Citizen Science Mangrove Research & Restoration Efforts in the U.S. Virgin Islands

NOAA in the Caribbean Meeting, September 22, 2021

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Coral Bay, St. John

Meet the Team

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Virgin Islands Marine Advisory Service

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Lila Uzzel,
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Laura Palomino,
MMES Graduate Student Researcher

Julia Plotkin,
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VerNele Callwood,
Undergraduate Student Researcher

Nicholas Durgadeen,
Undergraduate Student Researcher

2018 Great Mangrove Cleanup, St. Thomas

THE 2021 ST. JOHN GREAT MANGROVE CLEANUP

Of the Coral Bay Mangroves

3,440 pounds =
of debris removed.
The most by weight of any
Great Mangrove Cleanup to-date!

7 donkeys!

CLEANUP AREA

ST. JOHN

1/4 mile of shoreline cleaned!

CORAL BAY

TOP 10 ITEMS COLLECTED

29 volunteers ages 22-77

what went into the dumpster....

- 96 Grocery Bags
- 112 Other Plastic Bags
- 112 Other Plastic Bottles
- 1,074 single-use beverage bottles (484 plastic, 354 glass, 236 cans)
- 579 plastic pieces
- 461 building materials
- 433 'other'
- 303 foam pieces
- 120 food wrappers
- 226 foam packaging

WEIRD FINDS

1 entire building roof

1 SCUBA tank

1 dog collar

1 kayak & 1 oar

9 car tires

"Coral Harbor's mangroves are an important marine nursery habitat. Cleaning up trash and hurricane debris helps them regrow after storms and protects our mangrove and coral ecosystems in Coral Bay."

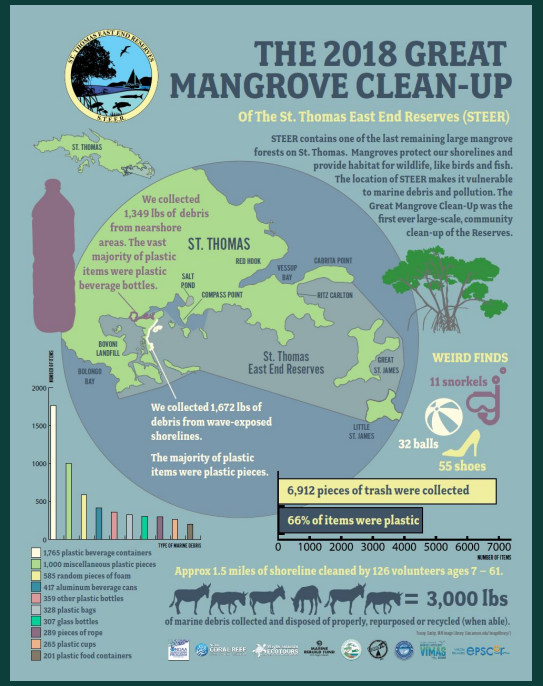
--Sharon Coldren, Volunteer President, Coral Bay Community Council

