

VI NPS Update

Nonpoint Source Pollution Committee Newsletter

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VOLUNTEERS PLANT OVER 3000 MANGROVE SEEDLINGS ON ST. CROIX

The St. Croix Environmental Association (SEA) and VI Marine Advisory Service (VIMAS) continued restoring a vital mangrove ecosystem within the Sugar Bay subbasin of the Salt River watershed this summer. Sugar Bay's mangrove forest was almost 100% destroyed during Hurricane Hugo in 1989. With the help of many volunteers, over 3000 propagules were planted during two planting weekends. Volunteers included students from the Educational Complex, Country Day School, The Good Hope School and the St. Croix Boys and Girls Club.



Volunteers getting started (and muddy) at the Sugar Bay mangrove planting site.

SEA and VIMAS are using the Riley Encased Methodology (www.mangrove.org) to plant 18,000 red mangroves in Sugar Bay over the next three years. The goal of this technique is to encourage mangrove reforestation to create habitat, decrease shoreline erosion, improve water quality, and reduce nonpoint source (NPS) pollution within the watershed. The Riley technique was developed for planting red mangroves in high wave or wake energy areas or in deep water, such as around breakwaters. It is also effective in conditions similar to those at Sugar Bay, where water levels fluctuate due to seasonal high tides and runoff from rain events.

The Riley Encased Methodology uses a two-part PVC encasement system to protect and support red mangrove propagules (seedlings) until they can establish prop roots. A PVC bottom piece that varies in height depending on the water level (the bottom piece is meant to reach the mean high tide mark) is attached to a fixed-length PVC top piece with a PVC coupling. The top piece compensates for seasonal high tides and runoff. Once prop roots have been established (about 2 years), the top piece can be removed, allowing it and the coupling to be reused. The bottom piece cannot be removed without damaging the young tree. Over time the bottom piece itself becomes a habitat encrusted with organisms. The project partners anticipate that the encasement technique will greatly improve the success rate for mangrove establishment in Sugar Bay.



UVI science professor, Dr. Stuart Ketcham, instructs students from the St. Croix Educational complex in the mangrove propagule planting method.

SEA and VIMAS will also provide additional materials to the St. Croix Aquarium in Caravelle Arcade to expand their mangrove exhibit, including a collection of photos of the reforestation project. An educational module about mangroves was produced for SEA's "My Environment" grade 3 curriculum. More than 300 students have benefitted from this module, and it is available from SEA for interested teachers and youth group leaders. For more information on the Sugar Bay reforestation project, please contact Card Cramer-Burke, SEA, at (340) 773-1989, or Paige Rothenberger, VIMAS, at (340) 779-3141. Information on the Riley Encased Methodology can be obtained from their website at <http://www.mangrove.org>.

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ST. JOHN SEDIMENTATION STUDY EXPANDS

Dr. Rick Nemeth of the UVI Eastern Caribbean Centers (ECC) Environmental Research Unit has joined forces with Dr. Henry Smith of UVI's Water Resources Research Institute (WRRI) and Dr. Lee MacDonald of Colorado State University's (CSU) Watershed Science Program to integrate their research and document the cumulative effects of upstream activities on the health and sustainability of downstream marine resources. This project, funded by the Department of Interior US Geological Survey, is focusing its effort on two watersheds and bays on the south shore of St. John. Rapid road-building and development has occurred in the Fish Bay watershed over the past 15-20 years, while Lameshur Bay watershed is relatively undisturbed; it is located almost entirely within the Virgin Islands National Park. Since the watersheds are similar in topography and are only about 5 km apart, they provide an ideal comparison with respect to predicted sediment delivery and the health of similar reefs subjected to different rates of sedimentation.

