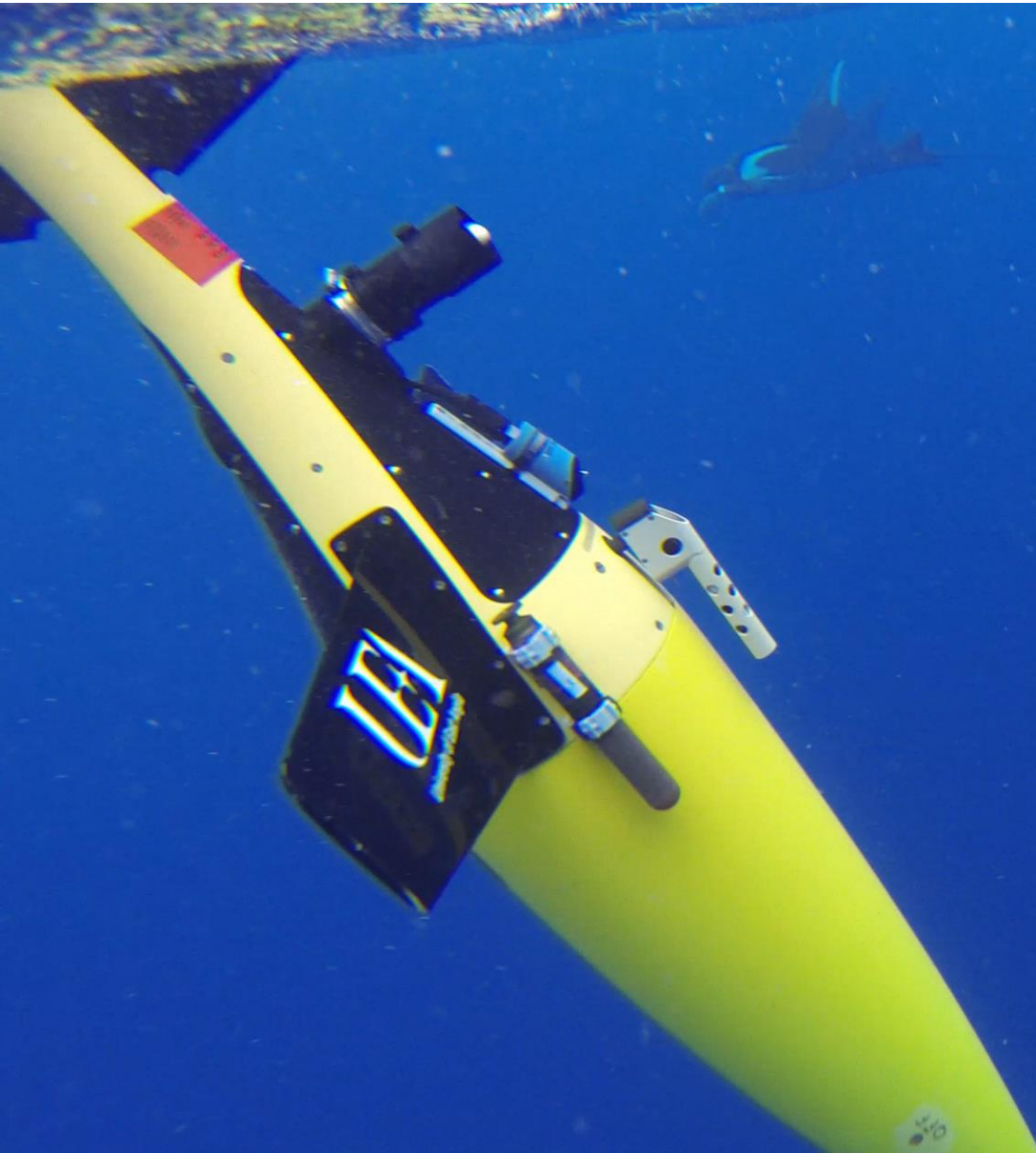


# Passive Acoustic Monitoring Gliders



Rationale for Passive Acoustic Monitoring (PAM)

