SECOORA
Southeast Coastal Ocean Observing Regional Association

# Biological data demo

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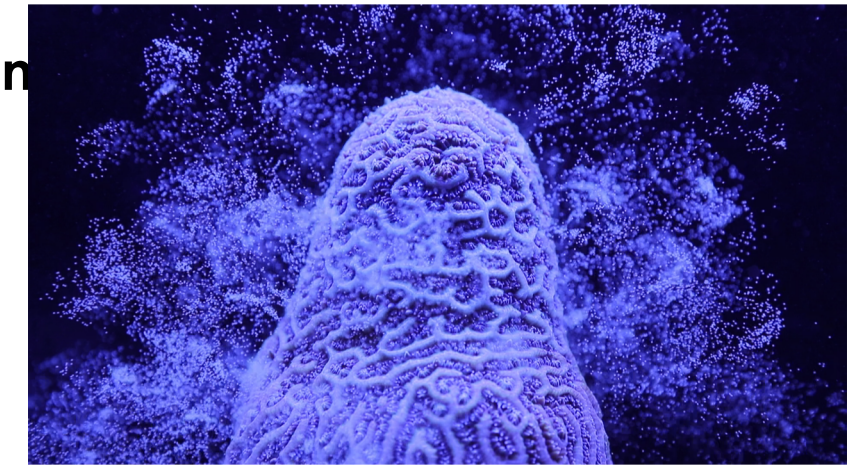
IOOS
Integrated Ocean Observing System

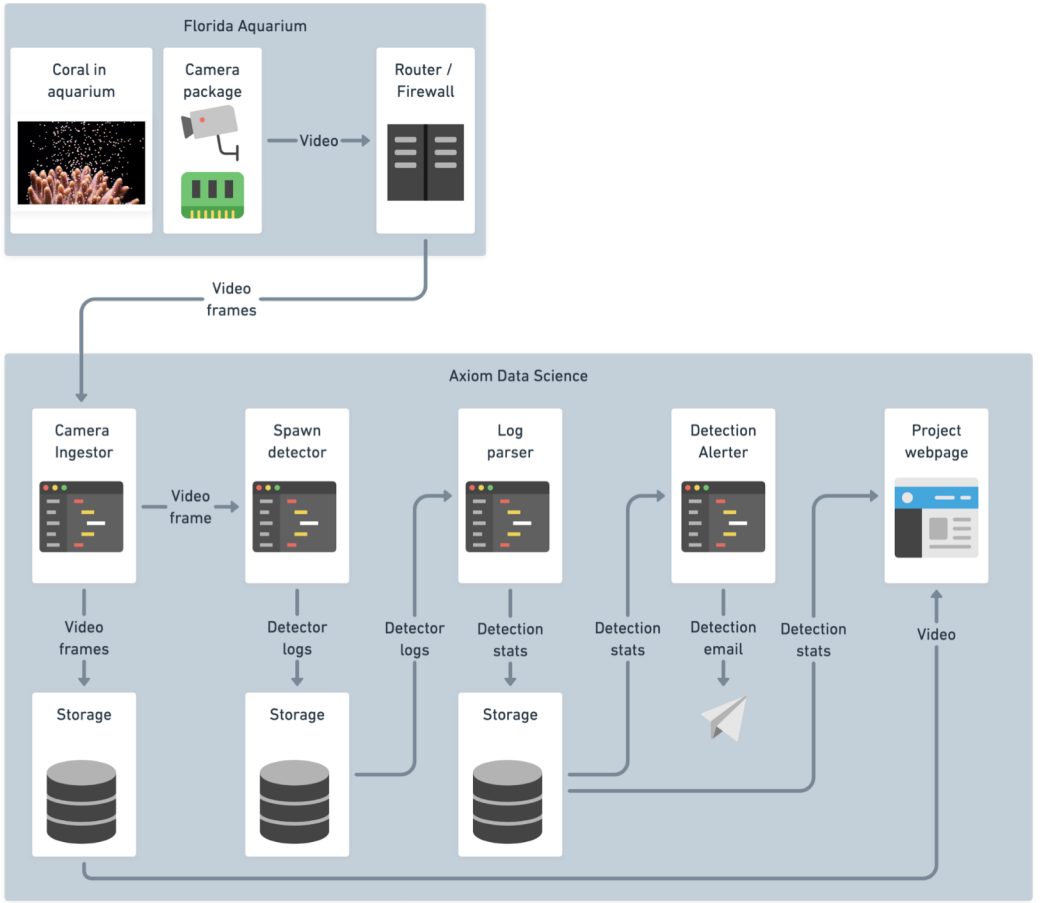
# Project Goals - Coral AI

- Better understand timing and duration of spawning events
- Build camera-based coral monitoring system
- Develop method to detect when coral are spawnin
- Develop pipeline to alert users of coral spawning

