



Streams Monitoring at Bent's Old Fort NHS

Importance

Riparian habitats constitute less than 2% of the land area in the American Southwest, but support the highest density and abundance of plants and animals of any habitat type, making streams and associated riparian areas critical to the ecological integrity of the region. Riparian areas supply food, cover, and water, and serve as migration routes and habitat connectors for a variety of wildlife. They also help control water pollution, reduce erosion, mitigate floods, and increase groundwater recharge. Riparian systems perform numerous ecosystem functions important to human populations, yet are one of the most endangered forest types in the United States.

Monitoring Objectives

The goal of this protocol is to detect broad-scale changes in aquatic and riparian ecological condition by observing selected ecological drivers, stressors, and processes. Specific, measurable objectives are to determine status and long-term trends in selected parameters for stream channel morphology, riparian vegetation, core water quality parameters, surface water quantity, aquatic macroinvertebrates, and fish.

Status of the Effort

During Water Year 2011 (WY11, October 2010–September 2011), staff from the Southern Plains Network (SOPN) conducted a site assessment of the Arkansas River segment selected for monitoring.

The information collected, including water velocity (Figure 1), sediment particle size, and water quality, will help us to understand ecosystem processes on the Arkansas River and increase the efficiency and effectiveness of future monitoring efforts.

The SOPN plans to partially implement streams monitoring at Bent's Old Fort National Historic Site in WY12. We will conduct quarterly sampling of more than 30 water quality parameters and collect data on benthic macroinvertebrates and stream discharge. Network and park staff will also work together to implement groundwater monitoring, using existing monitoring wells.

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Figure 1. Sampling water velocity on the Arkansas River.