Relevance of the glider platform

PAM glider applications

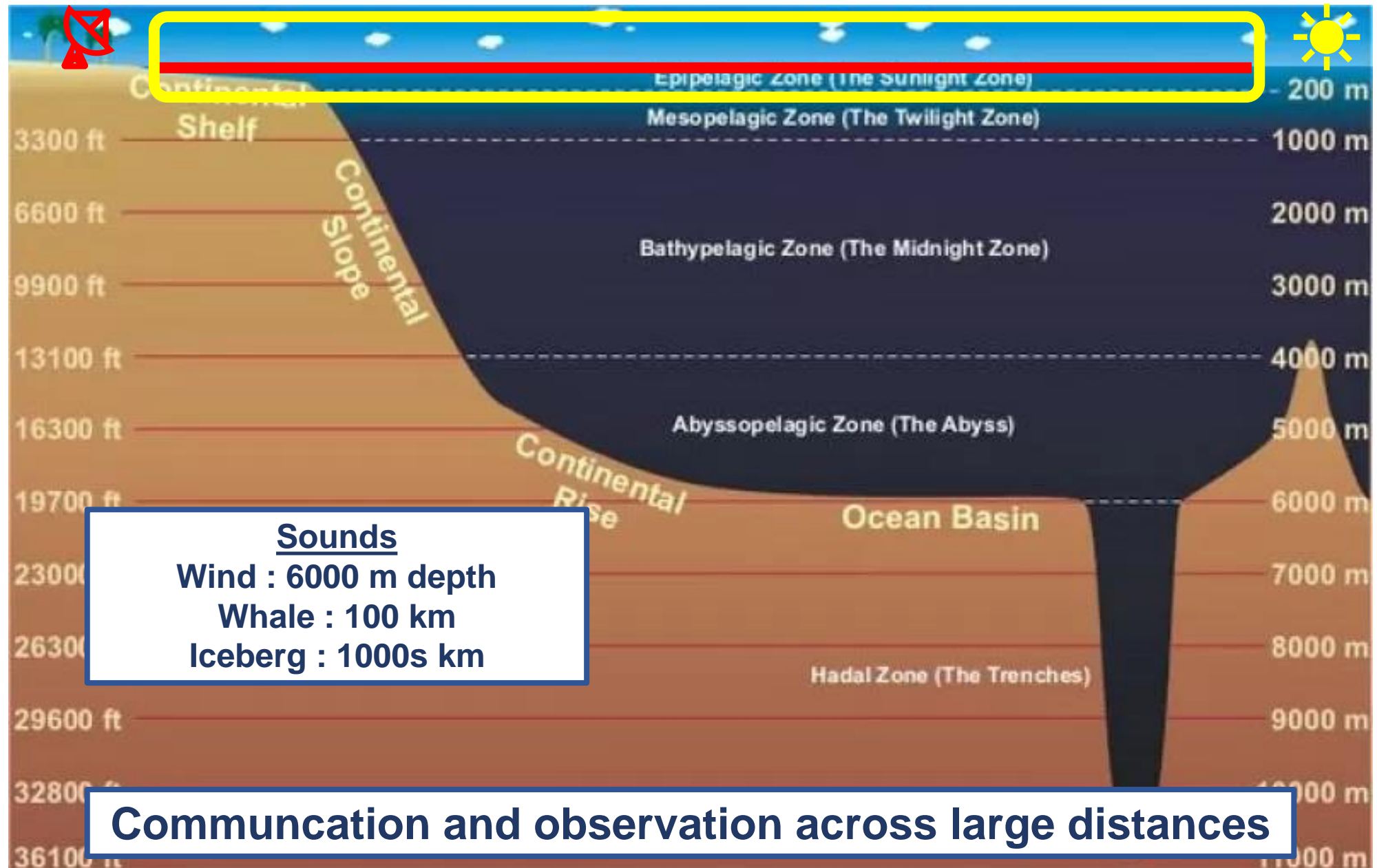
PAM Task Team

Members

Objectives

