

# Development and application of a drifting recorder for right whale acoustic monitoring



New England Aquarium

*Protecting the blue planet*

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# Motivation

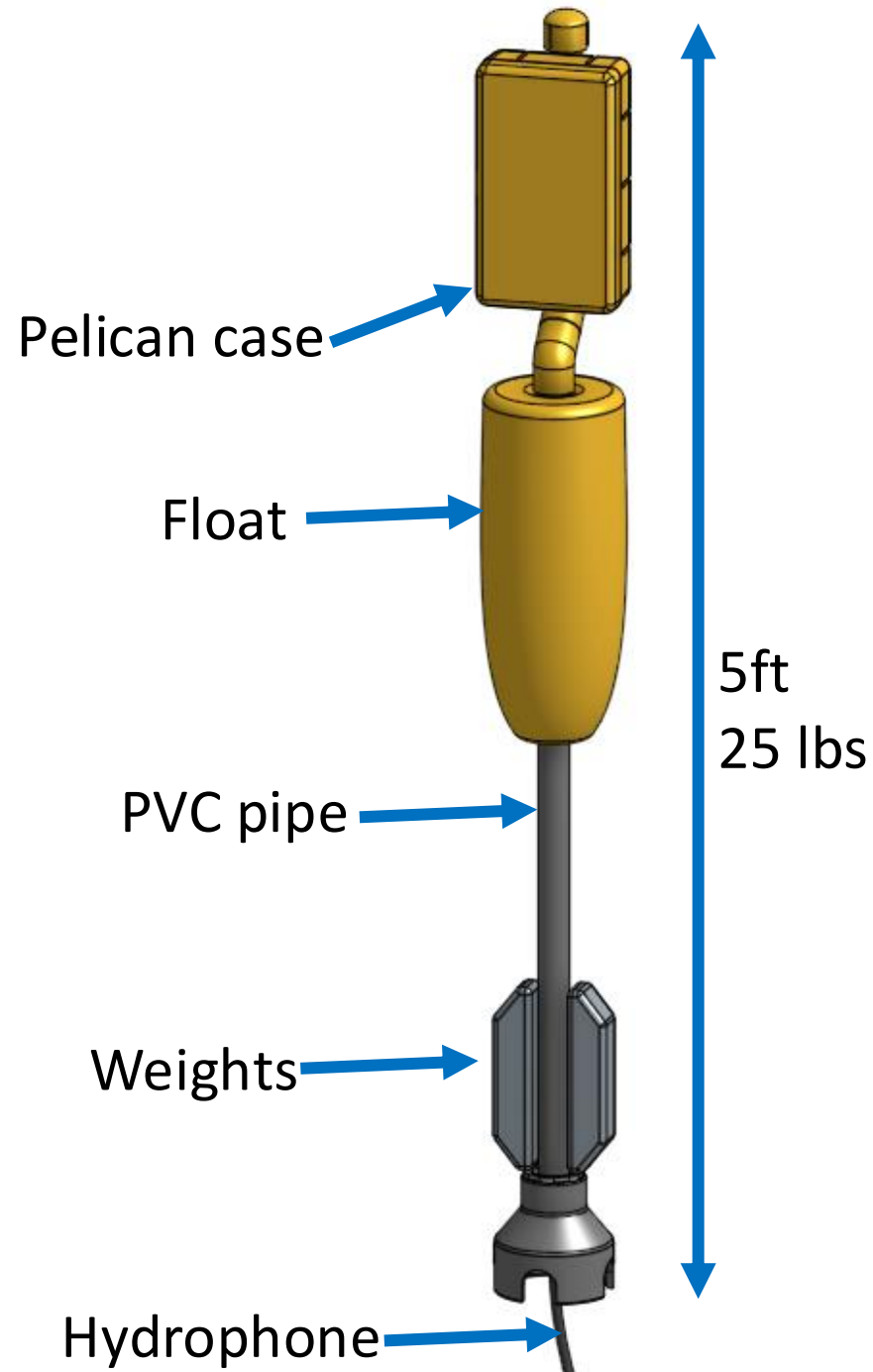
- Needed a system to collect acoustic data during vessel surveys:
  - Reliable and easy to use
  - Low cost
  - Record in GPS-time
- Towed/dip systems are sensitive to noise and restrict maneuverability
- Could not find a suitable system, so we decided to build it ourselves



