SERVING CORAL CONNECTIONS IN THE US VIRGIN ISLANDS

Dan Dorfman, NCCOS, Leslie Henderson, USVI-DPNR, Pedro Nieves, USVI-DPNR

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US VIRGIN ISLANDS

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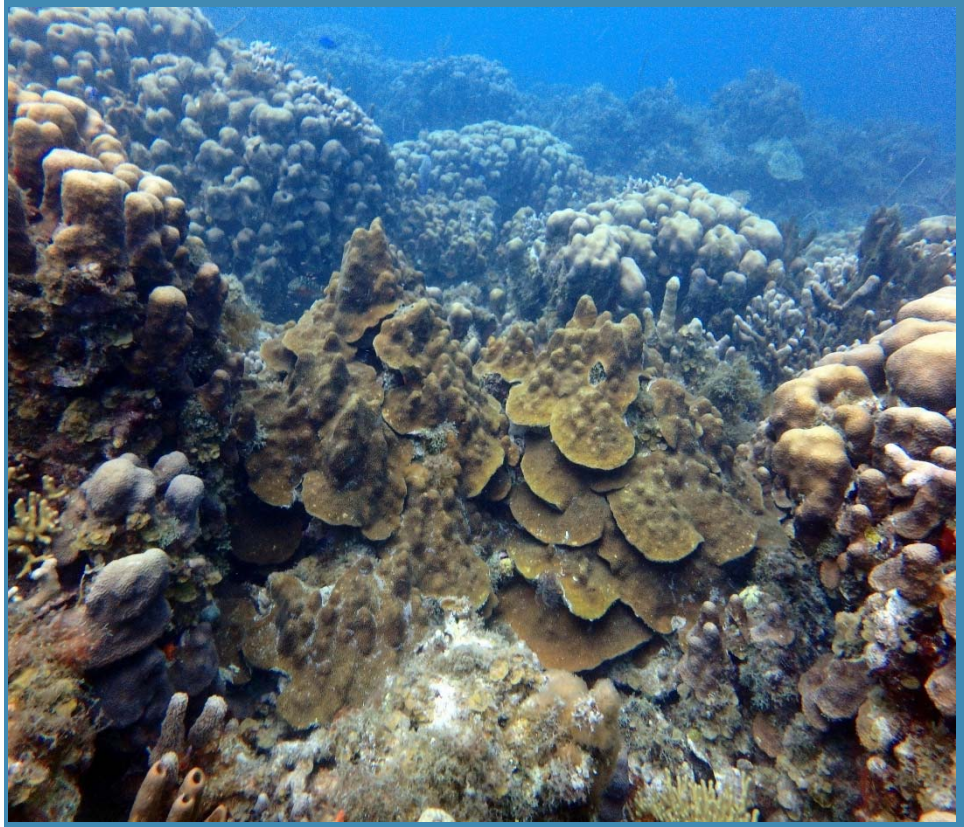

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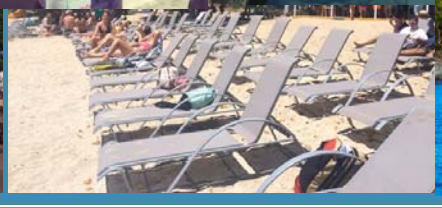
US VIRGIN ISLANDS

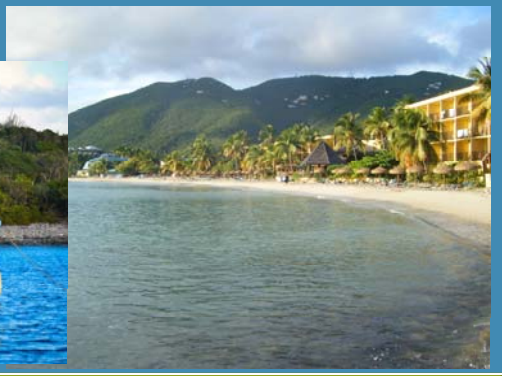
"Virgin Islands Coastal Zone Management" Act of 1978

to *manage, enhance, protect, and preserve our coastal resources, while reducing conflict between competing land and water uses.*





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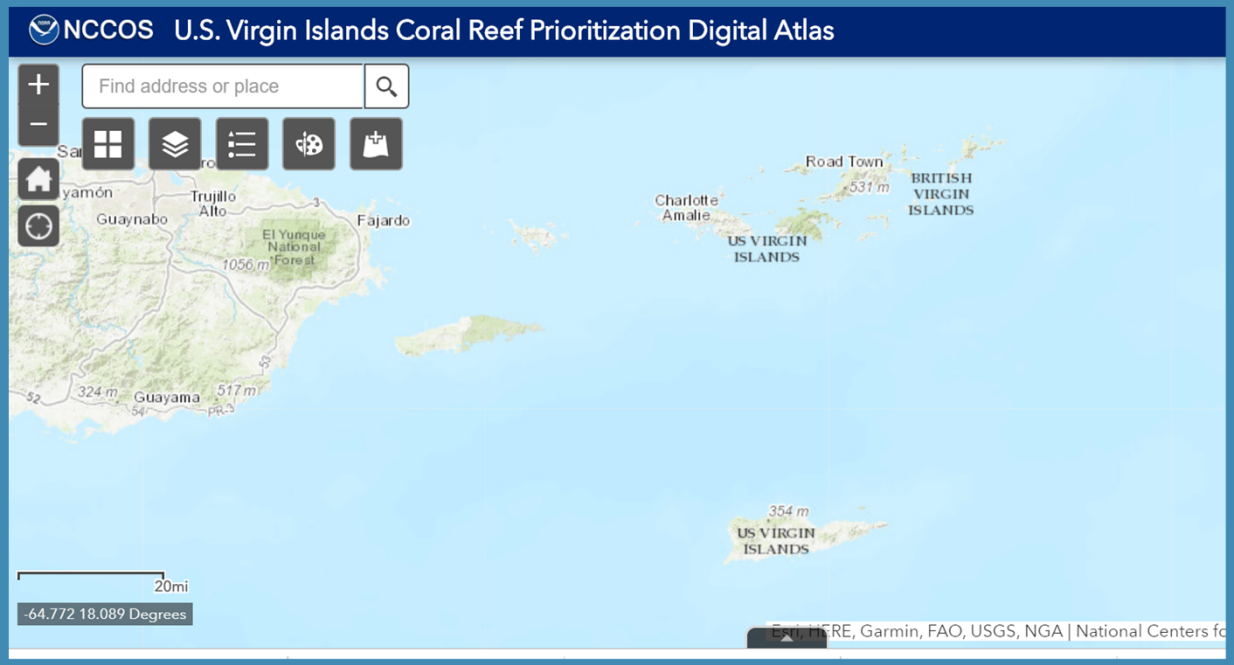
Project Objective:

- Provide a tool for USVI managers to be able to better visualize, characterize and communicate the presence and value of coastal and marine resources when making management decisions such as permitting, restoration, mitigation and conservation

USVI CORAL PRIORITIZATION DIGITAL ATLAS

Developed online geoportal:
USVI Coral Prioritization Digital Atlas
https://noaa.maps.arcgis.com/apps/webappviewer/index.html?id=3832758b3e4044c79079845e2c2487eb



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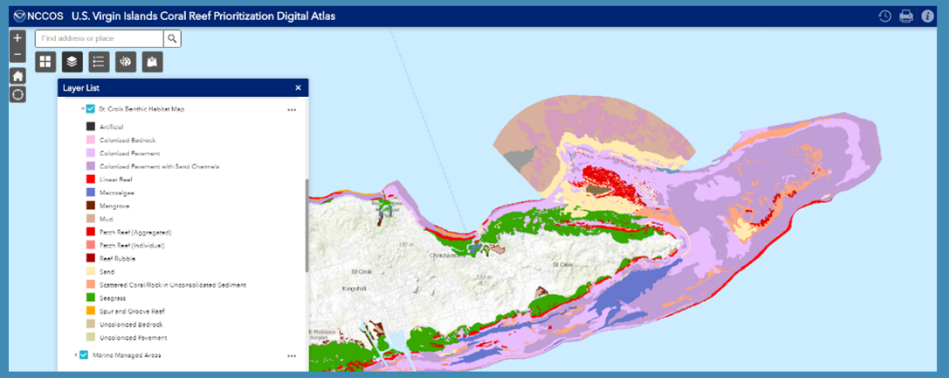
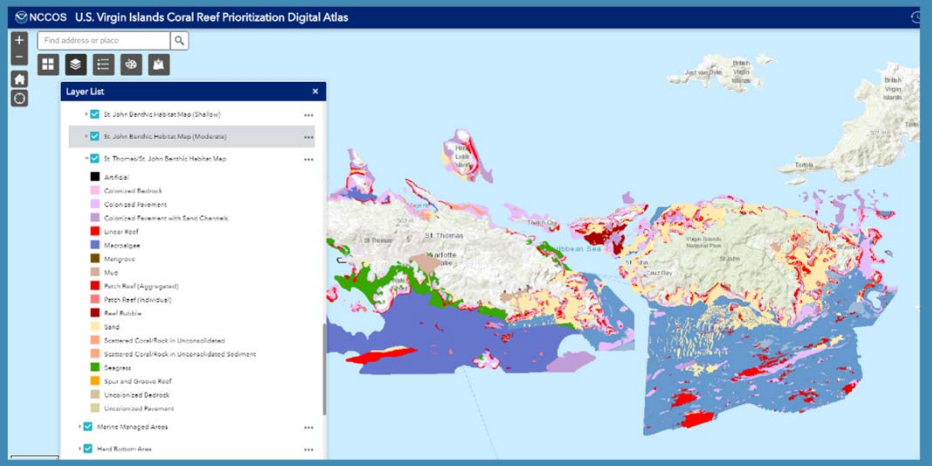
DIGITAL ATLAS DATASETS: BENTHIC HABITATS

