KEEPING OUR COASTLINES CLEAN

A U.S. Virgin Islands Marine Debris Curriculum

IMPACTS

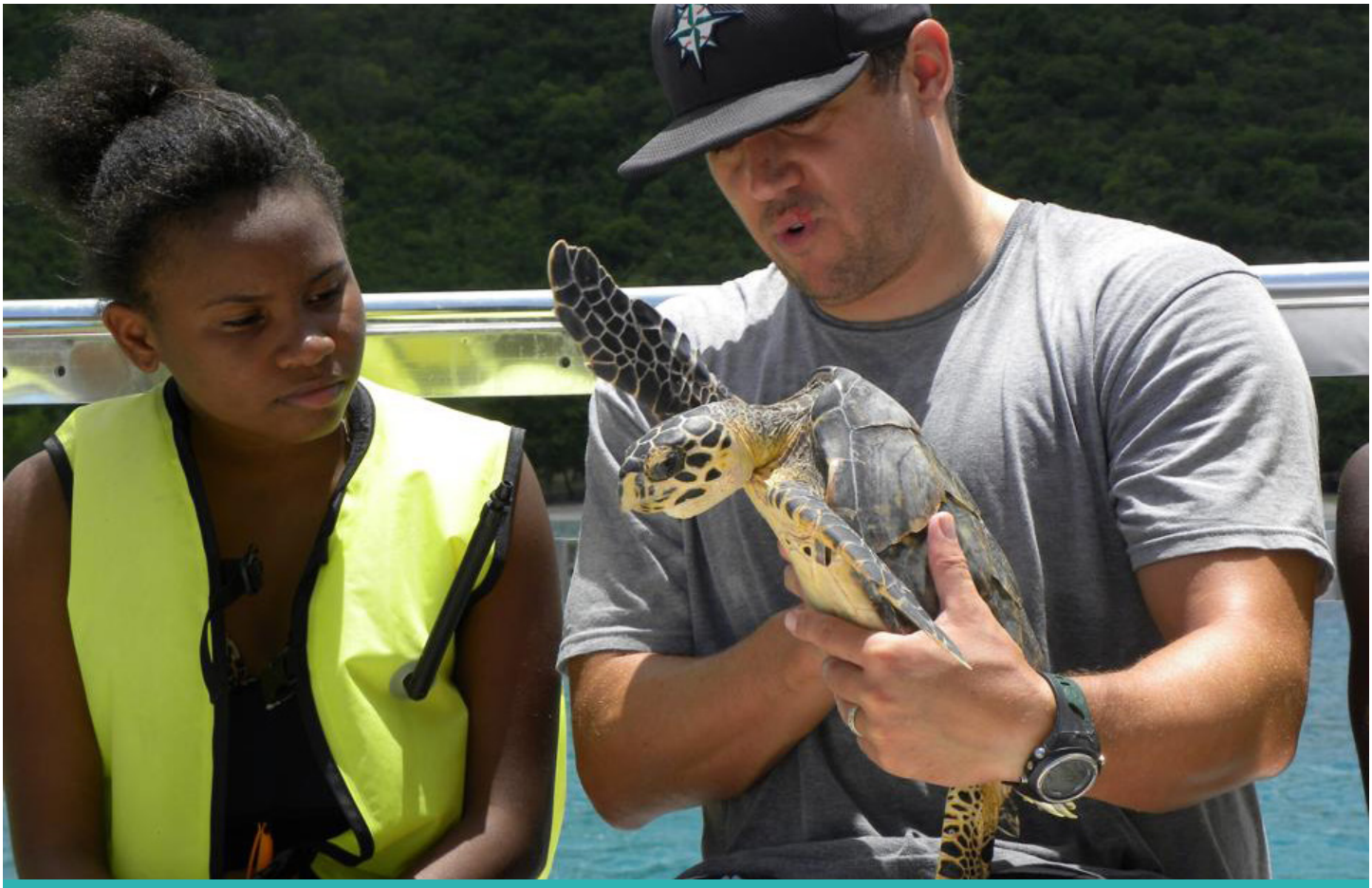
Links to the Next Generation Science Standards, Quick Reference Guide

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 Impacts to Sea Turtles in the U.S. Virgin Islands

Sea turtles are among some of the most charismatic marine animals and are also among the most vulnerable to the impacts of marine debris. Sea turtles can become very easily entangled in derelict fishing nets and other fishing gear, constricting movement and sometimes preventing the turtle from surfacing for air, resulting in eventual drowning and death. Here in the U.S. Virgin Islands (USVI), sea turtles are at risk of entanglement with fishing gear and other marine debris items, including shipping pallets. For example, several years ago, a green sea turtle became lodged between the panels of a shipping pallet and had to be rescued. But entanglement is not the only marine debris problem that sea turtles face. Of particular concern, is the sheer abundance of single-use plastic bags in the oceans. Of the four sea turtle species present within the U.S. Virgin Islands (green, leatherback, hawksbill, and loggerhead), the hawksbills, greens, and leatherback sea turtles, are known to prey upon jellyfish, which unfortunately, look a lot like free-floating plastic bags. When a turtle mistakes a plastic bag for a jellyfish and consumes it, the turtle may suffocate if the bag becomes lodged in its airway. Even if the turtle can swallow the plastic bag, it can't digest it, which may lead the turtle to starve, another unfortunate outcome for these endangered species. Fortunately, recent bans on single-use plastic items, like plastic bags, within the USVI could mean hope for sea turtles within the territory and the wider Caribbean. "The reduction of plastics in the environment will reduce the tragic and needless death of endangered sea turtles from entanglement or ingesting plastic," says Dr. Paul Jobsis, sea turtle researcher and Director of the Center for Marine & Environmental Studies at the University of the Virgin Islands.



University of the Virgin Islands alumna of the Masters in Environmental Science Program, Scott Eanes, shows a student from the Addelita Cancryn Junior High School on St. Thomas, a sea turtle from Brewers Bay, captured as part of a research program examining sea turtle movement patterns (all work is conducted pursuant to a National Marine Fisheries Service permit #15809). In the U.S. Virgin Islands and elsewhere, these endangered species are vulnerable to marine debris (Photo credit: Howard Forbes, Jr.).