State:	VI
Project Number:	2016VI261B
Title:	Ecosystem integrity of riparian waterways on St. Thomas, U.S. Virgin Islands using physical and biological indicators
Project Type:	Research
Focus Category:	Ecology, Conservation, Wetlands
Keywords:	Riparian corridors; ecosystem indicators; amphibia; chiroptera; bioacoustics
Start Date:	3/1/2016
End Date:	2/28/2017
Congressional District:	Not applicable
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Abstract

Natural stormwater drainages, known as guts in the U.S. Virgin Islands (USVI), are important riparian corridors with unique ecosystem components that differ from surrounding habitat. They are important ridge to reef conduits, such that anything discharged into them (e.g., trash, sewage, household contaminants, agricultural wastes) may be ultimately transported to the marine environment. Gut systems offer the only natural freshwater resources on St. Thomas, an island that is volcanic in origin with steep slopes and shallow soils. This project will identify new potential physical and biological indicators of gut integrity using an integrated approach for ecosystem monitoring that combines field surveys of streams with bioacoustics. These surveys will be conducted in guts with and without permanent water presence to understand how the presence/absence and connectivity of water affects ecosystem structure and function. Physical characteristics of guts, such as channel topography, presence/absence of permanent pools, and size & connectivity of pools, will be correlated with available rainfall data and biological components including vegetation structure and wildlife community assemblages using bioacoustic methods to assess ecological integrity. The results will provide management guidance for gut habitats within the Virgin Islands. Undergraduate students from the University of the Virgin Islands will be trained to collect and analyze data and the project will form the basis for an undergraduate classroom teaching lab.