- St. Croix Shallow Water
- Buck Island Deep, Moderate, and Shallow Water
- St. Thomas/St. John Shallow Water
- St. John Moderate Water
- Fish Bay, Coral Bay, and East End





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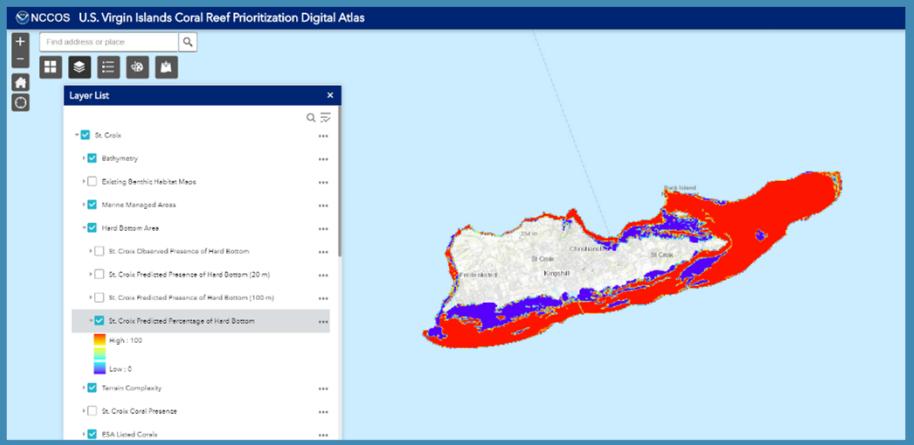
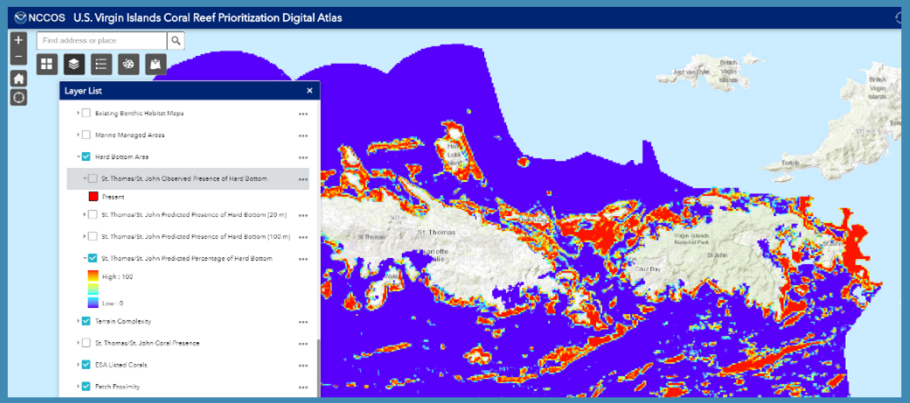
DIGITAL ATLAS DATASETS: HARD BOTTOM

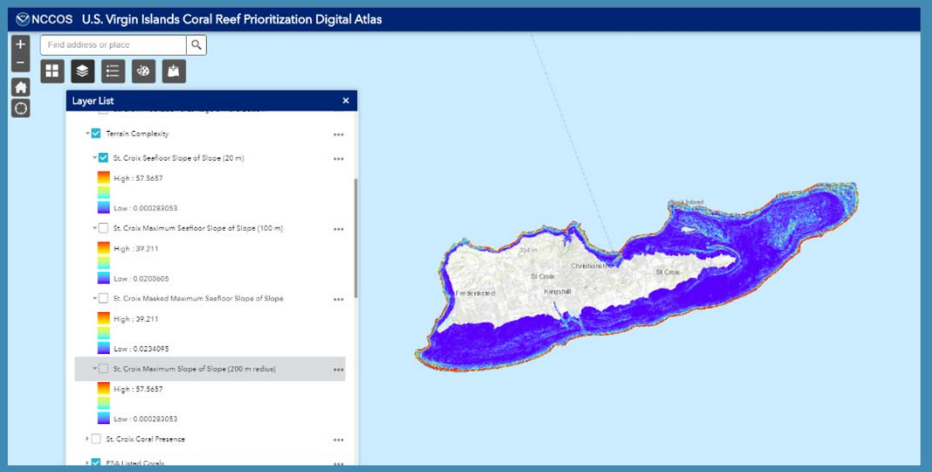
- Hard Bottom Observed
- Predicted Presence in 20m grid
- Predicted Presence in 100m grid
- Predicted Percentage Hard Bottom

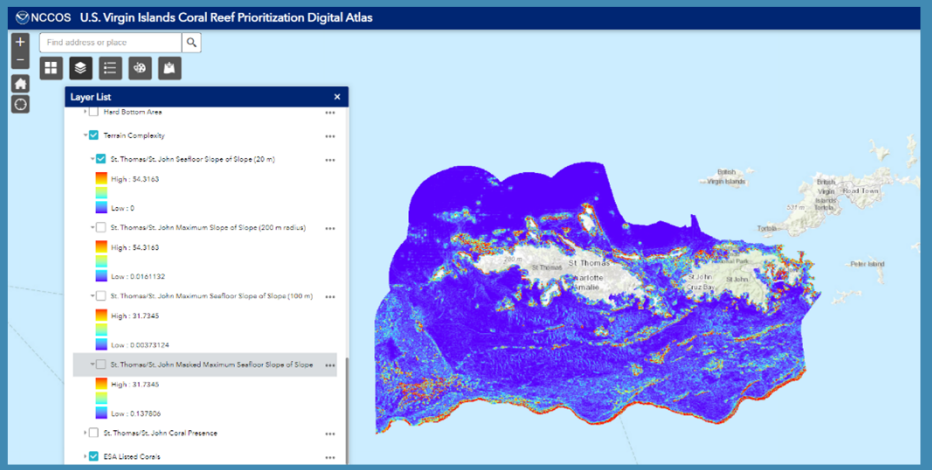




DIGITAL ATLAS DATASETS: BENTHIC COMPLEXITY

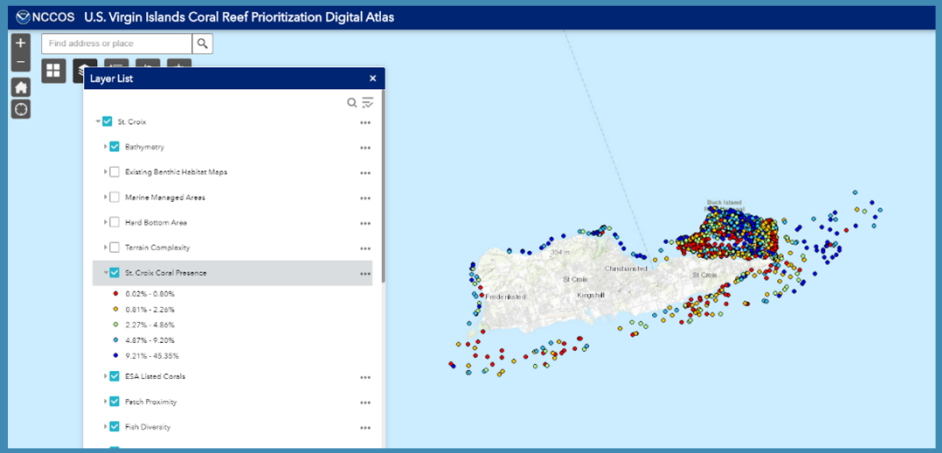
- Slope of Slope (20m)
- Maximum Slope of Slope (200m)
- Maximum Slope of Slope (100m)
- Masked Maximum Slope of Slope

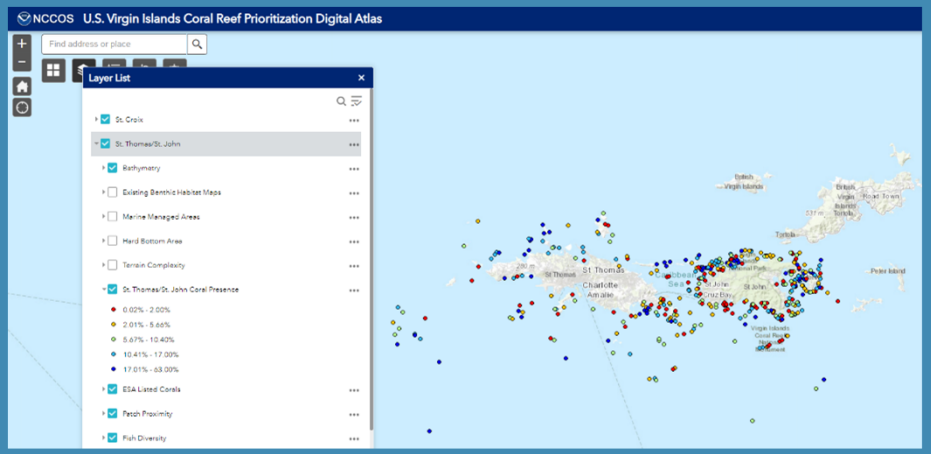




DIGITAL ATLAS DATASETS: IN-SITU CORAL SURVEYS

In-Situ Coral Surveys
(2001-2017)