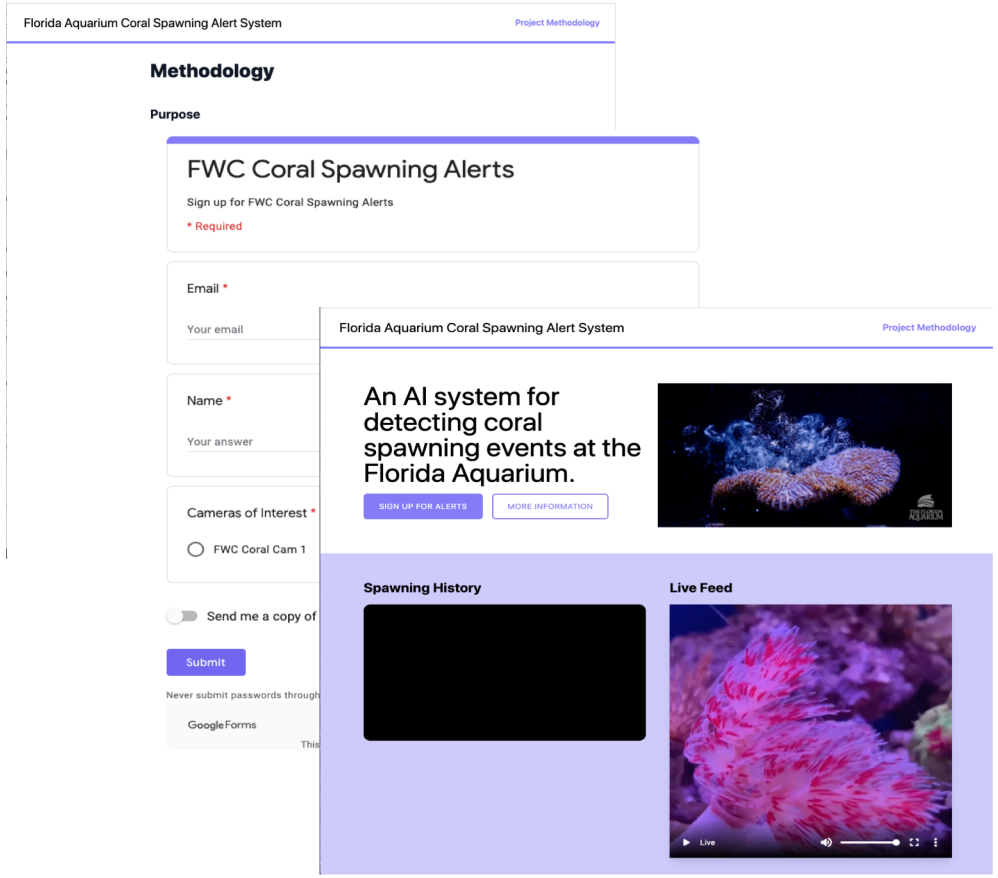


# System Overview - Coral AI

- Ingest video over internet
- Send video frames to spawning detector
- Log spawning events
- Send alerts based on data collected from detector
- Results and video on website



