



## Teen Scientists Investigate Water on Saipan ...and change the way a wetland is managed

In the spring of this year, the natural resources staff at American Memorial Park (AMME), on the island of Saipan, heard about a previously undiscovered sewer line break being repaired just a few dozen yards from the park's boundary within the city of Garapan. The leak was quickly fixed, but this raised questions about exactly what was draining into the park's artificial wetland and stream from the city's storm drains.

Seven teenagers from AMME's Youth Conservation Corps (YCC) investigated the situation. For two months over the summer, they measured bacteria levels in the wetland and stream. They tested the water at several of the Inventory & Monitoring Program's (I&M) regular water quality monitoring sites. In addition, they tested a site shared with the Commonwealth of the Northern Mariana Islands Division of Environmental Quality (DEQ) in its recreational water monitoring program. They also tested the park's drinking water. Because they used the same type of tests used by DEQ, the U.S. Environmental Protection Agency, and many other organizations responsible for testing beaches and

recreational waters, their results could be directly compared to local and national standards.

Most of these YCC teens started with no training in scientific procedures, yet all learned quickly. A National Park Service Biological Technician trained both the teens and AMME rangers to collect, prepare, and analyze samples. AMME rangers supervised the YCC team throughout the project, and made sure they worked safely and carefully.

The young scientists tested three to four sites twice a week, measuring levels of *E. coli* and total *coliform* bacteria on Mondays, and *Enterococcus* bacteria on Wednesdays. They were responsible for sample collection and preparation, monitoring the incubation of samples, and reading and collating the results. Not only did they follow strict protocols for the safe and sterile collection and handling of these samples, they conducted precise dilutions and kept extensive field notes. Their preliminary data showed little or no contamination of samples, and supported the proposition that citizen science can provide reliable

data for management decisions.

The resulting data\* will be AMME's first long-term look at bacteria concentrations in the stormwater flowing into and through the park, and out to the adjacent Smiling Cove Marina. With this information, NPS scientists and managers have changed the way they manage the wetland, helping improve safety and making long-term management plans with local public works and environmental officials.

The National Park Service provided the testing supplies and equipment to start this project and a similar one on Guam, giving the parks a powerful new tool for outreach, research, and management. The success of this project is a great reminder of the importance of involving the public in our work, and of the power of combining opportunities for outreach with meaningful projects that benefit both the participants and the parks.

–J. Mills, NPS  
Biological Technician



AMME's Youth Conservation Corps takes on the challenge of conducting serious water quality science.

*\*Final analysis of project data is still being processed.*