The land-based part of the study, conducted by CSU Ph.D. student Carlos Ramos, is presently quantifying current and potential sediment storage in stream channels along longitudinal transects from headwaters to the edge of the bays. Automated, flow-activated pump samplers located along the main Fish and Lameshur guts will collect water samples during storm events and sample suspended sediment concentrations moving through each watershed. For the marine portion, Dr. Nemeth will use underwater sediment traps to measure the amount of sediment deposited onto coral reefs within each bay. Divers will assess the health of reef-building corals, levels of coral recruitment, fish populations and cover of macro-algae on reefs located inside and outside each bay. **This study is the first to directly and quantitatively link land use, erosion rates, and sediment delivery to the resultant effects on the marine environment,** said Dr. Nemeth. **Effective management of our aquatic resources requires an integrative approach that links land use, erosion, sediment delivery, and impacts on the marine environment.** For further information on this study, contact Dr. Nemeth at (340) 693-1389.

UVI INSTALLS NEW WEATHER STATION WITH WEB LINK

The UVI Water Resources Research Institute is a step closer in becoming the premier weather monitoring and meteorological data archive center for the Virgin Islands. In September, WRRI erected a solar powered weather monitoring station on UVI's St. Thomas Campus. This state of the art assembly is equipped to measure and record wind speed and direction, temperature, relative humidity, atmospheric pressure, rainfall, and solar radiation. The station communicates in real time by radio telemetry with a computer in WRRI's office. Data collected from the station will be archived on this computer.

WRRI staff is creating a web page where hourly updates of weather conditions in St. Thomas can be viewed worldwide at <http://rps.uvi.edu/WRRI/wrri.htm>. Data will be presented through user-friendly graphs and charts. The public will also be able to

access past weather data through the site. Look for the site to be fully operational by the end of October.

Although there is no guarantee that the station can survive the violence of a severe storm, it is designed to withstand hurricane force winds. This will provide WRRI with an opportunity to collect data on wind speed, rainfall and barometric pressure during severe storm events.



New WRRI weather monitoring station on UVI St. Thomas campus.

Once the weather archive is compiled, data will be available upon request to the public and government agencies. WRRI's manual weather station, in use for more than a decade, will remain in operation and will serve as a location to give presentations to student and community groups on traditional methods of measuring weather conditions. Funding for the station is provided through a grant from the U.S. Geological Survey. For more information on the weather station or other WRRI programs, contact Dr. Henry Smith at (340) 693-1020 or Ronald Olivace at (340) 693-1074.

U.S. CORAL REEF TASK FORCE MEETING TO BE HELD ON ST. CROIX

The next meeting of the U.S. Coral Reef Task Force, established by President Clinton by Executive Order 13089 on Coral Reef Protection, will be held November 2nd and 3rd at the Tamarind Reef Hotel in St. Croix. Interior Secretary Babbitt and Commerce Secretary Daley plan to participate and look forward to representation and participation from government and non-governmental organizations.

Key items for review and potential adoption or endorsement at the meeting include:

- * A National Action Plan for implementing responsibilities of the Task Force;
- * A coral reef enforcement protocol;
- * A blueprint to assist marine protected area managers in going forward with the fundamentals needed for coral reef protection;
- * A mechanism for Coral Reef Task Force oversight of E.O. 13089 implementation; and
- * Principles and processes for addressing unsustainable trade in coral reef species.

Public comment will be taken at the meeting and for some time following the meeting on all topics and proposals. For hotel information, call the Tamarind Reef Hotel at (340) 773-4445, fax (340) 773-3989, or reservations 1-800-619-0014. Please contact Karen Koltes at the U.S. Interior Department (202-208-5345) or Michael Crosby (301-713-9121) or Roger Griffiths (202-482-5034) at NOAA for information about the meeting agenda or to register.

UVI-CDC OFFERS GIS AND AERIAL PHOTO INTERPRETATION CLASSES

UVI-CDC is offering a short course in ArcView®, a widely used Geographic Information Systems (GIS) program, October 6th - 8th on UVI's St. Croix campus. ArcView® is a GIS desktop software program that connects compiled data to geography. Through ArcView®, planners can access and edit data to create maps.

