

TROPIC BIRD

January 2000

NPS and USGS Inventory & Monitoring Activities in Virgin Islands National Park and Buck Island Reef National Monument



Will Seagrass Recover Around Moorings?



NPS Resource Managers and USGS-BRD scientists are working hard to track seagrass recovery adjacent to 208 moorings installed around St. John.

Underwater videos of the seabed around moorings give general estimates of seagrass and algae coverage. Videos will be augmented by a more quantitative method of counting seagrass blades within quadrats. Videos of moorings in Maho, Francis, Leinster, and Hawksnest Bays have all been recorded. Any persons wishing to assist in future field work, please contact Rafe Boulon.

Something in the Air

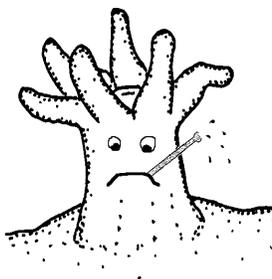
The Environmental Protection Agency and the National Park Service agreed to jointly monitor air quality within Virgin Islands National Park. Instruments collecting temperature, wind, rain, ozone, dust particulate and solar radiation data have been operational since May 1998. You can check out data and reports at <http://www.nature.nps.gov/ard/prime>.

Video Protocol gets Regional Use

Scientists within our USGS Inventory & Monitoring Program have been developing a coral reef monitoring protocol based on using digital video cameras in underwater housings. They are analyzing still images to accurately quantify how much living coral is found on the ocean floor. In workshops held in Spring and Fall 1999, Jeff Miller trained Caribbean Planning for Adaptation to Global Climate Change Project participants from the Bahamas, Belize and Jamaica. These countries have now added this valuable monitoring tool to their coral reef monitoring programs. This summer, Jeff traveled to the Soufrière Marine Management Area in St. Lucia to train scientists and managers from members of the Caribbean Natural Resources Institute. Attendees were from Antigua, Barbados, Cuba, and Tobago. The widespread use of our video monitoring protocol will benefit local resource managers and produce comparable data throughout the Caribbean region.

Some Don't Like it Hot

For those of you that remember, last year the water was exceptionally warm. We have underwater thermometers measuring temperature every two hours at four sites around St. John and one at Buck Island. We have collected over ten years of data and last year was a scorcher compared to all the rest! Our teams were out monitoring reefs and noticed significant coral bleaching (loss of normal coloration) events. Scientists have discovered that if temperatures reach 1°C above the Mean Monthly Maximum Temperature (MMMT), bleaching often occurs. The table below shows how many times our thermometers have hit that magic number over the past ten years. 1992, 1995 and 1998 were the only years this critical value has been met or exceeded, with 1998 being by far the hottest.



Site	1°C+MMMT	Number of times 1°C+MMMT exceeded	
		1995	1998
Lameshur	29.8	2	353
Newfound	29.7	2	198
Buck Island	29.8	52	80
Francis	29.7	0	28
Haulover	30.6	0	3

Lameshur exceeded 1°C+MMMT three times in 1992.

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Coral Corner

Reefs in the US Virgin Islands have deteriorated because of coral diseases, hurricanes, anchor damage, and runoff. On Tektite Reef (Great Lameshur Bay) and in Haulover Bay, USGS scientists are monitoring "Plague Type II". This disease kills coral tissue and leaves bright white patches on coral colonies. Algae then grow on these dead coral patches. "Plague Type II" has attacked sixteen species of coral around St. John and has been observed throughout the Caribbean and Florida. "Yellow Blotch" is another unusual condition that has been observed on corals in Haulover and Hawksnest Bays. It is not known if "Yellow Blotch" is a disease. Coral bleaching occurred in late summer of 1999 but was not as severe as the episode in the summer/fall of 1998.

When USGS scientists dove on reefs around St. John and Buck Island following Hurricanes Georges, Jose, and Lenny, they found ripped up sponges and gorgonians as well as some broken corals. Damage was minor compared to that after Hurricane Hugo ten years ago.

There are some promising signs that elkhorn corals are recovering around Buck Island and in many St. John bays. Elkhorn corals are responsible for building most shallow water reefs in the western Atlantic and Caribbean. This species suffered dramatic declines in the 1970's and 1980's, but new colonies are now being found. Highest densities are found in Hawksnest Bay, St. John. USGS Biologist Ginger Garrison and volunteers are collecting data on growth and survival of elkhorn corals as part of a Canon USA and National Park Foundation "Expedition in the Parks" project.

Who's New

Dr. Donald G. Catanzaro recently joined us as the National Park Service's Chief of Inventory & Monitoring. Don graduated from University of California, Los Angeles with a bachelors degree in Geography and earned a doctorate in Biological Sciences from University of Arkansas. He was stationed in St. Croix working with the Inventory & Monitoring Program for eight months before moving to St. John. Feel free to email him at Don_Catanzaro@nps.gov or phone him at 776-6201.

Rafe Boulon recently joined us as the National Park Service's Chief of Resource Management. Rafe is a native Virgin Islander, graduating from the College of Virgin Islands with a bachelors in Marine and Environmental Science and a masters in Biological Oceanography from the University of Puerto Rico. Rafe worked for Division of Fish & Wildlife, DPNR for 18 years as the Chief of Environmental Education and Endangered Species Coordinator. Feel free to email him at Rafe_Boulon@nps.gov or phone him at 776-6201 ext. 224. We are excited to have you, welcome aboard!

Sheri Caseau has been hired as a Resource Management Specialist and is expected to begin work with NPS Resource Management Division in January 2000. Sheri graduated with a bachelors in Marine Science/Biology from Long Island University at South Hampton and has been working at Division of Fish & Wildlife, DPNR for six years. Welcome aboard !

Ries Collier is no longer with the NPS Inventory & Monitoring program. He and Mary are currently at Cumberland Gap National Historic Park in Middlesboro, Kentucky. Ellen Link is no longer with the USGS Inventory & Monitoring program, we will miss her hard work and wonderful personality and wish her well in her new life in San Francisco!



Digital Maps of the Virgin Islands

USGS-BRD and NPS personnel are cooperating with the National Oceanic and Atmospheric Administration (NOAA) to implement President Clinton's 1998 Executive Order 13089, "Coral Reef Protection". The reefs of the US Virgin Islands have been selected as pilot study areas investigating mapping methodologies. Fine scale bathymetric and aerial photographs of St. Croix (see Buck Island photo above), St. Thomas, and St. John were taken in conjunction with a new hyperspectral scanner in Feb. 1999. Local knowledge of our team members is assisting NOAA in the interpretation of aerial photographs and digital images obtained from the hyperspectral scanner. Draft products have been assembled and the project should be completed by this summer. Check out <http://coralreef.gov> for more information about how federal agencies are cooperating to protect our coral reefs.



Virgin Islands
Prototype Long Term Ecological Monitoring Program
P.O. Box 710 St. John, USVI 00830