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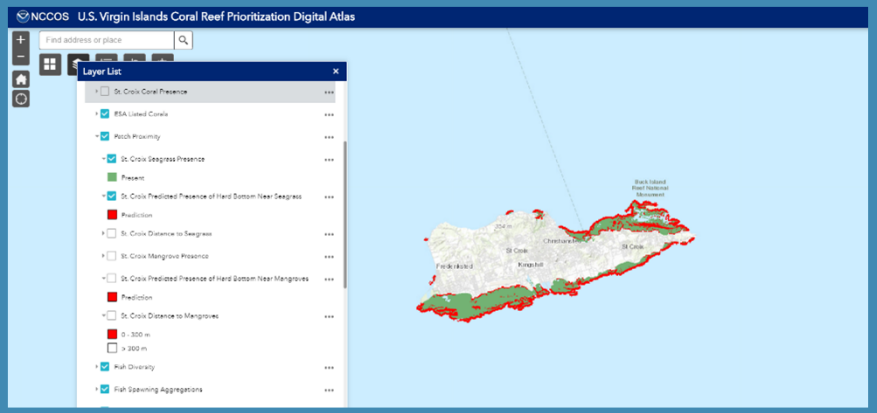
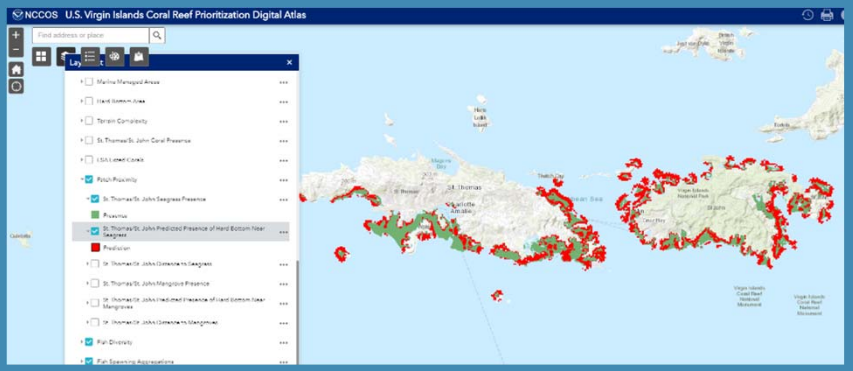
DIGITAL ATLAS DATASETS: PROXIMITY

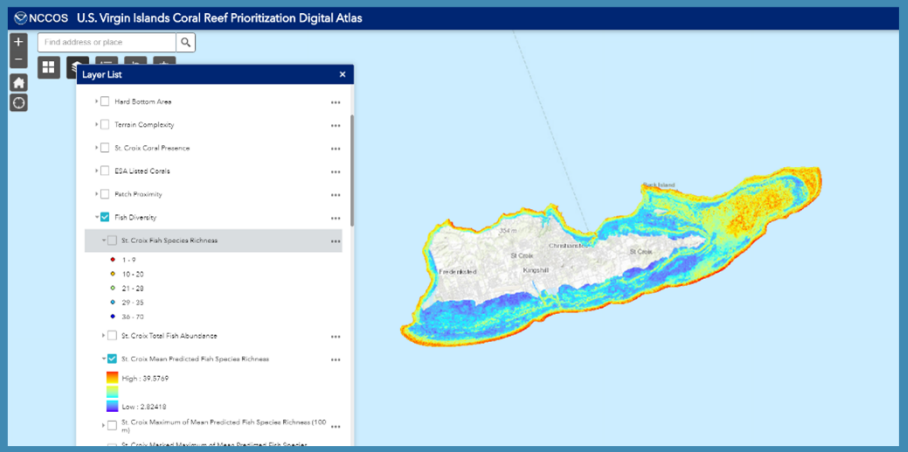
- Seagrass Presence
- Predicted Presence of Hard Bottom Near Seagrass
- Distance to Seagrass
- Mangrove Presence
- Predicted Presence of Hard Bottom Near Mangroves
- Distance to Mangroves

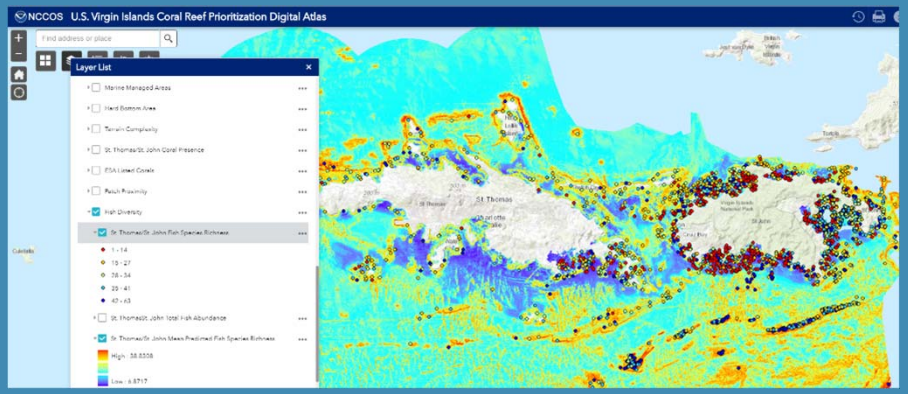




DIGITAL ATLAS DATASETS: FISH DIVERSITY

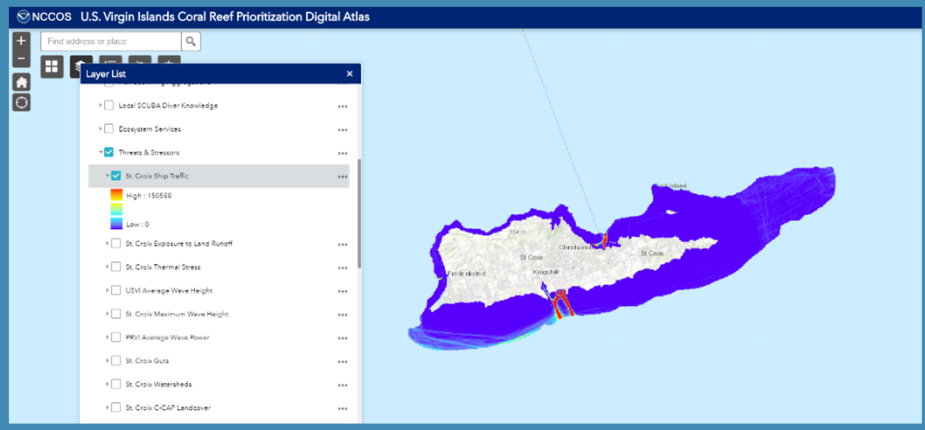
- In-Situ Fish Species Richness
- In-Situ Total Fish Abundance
- Mean Predicted Species richness
- Maximum of Mean Predicted Species Richness
- Masked Maximum of Mean Predicted Species Richness

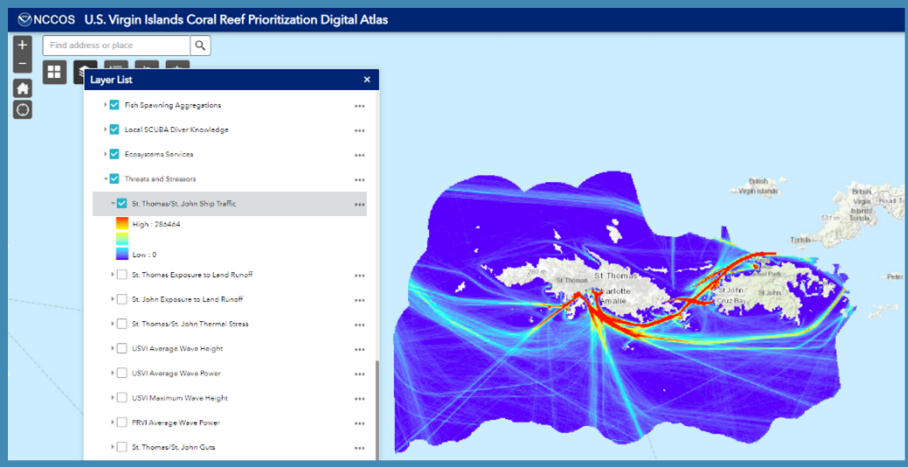




DIGITAL ATLAS DATASETS: THREATS

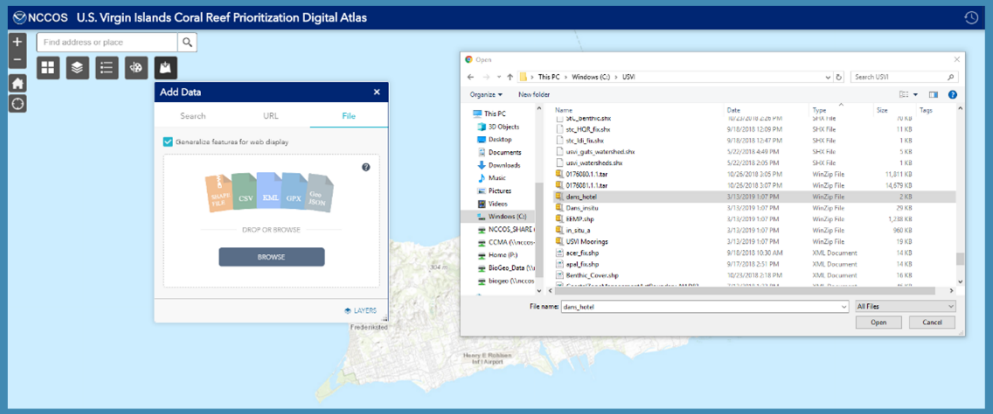
- Ship Traffic
- Land Runoff
- Thermal Stress
- Average Wave Height
- Maximum Wave Height
- Average Wave Power
- Guts
- Landcover
- Landscape Development Intensity Index