# Project Website and Code – Coral AI (in progress)



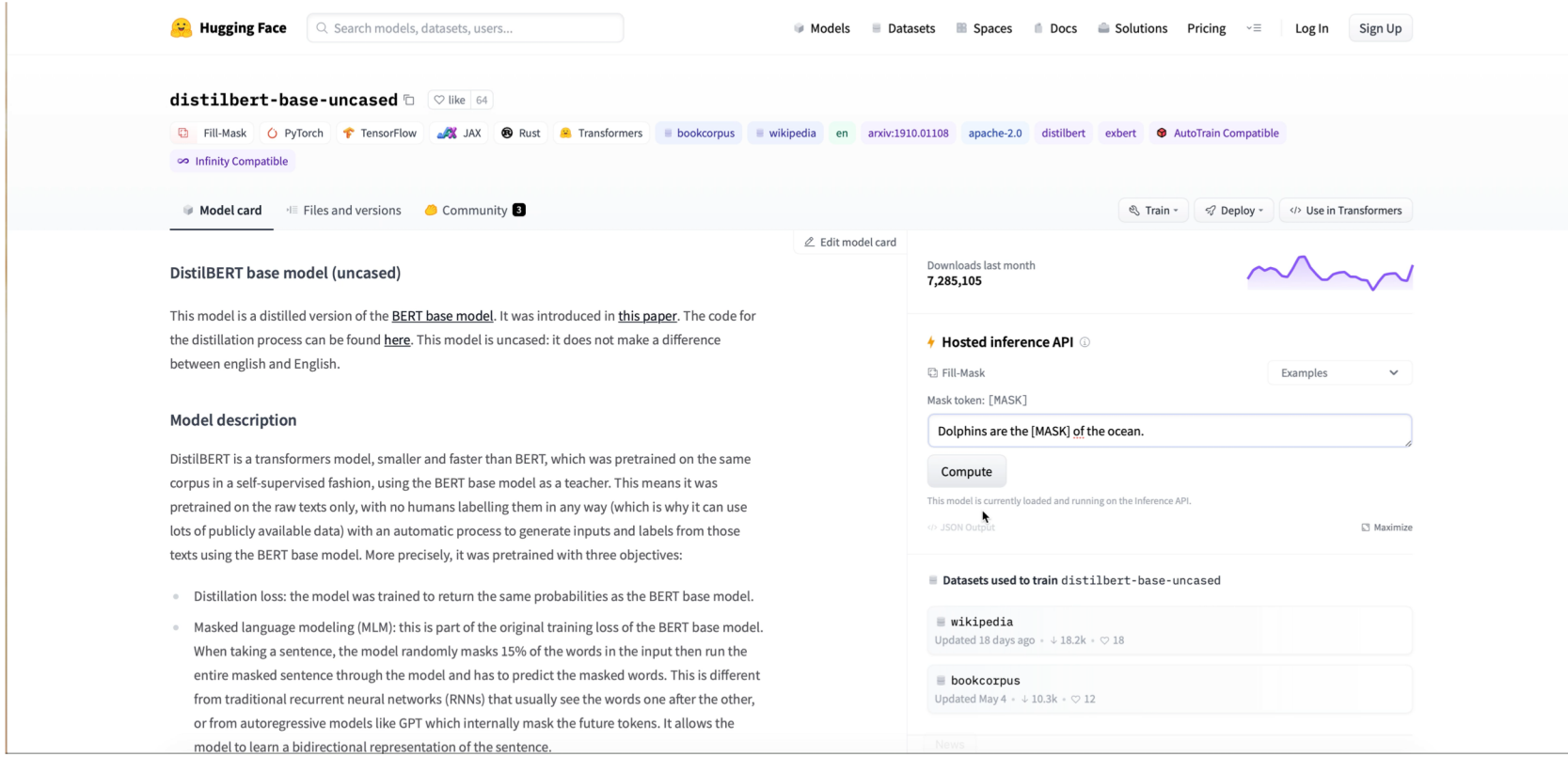

- Access to video feed, spawning history, and sign-up for alerting
- Details about implementation and links to source code
- Issues with firewall at the FL aquarium have made access to the cameras difficult
- When data is flowing
  - coral-spawning.srv.axds.co
- Source: github.com/axiom-data-science/coral-spawning-detector

