

VIRGIN ISLANDS ECOLOGICAL
RESEARCH STATION

ACTIVITY REPORT FOR 1990

Prepared for

Virgin Islands National Park Service

by

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INTRODUCTION

In a continuing effort to meet the requirements of the memorandum of understanding between the University of the Virgin Islands and the Virgin Islands National Park, the following report has been prepared outlining the activities of the Virgin Islands Ecological Research Station (VIERS) for 1990.

The primary focus of the program at VIERS is environmental education appropriate for the Virgin Islands community and various research projects primarily directed at marine habitats. Stateside educational groups and scientists are encouraged to use the facilities. The staff members of the Environmental Research Center (ERC) and VIERS have a significant commitment to maintain the standards of VIERS and uphold the memorandum of understanding with the Virgin Islands National Park Service.

FACILITY IMPROVEMENTS

The seawater tables located behind the shore laboratory were completely rebuilt to replace the tables lost in the hurricane in 1989. Two large seawater tables are available for use with an efficient system of constant seawater aeration.

Improvements to the main station facilities continued, including many minor repairs to the cabins. A new washing machine was purchased for the facility, a new Ford pick-up truck was purchased to replace the old truck and a new computer and printer were put into the main office.

ENVIRONMENTAL EDUCATION

An environmental education program was started at VIERS. The staff members were available for mangrove walks, beach walks as well as walks focused on terrestrial botany and medicinal uses of local plants. The staff members emphasize environmental awareness to all student groups using the facility.

FACILITY USE

There has been an increase in the use of VIERS during the 1990 year. The most noticeable increase was in the use by local groups for environmental education purposes. There were a total of nine local groups using the facility in 1990, compared to only three in 1989.

MAJOR RESEARCH PROJECTS AT VIERS

Dr. Lisa Muehlstein - Caribbean Research Institute

Algal census. Macroscopic algae on Yawzi reef and surrounding areas was documented, including species present and percent cover of algae. This work is ongoing and conducted in cooperation with the NPS as a portion of the NPS long-term coral reef monitoring project.

Seagrass ecology. A research project documenting the recovery of the seagrass bed following the extensive damage from Hurricane Hugo including successional patterns and areal recovery was established. Three permanent transects were established in Great Lameshur Bay. Basic ecological parameters including productivity, shoot densities and community structure of the seagrass bed were monitored over the year. A study examining disease related seagrass declines and effect on seagrass loss to coastal erosion was initiated. (Projects funded by Sea Grant and US Geological Survey)

Dr. Irwin Ting - University of California, Riverside

Growth of the strangler fig, Clusia rosea. Dr. Ting conducted post-hurricane assessment of strangler fig populations found on St. John. Dr. Ting also continued his extensive research on Crassulacean acid metabolism (CAM) photosynthesis in Clusia rosea and other plant species. Dr. Ting returned in the summer with a group of teachers from California for a terrestrial botany course.

Dr. Peter Edmunds - Northeastern University

Coral reef ecology. Continuing research was conducted to study the progress and effects of the black band disease in Great Lameshur Bay. Photo quadrats were used to document the disease and determine mortality as well as recolonization. Ongoing research was conducted on the progress and effects of the bleaching phenomenon of corals. (NPS co-operative agreement)

Dr. Don Levitan - Bamfield Marine Station

Population biology of Diadema antillarum. Extensive long-term research was conducted on the size, distribution, and density of the long spined black sea urchin, Diadema antillarum following the massive die-off of urchins in 1983. (NPS co-operative agreement)

Dr. Jon Whitman - Northeastern University

Coral reef ecology. Long-term monitoring of coral reefs was continued in Great Lameshur Bay. Photo quadrats were used to document species abundance, species richness, overgrowth, recruitment and mortality of corals.
(NPS co-operative agreement)

VIERS USERS LIST (1990)

SCIENTISTS

- 01/12/90 - 01/14/90 : Dr. Bob Askins, Dr. Dave Ewert
Connecticut College
NPS study: assessed impact of Hurricane Hugo on the local bird populations.
- 02/02/90 - 02/05/90 : Dr. Irwin Ting
University of California, Riverside
Assessed impact of Hurricane Hugo on the strangler fig, Clusia rosea.
- 03/19/90 - 04/04/90 : Ms. Marilyn Schiltz
University of Texas
Studied the cultural significance of bush medicines on St. John.
- 04/26/90 - 05/11/90 : Dr. Don Levitan
Bamfield Marine Station
NPS study: populations dynamics of Diadema antillarum.
- 07/30/90 - 08/13/90 : Mr. Rich Holdeman
Culver Academy, Culver, Indiana
Extensive photo-documentation of coral reefs, grass beds and mangroves.
- 09/10/90 - 09/20/90 : Dr. Jon Whitman, Dr. Pete Edmunds
Northeastern University
NPS study: coral reef research.

HIGH SCHOOL/COLLEGE GROUPS (off island)

- 12/28/90 - 01/09/90 : Antioch University, New York
Group leader: Dr. Ty Minton
Coral reef ecology, impact of Hurricane Hugo on Great Lameshur Bay

01/03/90 - 01/23/90 : Gustavus Adolphus College,
Group leader: Dr. Myron Anderson
Coral reef ecology, terrestrial
ecology

05/20/90 - 06/02/90 : University of New York, Oneonta
Group leader: Dr. Willard Harmon
Tropical marine biology

05/27/90 - 05/06/90 : Connecticut College
Group leader: Dr. Paul Fell
Tropical marine biology

06/10/90 - 06/24/90 : Blevins J.H.S., Colorado
Group leader: Mr. Richard Martz
VI History, Marine Biology

07/09/90 - 07/22/90 : University of California, Riverside
Group leader: Dr. Irwin Ting
Terrestrial botany

LOCAL GROUPS

03/02/90 - 03/03/90 : VI Environmental Education Workshop
Group leader: Ms. Pat Mortenson
Environmental Education

05/01/90 - 05/03/90 : Good Hope School, St. Croix
Group leader: Ms. Dorothy Hutchins
Environmental Education

05/25/90 - 05/27/90 : Antilles School, St. Thomas
Group leader: Ms. Susan Russo
Environmental Education

06/05/90 - 06/07/90 : Montessori School, St. Thomas
Group leader: Ms. Williams
Environmental Education

06/09/90 - 06/10/90 : Antilles School Cub Scouts, St. Thomas
Group leader: Mr. Thomas Young
Environmental Education

07/09/90 - 07/20/90 : Anglican Diocese, St. Thomas
Group leader: Rev. Don Taylor
Environmental Education

07/27/90 - 07/30/90 : Assembly of God
Group leader: Mr. Pedro Williams
Environmental Education

08/07/90 - 08/13/90 : VI Diabetics association
Group leader: Mr. Steve Prosterman
Environmental Education

09/07/90 - 09/09/90 : Boy Scouts of America
Group leader: Mr. Van Ford
Environmental Education

MISCELLANEOUS

01/25/90 - 02/5/90 : National Park Service Trail Crew
Group leader: Mr. Rabbsatt
Assist VINPS with trail
maintenance.

APPENDIX

VIERS Staff Organization

Coordinator, Environmental Research Center
Dr. Mary Lou Coulston (January - July)

Assistant Research Professor, Environmental Research Center
Dr. Lisa Muehlstein

Program Specialist I, VIERS
Patricia Moss (November - present)

Program Assistant II, VIERS
Donna Roberts

Maintenance Leader, VIERS
Vincent Powell

Maintenance Worker III, VIERS
Ernie Clendenin

Cooks, VIERS
Enid Francis
Cassilda Roberts
Laverne Roberts