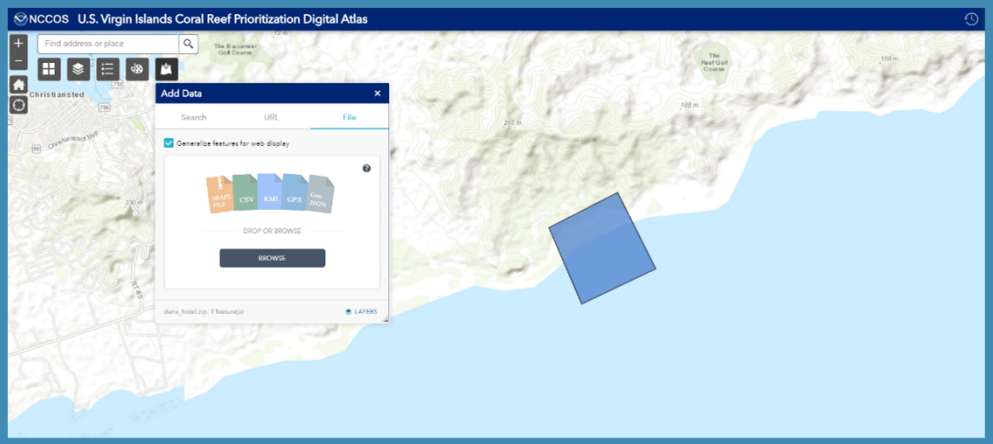




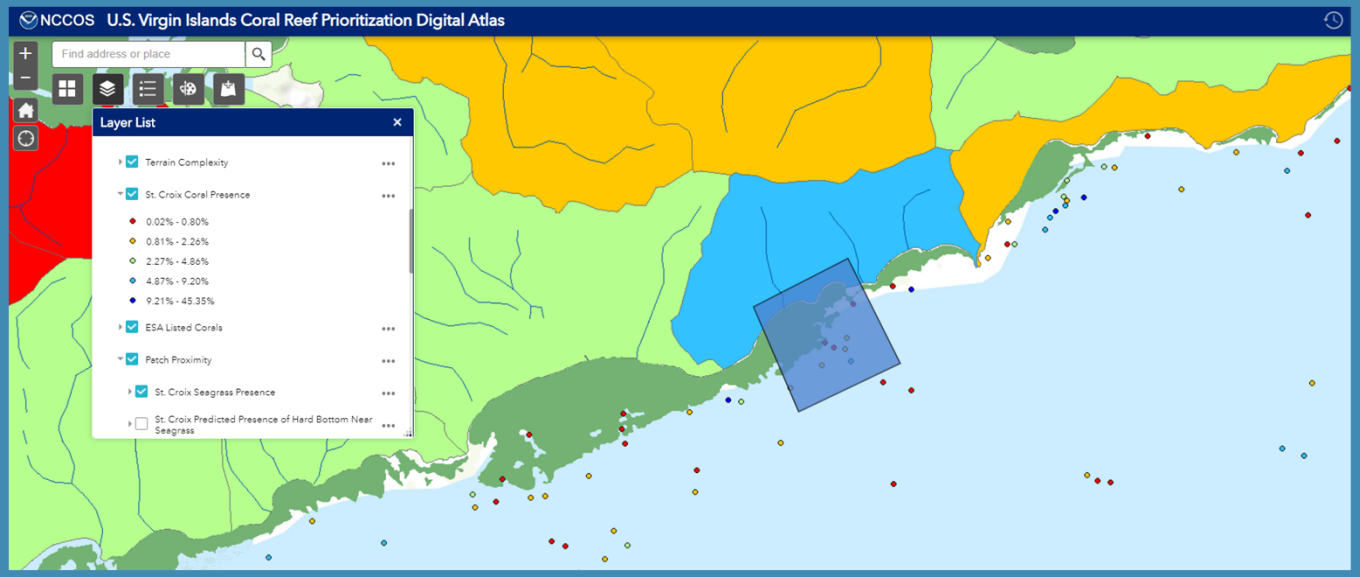
DIGITAL ATLAS FUNCTIONALITY: ADDING DATA

Import data from online resource or your own computer



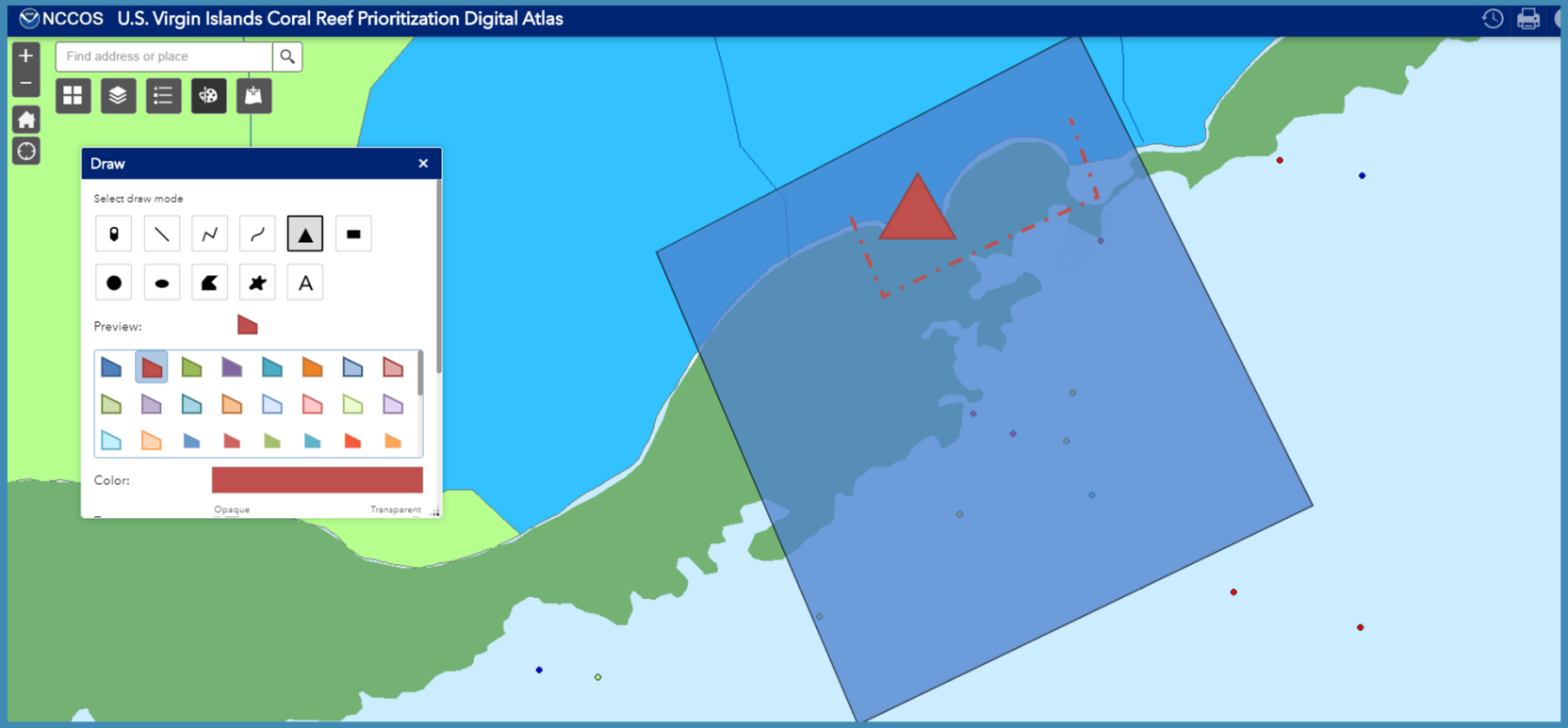


DIGITAL ATLAS CAPABILITIES: CUSTOMIZE



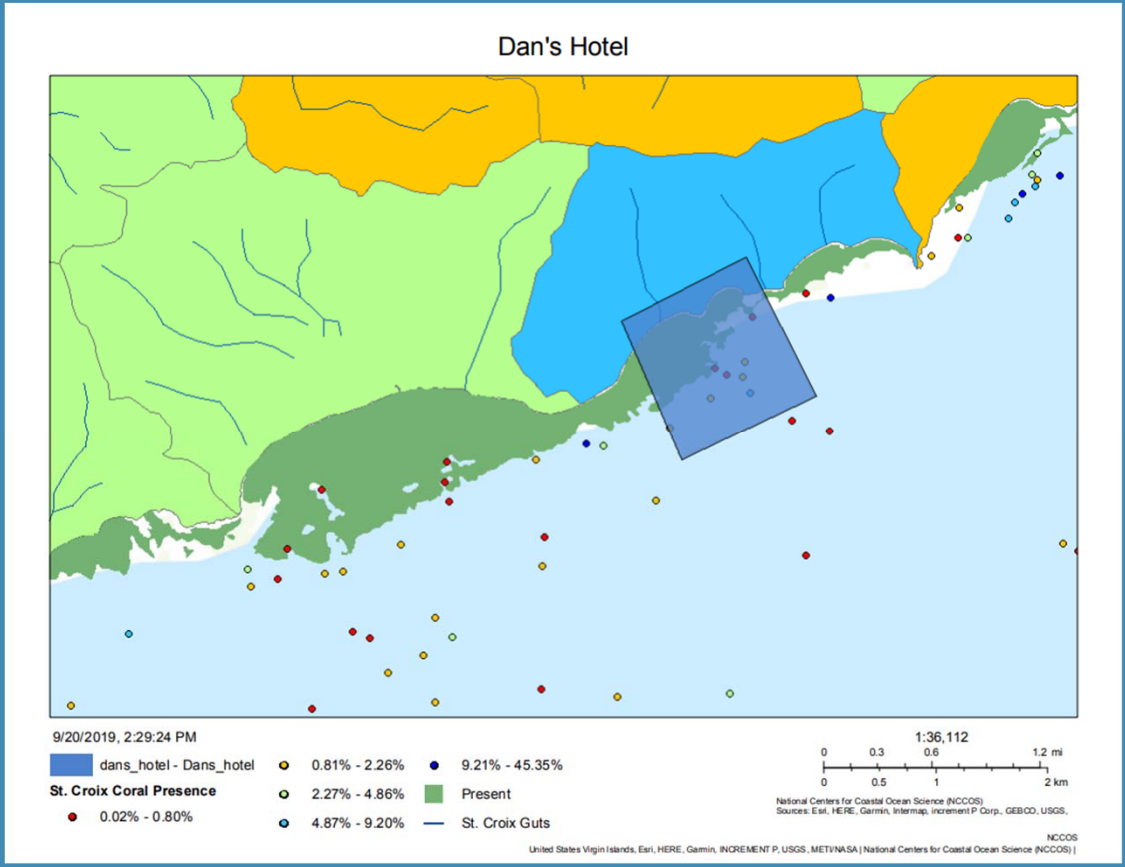
Customize information relevant for decision making or analysis