# Summary - Coral AI

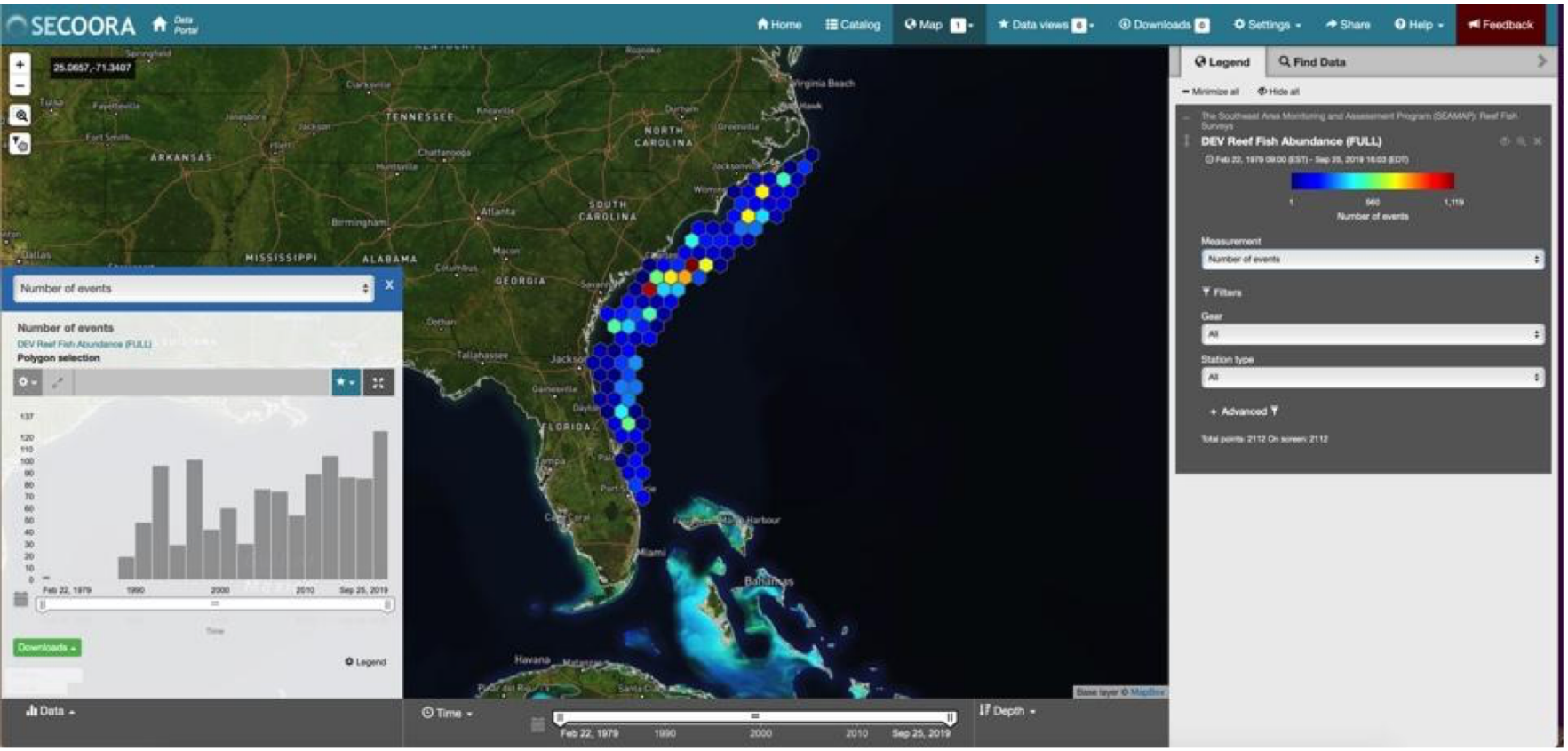
- Spawning detector model created and served using BentoML
- Camera ingestion system created that saves video and requests for spawning to be detected
- System to collect spawning events, determine duration of events, and provide for alerting
- Project website with video feed, history of detection events, methodology, links to source code, and ability to sign up for email alerts created
- System built on open source software to facilitate reuse
- This will be a use case for the ongoing AI portal project

# Grouper Detector

- Work with Jim Locascio on using acoustic data to feed an AI detector to detect grouper calls
- Currently have a working detector for dominate grouper calls from the initial data provided
- In Progress: organizing and incorporating more data and hoping to detect a greater variety of grouper sounds



# SEAMAP




1. Support the final integration of long-term living marine resources survey data types from SEAMAP-SA into the SECOORA data portal,
2. Support the development of new data access, data exploration, and data analysis or visualization tools within the SECOORA data portal,
3. Support expansion of long-term living marine resource survey data availability in the SECOORA data portal, and
4. Assess methods for inclusion of SECOORA oceanographic data into stock assessment data inputs for managed fisheries species.

