

# Mangrove Education in the US Virgin Islands: A Unique Perspective Through the Youth Ocean Explorers Summer Program



**VIMAS Extension Director**  
*Howard Forbes Jr. (MSc.)*  
howard.forbes@uvi.edu



**St. Thomas VIMAS Extension Coordinator**  
*Jendahye Antoine (MSc.)*  
jendahye.antoine@uvi.edu





# United States, Virgin Islands

St. Thomas, St. John, and St. Croix

Population size: ~ 90,000

Demographic: Largely Black /  
African American / Afro-Caribbean





# 70%

**of URM youth lack any swimming ability.**

Irwin, C., et al. "Constraints Impacting Minority Swimming Participation Phase II Qualitative Report." Qualitative Report (2010)







**Maleyah Navarro - YOE Mentor / Junior Dive Master**

## **BUILDING CAPACITY**

is one of the main drivers for the work we do.

“How do we get more Virgin Islanders in this space?”





# Junior and Youth Ocean Explorers Summer Programs



Open to youth between the ages of 7-12 and focuses primarily on teaching the Red Cross' Learn to Swim lessons with an infusion of marine science concepts such as animal identification and arts and crafts activities.



Open to youth between the ages of 13-18 and focuses on building upon student's aquatic skills through snorkeling, free diving, scuba dive training, and hands on engagement in STEM-based research projects.



# Mangrove Planting @ Range Cay St. Thomas



# Kayaking @ St. Thomas East End Reserve (STEER)



# 360 DEGREE USVI MANGROVE RESTORATION

# Virtual Reality Experiences



# 360-DEGREE KAYAK AND HIKE

U.S. Virgin Islands  
ST. THOMAS EAST END RESERVE (STEER)

