

Water Quality in Small Parks: A Problem-Solving Approach

By George Oviatt, Gary Larson and Larry Blake

Resource issues and their subsequent impacts on natural resources are of obvious concern to managers of park units. Finding sufficient funding and manpower to assess park needs adequately is a constant problem, especially in small units. This situation has led to some innovative strategies to meet management objectives. The strategy used at George Washington Carver National Monument (NM) to solve a series of water quality issues is an example.

The staff at Carver NM has been recognized for utilizing volunteers and student interns to accomplish many programs beyond the budget and manpower capabilities of such a small park. In 1982 a program was implemented to acquire baseline data for park's historic springs, streams and a pond. The program objectives were threefold: (1) collect baseline data using highly motivated college undergraduates supervised by park staff; (2) examine the data to uncover areas of potential impact that could require a more professional level of investigation; and (3) utilize the data as a baseline for comparison against future threats to the resource. Initial results of intern projects found coliform levels in some streams ranging upward to 50,000 organisms per 100 ml and levels of mercury in excess of 10 times the state standard. These and the results of other projects are published in a series of research bulletins available from the park upon request.

Through an established network involving professionals from EPA, the Missouri Department of Natural Resources (MDNR), universities and Regional science staff, the park staff designed a professional level program. Presented with a well organized collection of baseline data in a scientific format, the superintendent agreed that further investigation of these two issues, coliform and mercury, was critical to the protection of the aquatic ecosystem and visitor safety. The outcome, a program that utilized VIP's and networking as initial steps, was two professional contracts - one to monitor water quality and another to investigate the recharge areas for springs within the park, utilizing funding provided by the Midwest Regional Science Office.

Based on the first year of water quality data,



A VIP at George Washington Carver National Monument takes water samples at Carver Park.

potential sources of high coliform have been identified ranging from feedlots for cattle to the sewage

"We feel that this undertaking has demonstrated the potential for conducting professional level research with limited funding." Gentry Davis, Supt.; George Washington Carver NM

treatment facility for the nearby town of Diamond, MO. A spin-off of these findings has been a cooperative effort involving the park superintendent, the city administration of Diamond, and the MDNR to acquire state funding to assist the town in achieving the compliance for its treatment facility. This effort will relieve the park of a major impact on its aquatic resources.

The hydrologic investigation had two results. First it led to reclassification of a major stream that bisects the park. Instead a surface stream, it is now a "losing stream" (one that flows for a portion of time below ground), as defined by Missouri Clean Water Regulations. This reclassification brings with it stiffer penalties for the discharge of pollutants. Second, the investigation led to a tentative identification of the mercury as coming from a now defunct seed treatment operation within the recharge area of the park's historic springs. Cleanup efforts are being initiated for this area, which at one time was the site for treatment of over a million bushels of wheat with a mercury fungicide.

Continued monitoring promises to present a more complete picture of these and other potential impacts. State and local municipalities also will be assisted in correction of problems associated with discharge into the waters that flow into the park. The above discussion provides evidence that a workable system approach does exist for solving many resource management problems of a small park.

Certain prerequisites are required to achieve success from our approach. The park must have a superintendent who is concerned for the state of the park resources and allows staff members enough latitude to pursue individual interests directed toward those resources. The staff effort must include commitment to the goal of resource protection, utilization of an effective VIP program to assist in achieving those goals and the ability to network with professionals at the federal, state and local levels to provide technical assistance. Finally, it is necessary to have a Regional science staff that supports priorities based on potential for impact to park resources, regardless of unit size.

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