

# Data Documentation

## Dataset Information

### Dataset Title:

**NCCOS Assessment: Fish tracking data from East End Marine Park in St. Croix, U.S. Virgin Islands from 2019-11-08 to 2022-09-27**

### Description:

This dataset includes detections of fish tagged with Vemco/Innovasea acoustic transmitters in East End Marine Park (EEMP), St. Croix, US Virgin Islands from 2019 through 2022. Detection data were obtained from an array of underwater dataloggers/receivers deployed across the study area which recorded transmissions from tagged fish. Data include identifying information for each fish tag/transmitter, species tagged, timestamp of detection, and positional information for the receiver that detected the tag.

### Purpose:

This dataset was collected to document movement patterns of reef fish among management zones in and around the EEMP, St. Croix for the Virgin Islands Department of Planning and Natural Resources (DPNR). The primary goal was to provide managers at EEMP with data to understand fish residence time within the park, the frequency and duration of movements across park zone boundaries, and connections to other reef areas around St. Croix.

### Methods:

Dataloggers were deployed and anchored to the seafloor at strategic locations in EEMP by divers. Fish were live captured inside the no-take areas of EEMP, surgically implanted with Innovasea acoustic transmitters (Model V8-4L), and released at their capture site. Dataloggers recorded the time when tagged fish were within a radius of 50-200 m. Raw detection data were exported from proprietary Innovasea VUE software into a tabular .csv format. Detections from transmitters not owned by NCCOS were removed. Drift of timestamps was corrected using the internal clock of the download computer. The data should be treated as “presence only” in that additional data loggers deployed around St. Croix by regional collaborators are documented in this dataset only when a fish was detected there, and these were not the target management zones of the study. Other data loggers may exist regionally around St. Croix but are not documented here. For additional details see Kendall et al. In Prep..

### Cited Publications:

- Kendall, M. S., et al.. In Prep. Transboundary movements of reef fish in the East End Marine Park, St.Croix.

### Associated Datasets:

- Williams, Bethany; Kendall, Matt; Siceloff, Laughlin (2024). NCCOS Assessment: Fish and benthic communities in the East End Marine Park, St. Croix, U.S. Virgin Islands from 2022-04-25 to 2022-06-18. NOAA National Centers for Environmental Information. Dataset. [in prep]

## People & Projects

### Dataset Authors:

- Williams, Bethany; Kendall, Matt; Siceloff, Laughlin

### Principal Investigator:

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### Primary Point of Contact:

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- NCCOS Data Manager, [nccos.data@noaa.gov](mailto:nccos.data@noaa.gov), US DOC; NOAA; NOS; National Centers for Coastal Ocean Science (NCCOS)

### Collaborators:

- Caroline Pott, USVI DPNR
- Leslie Henderson, NOAA Coral Reef Conservation Program
- Ashley Ruffo, NOAA Fisheries

### Partners:

- Virgin Islands DPNR (Department of Planning and Natural Resources)
- US Caribbean Acoustic Network (USCAN)
- Florida Atlantic Coast Telemetry Network (FACT)

### Funding:

- US DOC; NOAA; NOS; National Centers for Coastal Ocean Science (NCCOS)
- US DOC; NOAA; NOS; Coral Reef Conservation Program Project # 31228; Title - Assessment of MPA boundaries and fish movements in the East End Marine Park, USVI

### Associated Online Resources:

#### NCCOS Project Webpage:

- <https://coastalscience.noaa.gov/project/acoustic-tracking-fish-movements-coral-reef-us-virgin-islands/>

### Extents

Start Date: 2019-11-08

End Date: 2022-09-27

Northern Boundary: 17.83012

Southern Boundary: 17.73020

Western Boundary: -64.64261

Eastern Boundary: -64.43228

### Keywords

#### Sea Areas, Water Bodies, Marine Protected Areas:

- St. Croix East End Marine Park
- Caribbean Sea

#### NCCOS Keywords:

- NCCOS Research Priority > Marine Spatial Ecology
- NCCOS Research Topic > Regional Ecosystem Science; Ecological and Biogeographic Assessment
- NCCOS Research Location > Region > Caribbean Sea
- NCCOS Research Location > U.S. States and Territories > U.S. Virgin Islands
- NCCOS Research Data Type > Field Observation

*Data Documentation*  
*EEMP Fish Tracking: 2019-2022*

CoRIS Keywords:

CoRIS Discovery Thesaurus:

