial uses in the Chalk Creek watershed have been identified as domestic uses, recreation, cold-water game fish, and agricultural uses. Chalk Creek is approximately 24 miles long and flows from east to west the length of the watershed. The creek receives water from three major tributaries: Huff Creek, South Fork of Chalk Creek, and East Fork of Chalk Creek.

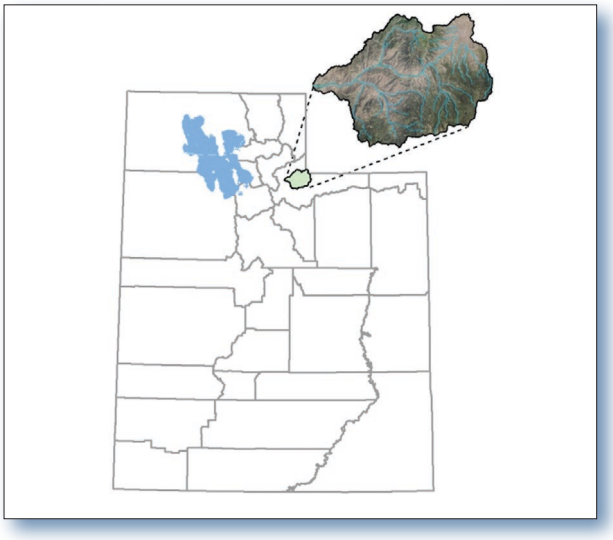

Figure 1. The Chalk Creek watershed is in northern Utah.

In 1987 Chalk Creek was assessed, and it was determined that the creek did not meet the water quality standards for a cold water fishery due to elevated levels of phosphorous and sediment. In 2008 the Lower Chalk Creek, Huff Creek, and the East Fork of Chalk Creek were listed for being biologically impaired as a result of the high sediment levels. The sediments are coming from bank erosion, downcutting of the stream, deteriorating alluvial fans, steep shale and sandstone escarpments, irrigation induced erosion, sediment from eroding rangeland, oil pads, and disturbances related to exploration and extraction of oil such as pipelines, roads, cuts and culverts.

In January 1991 a steering committee was organized to provide local planning guidance and direction. The Chalk Creek Watershed Coordinated Resource Management Plan was submitted by the Utah Division of Water Quality as a total maximum daily load for sediment, phosphorus and stream habitat impairments to its cold water fisheries beneficial use. The document was approved by Region 8 of the U.S. Environmental Protection Agency (EPA) on October 23, 1997. The plan calls for a 130,000 tons/year of sediment reduction on rangelands and 8,200 tons/year of sediment reduction from stream channels and stream banks.

Figure 2. Huff Creek before and after restoration.

Project Highlights

In 1990 the Division of Water Quality began funding water quality improvement projects in the Chalk Creek watershed. Implementation has continued through 2017. Since 1990, nearly $2.5 million in CWA section 319 funding has been spent, resulting in 5.3 miles of stream channel restoration (Figure 2). Grazing management plans have been developed and implemented on over 96,000 acres, which have included reseeding 7,000 acres, adding 2.5 miles of cross fencing, and installing 104 livestock watering facilities, 100 sediment catchment basins and 300 water bars. Other projects included replacing or adding protection on nine bridge sites to reduce erosion, improving 1,200 acres of irrigation, and relocating five animal feeding operations to reduce nutrient loading.

Results

Since restoration efforts began, there has been a noticeable decrease in both the phosphorous and sediment loading into Chalk Creek, with the most noticeable decreases taking place after the early implementation activities that occurred in the early 1990s (Figures 3 and 4). As a result of this decrease in sediment and nutrients, the segment of Chalk Creek above the confluence with the South Fork of Chalk Creek was removed from Utah's list of impaired waters for biological impairments in 2016. Marked improvements have been observed throughout the watershed; other reaches could be delisted for their biological impairments in the near future. Additional work is planned in the South Fork of Chalk Creek to continue to reduce the sediment and nutrient loading. This watershed was selected as a National Water Quality Initiative watershed in cooperation with the Natural Resource Conservation Service (NRCS) in 2017. The state of Utah has also allocated a large amount of fiscal year 2018 funding to help continue implementation efforts.

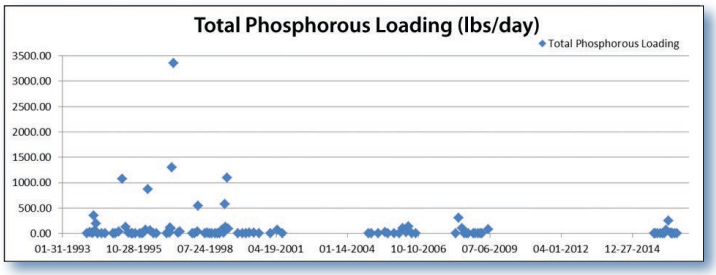

Figure 3. Phosphorous loading into Chalk Creek.

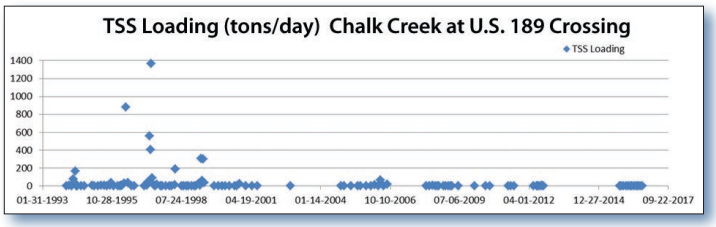

Figure 4. Total suspended sediments loading into Chalk Creek.

Partners and Funding

Partners involved in the Chalk Creek Restoration Project include the Utah Division of Water Quality, Utah Division of Wildlife Resources, Trout Unlimited, U.S. Fish and Wildlife Service, EPA, NRCS and private landowners. Since 1990, more than $4.5 million from multiple sources has been spent on restoration activities in the Chalk Creek watershed, including EPA section 319 funding ($2,489,204), Utah nonpoint source grants ($30,167), and funds from Trout Unlimited ($63,658), NRCS ($391,661), U.S. Fish and Wildlife ($21,450), and private landowners ($1,523,821).

U.S. Environmental Protection Agency
Office of Water
Washington, DC

EPA EPA 841-F-17-001FF
December 2017

For additional information contact:

Jim Bowcutt, Utah Division of Water Quality
801-536-4336 • jdbowcutt@utah.gov
Kari Lundeen, Utah Division of Water Quality
801-536-4335 • klundeen@utah.gov