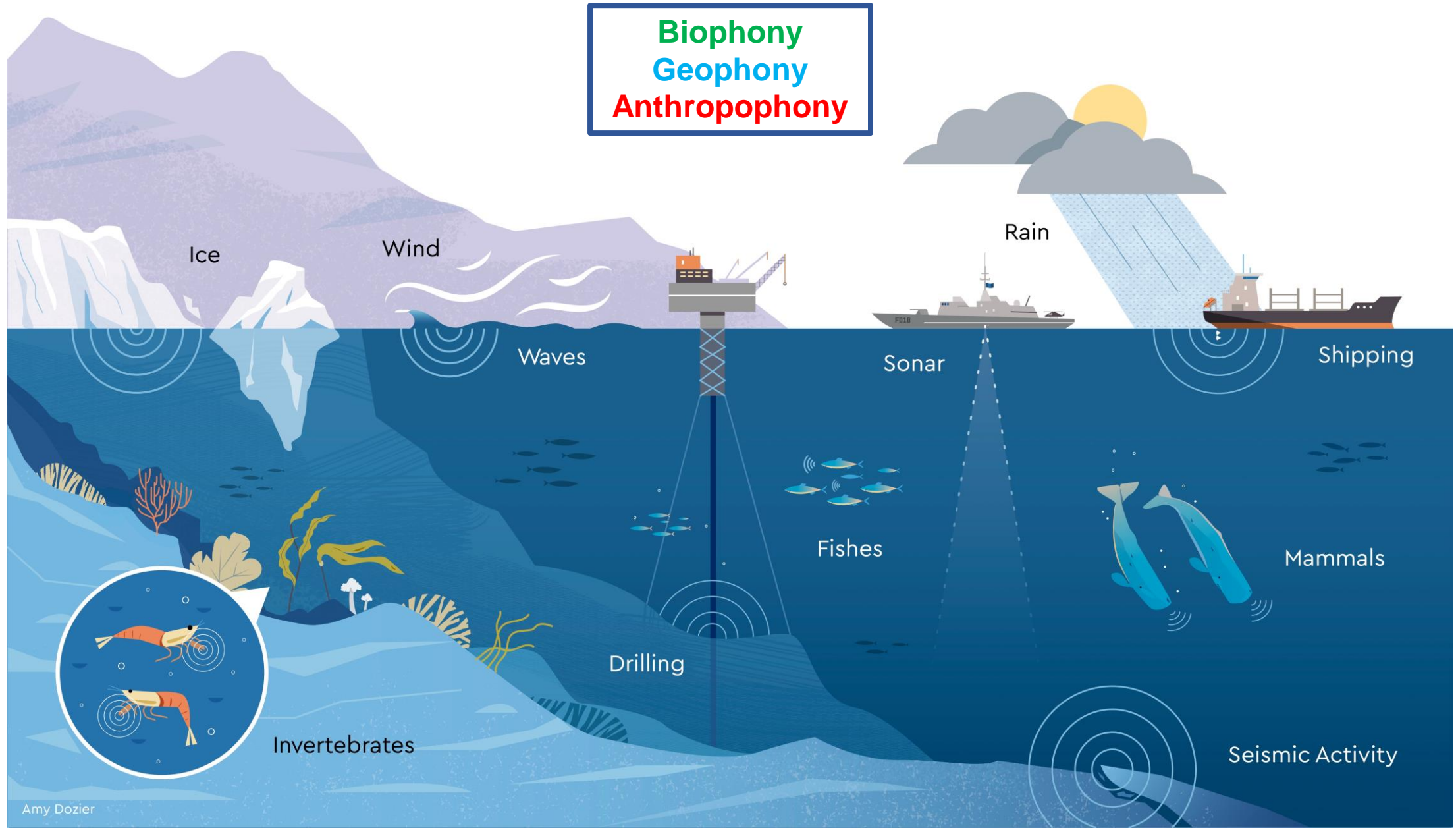
Reporting

# Propagation



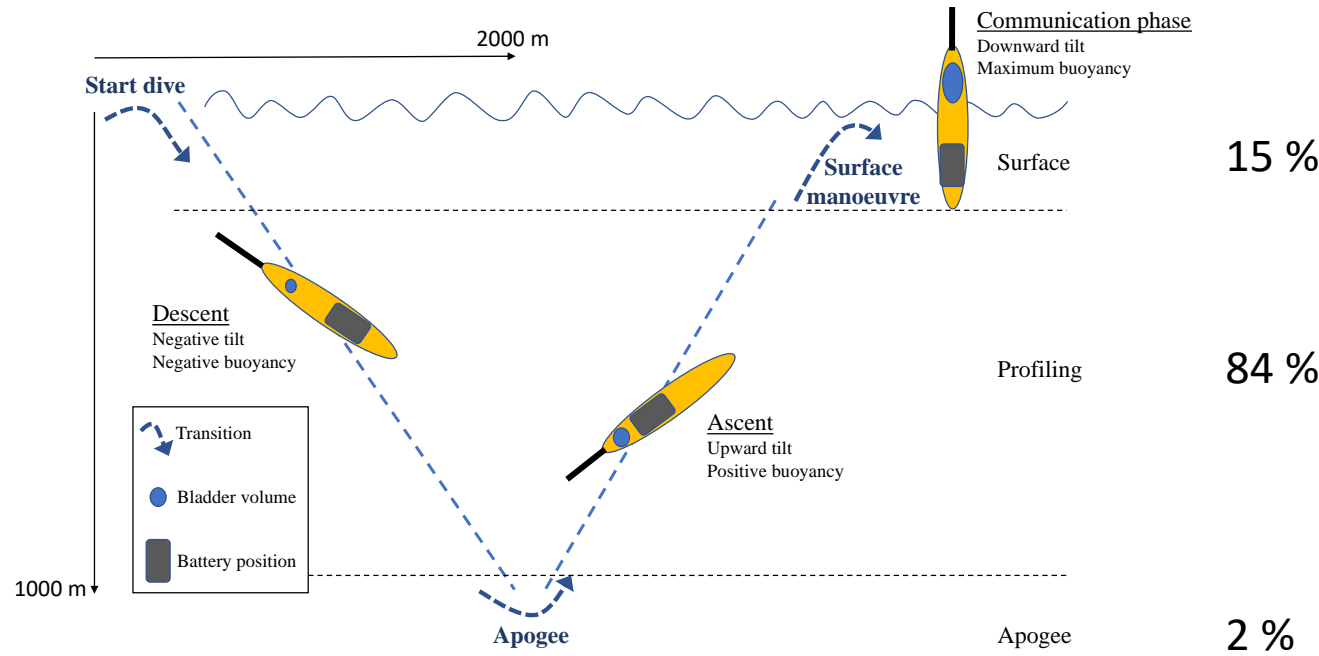
# Oceanic soundscape

Biophony  
Geophony  
Anthropophony



