



## Hydrology Program



Monitoring woody debris as part of hydraulic modeling on the Stehekin River at North Cascades National Park Complex (Washington). NPS/MICHAEL MARTIN

### Background

The Hydrology Program is a part of the Aquatic Systems Branch of the Water Resources Division, located in Fort Collins, Colorado. Hydrology Program staff provide water resources support to decision makers, planners, and resource professionals located in parks and all other organizational levels of the National Park Service.

Program staff have expertise in physical water-related disciplines including the areas of surface and ground water hydrology, fluvial geomorphology, floodplain assessment and policy, erosion and sedimentation, and watershed and riparian processes and represent senior-level expertise in these disciplines within the agency.

Program staff contribute to NPS efforts by providing national consistency in water related activities, specialized analytical or technology support to field-based water professionals, and by conducting studies requiring specialized technical skills or dealing with significant issues of multi-park, regional, or

national scope. Support is made available to parks and other the NPS entities through 1) national program coordination, 2) technical assistance, and 3) funded project support.

Park managers and planners in the NPS are confronted with a wide variety of hydrologic problems and issues, often in the day-to-day operation of the park, and also, as a result of special circumstances such as floods, wildfire, and infrastructure failure. Few parks have staff with specific hydrologic expertise necessary for the wide range of potential problems, and therefore, periodically require assistance to adequately address specialized issues. Hydrology Program staff are able to efficiently contribute to issue resolution by providing needed technical expertise in the physical water-related disciplines, often drawing upon prior knowledge gained from earlier WRD studies at the park. Additionally, Program staff understand the special management mandates of the NPS and, therefore, are able to work effectively with park staffs dealing with unique park circumstances.

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## Examples of Hydrology Program Assistance

Activities that provide national program coordination include development, interpretation, and application of NPS-specific policies, for example in the area of floodplain management. Similarly, assistance is provided in interpreting the technical aspects of federal, state, and local laws and regulation pertaining to ground water protection and development, environmental permitting and compliance, and storm water management.

Technical assistance is provided to parks through activities such as fluvial restoration design, groundwater investigation and modeling, floodplain surveying and mapping, hydraulic and sediment modeling, infrastructure design, and watershed analysis.

Funded project support can occur when the needs of a park project are beyond the limits technical assistance or staff capabilities. In this case, the Hydrology Program can assist parks by developing detailed scopes of work, providing direct funding from WRD funding sources, performing COTR duties for park based projects, and/or helping identify appropriate sources of expertise at universities, other government agencies, or private industry.



**Surveying an eroded stream channel at Channel Islands National Park (California).** NPS/MICHAEL MARTIN



**Mike Martin searches for a well casing at Cumberland Island Natinal Seashore (Georgia).** NPS/KEVIN NOON

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## More Information

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