

**Integrated Stream Monitoring to Inform Resource Management in
Northern Colorado Plateau National Parks**

David Thoma (NPS Inventory and Monitoring)

Anne Brasher (USGS)

Steven Garman (NPS Inventory and Monitoring)

National Park Service Northern Colorado Plateau Inventory and Monitoring Program
State Route 9, Zion National Park
Springdale, UT 84767

ABSTRACT

Integrating multiple components into aquatic monitoring programs optimizes resources and improves understanding and the ability to successfully manage complex and dynamic natural systems by providing multiple lines of evidence. The National Park Service Inventory and Monitoring Program is implementing an integrated, multi-scale riparian, water-quality and aquatic macroinvertebrate monitoring program on wadeable streams in National Parks on the Northern Colorado Plateau. Monitoring data will help establish the natural variation in these resources, and thus provide a basis for understanding observed changes and possible management connections. Information from this program will be used by managers to track change due to drivers affecting Park resources and consequently mitigate negative impacts within their control. Initial results will establish baselines for expected ranges in natural conditions and have already been used in a petition to increase levels of protection, identify areas of concern, and provide rationale to remove one stream from the 303(d) list of impaired water bodies.

KEYWORDS Water quality, aquatic macroinvertebrates, riparian, monitoring, Colorado Plateau