

KEEPING OUR COASTLINES CLEAN

A U.S. Virgin Islands
Marine Debris Curriculum





IMPACTS

Links to the Next Generation Science Standards, Quick Reference Guide

Curricula by Sub-Section		Middle School						High School					Sci & Engineering Practices
		ESS 3-1	ESS 3-2	ESS 3-3	ESS 3-4	ETS 1-1	ETS 1-2	ESS 3-1	ESS 3-3	ESS 3-4	ETS 1-1	ETS 1-2	
Composition & Abundance	Beach Box Exploration			✓									✓
	Investigating Oceanic Garbage Patches			✓					✓				✓
	A Degrading Experience			✓					✓				✓
Sources & Transportation	Watershed Walk	✓		✓				✓					✓
	Sources of Microplastics: Microbeads			✓									✓
Impacts	Entanglement Problems			✓	✓				✓	✓			✓
	Natural Disasters and Marine Debris		✓	✓	✓			✓					✓
Solutions	Linked Beach-Ghut Clean Ups	✓		✓					✓				✓
	Mitigating Microplastics			✓					✓				✓
	Upcycling Plastic Bags					✓	✓				✓	✓	
	Making Connections Through Art			✓					✓				✓

SPOT LIGHT

Marine Debris and Natural Disasters: Removal of Abandoned and Derelict Vessels following Hurricanes Irma and Maria in the U.S. Virgin Islands

In September 2017, Hurricanes Irma and Maria made landfall in the U.S. Virgin Islands as Category 5 hurricanes, resulting in extensive damage to the territory and massive amounts of marine debris along its coastlines. These disasters triggered Presidential Disaster Declarations and a National Response Framework Emergency Support Function-10 (ESF-10) Mission Assignment (#4340DR-VI-USCG-06) by the Federal Emergency Management Agency (FEMA). The ESF-10 Mission Assignment included ~100 responders from the U.S. Virgin Islands Department of Planning and Natural Resources, the U.S. Coast Guard, the Environmental Protection Agency, the

National Oceanic and Atmospheric Administration, U.S. Fish and Wildlife Service, the U.S. Department of Agriculture, and several U.S. Coast Guard contractors. The ESF-10 Mission Assignment was tasked with two important responsibilities: (1) recovery and removal of pollution threats, and (2) physical removal of compromised vessels. From September 2017 to February 2018, 354 vessels were removed from St. Thomas, St. John, and St. Croix shorelines as part of the ESF-10 Mission Assignment. An additional 107 vessels were removed by owner, insurance, or another party, making the total number of vessels removed 461.

Why were some boats left behind? ESF-10 funding can only be used for boats determined to be damaged or sunk as a direct result of Hurricanes Irma and/or Maria. In addition, ESF-10 funding cannot be used for boats that (1) are on federal lands, and (2) have insurance that includes a salvage rider. The total number of vessels left in place totalled 18 across the U.S. Virgin Islands.

Unfortunately, just two years later in August 2019, Hurricane Dorian caught many boaters unprepared when it spun up as a Category 1 hurricane over the U.S. Virgin Islands, creating a number of new abandoned and derelict vessels that now must be removed. Removal is important as vessels may harm important coastal habitats like mangroves, seagrasses, and coral reefs.



A vessel capsized onto red mangroves in the St. Thomas East End Reserves (STEER), as a result of the 2017 hurricanes, Irma and Maria. STEER is a marine protected area and this area is a government-designated boat safety sanctuary area during storms (Photo credit: Kristin Wilson Grimes).