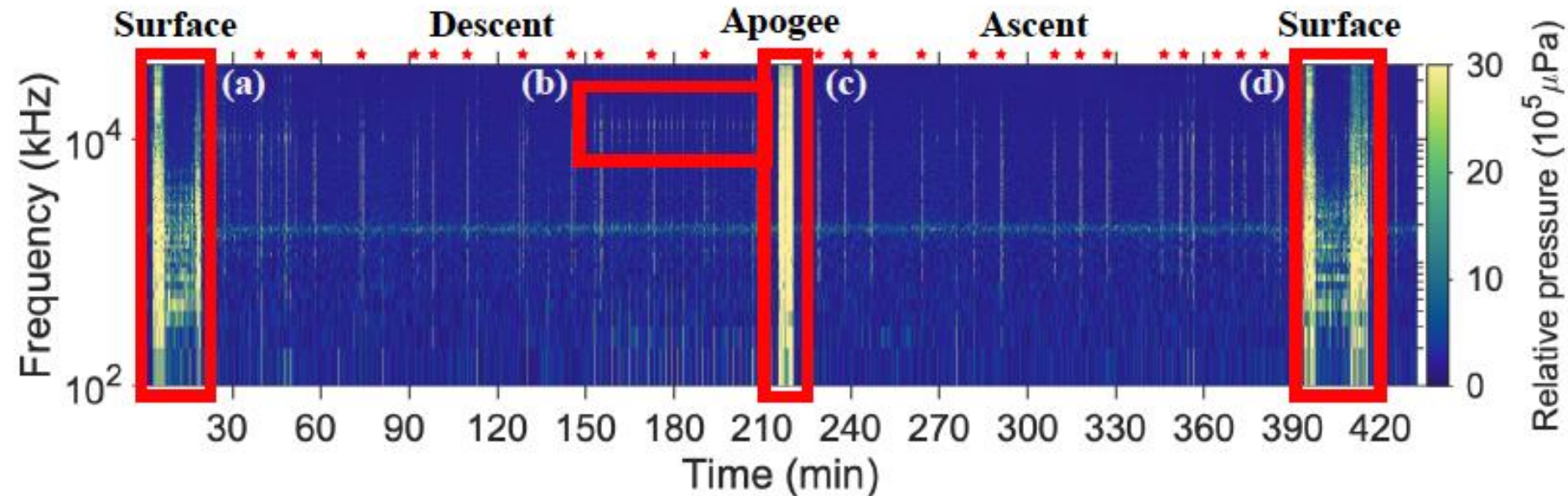


# Gliders for PAM

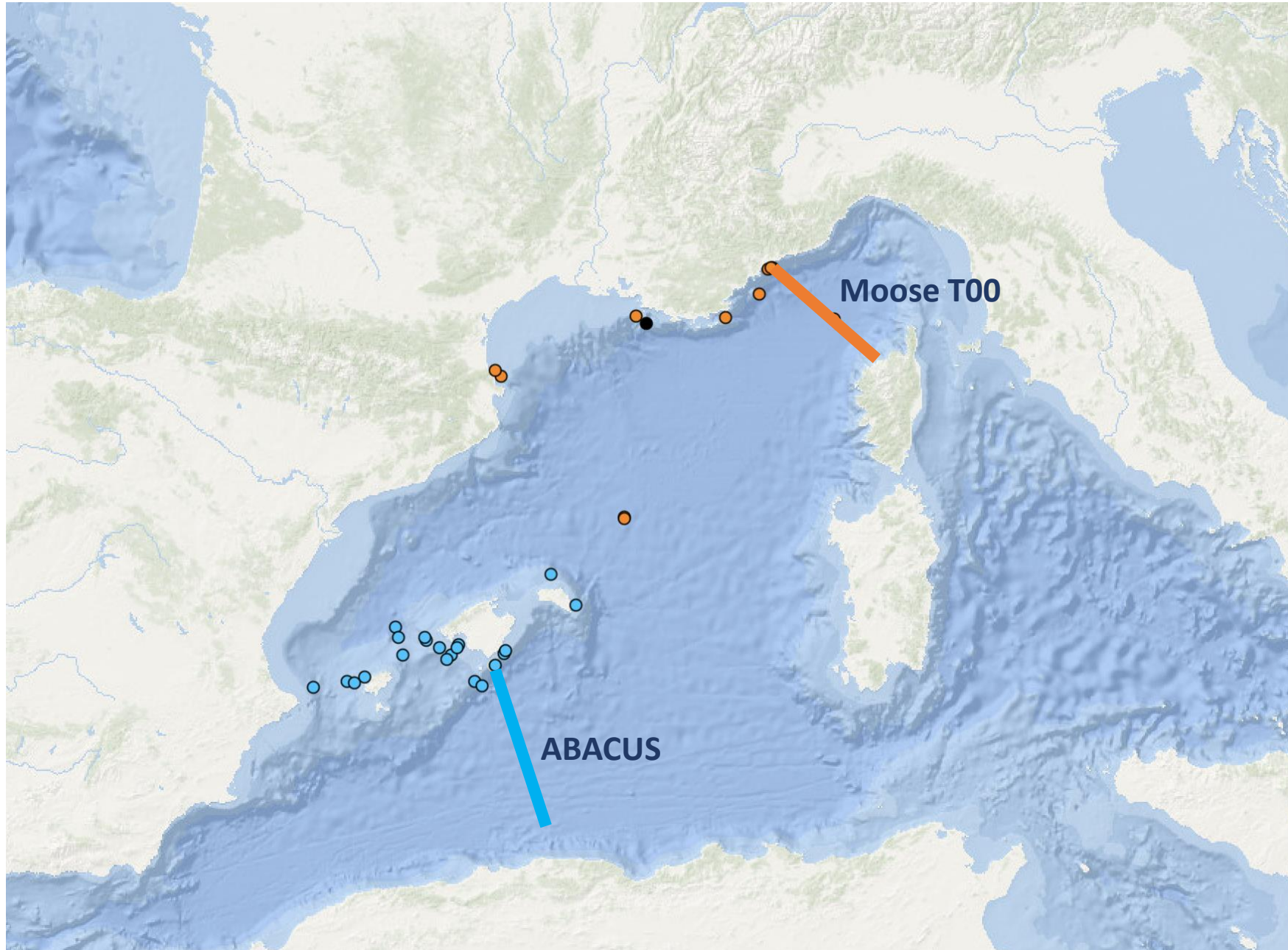


**No propulsion noise**

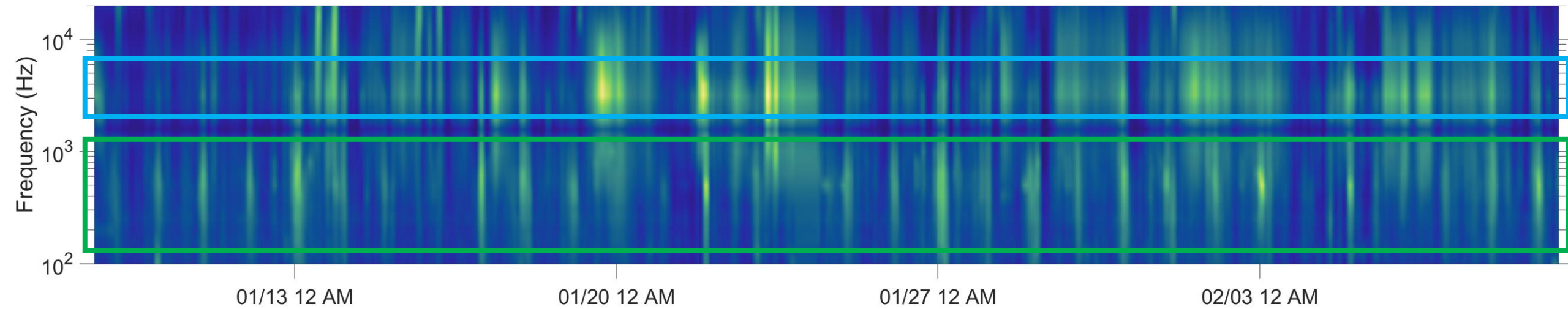