# SEAMAP - work in progress

1. Expand the data tables and code tables currently in the system to add a Tagging table, additional life history data, and a Turtle table.
2. Based on user feedback, develop tools or create training for users for pre-existing tools as appropriate.
3. Create a multispecies data access product to produce the zero records for more than one species at a time.
4. Develop a reporting system on top of EAV database (developed in previous years of the project) to support user metrics, user report queries/requests and exporting or querying of data for inclusion in the visualization system.
5. Produce reports for inclusion into the SECOORA data system and change current visualization to use the new data source of the data.

# Soundscapes page

- Educational page where users can listen to estuarine sounds and get more information about various soundscape projects
- Initial build is complete, we are now incorporating feedback from the team to improve the site and add more data
- https://sound.secoora.org

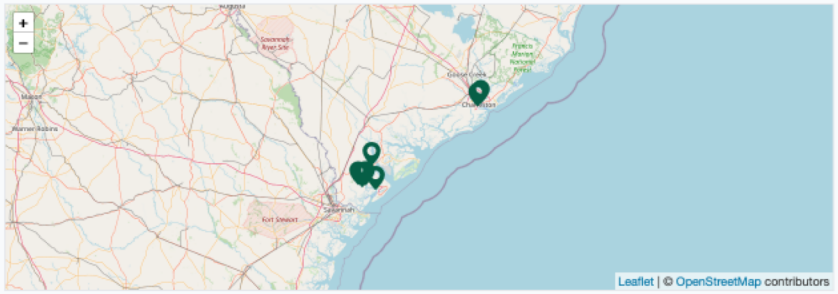
Estuarine Soundscape Observatory Network in the Southeast

About

## Explore Estuarine Soundscapes

We utilize passive acoustic recorders that allow continuous and long-term sampling of the underwater soundscape. These recordings provide information on the behavior of marine life and noise levels associated with human activity.

