

Aquatic invertebrates and fishes of the Washita River in the Washita Battlefield National Historic Site

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November 26, 2003

Executive Summary

1. The Washita Battlefield National Historic Site (WBNHS) is a unit of the National Park Service located in Roger Mills County, west of Cheyenne, Oklahoma.
2. The water in the Washita River is slightly alkaline and has a high conductivity, in part because of a measurable salinity.
3. Aquatic invertebrates and fish were sampled three times during 2002-2003, and two light samples of aerial insects were collected.
4. Eighty-two taxa of aquatic invertebrates, 26 taxa of aerial insects, and 16 species of fish were identified from the WBNHS.
5. The high faunal diversity in the Washita River in the WBNHS is partly attributed to a combination of habitat-specific sampling, and the use of both quantitative and qualitative methods for collecting aquatic invertebrates.
6. Invertebrate associations differed among habitats. In particular, organic matter, fine sediments, and the beaver pond had distinct assemblages, as demonstrated by non-metric multidimensional scaling and clustering analysis.
7. Many invertebrate taxa were associated with specific habitats (shifting sand, silt-covered sand, exposed roots, woody debris, beaver pond, etc.) or habitat groups (e.g. slow water habitats). For example, the beetle *Helichus* was generally found on wood.
8. A rapid bioassessment of habitat conditions of the Washita River was conducted. The habitat scored low on epifaunal cover, pool variability, sediment deposition, and channel sinuosity.
9. The fauna of the Washita River at the WBNHS is apparently more diverse than it is below Foss Reservoir. Foss Reservoir may negatively affect some species inhabiting the upper Washita River.
10. Potential taxa for biomonitoring consideration are listed.