



Water Quality Program



Upper Kijik River at Lake Clark National Park & Preserve (Alaska) NPS/USGS SHEARER

Background

The Water Quality Program is part of the Aquatic Systems Branch of the Water Resources Division. Water quality activities are broadly categorized into three program areas: 1) national program coordination and management; 2) project proposal development, funding, and management; and 3) technical assistance and support to parks. Currently, the primary focus of the program is on managing the Vital Signs Water Quality Monitoring program. Considerable support is also provided for managing the NPS-USGS Water Quality Partnership program and participating on interagency groups like the National Water Quality Monitoring Council. Technical assistance to parks on water quality and contaminants issues remains a high priority. Directly funded project support has diminished because the Division has been unable to financially support the Water Resources Competitive project program in recent years.

The Vital Signs water quality monitoring program, supported by the Natural Resources Challenge, is designed to track and support attainment of NPS and Department of the Interior strategic goals to protect pristine water quality and improve impaired water quality by supporting the Clean Water Act protections and provisions for designated unimpaired and impaired waters. NPS offices are integrating the water quality monitoring component of the program with the monitoring of other vital signs in parks. Therefore, water quality monitoring may emphasize the support of protected uses through water quality standards as developed by the states, or emphasize the characterization and determination of trends

in water quality conditions due to influences like climate change and urbanization. As of 2012 about 110 parks had at least one waterbody that did not meet one or more water quality standards. Annual funding for this water quality monitoring in national parks is approximately \$2.6 million.

The NPS-USGS Water Quality Partnership program is a mutual collaboration that began in 1998. The goal of the partnership program is to develop information on park water quality to enable NPS to address its most critical water quality management responsibilities. Both agencies view the water quality partnership as a positive example of the progress that can be achieved by working together to solve resource management problems. Annual funding support for the partnership program is approximately \$2.0 million.

Thirty-two network Vital Signs monitoring plans are completed. Most of these plans address water quality and water resources but save the monitoring details for the monitoring protocols and Standard Operating Procedures. To date, water quality protocols have been completed in all networks. Water quality and aquatic protocols are being produced for wadable streams, large rivers, lakes and ponds, seeps and springs, wetlands and wetland habitats, groundwater, estuaries and marine areas, amphibians, macroinvertebrates, fish, stream flow, nutrients, and toxic contaminants. Over \$5 million is being invested annually for aquatic Vital Signs monitoring in parks (including \$2.6 million from NRSS-WRD).

Highlights and Accomplishments

Since 1999, nearly \$25 million has been allocated for USGS partnership water quality projects in parks. Through 2012, 173 partnership projects have been initiated in 115 national park units. Twelve new projects were funded in FY 2012 for initiation in FY 2013 for a total of \$867,430 (\$2,144,550 when complete). Additional information on the program is avail-



Paul Burger measuring discharge at Lake Brooks outlet in Katmai National Park & Preserve (Alaska). NPS/DANIEL NOON

able on the partnership web site at http://water.usgs.gov/nps_partnership/

Recent technical assistance provided to parks for ground and surface water quality issues includes: 1) support of a Mountain Pass Mine groundwater plume's delineation upon its approach to Mojave National Park, 2) assessment of soil and groundwater impacts from a 3rd party's diesel release adjacent to Chesapeake and Ohio NHP 3) evaluate threats on both a national and local scale to surface water and groundwater from unconventional oil and gas development, including hydraulic fracturing, that has begun to spread toward natural areas such as Theodore Roosevelt NP and parks of the northeastern U.S., and 4) monitoring of Soda Butte Creek at the boundary to Yellowstone NP during MT DEQ's in-stream removal of mine tailings and their placement into a new repository.

Status and Future

The emphasis for the Vital Signs water quality program will be to implement the network plans and ensure that all aquatic monitoring protocols and standard operating procedures are complete and approved through final peer review. The water quality team will assist networks with these few remaining reviews and provide guidance on basic monitoring designs, instrumentation and the technical details of monitoring. In addition, networks will need assistance in recruiting and training skilled staff, acquiring appropriate instrumentation and analysis software, and that their aquatic monitoring work is conducted in a safe manner under an approved Job Safety Analysis or equivalent.

The NPS is exploring ways to expand the partnership concept with both USGS and EPA to address other water resource needs in parks. As a follow-up to the Western Air Contaminants Assessment Program, NPS has begun water column sampling for Contaminants of Emerging Concern (Pesticides, Pharmaceuticals, Personal Care Products and Waste Water Indicators) in several southwestern parks with EPA analytical support. In addition, the USGS will begin limited sediment sampling for these emerging contaminants in selected parks. It is anticipated these initial sampling programs will be expanded further if this data shows that even pristine areas are affected by these chemicals that may have endocrine disruptive potential for aquatic life at very low ppb levels.

More Information

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