# System design: float

## GOAL

Easy-to-use, low-cost, and customizable drifting recorder capable of logging **position** and **audio** for at least **24 hours**



# System design: electronics

## GOAL

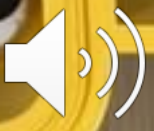
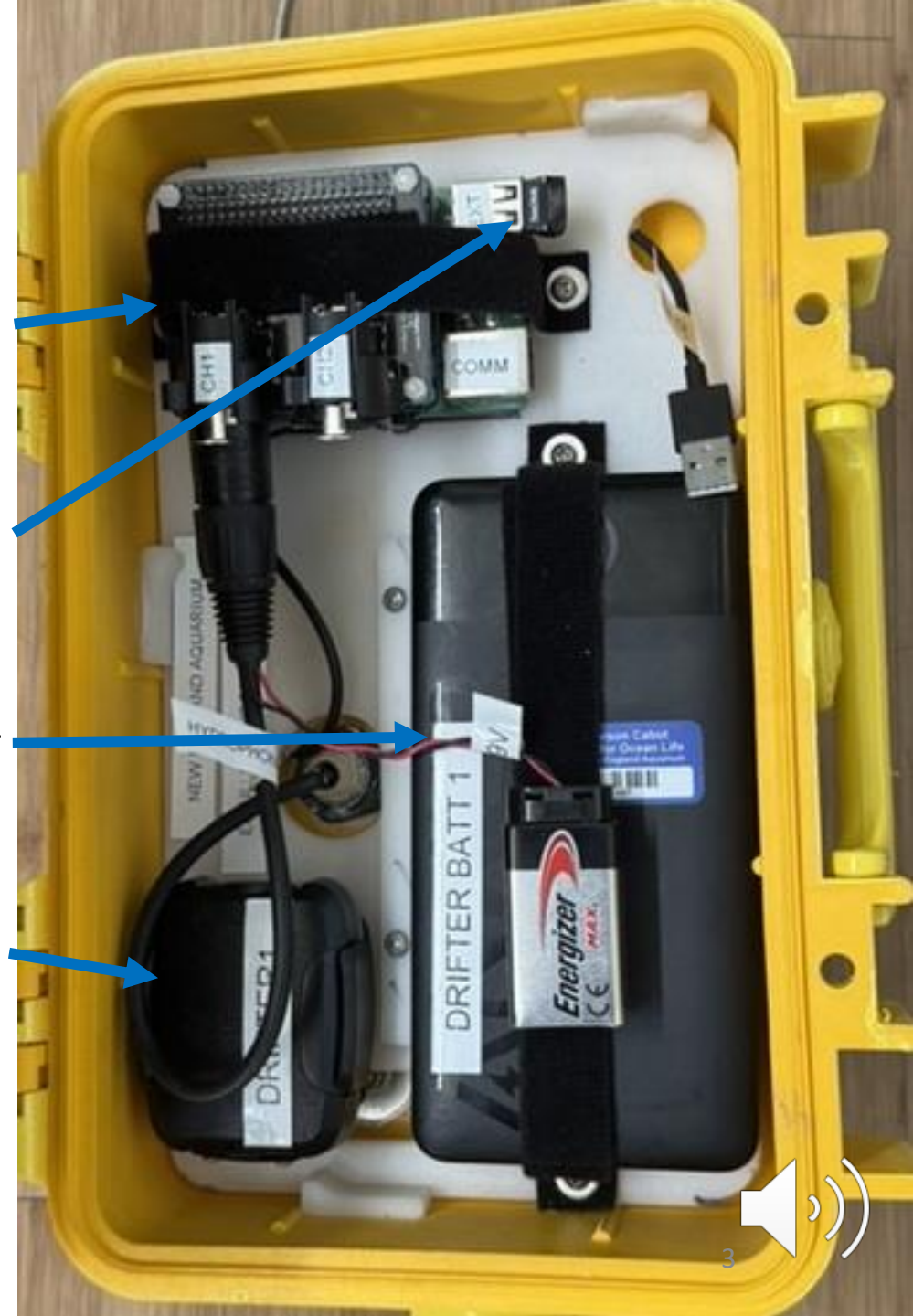
Easy-to-use, low-cost, and customizable drifting recorder capable of logging **position** and **audio** for at least **24 hours**