**Limited flow noise**



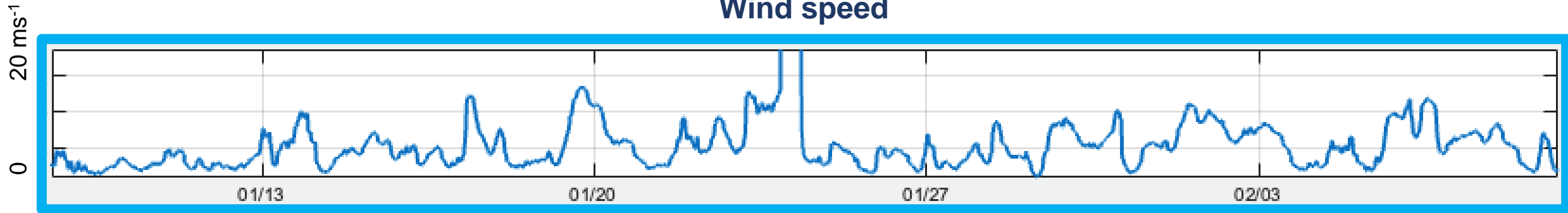
# Repeated PAM glider observation



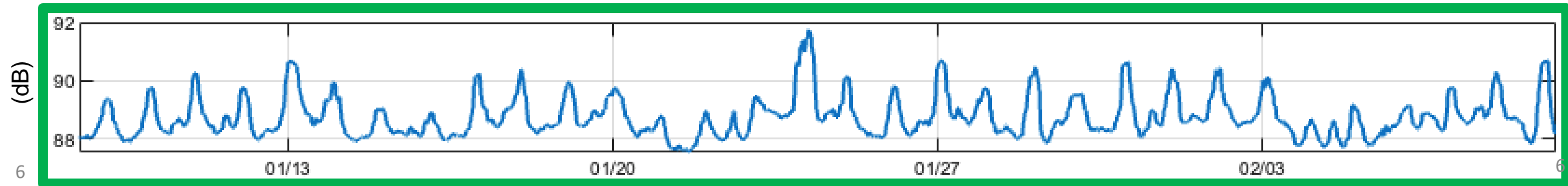