CDC held its first two-day ArcView® training session in July on St. Thomas. Local government personnel, architects and engineers participated in July's class. Mariath Hodge, Caribbean Professional Consultants, described her training in ArcView® as **"a valuable tool for my firm. If you are computer literate and you have the basic knowledge of mapping, it's pretty easy."**

Architects, engineers, surveyors, real estate brokers and others who need up-to-date maps can benefit from ArcView®. It allows users to simultaneously access demographic information and the location of items such as water mains, electrical lines and telephone connector cables, making it possible for one map to be created using common information about a single point. GIS is used for transportation planning, voting district allocation, land use planning and natural resources management. According to Stevie Henry, CDC data manager, **"By offering ArcView® training at UVI, we can demonstrate how GIS can benefit the territory by using local examples to train government and private sector personnel."**

CDC is also planning to offer two short courses in aerial photography interpretation at UVI during the spring 2000 semester.

Basic Photo Interpretation and Advanced Aerial Photo Interpretation. Each class will require approximately 30 hours of classroom and field time. Registration fees will cover the cost of texts, equipment and supplies required for the course.

Basic Photo Interpretation will be offered in two sessions. One section, for students traveling for the course, will run for five days, January 10 - 14, 2000, while the second section (for St. Thomas residents) will meet twice per week for four weeks beginning January 11th, and continuing every Tuesday night and Saturday until February 5th. This class will train students to use basic aerial photo interpretation techniques and skills, including photo interpretation, orienting aerial photos, and obtaining measurements from photography (photogrammetry).

Advanced Aerial Photo Interpretation is designed to leave students capable of planning and carrying a project to completion. This course advances students through scales, types of photography (infra red, multi-spectral, black & white), flight altitudes relating to scale, plotting flight lines, effects of motion, terrain heights and much more. The Advanced class for residents will begin February 15th and continue every Tuesday night and Saturday until March 11th. CDC is a component of the University of the Virgin Islands Eastern Caribbean Center that collects, analyzes and disseminates information on the natural resources of the Virgin Islands. *For more information on ArcView® training classes, contact Stevie Henry at (340) 693-1033 or visit the CDC's web site at <http://cdc.uvi.edu>. Press the GIS training button for a course description and registration form. Persons interested in the Photo Interpretation classes should contact Dayle Barry, UVI-CDC, at (340) 693-1030 or by e-mail at dbarry@uvi.edu.*

GRANT FUNDING AVAILABLE

The DPNR Division of Environmental Protection has announced the availability of fiscal year 2000 **Nonpoint Source Pollution Control and Management Implementation Grant** funds. Approximately \$480,000 is available in the form of pass-through grants funded through Section 319(h) of the federal Clean Water Act for projects that implement best management practices (BMPs) in priority watershed areas, other watershed areas, and education to critical audiences. Two public meetings have been scheduled for 6:00 - 8:00 p.m.; October 26th at the Florence A. Williams Public Library in Christiansted and October 28th at the Curriculum Center in Anna's Retreat, St. Thomas, to explain the grant application process and discuss ideas with applicants. Persons unable to attend can obtain grant guidelines from Syed Syedali, DPNR-DEP, 1118 Water Gut Homes St. Croix or by calling (340) 773-0565.

Environmental Education Grants. EPA is seeking grant applications to support projects that design, demonstrate, or disseminate environmental education practices, methods, or techniques, including assessing environmental and ecological conditions or specific environmental issues or problems. Proposals will be accepted from education institutions, environmental and educational public agencies, and not-for-profit organizations. Non-federal matching funds are required for at least 25% of the total cost of the project. EPA Headquarters will fund proposals for grants over \$25,000 that address capacity building, education reform, and/or community issues. Regional offices will fund grants under \$25,000 in the previous categories in addition to health, teaching skills, career development, and/or environmental justice. Visit their website www.epa.gov/enviroed to view and download the solicitation notice, details of eligible activities, a list of EPA environmental education contacts, tips for developing successful grant applications, descriptions of past projects funded under this program, and other education links and resource materials. **The deadline for submitting a proposal is November 22, 1999.**