Recorder

Hard drive

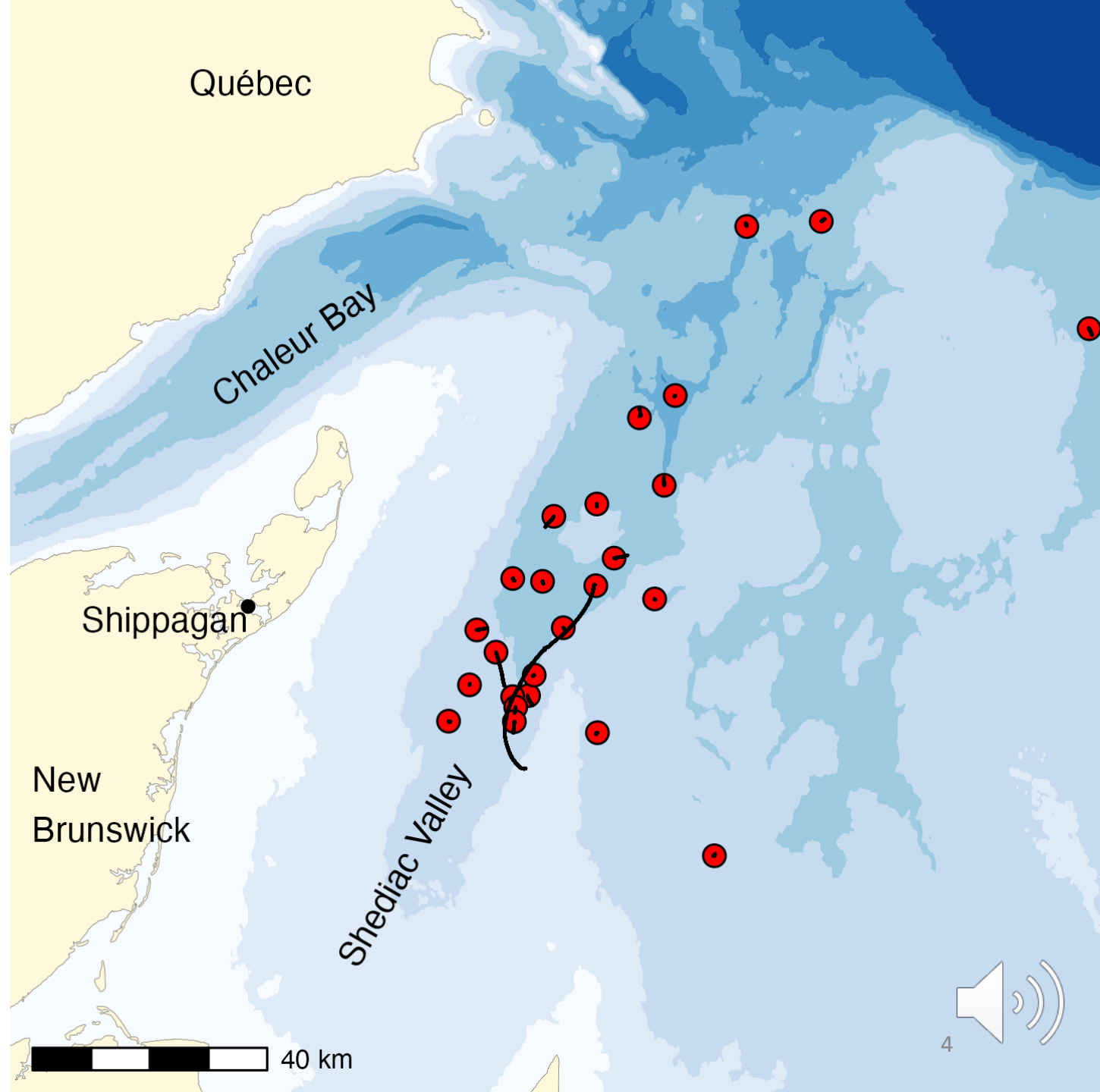
Battery

Satellite tracker



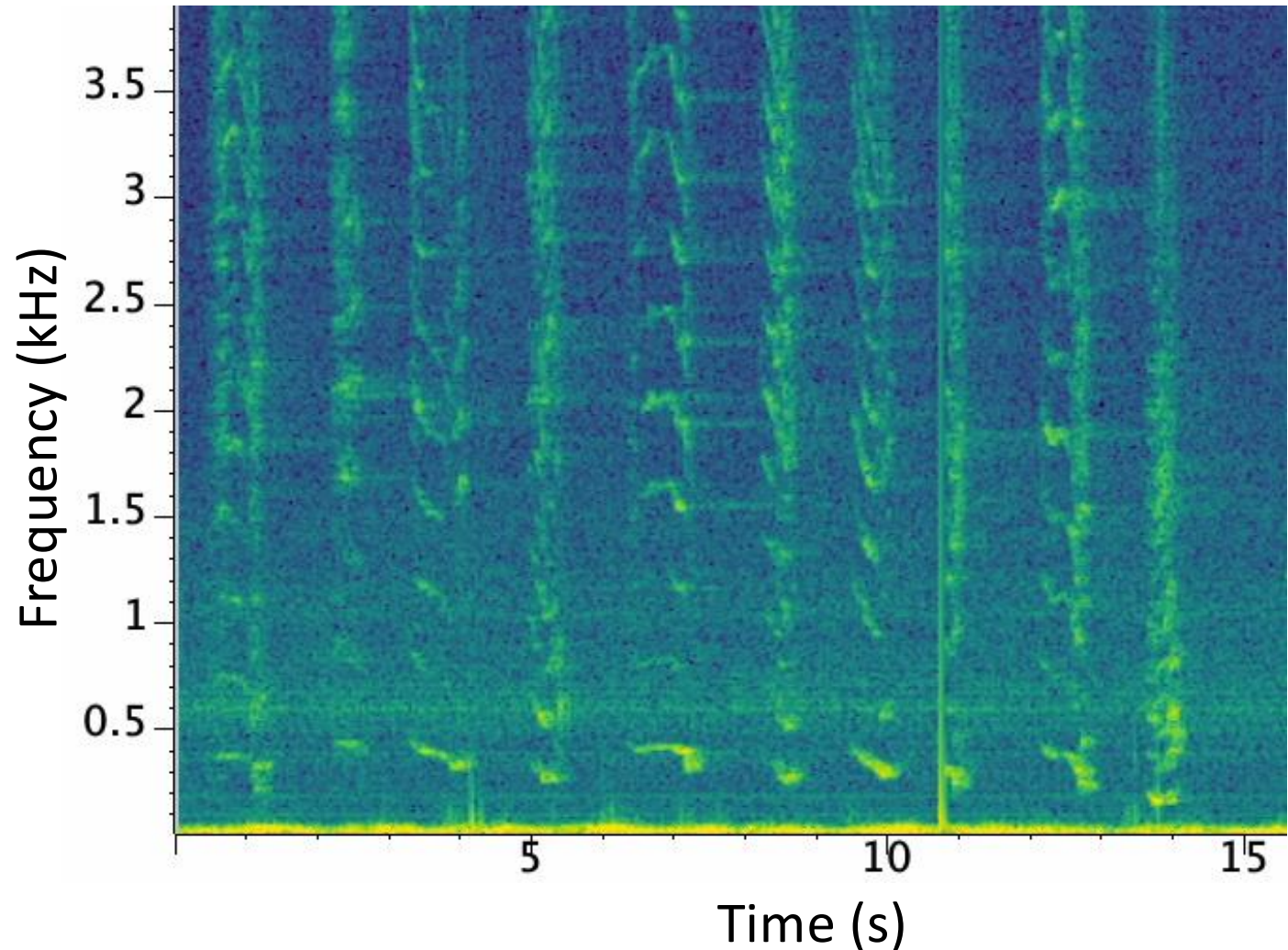
# Deployments

- Right whale surveys in the southern Gulf of St Lawrence
- 25 deployments
- >60 h of recordings
- Associated visual survey data
- Interesting calling behavior from SAGs and lone males



# Example: vocalizations from a lone male

- Recorded on Aug 12, 2025
- Single right whale
  - Peter Rabbit (#2920)
  - 26 y/o male
  - Head pushing and flipper slapping
  - Producing patterned sequences of gunshots and tonal calls
- Observed similar calling from several other lone males



# Next steps

- Intend to publish build instructions and software
- Expand system capabilities
  - Test accuracy of sound localization
  - Test short range live data streaming
  - Test with directional hydrophone
- Use to study right whale acoustic ecology and the impacts of noise



# Thank you!

*Special thanks to CWI/NEAq research team and the crews of the F/V Jean-Denis Martin and FRC Charlie for assistance with field testing*



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For more information, please get in touch with me ([hjohnson@neaq.org](mailto:hjohnson@neaq.org)) or say hello at the meeting!