# Background noise – long term monitoring



Wind speed

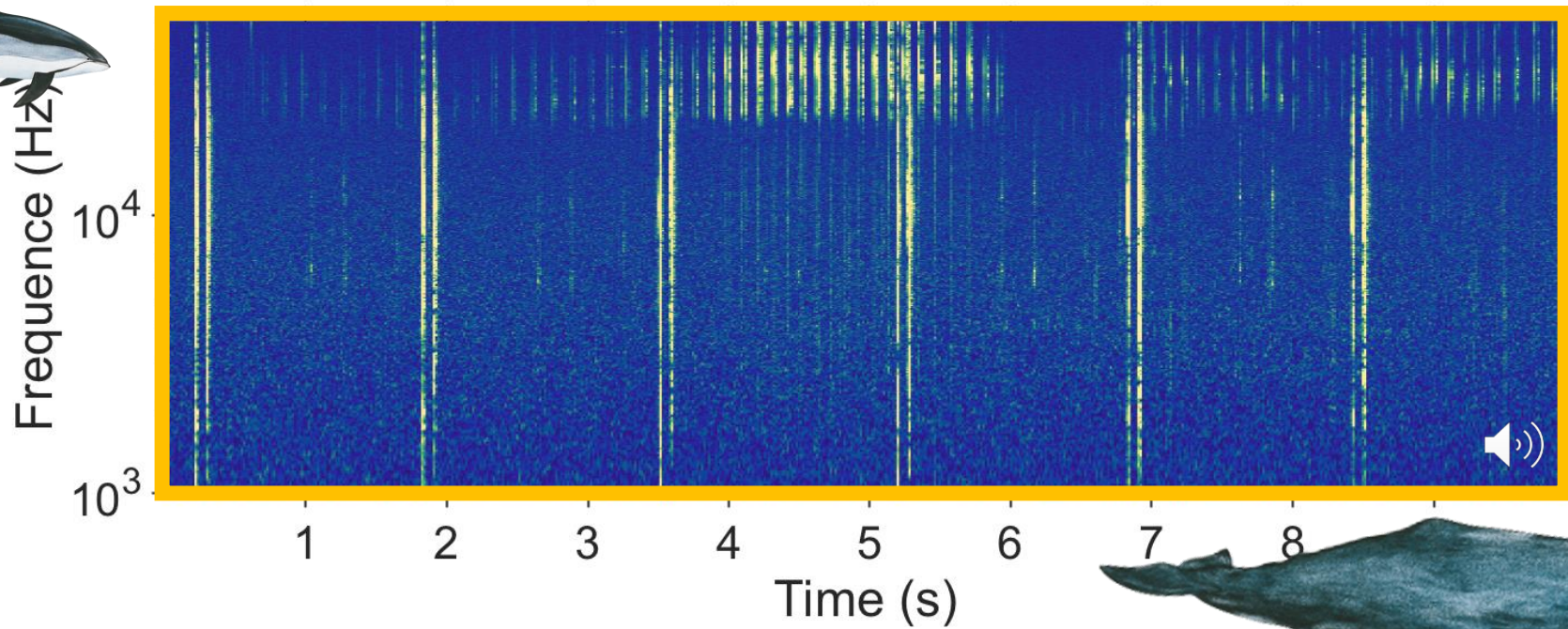
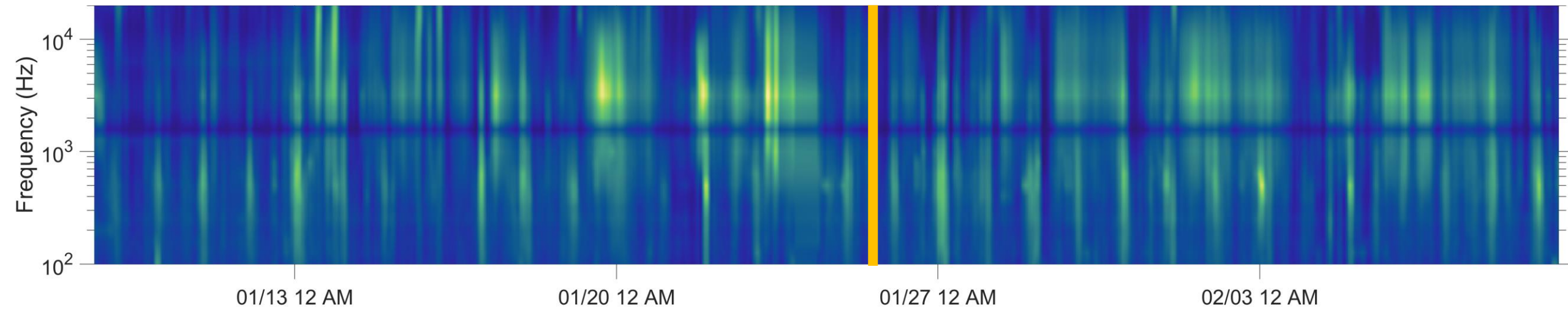


