

Hitting Moving Targets in Rivers of Change: Water Quality Monitoring for West Virginia Riverine National Parks

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Biographical Sketch of Author

Jesse has coordinated the aquatic resources program for the three, perhaps soon to be four, river-based units of the National Park system in scenic southern West Virginia since 1997. He earned a B.S. in Fisheries from Humboldt State University, an M.A. in biology from California State University Chico, and a Ph.D. from the Aquatic Biology Program at the University of Alabama. Jesse has worked as a hydrologist or biologist for Lassen Volcanic National Park, the California Departments of Fish and Game and Water Resources, the Bureau of Land Management, and the Minerals Management Service.

Abstract

Water quality monitoring at the three river-based West Virginia units of the National Park system has evolved as we attempt to develop meaningful information that is useful to management, park neighbors, the visiting public, commercial river outfitters, and other interested agency, organizational, and individual stakeholders. Initial efforts focused on describing water quality issues in New River Gorge National River (and later Bluestone National Scenic River and Gauley River National Recreation Area as they were established). This led to a focus on monitoring fecal coliform bacteria as an indicator of sewage pollution. Inadequate sewage treatment is a widespread problem in rural areas like Appalachia, and may pose a significant health risk to park employees and visitors. Being both proactive and responsive, the program has had changes in monitoring sites and frequency, methods, and quality assurance and quality control efforts. With all of these changes, we have strived to maintain the basic focus of the monitoring program and to ensure continuity of data. To expand the basic program, special studies examined hydrologic and storm event influences on fecal coliform dynamics. Data management and presentation has evolved to respond to requests from outside agencies and user groups. Results from other water quality monitoring programs led to examination of other constituents (e.g. pathogenic organisms, polycyclic aromatic hydrocarbons). New techniques like bacteria source tracking are leading to further refinement of our knowledge of water quality in the three parks. A comprehensive technical evaluation of our water quality monitoring program is scheduled for 2005.