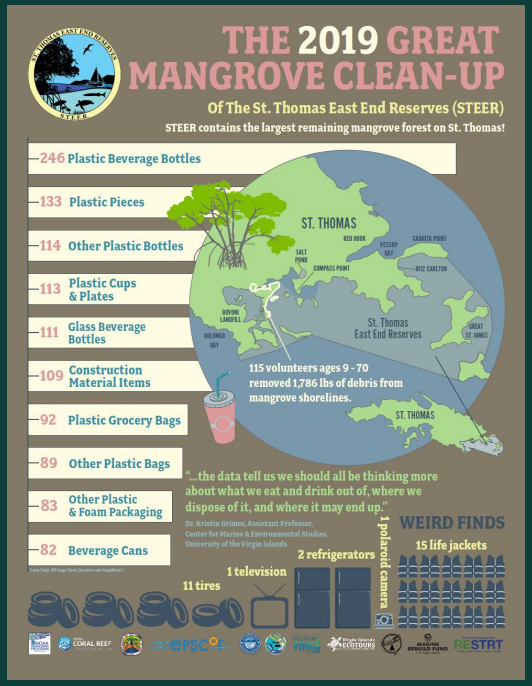
VIMAS · VIWMA · VIRGIN ISLANDS EPSCoR

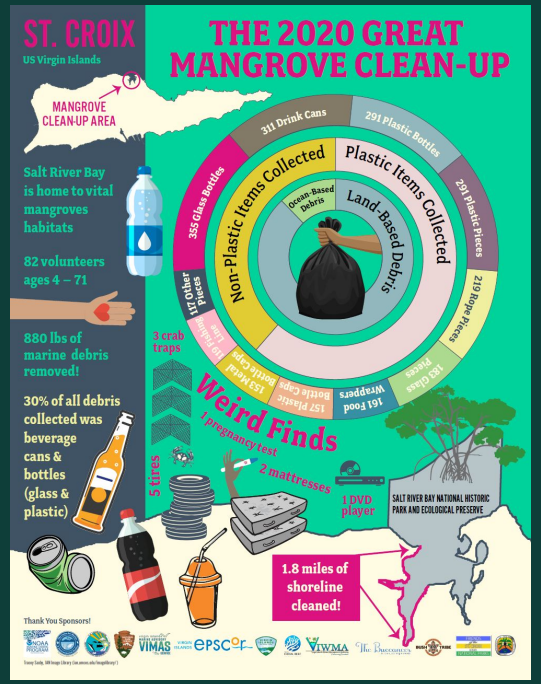
Tracey Saxby, IAN Image Library (ian.umces.edu/imagelibrary/)

Efforts Add Up!

Since 2018, 406 volunteers aged 4-77 have removed 5.4 tons of marine debris!







How Do The Data Compare?

2016 Territory Beach Cleanups versus 2018 Great Mangrove Cleanup

Similar types of debris were found in the mangroves as on beaches, but a comparison of the density of debris items per mile suggest mangroves are particularly vulnerable. This may be because of :

1. the mangroves' location relative to potential marine debris sources (next to the Bovoni Landfill and populated areas).
2. the mangroves' ability to collect more marine debris or different types of debris at higher rates compared to USVI beaches (it appears mangrove root structures trap floating debris especially well).
3. the mangroves' structure, they aren't cleaned as frequently as USVI beaches (they are harder to get to than most beaches and many people believe they are dirty, smelly and hard to clean).

The top five marine debris items collected

2018 Great Mangrove Cleanup	2016 Territory Beach Cleanups
#1 Plastic Beverage Bottles	#1 Metal Bottle Caps
#2 Plastic Pieces	#2 Plastic Pieces
#3 Foam Pieces	#3 Plastic Bottle Caps
#4 Beverage Cans	#4 Glass Beverage Bottles
#5 Other Plastic Bottles	#5 Plastic Beverage Bottles

