

# Advancing marine life data management: Passive acoustic archiving and SanctSound Portal

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**NCEI acoustics archive: Chuck Anderson and Veronica Martinez**  
**SanctSound portal: Leila Hatch, Brian Stone, Jenn Brown and Ben Best**



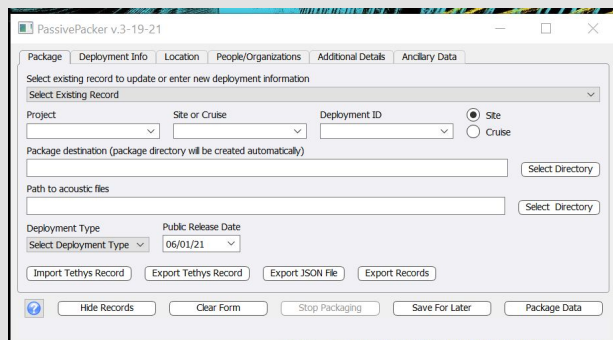
# Passive Acoustic Data Management

## NCEI passive acoustic archive

- Established 2017
- Holds over 100 TB
- Positioned to grow exponentially in the coming year(s)
  - Large holdings at NOAA Fisheries, U.S. Navy- and BOEM-funded projects, National Park Service, and IOOS
  - Ongoing multi-year monitoring efforts
    - NOAA-NPS Ocean Noise Reference Station Network (NRS)
    - **NOAA-Navy Sanctuary Soundscape Monitoring Project (SanctSound)**
    - NOPP-funded Atlantic Deepwater Ecosystem Observatory Network (ADEON)
    - NOAA Restore Science/DWH NRDA Gulf of Mexico Marine Mammal Monitoring

# Passive Acoustic Data Management

## Data submission aided by PassivePacker



PassivePacker v.3-19-21

Package Deployment Info Location People/Organizations Additional Details Ancillary Data

Select existing record to update or enter new deployment information  
Select Existing Record

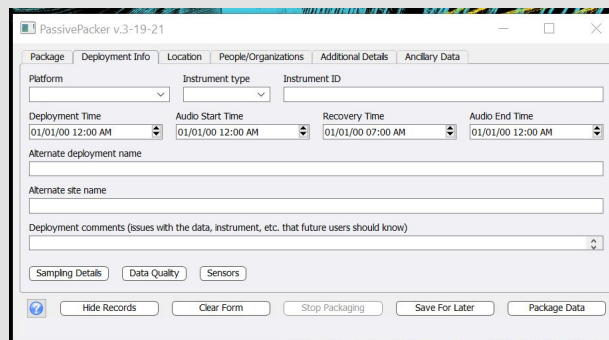
Project Site or Cruise Deployment ID Site  
01/01/00 12:00 AM 01/01/00 07:00 AM 01/01/00 12:00 AM

Package destination (package directory will be created automatically)  
Path to acoustic files

Deployment Type Public Release Date  
Select Deployment Type 06/01/21

Import Tethys Record Export Tethys Record Export JSON File Export Records

Hide Records Clear Form Stop Packaging Save For Later Package Data



PassivePacker v.3-19-21

Package Deployment Info Location People/Organizations Additional Details Ancillary Data

Platform Instrument type Instrument ID

Deployment Time Audio Start Time Recovery Time Audio End Time  
01/01/00 12:00 AM 01/01/00 12:00 AM 01/01/00 07:00 AM 01/01/00 12:00 AM

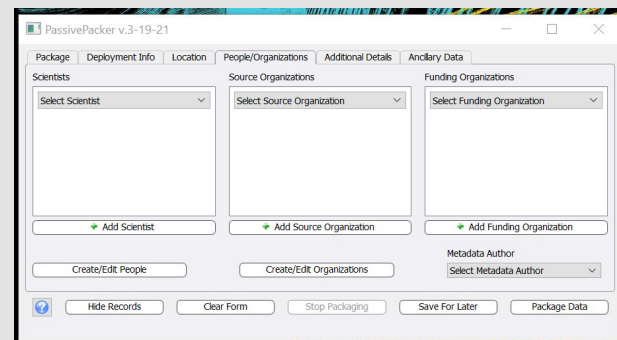
Alternate deployment name

Alternate site name

Deployment comments (issues with the data, instrument, etc. that future users should know)

Sampling Details Data Quality Sensors

Hide Records Clear Form Stop Packaging Save For Later Package Data



PassivePacker v.3-19-21

Package Deployment Info Location People/Organizations Additional Details Ancillary Data