DIGITAL ATLAS CAPABILITIES: DRAWING TOOL



DIGITAL ATLAS CAPABILITIES: EXPORT MAP

Automated map production



SEASKETCH CAPABILITIES: ONLINE COLLABORATION

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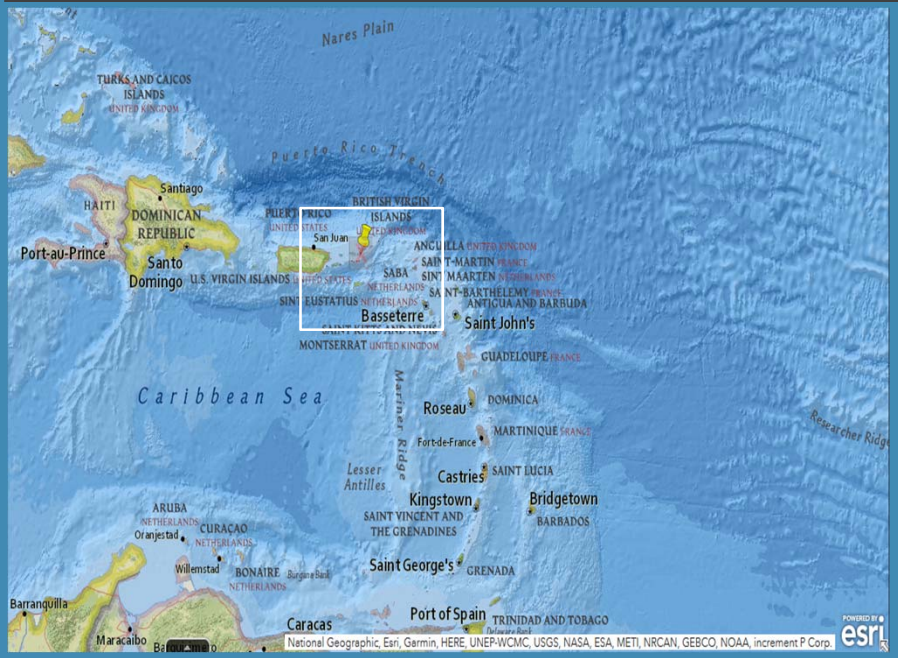

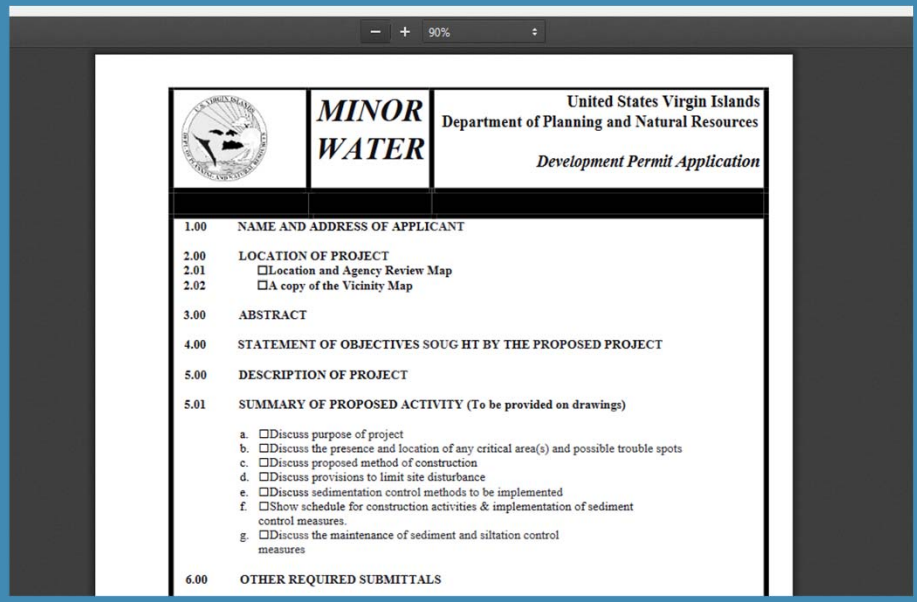

MINOR WATER

United States Virgin Islands
Department of Planning and Natural Resources

Development Permit Application

1.00 NAME AND ADDRESS OF APPLICANT

2.00 LOCATION OF PROJECT
2.01 ☐Location and Agency Review Map
2.02 ☐A copy of the Vicinity Map

3.00 ABSTRACT

4.00 STATEMENT OF OBJECTIVES SOUG HT BY THE PROPOSED PROJECT

5.00 DESCRIPTION OF PROJECT

5.01 SUMMARY OF PROPOSED ACTIVITY (To be provided on drawings)

a. ☐Discuss purpose of project
b. ☐Discuss the presence and location of any critical area(s) and possible trouble spots
c. ☐Discuss proposed method of construction
d. ☐Discuss provisions to limit site disturbance
e. ☐Discuss sedimentation control methods to be implemented
f. ☐Show schedule for construction activities & implementation of sediment control measures.
g. ☐Discuss the maintenance of sediment and siltation control measures

6.00 OTHER REQUIRED SUBMITTALS

Hurricane Alley

Marine Human Use

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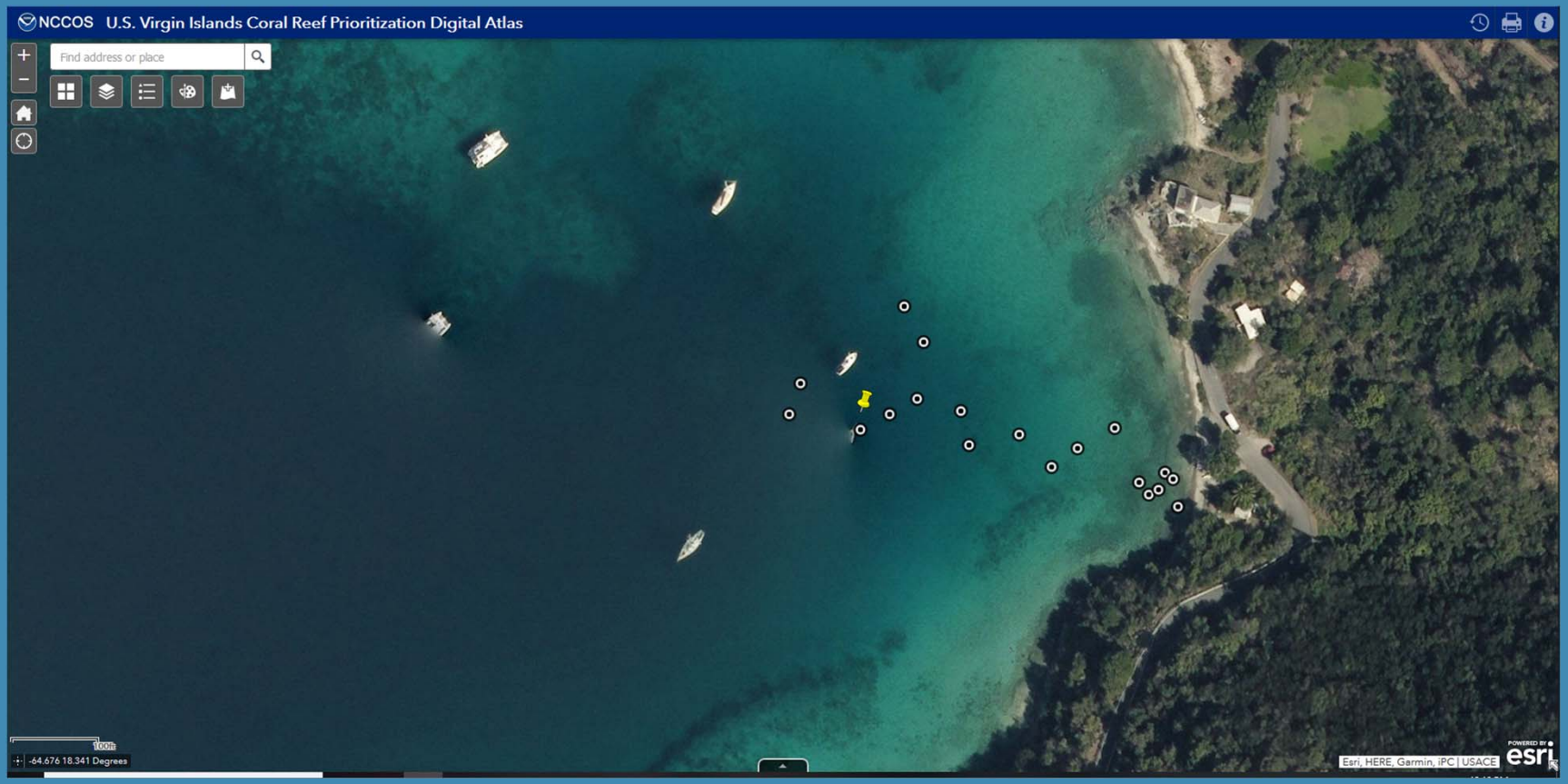