Nighttime biological chorus





# Detection / classification





# North Atlantic Right Whale program



Real time monitoring

Dynamic management  
Fisheries  
Traffic



Government  
of Canada

Gouvernement  
du Canada

[Français](#)

## Whale Insight



### Filter by date

- ☐ Past 14 days
- ☐ Current Month
- ☐ Current Week
- ☐ Today
- ☒ Pick a date range

7/1/2023



8/30/2023



### Filter by species

Show Right whales only All whales

☐ North Atlantic Right Whale

### Filter by calves sighted

All Display calves only

### Filter by platform type

- ☐ Buoy
- ☐ Opportunistic
- ☐ Plane
- ☒ Slocum Glider
- ☐ Vessel

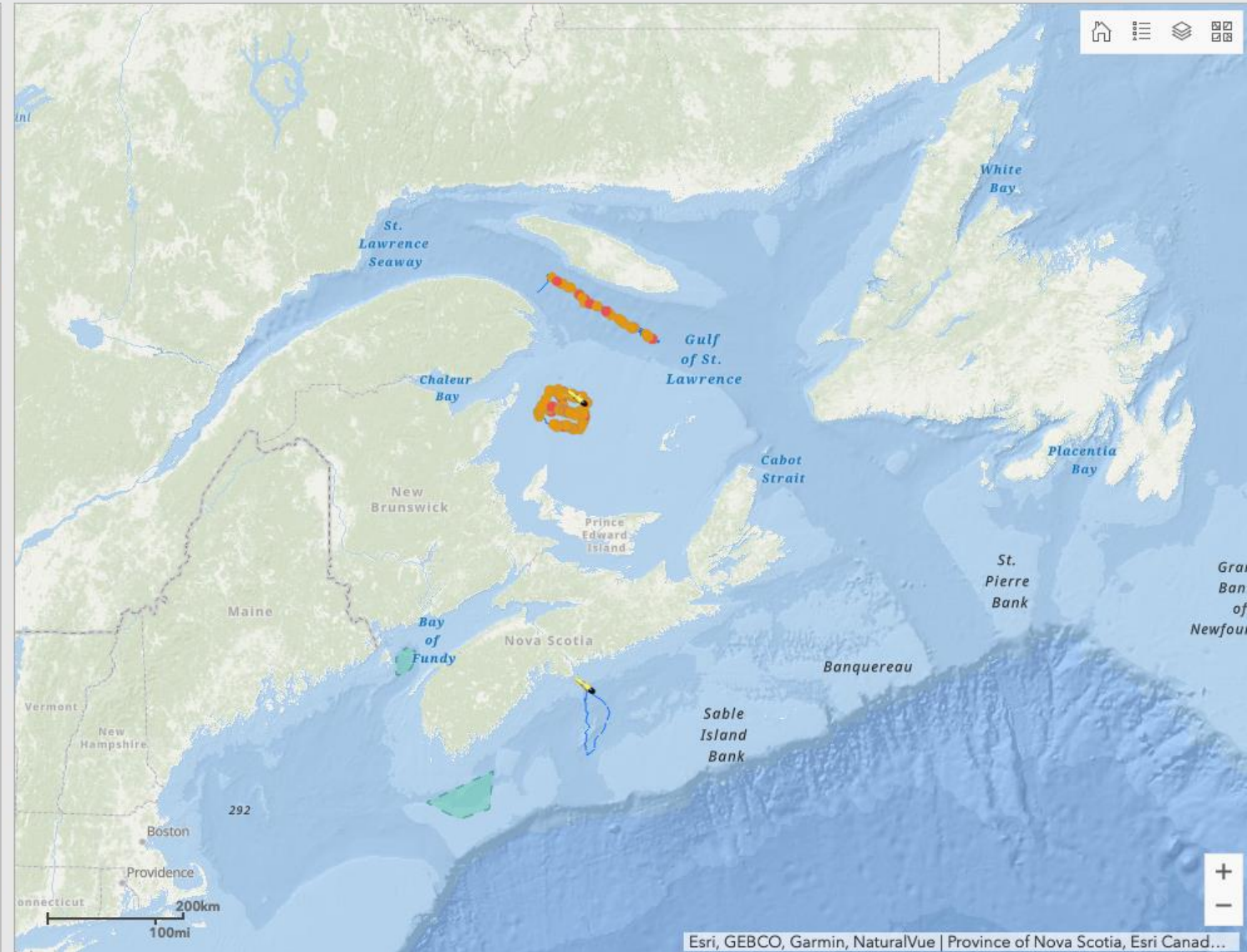
### Filter detections by platform name

### Filter by score/type

- ☐ Definite acoustic
- ☐ Possible acoustic

### Filter by number of whales

☐ 1





# North Atlantic Right Whale program



Real time monitoring

Dynamic management  
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## Whale Insight

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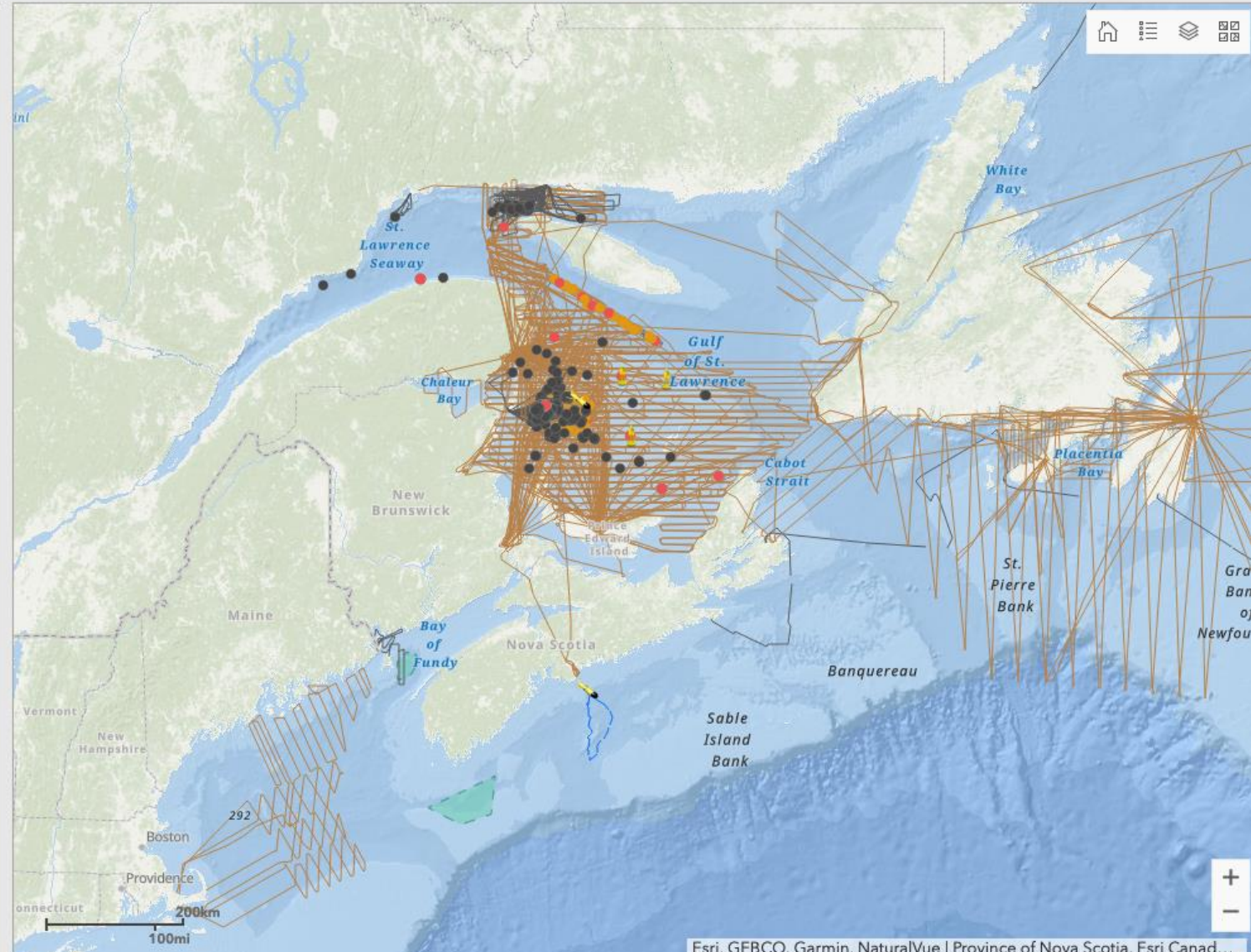


### Filter by score/type

- ☐ Definite acoustic
- ☐ Definite visual
- ☐ Possible acoustic

### Filter by number of whales

☐ 1



Esri, GEBCO, Garmin, NaturalVue | Province of Nova Scotia, Esri Canada...