Scientists Source Organizations Funding Organizations

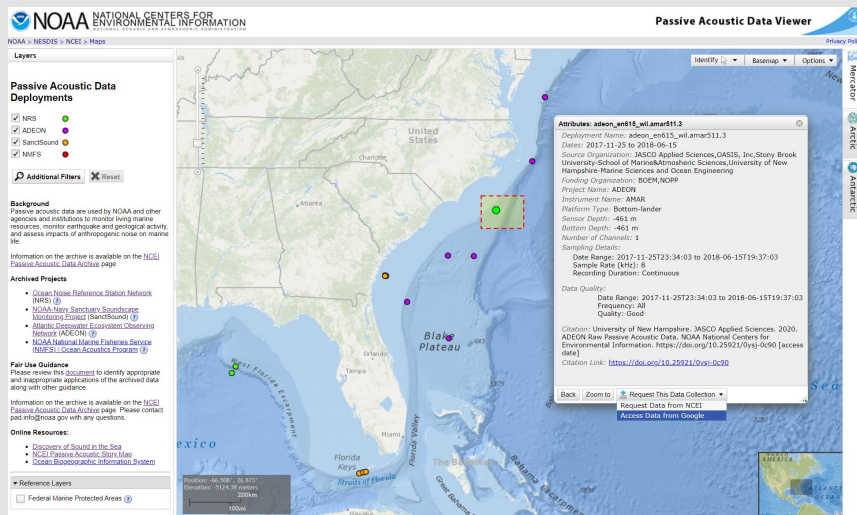
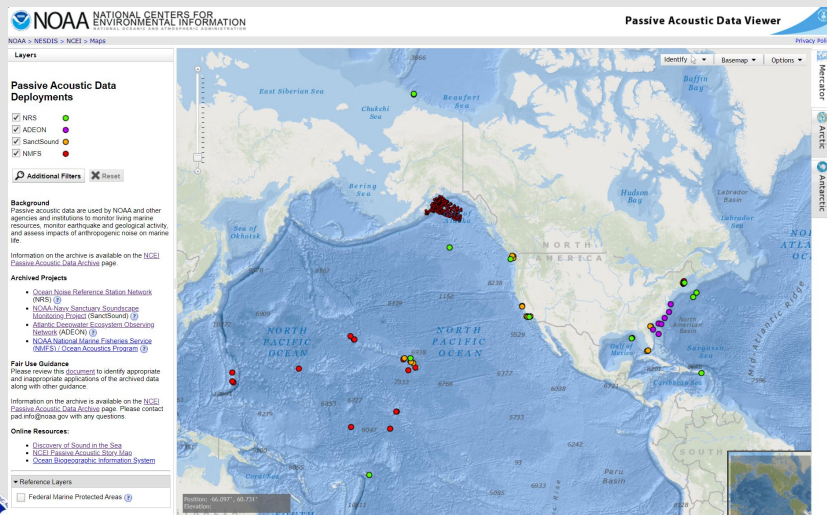
Select Scientist Select Source Organization Select Funding Organization

Add Scientist Add Source Organization Add Funding Organization

Create/Edit People Create/Edit Organizations Metadata Author  
Select Metadata Author