- Geographic Information > Biology
- Geographic Information > Ecological Characterization
- Geographic Information > Marine Management Areas
- Geographic Information > Habitats
- Numeric Data Sets > Biology
- Numeric Data Sets > Geography
- CoRIS Theme Thesaurus:
  - EARTH SCIENCE > Biosphere > Aquatic Habitat > Coastal Habitat
  - EARTH SCIENCE > Oceans > Coastal Processes > Coral Reefs > Coral Reef Ecology
  - EARTH SCIENCE > Biosphere > Aquatic Habitat > Reef Habitat
  - EARTH SCIENCE > Oceans > Marine Biology > Fish > Fish Behavior
- CoRIS Place Country/Territory Keywords:
  - United States of America > U. S. Virgin Islands > St. Croix > St. Croix (17N064W0003)
- CoRIS Place Ocean/Seas Keywords:
  - OCEAN BASIN > Atlantic Ocean > Caribbean Sea > Virgin Islands > St. Croix > East Point (17N064W0010)

File Information

Total File Size: 36.7 MB total, 3 files in 1 folders (unzipped)

Data File Format(s):

- Comma-separated value (.CSV)

Data File Compression: n/a

Data Files:

- NCCOS\_EEMP\_Fish\_Tracking\_data\_2019\_2022.csv

Documentation Files:

- BrowseGraphic.jpg
- DataDocumentation.PDF

Table 1: Data Dictionary for NCCOS\_EEMP\_Fish\_Tracking\_data\_2019\_2022.csv

Column	Variable	Label	Definition	Units	Range
1	Date and time of detection	DETECTION_DATETIME.UTC	In UTC, the time and date of the detection	YYYY-MM-DDTHH:MM:SS	n/a
2	STATION	STATION	Unique name of the receiver location where the detection occurred	text	n/a

*Data Documentation*  
*EEMP Fish Tracking: 2019-2022*

Column	Variable	Label	Definition	Units	Range
3	ZONE	ZONE	Management zone of study where the detection occurred, including open and no take in EEMP, as well as outside study area at Buck Island or Lang Bank	text	n/a
4	Latitude of the receiver	STATION_LAT	Latitude of the receiver station where the detection occurred	Decimal degrees DD.DDDD	17.83012 17.73020
5	Longitude of the receiver	STATION_LON	Longitude of the receiver station where the detection occurred	Decimal degrees DD.DDDD	-64.64261 -64.43228
6	TRANSMITTER	TRANSMITTER	Unique ID of the transmitter associated with the detection, assigned by the manufacturer	text	n/a
7	COMMON_NAME	COMMON_NAME	Common name of the fish detected and associated with the transmitter ID	text	n/a
8	SCIENTIFIC_NAME	SCIENTIFIC_NAME	Genus and species of the fish detected and associated with the transmitter ID	text	n/a

## Parameter Information

### Parameter Description:

*Parameters:* Date and time of fish detection  
*Property Type:* measured  
*Units:* time and date (YYYY-MM-DDTHH:MM:SS) in UTC  
*Observation Category:* [in situ]  
*Sampling Instrument:* Innovasea/Vemco acoustic VR2W receiver  
*Sampling and Analyzing Method:*

When an acoustic receiver detects a tag transmission and successfully identifies and records the TRANSMITTER number (see below parameter), it also records a timestamp of when that transmitter was detected. The dataset provided here has been time corrected for possible drift in the internal clock of the receiver. The "T" is included to prevent Excel from reformatting the date times.

*Data Quality Method:*  
n/a

### Parameter Description:

*Parameters:* TRANSMITTER  
*Property Type:* measured  
*Units:* text  
*Observation Category:* [in situ]  
*Sampling Instrument:* Innovasea acoustic VR2W receiver  
*Sampling and Analyzing Method:*

Acoustic tags implanted in study animals transmit a unique series of pulses that is recorded and decoded by the receivers as the TRANSMITTER number if the transmitter is within range. The receivers are periodically downloaded to retrieve these data records.

*Data Quality Method:*  
n/a

### Parameter Description:

*Parameters:* Latitude and longitude coordinates of the dataloggers  
*Property Type:* calculated  
*Units:* Decimal Degrees (DD.DDDDD)  
*Observation Category:* laboratory analysis/calculation  
*Sampling Instrument:* Handheld GPS  
*Sampling and Analyzing Method:*

When a receiver is deployed at a station, GPS coordinates are recorded in the field using a handheld GPS unit. These coordinates are assigned to every acoustic tag detection logged by the receiver at that station. While the precise location of a tagged animal is not known, the known location of the receiver detecting that animal gives a rough approximation of the animal's location within 50 - 200 meters (the detection range of the receivers).

*Data Quality Method:*  
n/a

## Document Information

Date: 2024-04-04

Resource Provider: NCCOS Data Manager, [nccos.data@noaa.gov](mailto:nccos.data@noaa.gov), US DOC; NOAA; NOS; National Centers for Coastal Ocean Science (NCCOS)

Comment: This data documentation describes data files archived as a NOAA NCEI data accession, and is intended to provide dataset-level metadata for the purposes of discovery, use, and understanding.

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