# 20 Task Team members

**Chair – Pierre Cauchy**, Institut des Sciences de la Mer de Rimouski, Canada

**Co-chair – Denise Risch**, Scottish Association for Marine Science, UK

**Olivier Adam**, Université Paris Saclay, France

**Sofia Aniceto**, Equinor, Norway

**Mark Baumgartner**, Woods-Hole Oceanographic Institution, USA

**Laurent Beguery**, Alseamar, France

**Jorge Cabrera**, Plataforma Oceanica de Canarias, Spain

**Ivia Closset**, Finnish Meteorological Institute, Finland

**Kim Davies**, University of New Brunswick, Canada

**Rémi Emmetiere**, Alseamar, France

**Selene Fregosi**, Ocean Associates Inc/NOAA, USA

**William Halliday**, Wildlife Conservation Society, Canada

**Clara Hulburt**, Teledyne, USA

**Kate Indeck**, University of New Brunswick, Canada

**Katie Kowarski**, Jasco Applied Sciences, USA

**Albert Miralles**, SOCIB, Spain

**John Moloney**, Jasco Applied Sciences, USA

**Pablo Quiroga**, Alseamar, France

**Manuel Rubio**, SOCIB, Spain

**Kimmo Tikka**, Finnish Meteorological Institute, Finland



# Long-term objectives

## **Improve maturity / readiness**

- **Good practices guide**
- **Standard data format**
- **Shared tools and methods for data processing and analysis**
- **Data management / sharing**

## **Promote sustained / visible / impactful PAM glider observation**

- **Maintain and develop existing PAM glider efforts**
- **Add PAM to existing glider observatories**
- **Integrate PAM glider data to ambient noise monitoring programs**
- **Integrate PAM glider data to marine population monitoring programs**

# Short-term goals

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## **Build the PAM glider community**

- **Ocean Sciences Meeting – Feb 2024**
- **International Underwater Glider Conference – June 2024**

## **Identify sub-tasks and leaders**

- **Whale gliders**
- **Noise gliders**
- **Good practices**
- **Technology development**
- ...



# Timeline

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**May 2023 – Task team proposal**

**Oct 2023 – Task team approved**

**29 Nov 2023 – Kick-off meeting (12 participants)**

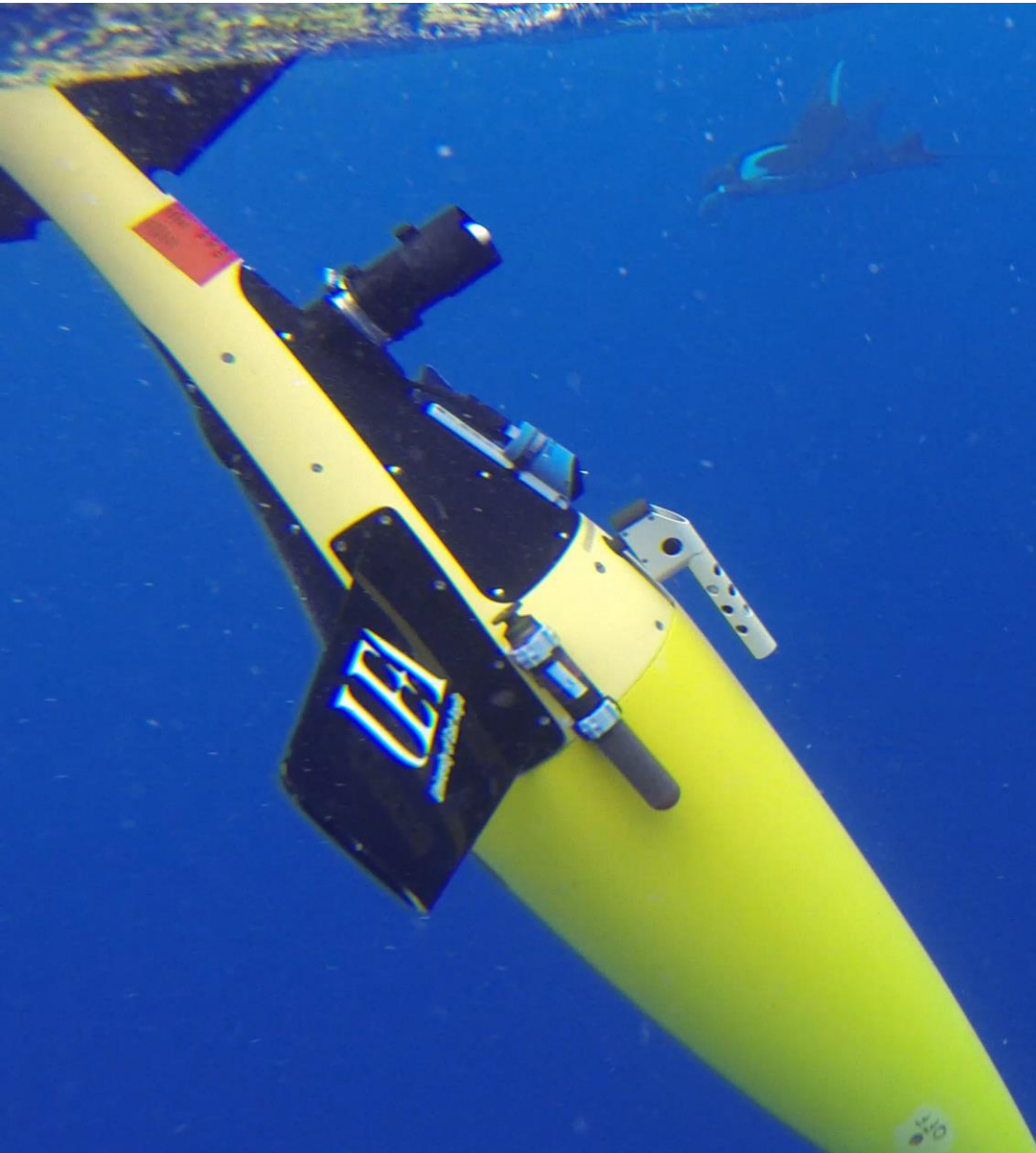
- Mailing list (18)

- Terms of Reference document

**Next meeting in May**

**More from the PAM task team during IUGC**

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