Hide Records Clear Form Stop Packaging Save For Later Package Data

## Data access via mapviewer and Google Cloud



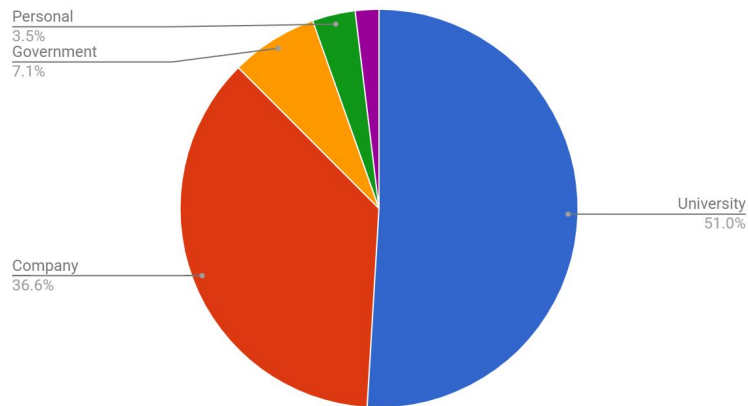


# Public Access

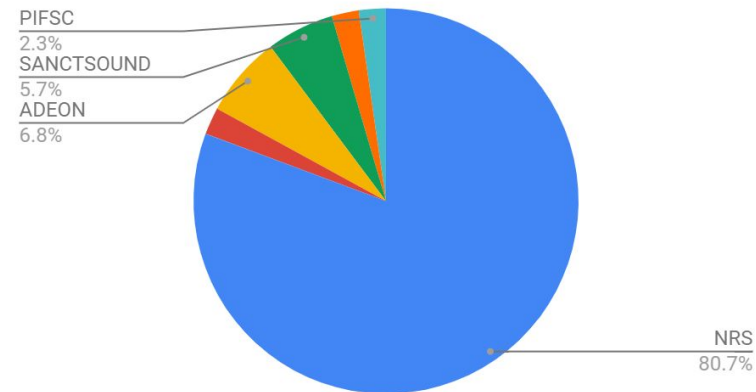
**Volume Delivered**  
**31.4 TB**  
**... plus data**  
**accessed directly**  
**from GCP**

Data Uses	Examples	Project
Whale sounds	Characterize fin whales and blue whales sounds	NRS
Support small business	Small Business Innovation Research, an incubator to develop technology with government and commercial applications	ADEON
Ambient noise	Characterize ambient noise near Channel Islands	NRS
Visualization	Visualize the underwater acoustic environment	NEFSC, NRS