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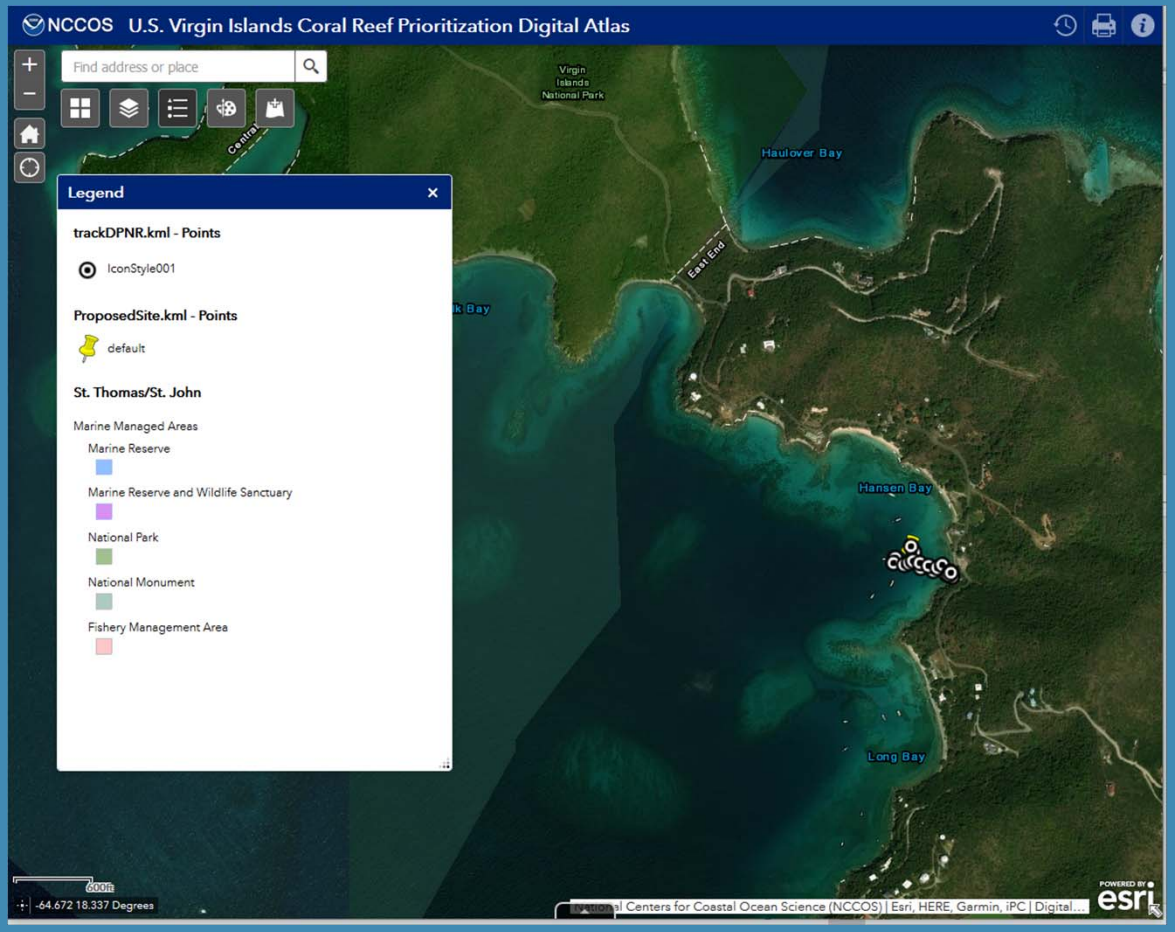

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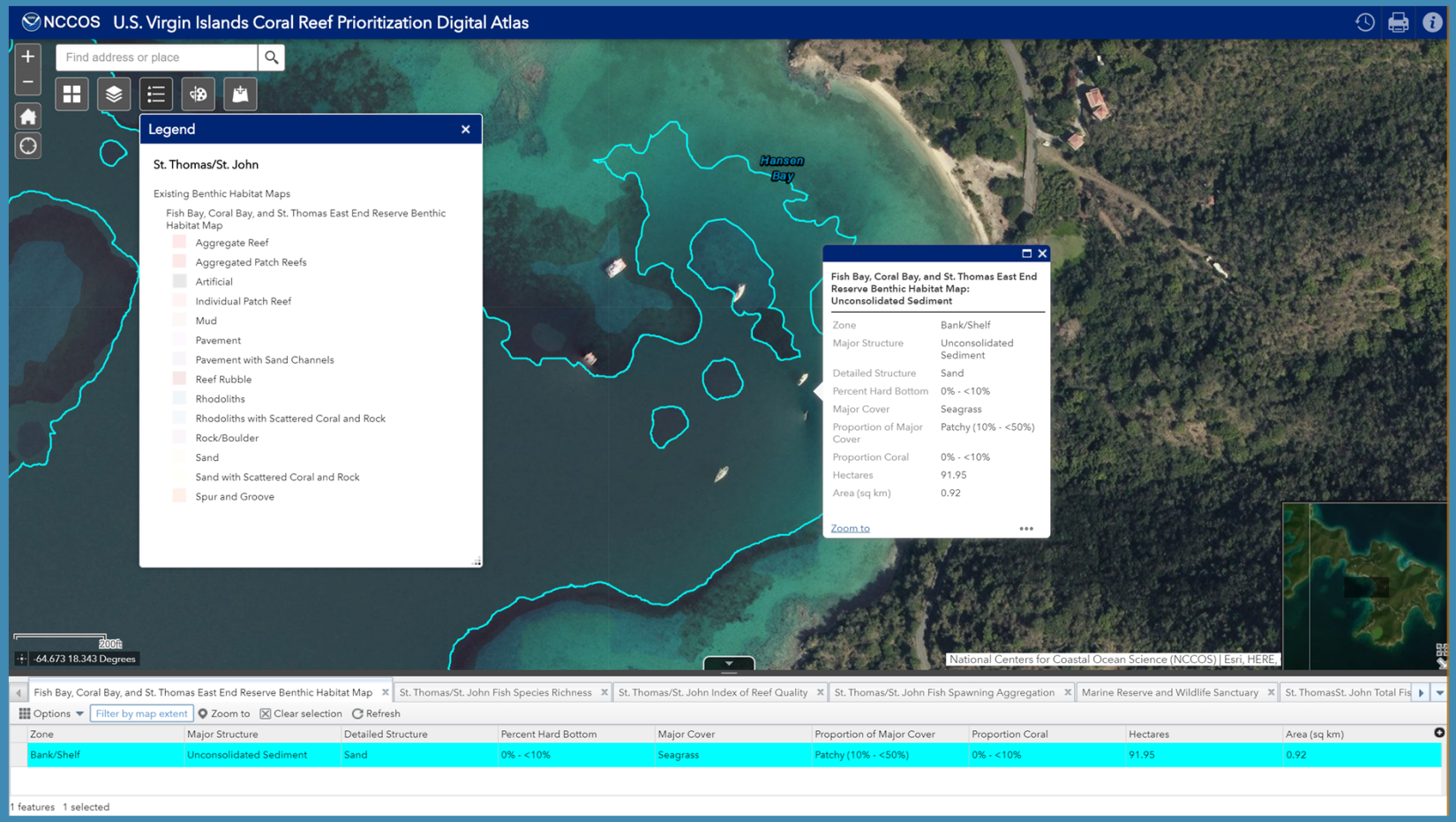

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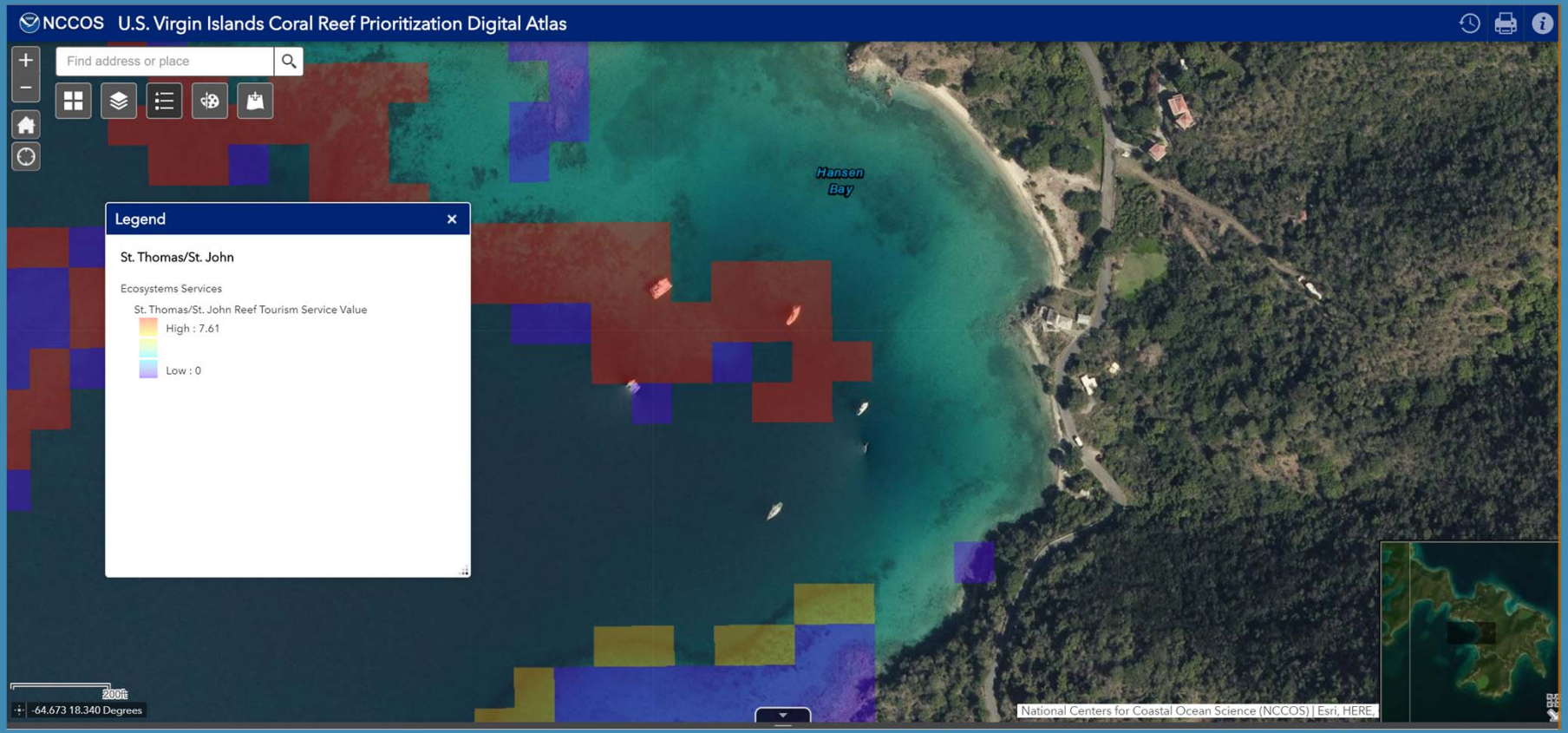

