

# Mapping and Describing the Soils of St. John

The National Park Service and Soil Conservation Service (SCS) are cooperating in a study to map and characterize the soils in several watersheds on the island of St. John. Both agencies are interested in monitoring soils to detect changes that result from local climate variations or natural processes of plant community succession and in augmenting the limited database on moisture and temperature of tropical soils.

In addition, careless and unregulated clearing and development of lands both within Virgin Islands NP ("inholdings") and adjacent to the park's boundary raise concerns over erosion and runoff of sediment into nearshore waters. Detailed data on the islands's soils should lead to greater understanding of the processes that influence the stabilization of terrestrial uplands.

The SCS will use the data collected to better understand the effects of different plant communities, and soil temperature and soil moisture regimes, on soil-forming processes in the semi-arid Caribbean setting. Ultimately, SCS hopes to improve its ability to predict a given soil's behavior under various, specific types of management.

Currently, the SCS is updating the U.S. Virgin Islands

Soil Survey. Soils in the Cinnamon and Lameshur watersheds were mapped in July 1991. SCS will study soils occupying dominant landscape positions within each watershed and soils associated with the permanent vegetation plots in the park. Vertical soil profiles will be excavated, sampled, and analyzed with assistance from the National Soil Survey Laboratory.

Monitoring of changes in vegetation in permanent plots and changes in the physical and chemical nature of the associated soils will help elucidate critical soil/plant community interactions and increase knowledge of Caribbean forest structure and dynamics. Automated data collection instruments have been installed in the Lameshur watershed near the University of Wisconsin plots to record hourly changes in soil temperature and moisture at depths of 4, 8, and 20 inches.

This cooperative project on soils began in August 1991 and will continue for at least three years. It is hoped that additional funding can be found to support collection of especially valuable long-term data on the soils of St. John.

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*Collecting data on soil temperature and moisture.*