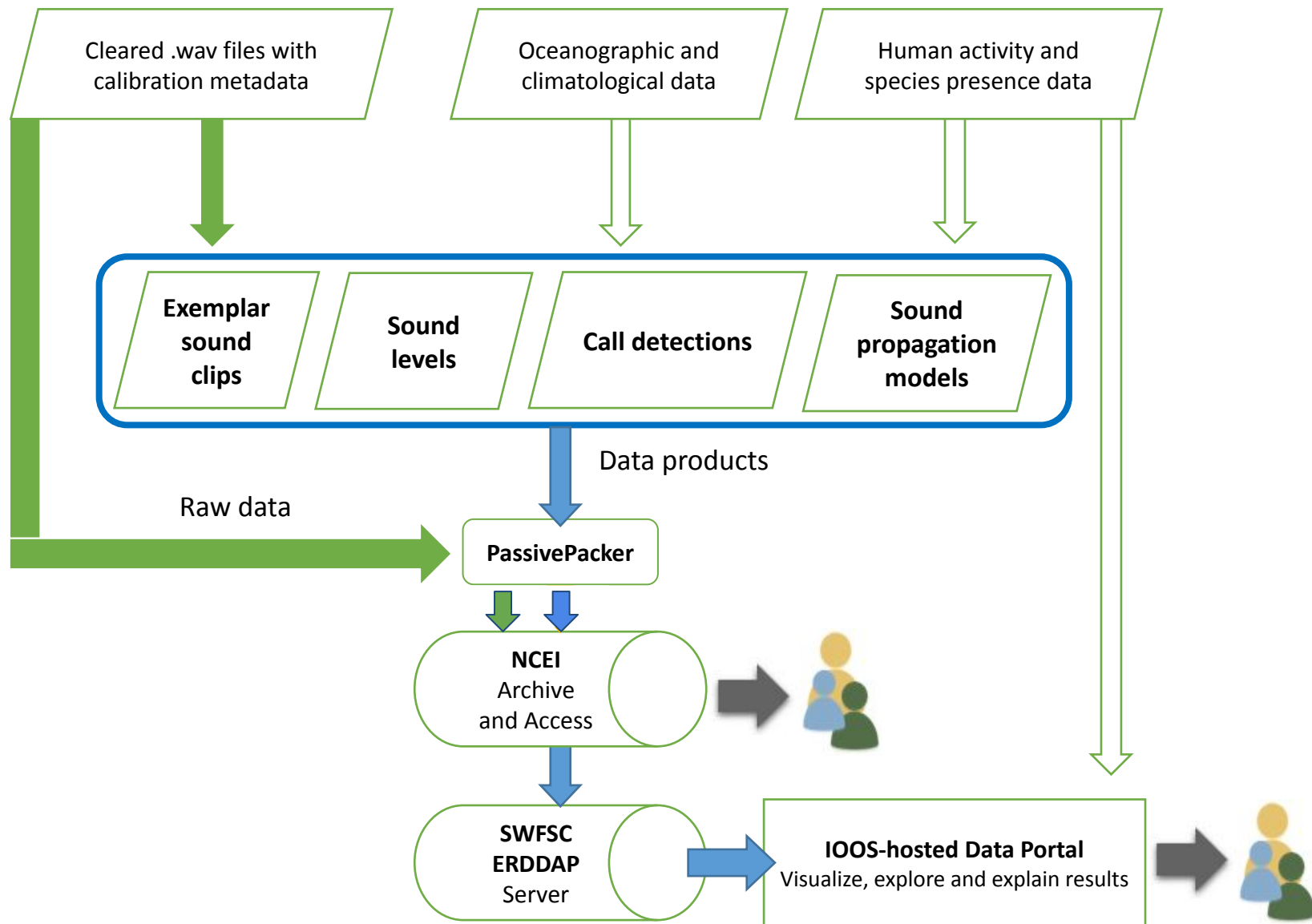
**Request Volume by User Type (GB)**



**Requests by Project**



# SanctSound Data Flow



# SanctSound Portal

## Foyer

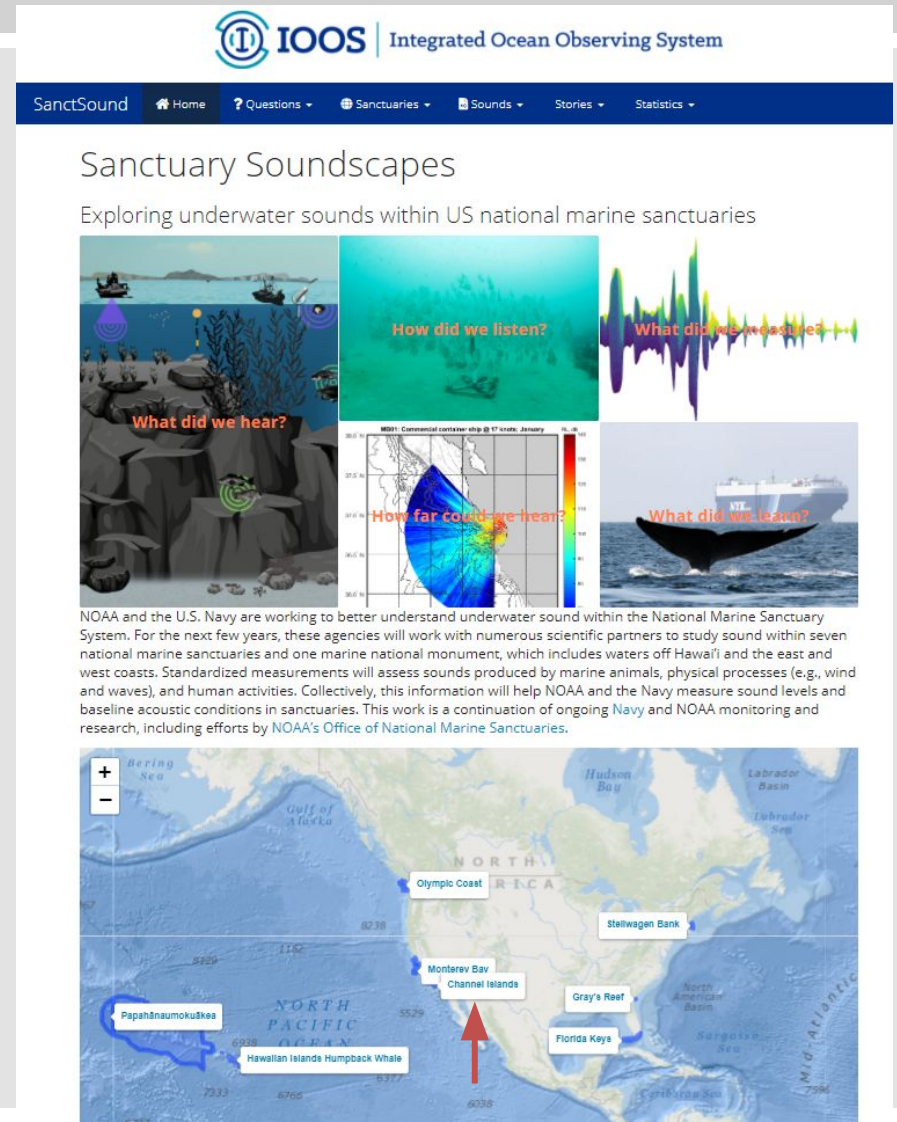
- General audience focused
- Curated
- Education