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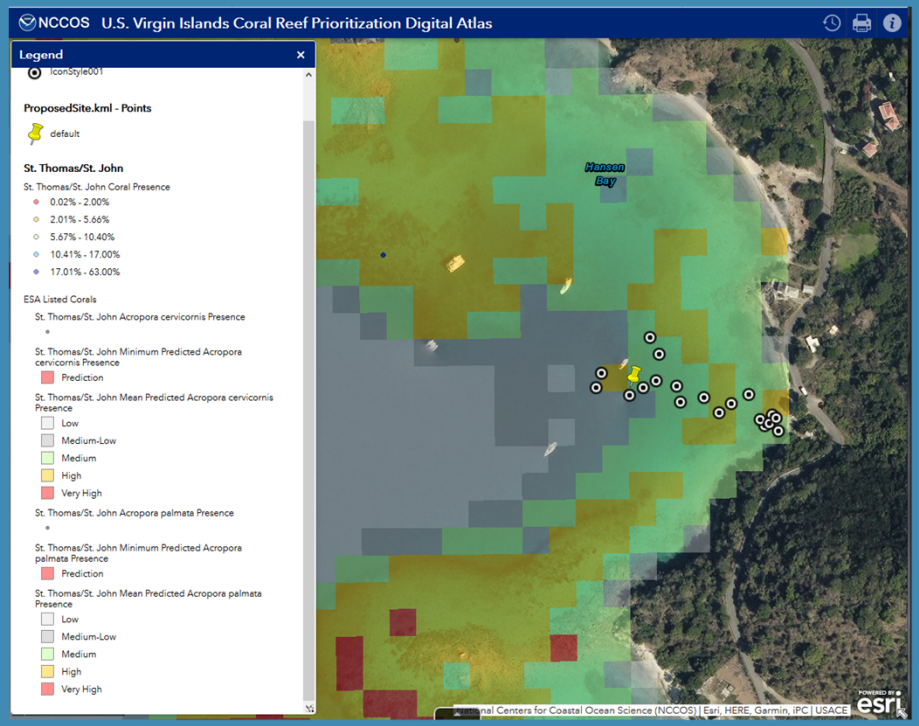

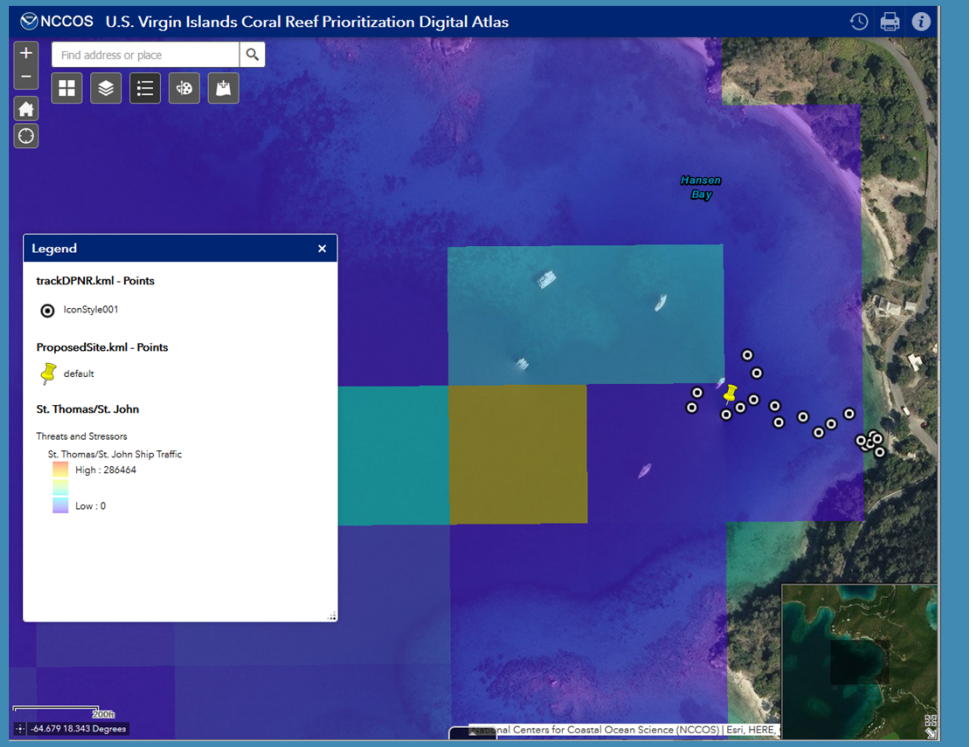

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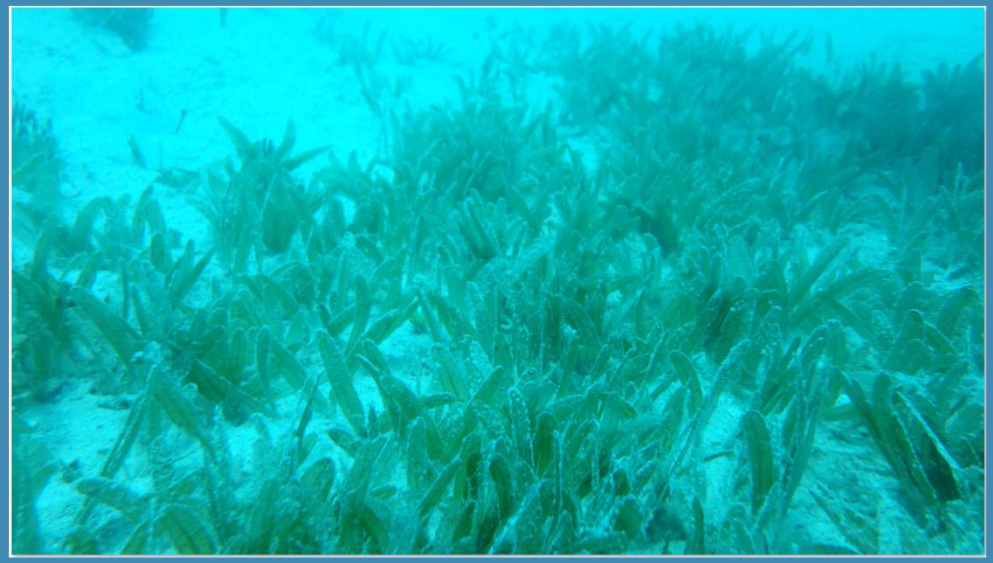

Native Species-
Thalassia testudinum

Invasive Species-
Halophila stipulacea

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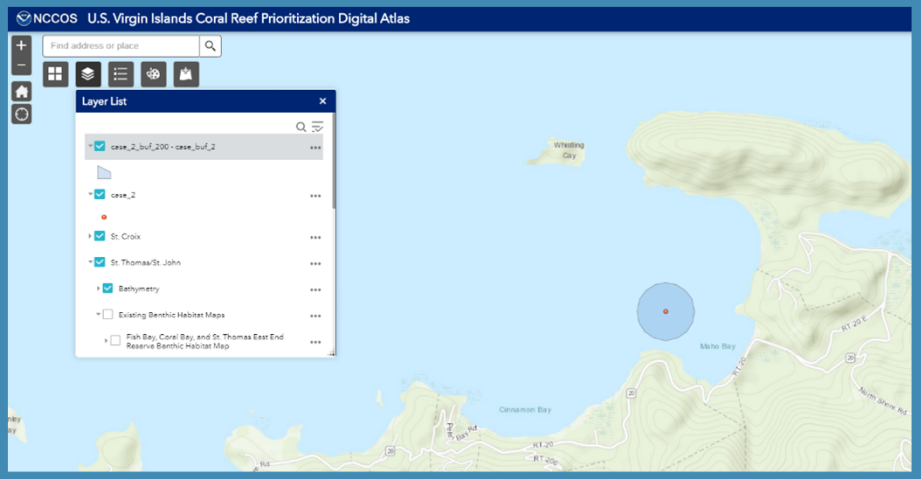
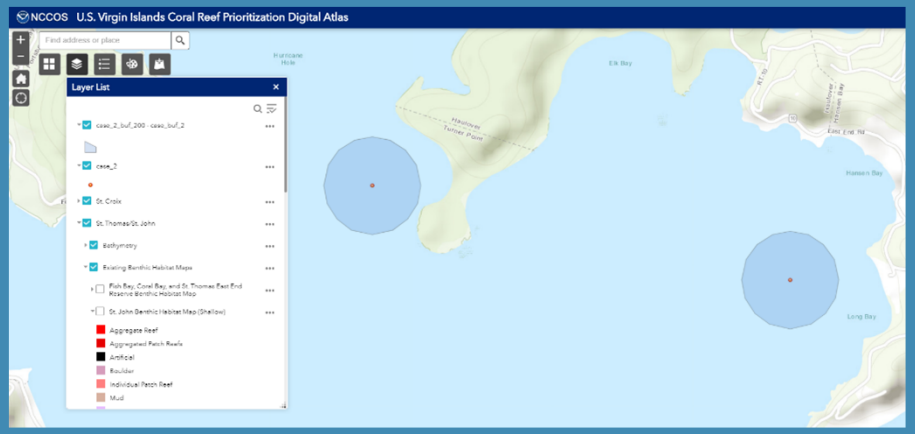
LIVE DEMO