EXPLORE SOUNDS | LEARN MORE




Search by name or AphiaID

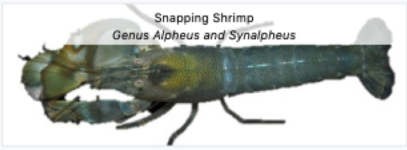
**Sounds of Estuaries**: Any

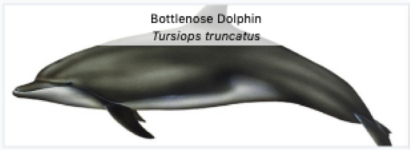
**Family**: Any

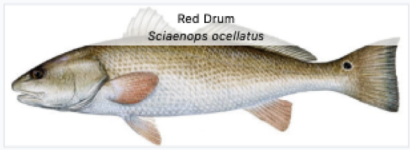
**Behavior**: Any

**Season**: Any

**Time of Day**: Any







Estuarine Soundscape Observatory Ne

About

Oyster Toadfish
*Opsanus tau*

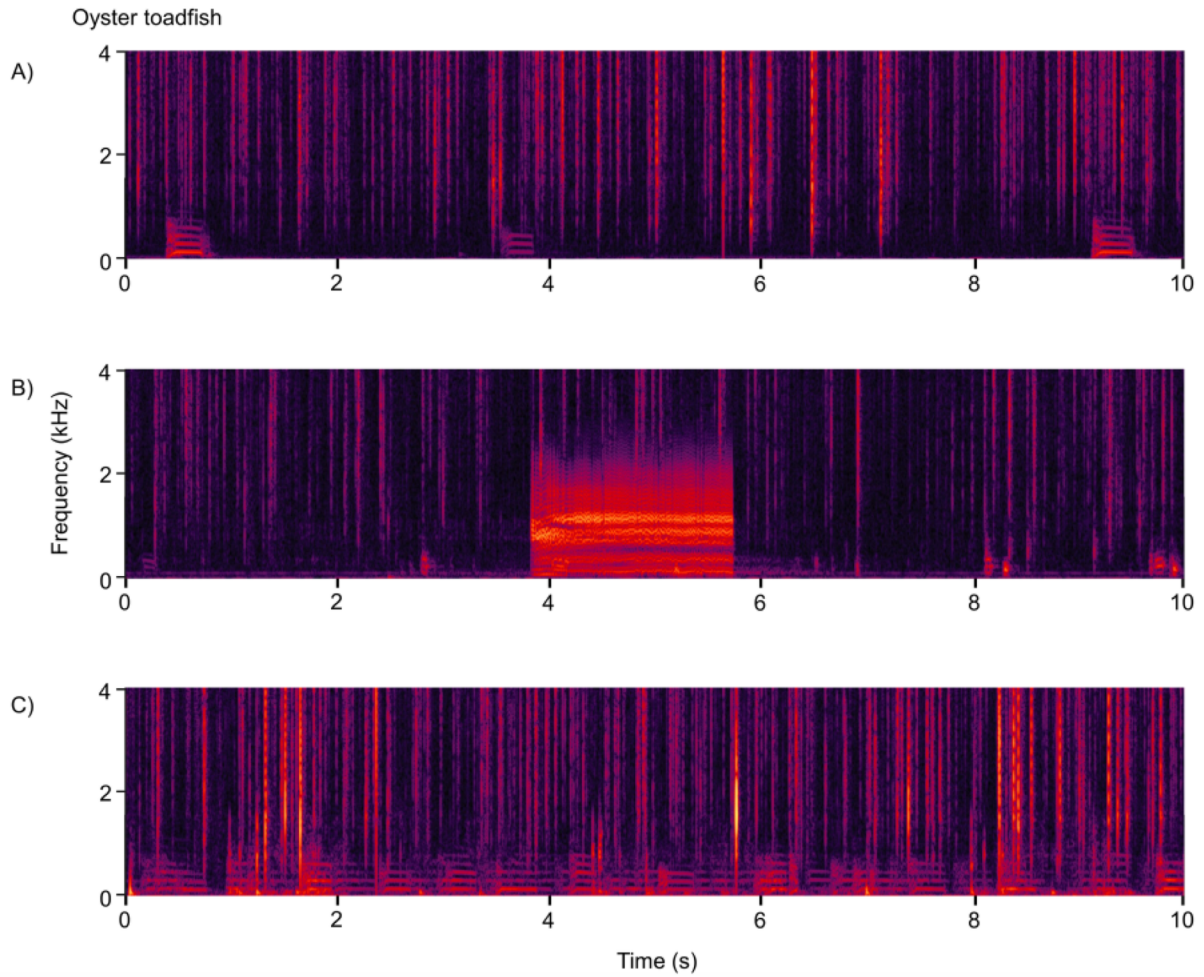
**3/21/2013, 1:40:00 AM**
Location: May River, South Carolina
Behavior: Calling

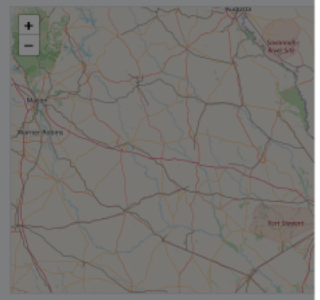
**10/9/2018, 9:00:00 PM**
Location: May River, South Carolina
Behavior: Grunt

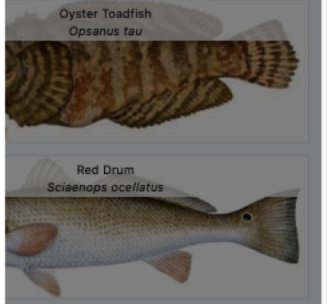
**4/2/2013, 11:00:00 AM**
Location: May River, South Carolina
Behavior: Chorusing

Location

Recording
This file is oyster toadfish calling at station 14M in the May River, SC. Recorded on March 21, 2013 at 1:40 EST.