Jennifer Brown, ECOS Consulting, LLC  
Ben Best, EcoQuants, LLC

## House

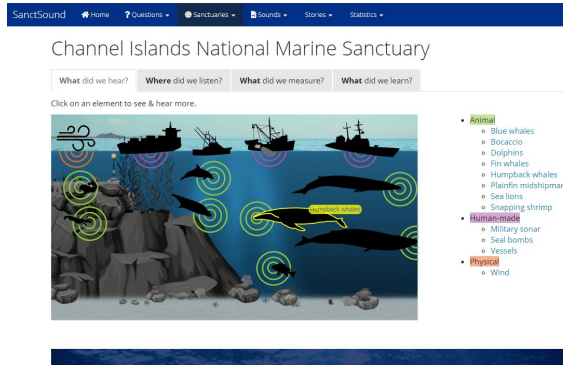
- Data focused
- Interactive
- Exploration

Brian Stone, Axiom Data Science LLC

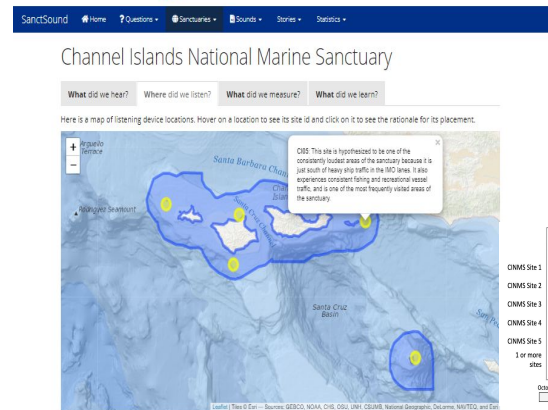
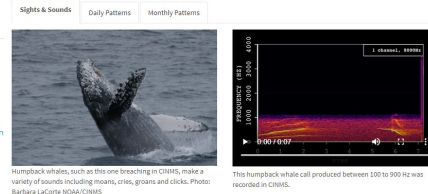


# What did we hear?

# Where did we listen?

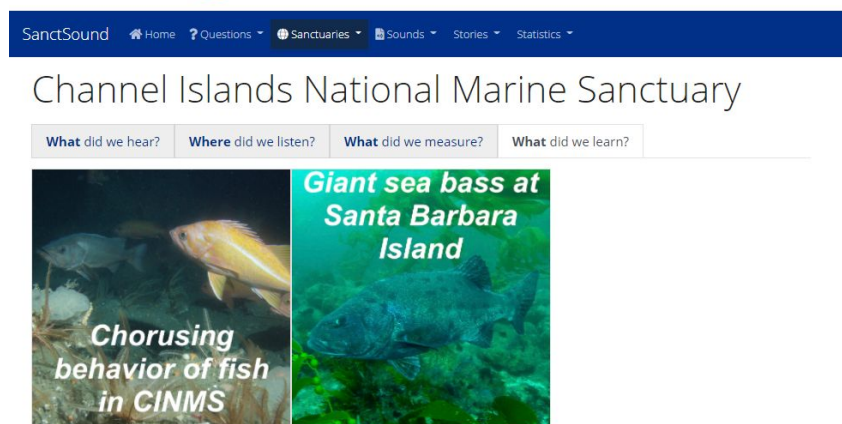
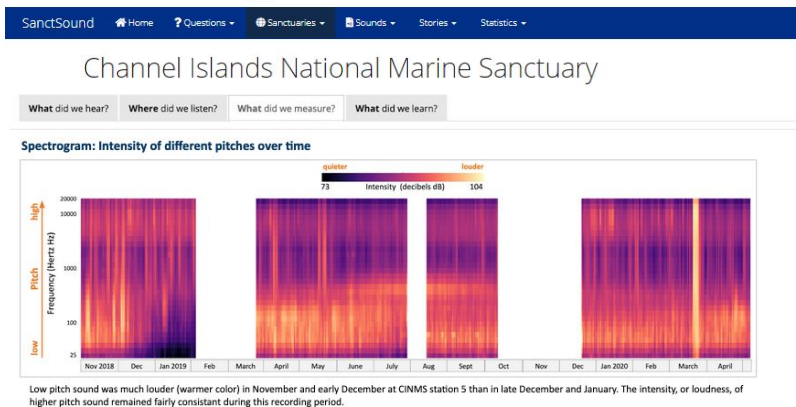


