

## Beaver River near Turpin

Station AT233900 (720500020450-001AT) is a permanent ambient trend monitoring station located on the Beaver River in Oklahoma. Situated in the west central portion of Beaver County, the site was established south of the town of Turpin on US Highway 83. The station is positioned near the terminal end of stream segment 720500020450 and is classified within the Middle Beaver River 8 digit HUC watershed (11100102). Water enters the stream system from Optima Lake and from several tributaries including Fulton Creek (Palo Duro Creek), Bull Creek, and Jackson Creek, among others.

This station on the Beaver River has been active for all water quality variables since October of 2000. The following assessment of beneficial uses is based on data collected from June of 2002 through March of 2007. For purposes of reporting, this station is representative of the Beaver River from just downstream of Optima Lake (101.0968, 36.6651) downstream to the confluence of the Beaver River with Sharp Creek (100.8064, 36.7972). As per Appendix A, Table 7 of OAC 785:45, this water quality management segment is assigned the following designated beneficial uses: 1) Warm Water Aquatic Community—Fish and Wildlife Propagation (WWAC), 2) Agriculture—Class III Irrigation (AG), and 3) Primary Body Contact—Recreation (PBCR).

The WWAC beneficial use is supported. Dissolved oxygen, pH, turbidity, and toxicant data met the criteria prescribed in the WWAC beneficial use. Fish were collected during the summer of 2006. Based on the Index of Biological Integrity (IBI) outlined in Appendix C of Oklahoma's USAP, the station has a sample composition score of 5 (maximum 30) and fish condition score of 10 (maximum 15) for a total score of 15. However, because biocriteria have not been developed for the Southwestern Tablelands ecoregion, no assessment of community biological health can be made at this time. The AG beneficial use is not supported. Of the forty (40) total dissolved solids concentrations, thirty-nine (39) samples (or 98%) exceeded the sample standard of 3010.0 mg/L, and the mean (6011.6 mg/L) exceeded the yearly mean standard (2442 mg/L). Of the thirty-six (36) chloride concentrations, 36 samples (or 100%) exceeded the sample standard of 945.0 mg/L, and the mean (2461.4 mg/L) exceeded the yearly mean standard (735 mg/L). Sulfate values met the segment-specific criterion. The PBCR beneficial use is not supported. Of the nineteen (19) fecal coliform concentrations, ten (10) samples (or 53%) exceeded the prescribed screening level of 400 cfu/100mL, and the geometric mean (471.9 cfu/100mL) exceeded the prescribed mean standard of 400 cfu/100mL. Of the 19 enterococci concentrations, 10 samples exceeded the prescribed screening level of 406 cfu/100mL, and the geometric mean (281.7 cfu/100mL) exceeded the prescribed mean standard of 33 cfu/100mL. Of the 19 *E. coli* concentrations, nine (9) samples exceeded the prescribed screening level of 406 cfu/100mL, and the geometric mean (261.6 cfu/100mL) exceeded the prescribed mean standard of 126 cfu/100mL. This segment of the Beaver River is not nutrient-threatened. The total phosphorus and nitrate/nitrite median values were below the threshold medians of 0.36 mg/L and 5.0 mg/L, respectively.