

Upper Bear River Watershed

2007 - 2008 Monitoring

Uinta County Conservation District

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Bear River, Site BR-4

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The Bear River in Southwestern Wyoming has been listed by the Wyoming Department of Environmental Quality (WDEQ) as impaired for sediment between Woodruff Narrows Reservoir and Sulphur Creek. The listing was a result of water chemistry, biological, and physical data collected by WDEQ in the late 1990's. As a result of this listing the Uinta County Conservation District (the District), under the direction of the Upper Bear River Steering Committee, established eight sites on the Bear River and its' tributaries for water quality and quantity monitoring. The District monitored the sites semi-annually between 2007 and 2008.

Basis of Listing

The WDEQ monitoring results reported increasing sediment loads in the substrate of Sulphur Creek, while habitat scores decreased primarily due to "sediment in the sample riffles and pools, bank stability conditions, and disruptive pressures adjacent to the channel" (WDEQ). Additionally, the macroinvertebrate and biological assessment confirmed that the core metrics change from clean-water taxa and functional feeding groups upstream to functional feeding groups that are sediment tolerant and respond to nutrient enrichment downstream. Additionally, trout populations including the Bonneville Cutthroat Trout were found to be diminishing.

Sampling Sites

- o 2 on Bear River upstream of Sulphur Creek
- o 3 on Bear River downstream of Sulphur Creek to Woodruff Narrows Reservoir
- o 2 on Sulphur Creek
- o 1 on LaChappelle Creek, a tributary to Sulphur Creek

Sample Frequency and Analysis

One sample from each site was collected semi-annually between June 2007 and September 2008. All sites were measured in the field for stream temperature, electrical conductivity, dissolved oxygen, turbidity, and pH. A sample was collected at each site and analyzed for inorganic chemistry and nutrients. Additionally, the District measured flow velocities, depths, and stream widths when navigable.



Bear River, Site BR-2

Results

Results showed an increase in stream temperature, conductivity, TDS and chloride from upstream to downstream. Turbidity concentrations were low, ranging between 1.3 and 165.1 NTU at all sites. Turbidity is a measurement of particles in the water column, while the impairment listing is based on substrate sediment.

Landowner Practicipation

Best management practices (BMPs) for the stream include fencing of streams, replanting vegetation, bank stabilization and installation of sediment detention basins. The District has implemented voluntary cost-share programs for landowners interested in rehabilitating both faulty or aging septic systems and non-compliant feedlots and working corrals.

Landowners interested in the cost-share program should contact the Uinta County Conservation District.

Paths Forward

Overall, the Bear River listing for sediment impairment is ambiguous and difficult to assess without chemical and biological monitoring. The District will continue water quality and quantity monitoring in hopes of identifying particular areas of concern and will continue to work with landowners for BMP implementation.