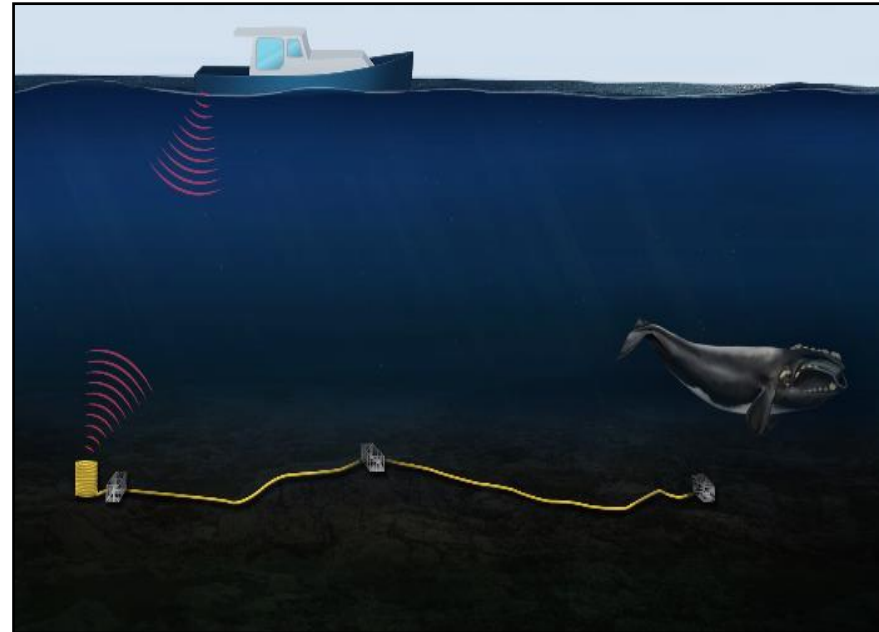
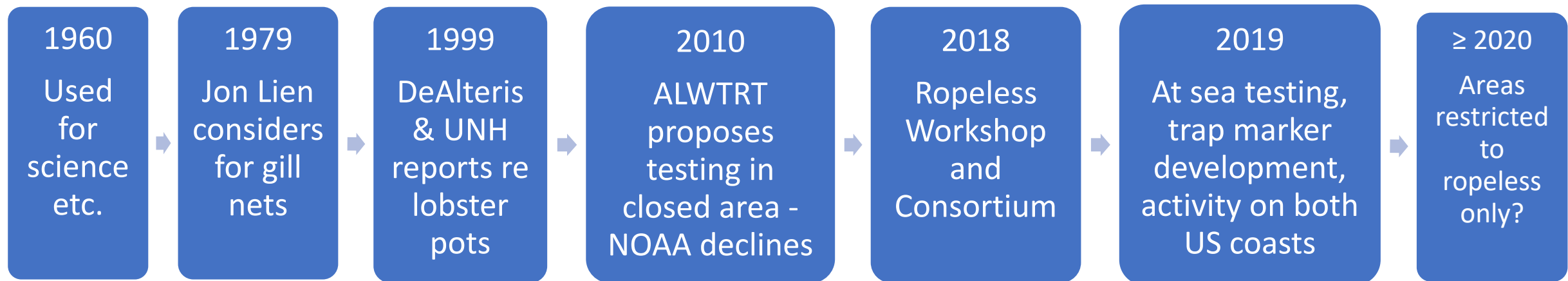