## Humpback whales in CINMS

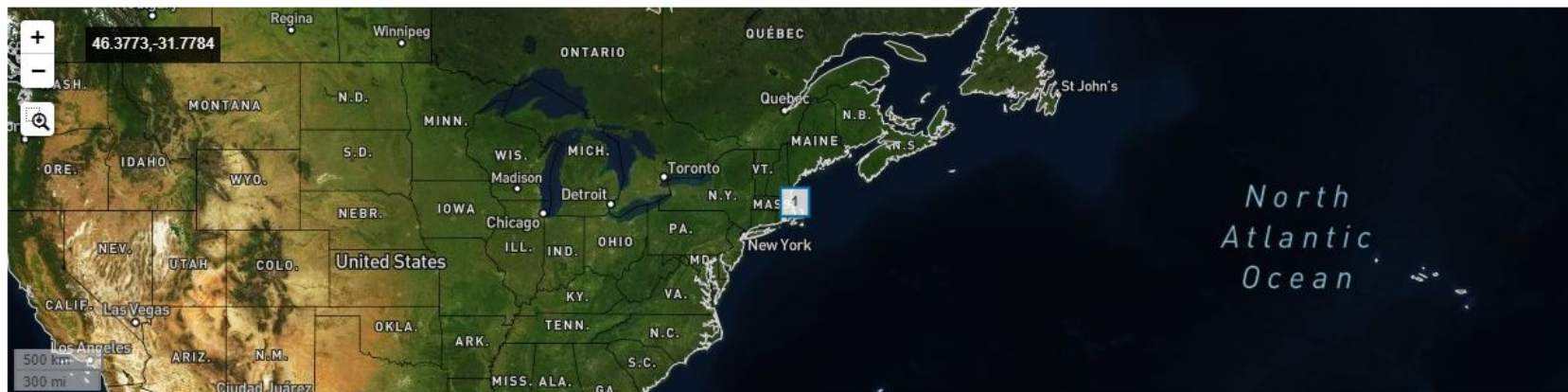


# What did we measure?

# What did we learn?

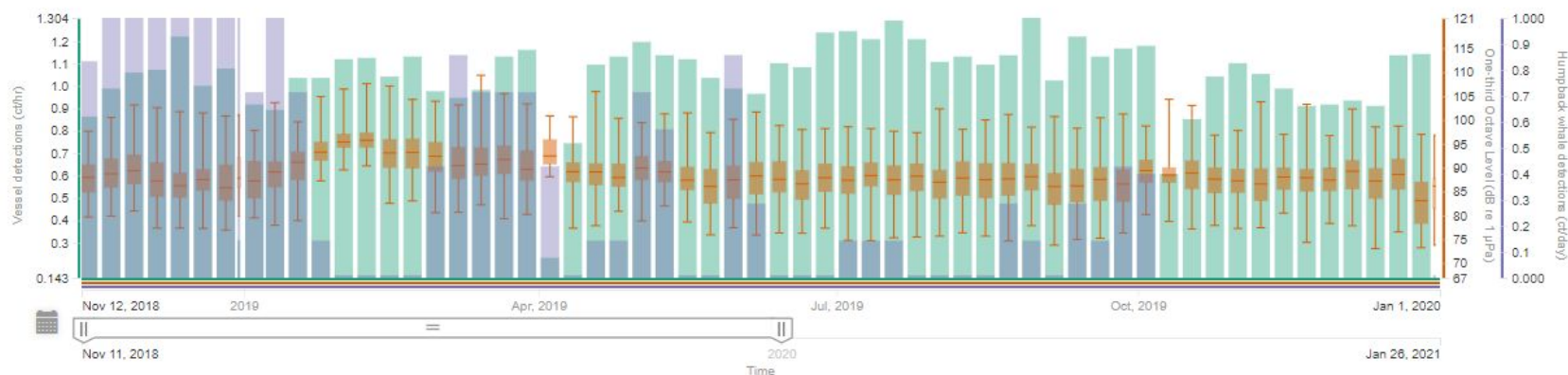






## Comparison chart

☒ Autoscale
 Group axes on Parameter



### Vessel detections (ct/hr)

**1** [Detection time series](#)  
 Stellwagen Bank  
 SB01
 Time bin : weeks Auto

### One-third Octave Level (dB re 1 µPa)

**1** [Levels Per Octave \(Octave: 63\)](#)  
 Stellwagen Bank  
 SB01
 Time bin : weeks Auto

### Humpback whale detections (ct/day)

**1** [Detection time series](#)  
 Stellwagen Bank  
 SB01
 Time bin : weeks Auto