Home Depot Environmental Research/Education Grants. The world's largest do-it-yourself retailer and largest single retailer of lumber in the world awards grants where it thinks it can have the most environmental impact in the areas of Sustainable and Green Building Practices, Forestry and Ecology, Clean-up and Recycling and/or Lead Poisoning Prevention. **Applications are accepted annually between November 1st & December 15th.** Any 501(c)(3) non-profit organization around the globe may apply. Requests can be for any dollar amount. Grant awards since 1995 total in the millions of dollars. Visit <http://www.homedepot.com/> for details. *click on Environment in the bar on the left, and then click on Outreach & Grants.*

UPCOMING EVENTS

- October 12-15, 1999. **Second National Small Farm Conference**, St. Louis, MO. Call Denis Ebodaghe, USDA-CSREES, at (202) 401-4385 for information or visit www.luce.lincolnu.edu/nsfc.
- October 12-15, 1999. **Southeast Regional Resource Conservation & Development (RC&D) Association Conference**, San Juan, PR. Call Faye Williams, V.I. RC&D, at (340) 692-9632 x.101 for information.
- October 19 & 21, 1999. **Hydroseeding Certification Training Workshop**, UVI-CES St. Croix and UVI St. Thomas, USVI respectively. Call Julie Wright, UVI-CES, at (340) 693-1082 for

information or to register.

October 26 & 28. **Nonpoint Source Pollution Control and Management Implementation Grant Public Meetings**, 6:00 - 8:00 p.m. at the Florence A. Williams Public Library in Christiansted and the Curriculum Center in Anna's Retreat, St. Thomas, USVI, respectively. Call Syed Syedali, DPNR-DEP, at (340) 773-0565 for information.

October 29, 1999. University of Minnesota Extension Service Live Satellite-Based Conference, **The Next Generation of Sewage Treatment: Flushing in the New Millennium**. Visit <http://www3.extension.umn.edu/water/satconf99.html> or call 1-800-719-2825 for information.

November 2-3, 1999. **Coral Reef Task Force Meeting**, Tamarind Reef Hotel, St. Croix, USVI. Call Karen Koltes, U.S. Interior Department, at (202) 208-5345 or Michael Crosby, (301) 713-9121 or Roger Griffis, (202) 482-5034, NOAA, for information about the meeting agenda or to register.

November 7, 1999. **Eco-Hike Guide-Training Workshop**, UVI-CES St. Croix, USVI. Call Olasee Davis, UVI-CES, at (340) 778-8676 or (340) 692-4080 for information.

November 12-14, 1999. **St. Thomas - St. John Agriculture and Food Fair**, Farm Every Day for a Healthy Y2K, Reichhold Center for the Arts grounds. Call (340) 693-1080 or (340) 774-5182 for information.

December 1, 2, & 7, 1999. **Safe & Healthy Home Workshop**, UVI-CES St. Thomas, St. John & St. Croix, USVI, respectively. Call Julie Wright, UVI-CES, at (340) 693-1082 for information.

December 14-17, 2000. **National Agriculture Conservation 2000 Conference**, New Orleans, LA. Call (765) 494-9555 or visit <http://www.ctic.purdue.edu/ctic/C2000/C2000.htm> for information.

January 30 - February 3, 2000. **National Association of Conservation Districts (NACD) 54th Annual Meeting**, Broadmoor Hotel, Colorado Springs, CO. Hotel Phone: (800) 634-7711. February 21 -25, 2000. **International Erosion Control Association (IECA) 31st Annual Conference and Expo**, Palm Springs, CA. Visit <http://www.ieca.org/> or call 1-800-455-4322 or (970) 879-3010 for information.

To have your event included in VI NPS Update, send the event title, date and time, location, contact person and other relevant information to the Editor at the address listed in the box below.

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Nonpoint source (NPS) pollution results from rain water flowing over and through the ground, picking up pollutants and depositing them into guts, salt ponds, beaches, coastal waters, and ground water.

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