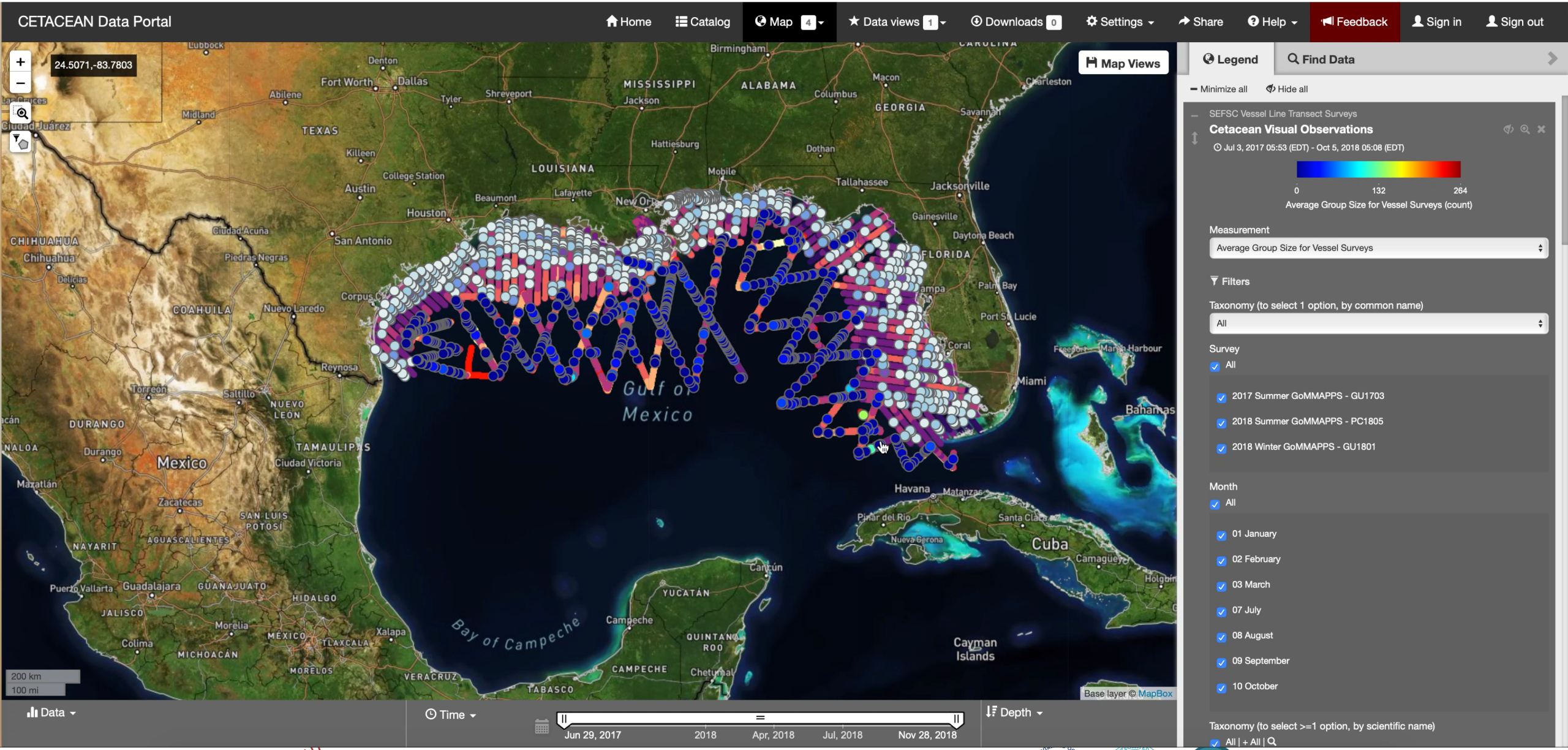




# CETACEAN

- The goal of this project is to develop a Gulf of Mexico platform (Compilation of Environmental, Threats, and Animal Data for Cetacean Population Health Analyses: CETACEAN) that provides user-friendly access to datasets that would assist the Trustees, restoration planners, responders, and conservation managers to assess the health of cetacean stocks and the stressors that threaten them over time and space.
- Collaboration with GCOOS, and NOAA NRDA
- First round of data ingest and visualization was to support a use case based on the needs of a restoration planner
  - Work included:
    - Marine Mammal survey data in the Gulf of Mexico
    - Marine Mammal stranding data in the Gulf of Mexico
    - various environmental layers as defined by the CETACEAN executive team and steering committee

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2022 Annual Meeting
#SECOORA2022