- https://noaa.maps.arcgis.com/apps/webappviewer/index.html?id=3832758b3e4044c79079845e2c2487eb

CASE STUDY:
MAHO BAY

Alternative Locations:
Maho Bay
Or
Hurricane Hole





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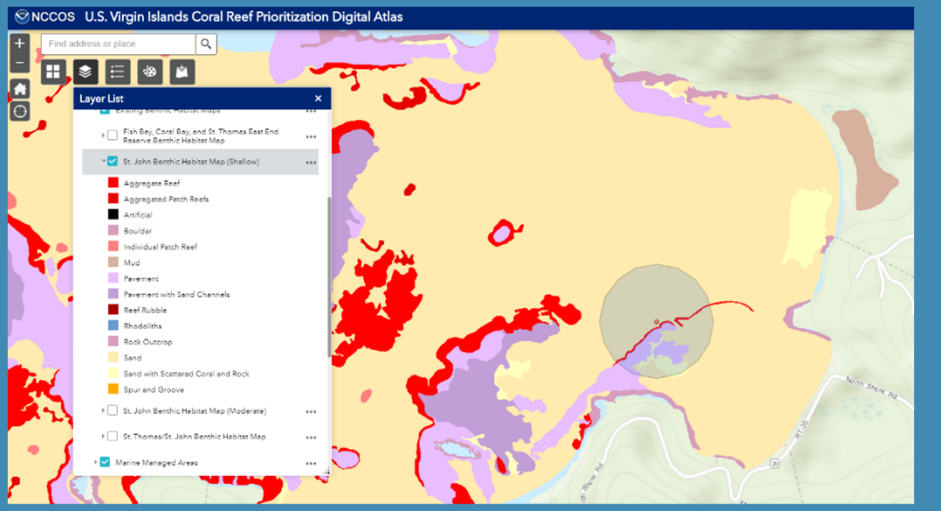
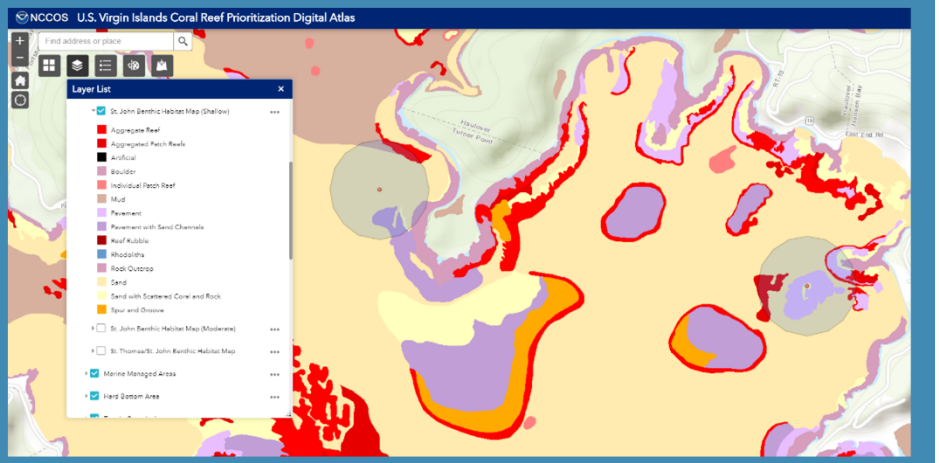
CASE STUDY: BENTHIC HABITAT

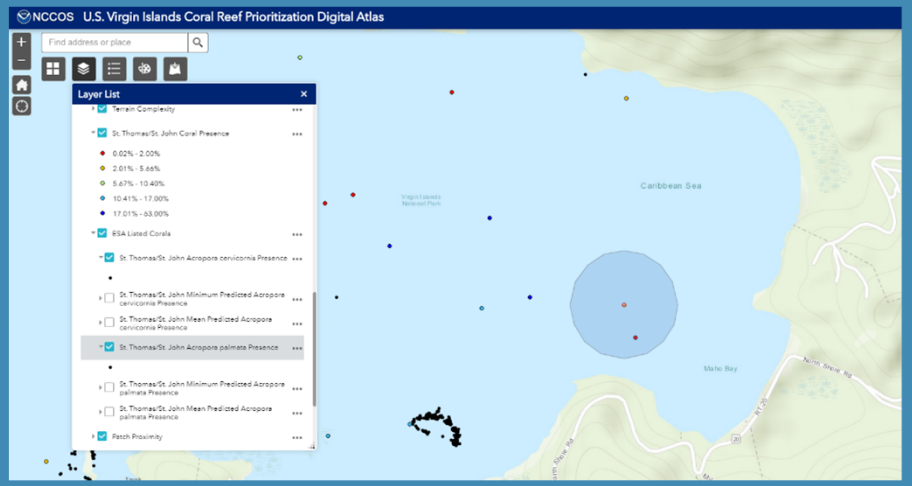
Benthic Habitat Maps

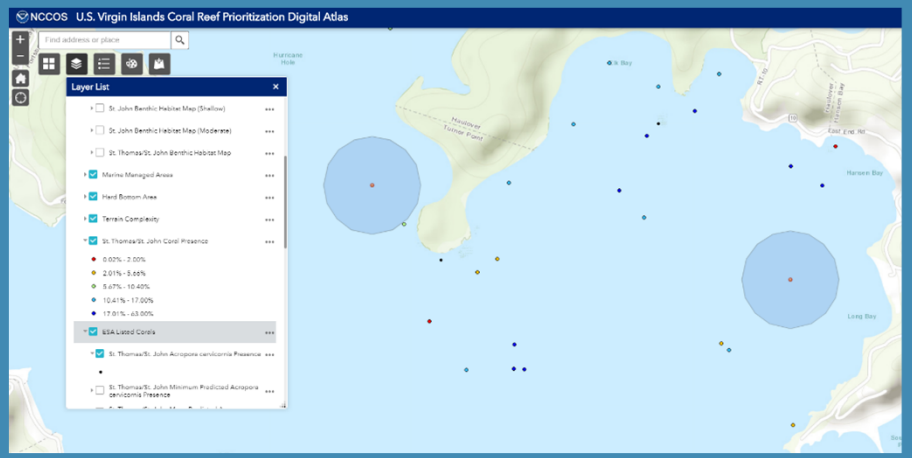




CASE STUDY: CORAL REEF

Presence of Endangered Coral Species
&
Coral Cover from In-Situ Surveys





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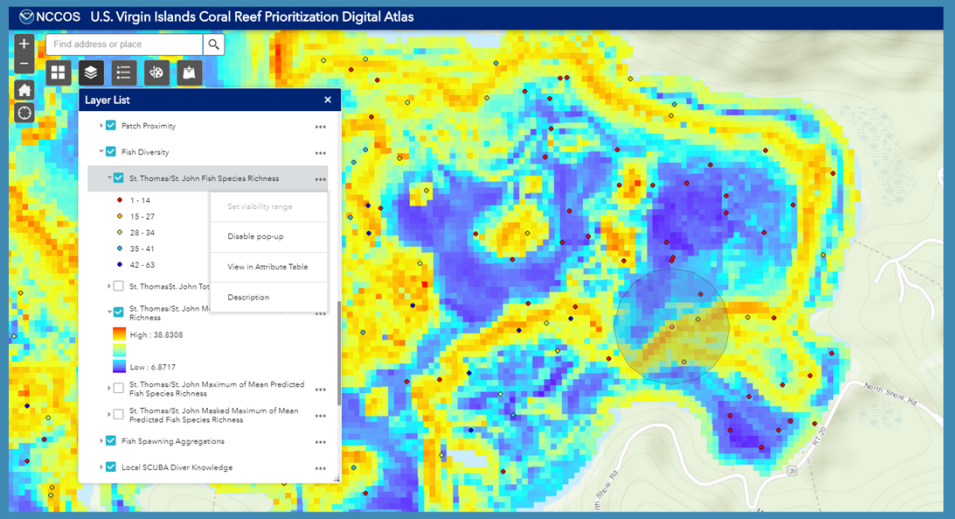
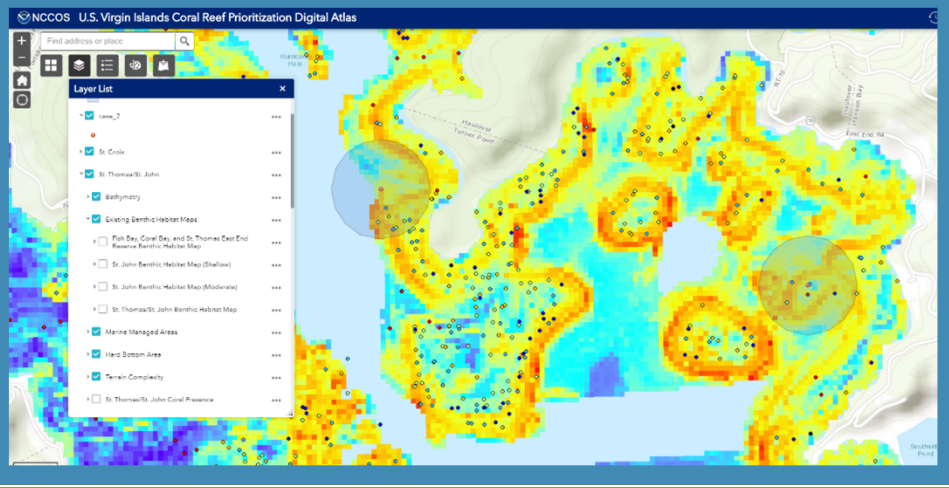
CASE STUDY: FISH

Fish Species Richness from In-Situ Surveys & Predicted Fish Species Richness





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CASE STUDY:
PATCH PROXIMITY

Presence of Seagrass and Mangroves