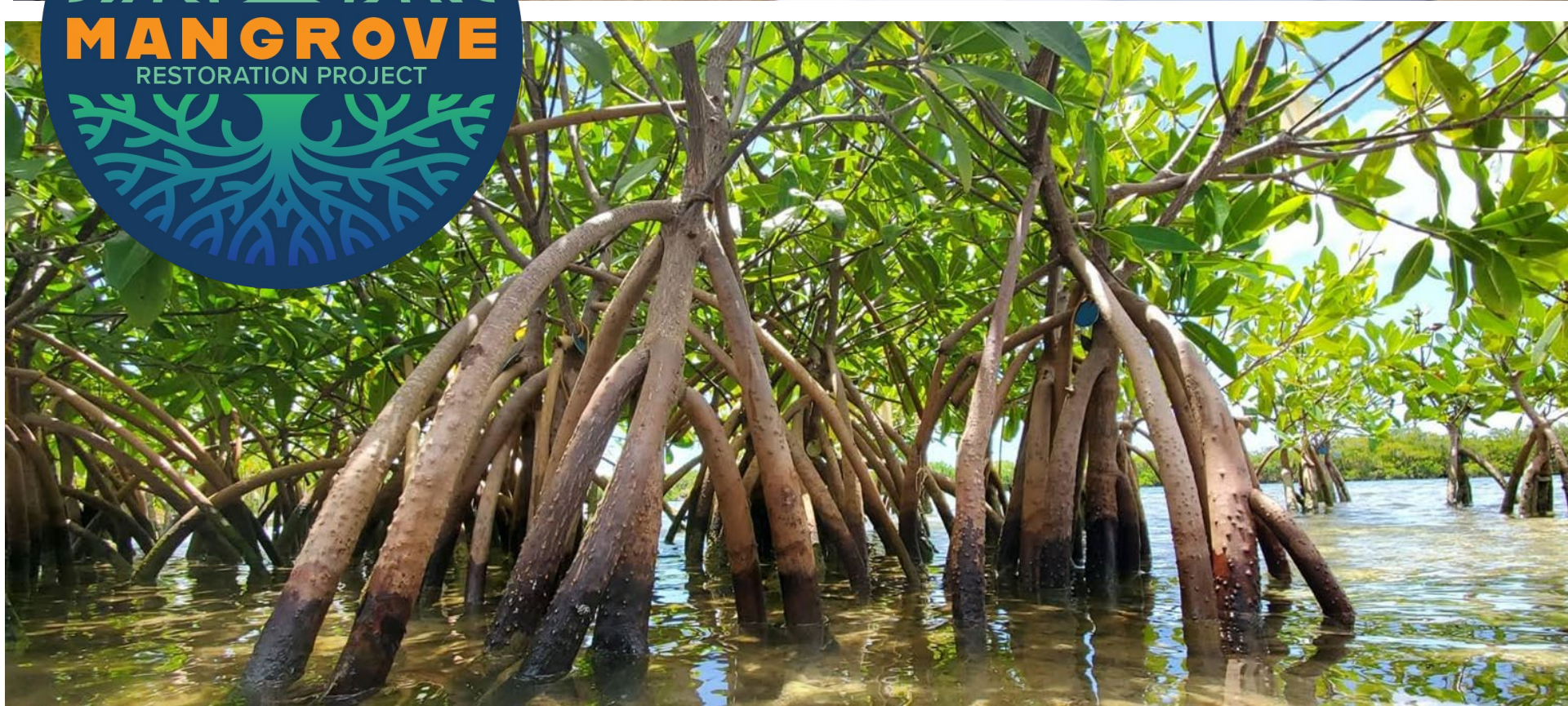
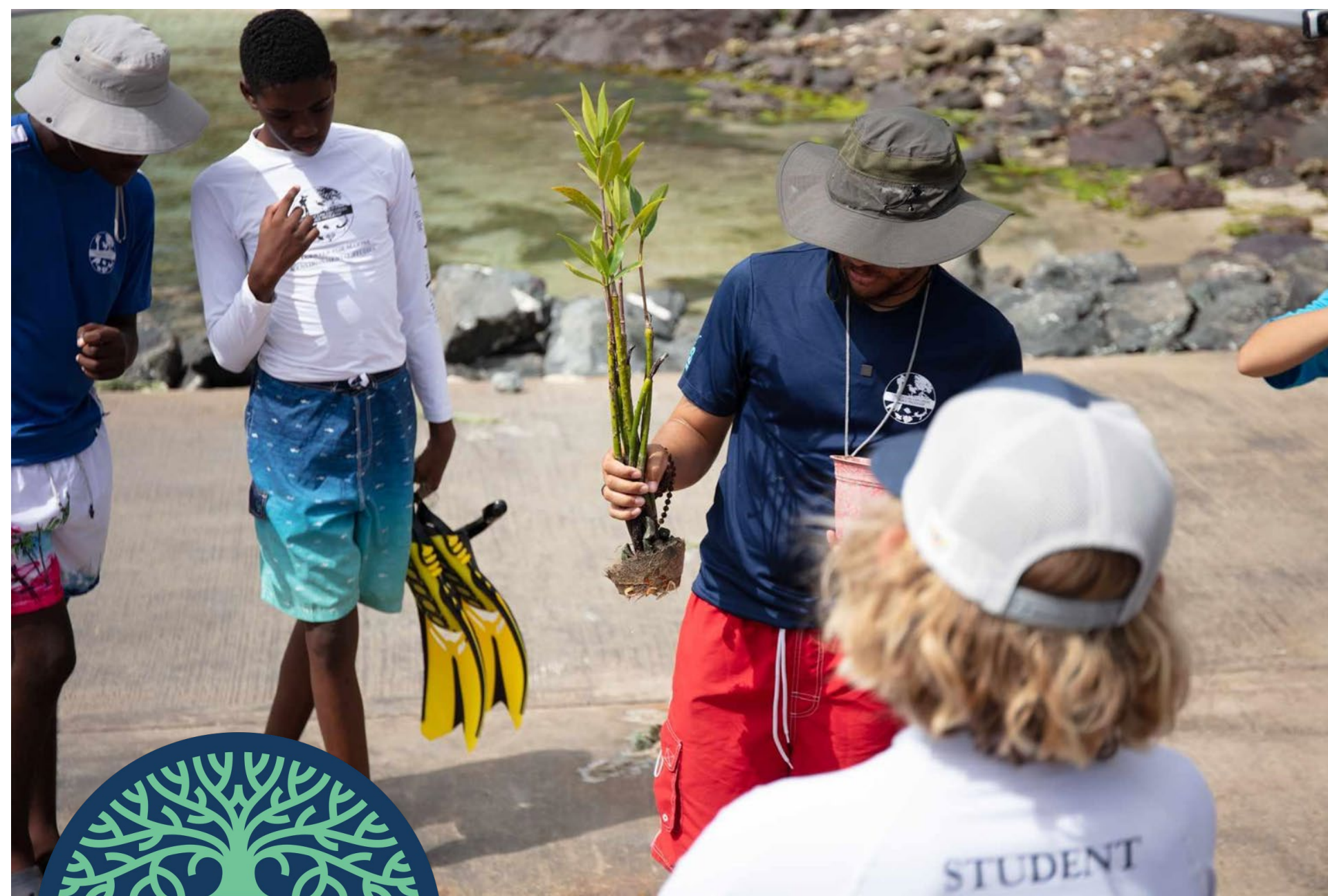
# Nighttime Shoreline Walk @ Range Cay, St. Thomas