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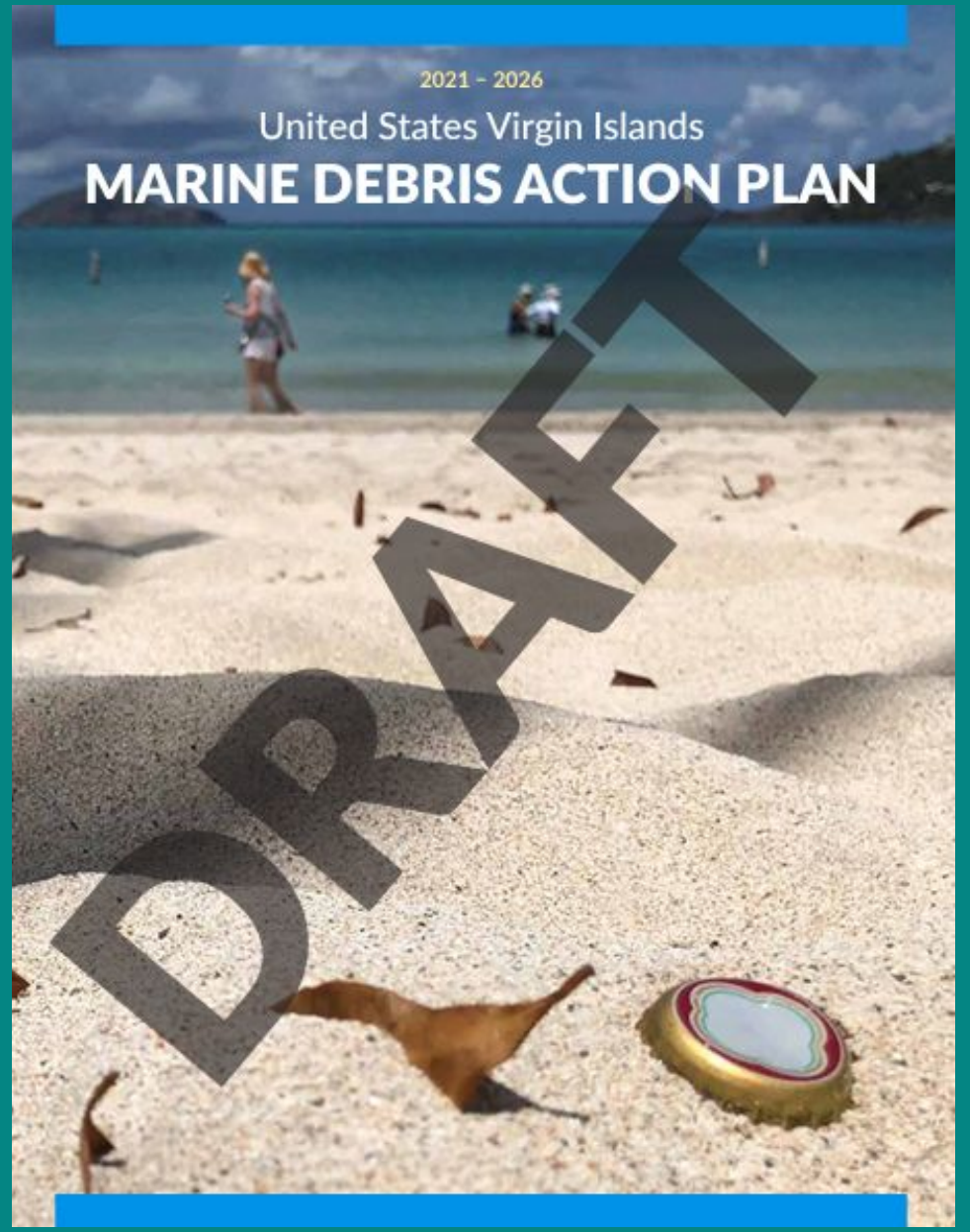
VIRGIN ISLANDS EPSCoR



Goals

01

Investigate current and historic U.S. Virgin Islands mangrove distribution, loss, and recovery.

02

Grow U.S. Virgin Islands mangrove restoration opportunities.

03

Share U.S. Virgin Islands mangrove research with stakeholders and provide new opportunities for partnerships.