Status quo for the entanglement risk of trap fishing



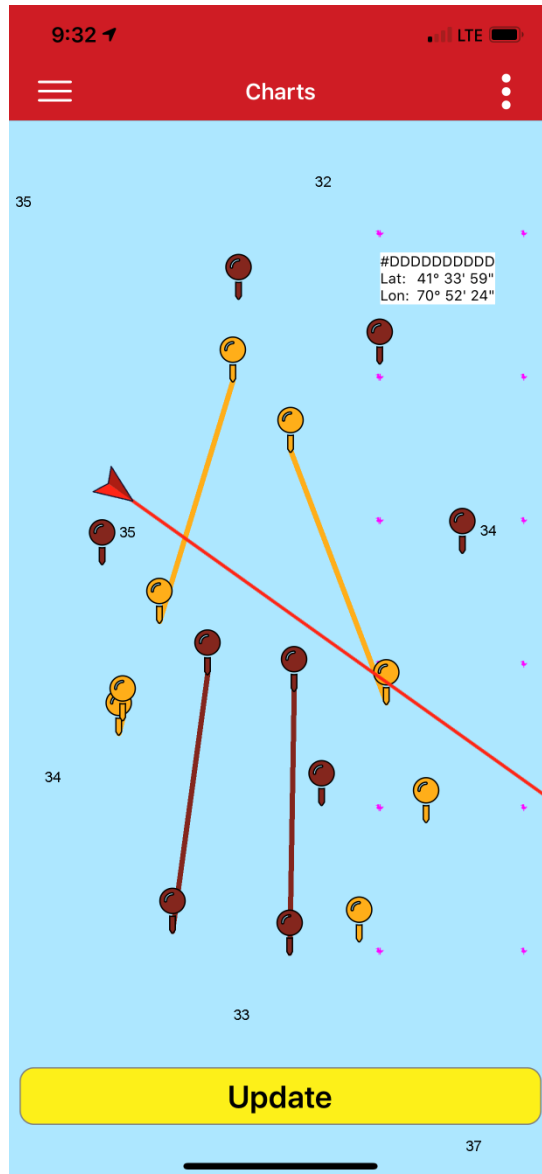
Proposed buoyless alternative. Trap is acoustically located, identified and retrieved.

## ACOUSTIC RELEASE TIMELINE



# GEAR LOCATION MARKING

## MacEachern - Edgetech

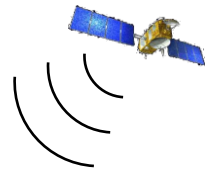
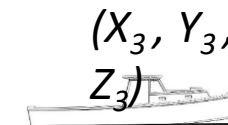
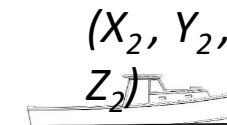
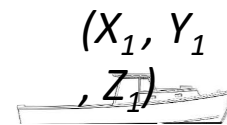


## Rugo – Teledyne Benthos

- Ranging and data telemetry capabilities
- Compact Modem with SMELTS Liftbag technology
- Release Command activates liftbag



## Baumgartner & Partan - WHOI Ranging Localization



## **Technology Status: System Updates**

9:45AM: Ropeless RISER - an end-to end system to implement a ropeless fishing capability - *Harold Vincent, DBV Technology*

9:55AM: Desert Star Update - *Marco Flagg, Desert Star*

10:05AM: Field testing the on-call spooled buoy system in an offshore commercial pot fishery - *Richard Malloy, Anderson Cabot Center for Ocean Life/New England Aquarium*

10:15AM: SMELTS update - *Richard Riels*

10:25AM: Ashored update - *Maxwell Poole*

10:35AM: LobsterLift update - *Cormac Hondros-McCarthy*

## Perspectives Panel

11:30PM: Fishermen's experience with ropeless gear *Panel discussion moderated by Tim Werner, Anderson Cabot Center for Ocean Life/New England Aquarium*

Panel Participants (*tested gear systems italicized*):

Martin Noel (*Modified Desert Star, EdgeTech*)

Robert Hache (*Modified Desert Star, EdgeTech*)

Hubert Saulnier (*FioBuoy, EdgeTech*)

Rob Martin (*EdgeTech, SMELTS*)

Mike Lane (*EdgeTech*)

Dave Casoni (*Desert Star*)

Marc Palombo (*WHOI spool*)

"Far less cautious and critical about ropeless than he was two years ago. "

"6 years of closure. 30 month with no paycheck. Fishing with a pop up on one end. Using it well.— fishing the gear doing well. Needs that paycheck. Want to be at the fore front of getting back to work."

"Recoiling in pot is more difficult. Safety a big issue. Needs to be as quick as the regular method. Need to make delivery times. Crab needs to be fresh. Good to use in closed areas. Need more deployments."

"Working with it. Works 100%. It's not as bad as people think it's going to be. "

"It will all work. But it boils time to time, which is money. This isn't going to be faster. Will continue to look at it. Managers have to give an allowance in closed areas. Lost over 3000 sq miles over 3, in fact 5 months removed. Add 1/3 of the day to work on deploying."

"They come up fast, then the tide picks them up, in 35 fm of water, in 2-3 knots, so need to be close, before it goes under."