# Mangrove Spy USVI



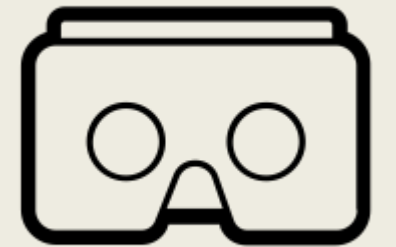




# YOE 2024: Virtual Reality Experience Road Map

1. Students take a short Pre-Survey on related topic to assess what they know about the topic. These topics include:

- a. Marine Invertebrates*
- b. Sea turtles*
- c. Mangroves*
- d. Kayaking and Coastal Plant ID*
- e. Ghuts*
- f. Marine debris*

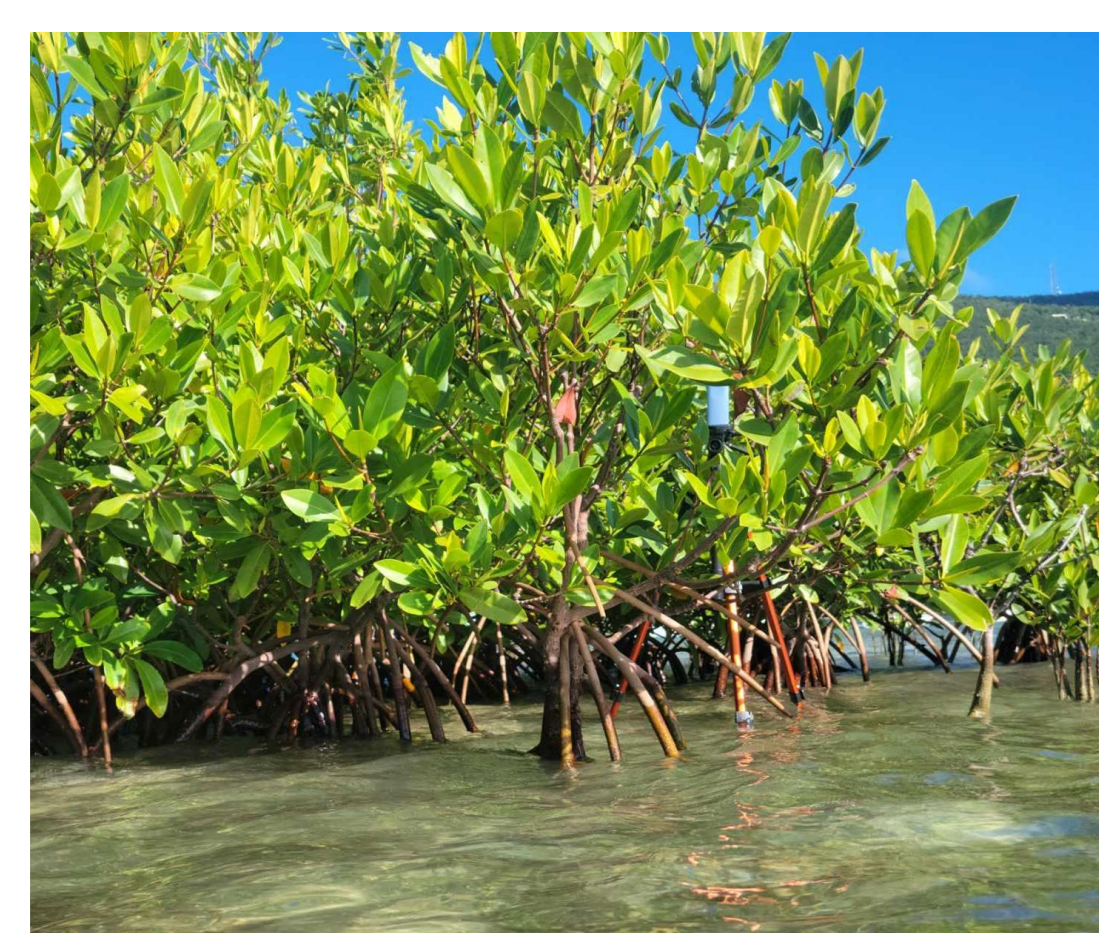
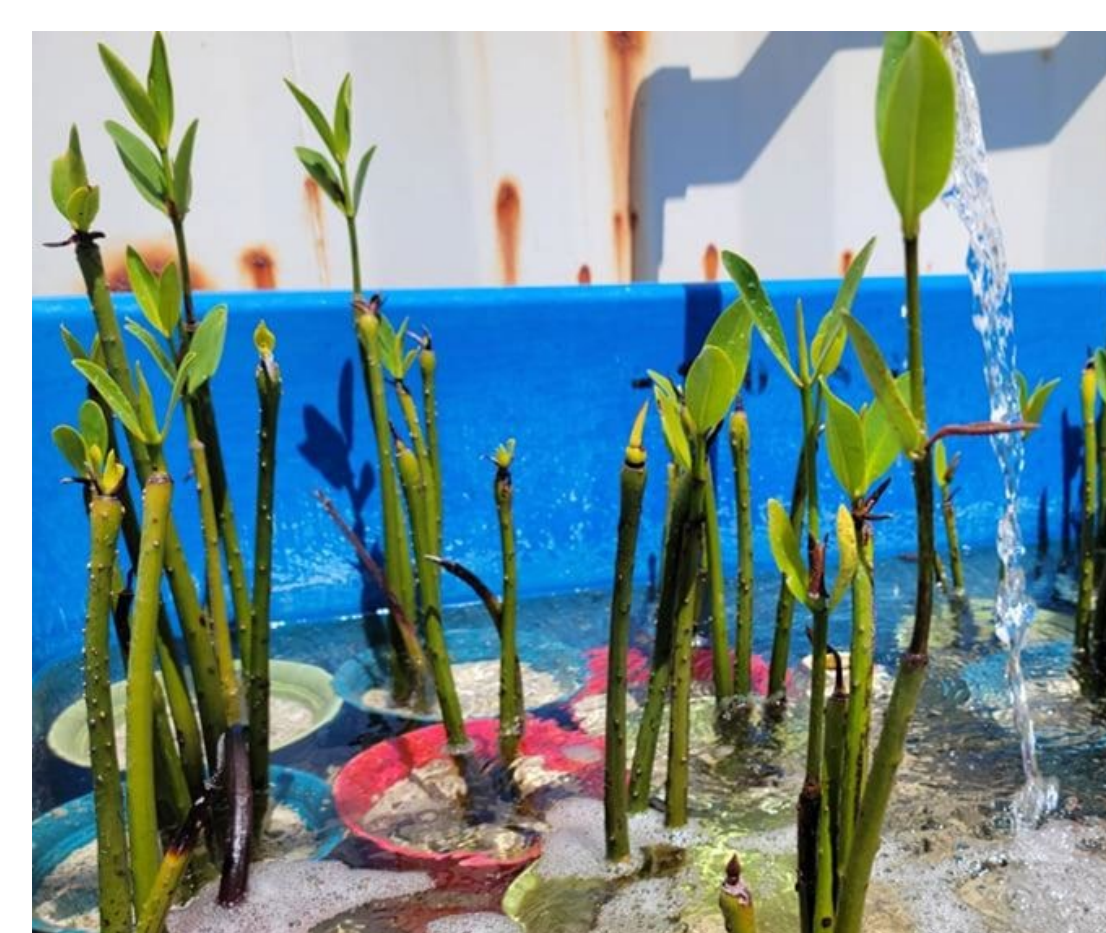


2. Students then engage in the following:

- a. PowerPoint presentation on related topic*
- b. A virtual reality (360 degrees) video*
- c. A hands-on activity related to the topic*

3. Students take a short Post survey to assess what has changed and how any of the items in bullet #2 influenced their learning outcomes.





## Mangrove Planting Activity @ Range Cay

1. Red mangrove (*Rhizophora mangle*) propagules are collected and propagated in recirculating seawater tables.
2. Since 2018, YOE students continue to add to the existing plot of red mangroves growing around Range Cay. Saplings are planted using a “clumped” method which has increased survivorship. Number tags were used to document health over time.
3. Presently supports more than **300 red mangroves** and counting!





## Mangrove Spy USVI - Citizen Science

- Underwater video footage of the red mangrove transplant site on Range Cay is collected.
- Students review video footage and identify what they see in the video clips.
- **73%** of respondents indicated that this activity improved their **animal identification skills**.



- Mangroves are relatively easy to develop educational programs around as they do not require as technical of skills and training (like scuba diving) to access.
- Through YOE, we use a multi-faceted approach to engaging youth that encompasses a combination of **1) Traditional classroom presentations, 2) Virtual reality experiences, and 3) Engagement in STEM-based research projects.**