Year 1 Highlights

TRAINING & LEARNING

Year 1 Highlights

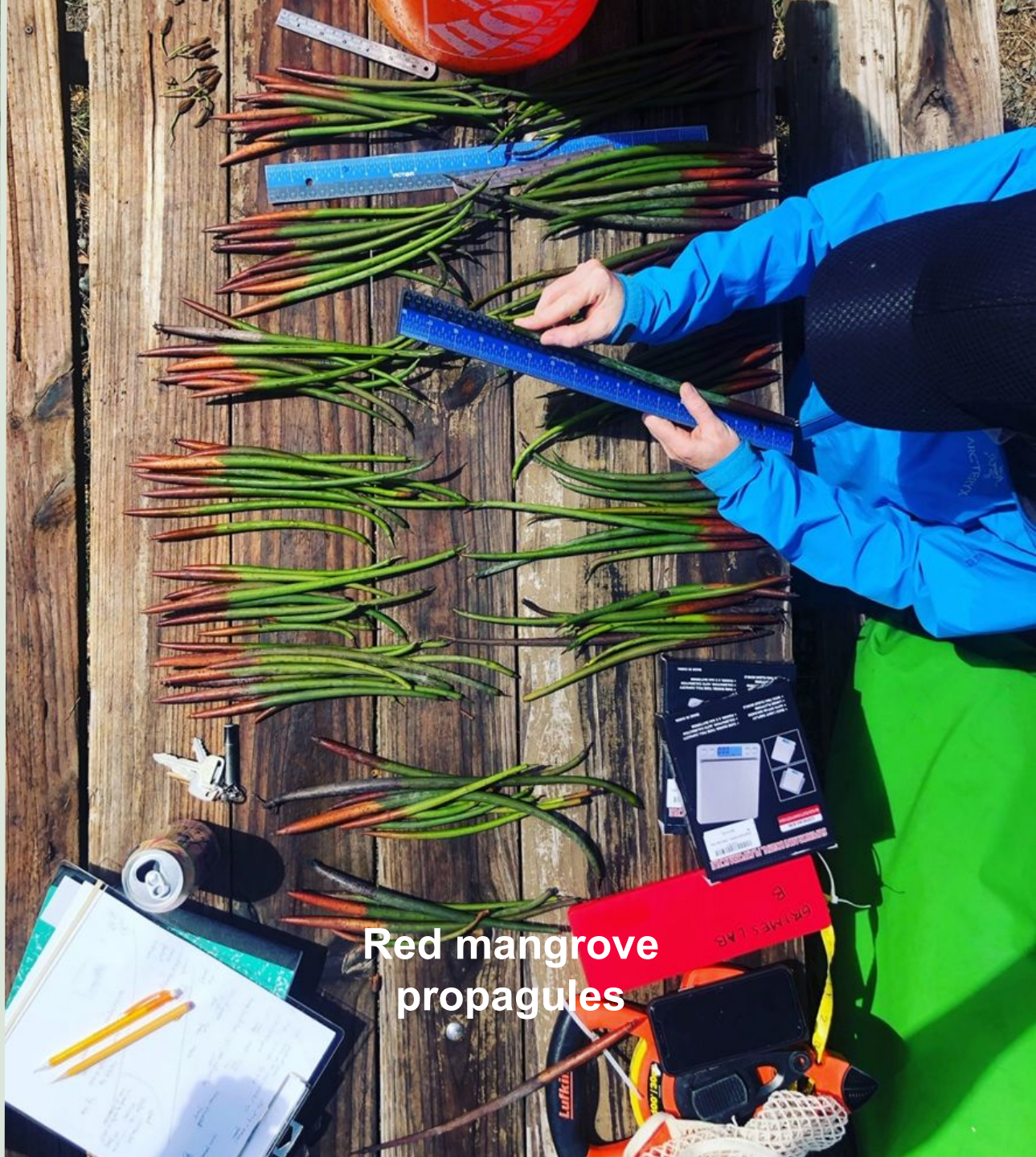
CONSTRUCTION OF THE LAND-BASED NURSERY

Year 1 Highlights

PROPAGULE COLLECTION & PHENOLOGY SURVEYS

Year 1 Highlights

NEW IN-TAKE PROTOCOLS DEVELOPED



Year 1 Highlights

WE'RE GROWING SEEDLINGS!

White mangrove seedlings

Year 1 Highlights

WE’RE EXPERIMENTING!

Year 1 Highlights

STRENGTHENING PARTNERSHIPS

Partners from the U.S. Geological Survey, St. John

Looking Ahead

01

Grow mangrove citizen-science opportunities in field-based research and land-based nursery operations.

02

Draft the mangrove coastal atlas.

03

Provide continued learning and training opportunities for students and the public.

Interested in Connecting?

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