12:30AM: Testing ropeless technologies for crab fishing gear in the Gulf of St. Lawrence - *Phillipe Cormier, CORBO Engineering*

12:45AM: Creating a framework for the evaluation of ropeless fishing gear using fisher perspectives - *Elizabeth Baker, Canadian Wildlife Federation*

1:00PM: Overview and progress of collaborative buoyless research - *Eric Matzen, Northeast Fisheries Science Center/NOAA*

# NEFSC / PSB GEAR RESEARCH FLOWCHART

Problem Identification  
All

Bycatch analysis to describe interaction and spatial and temporal extent of the bycatch problem

We plan to work with industry to the fullest extent possible throughout the entire documentation, design, and testing phases. We believe that working with industry when possible is beneficial because it allows us to gain knowledge about the fishing industry and increases the likelihood of industry acceptance and compliance.

**Involve Fishermen Early and at every step of the process.**

Test experimental gear in commercial fishery

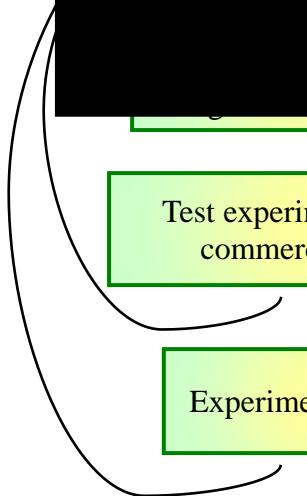
Test one experimental gear on commercial vessels using commercial gear and commercial fishing practices and use a robust statistical design to evaluate the effectiveness of the gear modification.  
Test for both difference in target catch and protected species catch.  
Test across appropriate strata (such as time, area, or fishing strata).  
Test with enough trials to detect a difference ( $\alpha=0.05$ ) if a difference exists.

Experimental fishery

Observers are placed on commercial vessels operating in the commercial fishery and collect quantitative data on the gear modification that is used to assess the effectiveness of the gear modification.

NEFSC provides scientific information to NERO

NERO decision making



They come up fast, then the tide picks them up, in 35 min or water, in 2-3 knots, so need to be close, before it goes under.

## Key to color coding

NMFS NERO	NMFS NEFSC	Fishing Industry
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# Identifying areas of high entanglement risk

The Right Whale Density Model  
and Risk Reduction Decision  
Support Tool

13 November 2019

Jason Roberts, Duke MGEL  
Burton Shank, NOAA NEFSC



Marine  
Geospatial  
Ecology Lab •  
Duke University



**NOAA**  
**FISHERIES**

**1:15PM: Lunch and gear demo 'Poster' session**

*Each manufacturer shows a model of their system and video of it in operation, if available, as in a poster session*

Greg MacEachern, EdgeTech

Richard Riels, SMELTS

Marco Flagg, Desert Star

Aaron Stevenson, Maxwell Poole, Ashored Innovations

Tim Werner and Richard Malloy, Anderson Cabot Center for Ocean Life/New England Aquarium

Bud Vincent, DBV Technology

Benthos

**Science, Government and Legal updates**

2:30PM: Identifying areas of highest entanglement risk— updates to the Risk Reduction Decision Support Tool - *Jason Roberts, Duke University and Burton Shank, Northeast Fisheries Science Center*

2:45PM: GARFO Update - *Colleen Coogan and Ryan Silva, Greater Atlantic Regional Fisheries Office*

3:00PM: Roadmap to ropeless fishing - *Sean Hayes, Northeast Fisheries Science Center*

3:15PM: Canadian support for ropeless fishing and Gear Innovation Summit 2020 - *Ed Trippel, Fisheries and Oceans Canada*

3:30PM: Negotiating a legal settlement that allows ropeless fishing - *Kristen Monsell, Center for Biological Diversity*

**3:45PM Break**

**Economics and Marketing**

4:15PM: Sourcing Seafood with Reduced Risk to NARWs - *Michelle Cho, Anderson Cabot Center for Ocean Life/New England Aquarium*



# Phase 1: Development and Evaluation

*Good progress –  
Ropeless Consortium  
meeting is helpful*

Fishermen, manufacturer,  
and engineer  
engagement

*Great progress for gear  
retrieval, need more  
work here for gear  
location methods*

Gear retrieval and gear  
location prototype  
development and  
engineering tests

*Trap Tracker and  
Ropeless Fisher apps are  
a great start*

Gear retrieval prototype  
testing with fishermen

Gear location prototype  
testing with fishermen,  
enforcement, and  
regulators

Development of data  
warehouse (cloud  
services)

*This is starting, but we  
need to better  
articulate what we are  
seeking to achieve with  
these tests*

*Progress with GPS  
approach, less progress  
with ranging, and none  
with SART self-  
localization*

Certification program

*No progress to date*

# Where should we go?

- What is the purpose of testing?
- Gear location methods
- Develop an independent gear cache
- Support experimental fisheries
- When can we go ropeless?