

## Ropeless Consortium Annual Meeting

24 October 2022

New Bedford Whaling Museum

New Bedford, MA USA

### **Overview**

- The Ropeless Consortium was born from a workshop in 2018 on finding solutions to reduce entanglement of large whales in commercial gear while still allowing fishing to continue and minimizing impacts to the fishery. That same year, the first annual meeting was held.
- 2022 represented the fifth annual consortium meeting, and there have been huge strides in the technology and awareness of ropeless, or preferably called on demand fishing with trials of different ropeless fishing systems (RFS) across the Eastern Seaboard in Canada and the US. Trials are also continuing along the West Coast and around the world.
- While entanglements of whales are accidental, they are no longer unexpected. Many are identifying RFS as the solution to entanglement, but time-area closures are likely a more efficient tool to reduce entanglement risk. RFS is the solution to these closures, by allowing fishers who want to continue fishing in these closed areas a way to do so that is safe for whales.
- This year's meeting was held in person however all presentations for the meeting were available for viewing prior to the meeting for participants. Each session featured a panel of both in-person and remote presenters available for a moderated discussion and question/answers from in-person and remote participants. About 150 people attended in person, plus about 120 attended virtually. (See Meeting details [here](#)).
- We are getting a clearer view of what the hurdles are to make RFS a viable option, however RFS should be considered a tool to address broader management measures (i.e. closures) and is not the "holy grail" to save the whales. RFS also might be suitable for some fisheries in the short term but it won't work for everyone.

### **Keynote/Opening**

- We have come a long way since 2018 when ropeless fishing gear was first discussed, but we aren't there yet- there are still a lot of challenges, but together we can make it happen. The goal is to have whales with no entanglements and continue fishing.
- It is more than just the number of right whales that are dying but also the number of serious and sublethal injuries caused by entanglements. While there are still living whales who are in poor health there will not be recovery of this species.

### **Session 1: Developers**

- Thank you to all the fishers for being part of this conversation and working with the developers to give all interested fishers what they need.
- Discussion was mostly around specific questions around about the various systems' technology and design: battery life length, integration into interoperable systems, depth that systems can be deployed to (dependent on amount of rope that can be stored in the underwater unit),

performance in different tide/ current velocities and distance for communication between the boat and underwater units.

- Conversations have started to see if smart buoys could aid in disentanglement of anchored whales.
- Future technologies might include the ability to add additional sensors on underwater units that could measure pressure, temperature, and environmental profiling.
- Current costs of units are high, some are ~ \$4000/trawl of traps plus ~\$3700 for the deck unit.
- As in previous years, fishers are reporting that fishing with ropeless gear in rough seas and storms has resulted in far less damaged and lost gear.

## **Session 2: Gear Marking**

- Results of 2020-2021 stakeholder interview project was shared. After 17 meetings with 75 US and Canadian participants. Stakeholders want/need:
  - To be able to detect underwater units within 0.5nm inshore and 2nm offshore
  - To be able to find their units within 25 feet (8m)
  - To be able to integrate into the various onboard chart plotters
  - Transmissions by the underwater unit needs to have the following data: ownership, license, gear type, date deployed, unique ID and trawl length and orientation. This would need to be able to be retrieved by law enforcement but this level of detail is not necessarily needed by other surrounding vessels that just need to know where gear that is not theirs is located on the seafloor.
  - Gear owners and Enforcement are the only people that need the above detailed data.
  - The information needs to be real-time and must reflect reality.
  - Need the location to be accurate in order to located any moved gear
  - Minimize the environmental impact, i.e. plastics and minimize the acoustic effects on marine wildlife
  - Systems need to be able to endure a minimum of a 6 month soak time and have batteries that will easily read how much life is left in them
  - Need systems to be interoperable, with communication standards
- Where are we going with gear location marking?
  - Exciting developments this year include: (1) Cloud databases that are accessible in real time by ships at sea to resolve gear conflict, (2) integration with chart plotters, (3) release manufacturers pairing with companies that can provide acoustic solutions, (4) position data can be improved with cloud computing and (5) both governments of US and Canada have been working to address interoperability and open standards as they will likely be part of any regulations about gear configuration
  - Need to be able to report to the cloud both surface marked GPS locations and/or be able to update those positions with acoustically interrogated positions from any vessel that interrogates the underwater unit. This will allow the cloud to have the most up to date positions as possible on ANY manufacturer's gear, to improve gear location accuracy, and allow enforcement to locate, raise and inspect any gear with a single ship-based system. The gear density and risk of gear conflict are significant factors when considering the relative benefits of GPS versus acoustic marking.
  - At this stage of development, coordination is critical to move this forward.

- There is a Gear Fund available ([www.gear-fund.org](http://www.gear-fund.org)) ready to fund manufacturers to develop and implement open acoustic standards.
- Another opportunity with cloud databases that include both interoperable cloud and interoperable acoustics will be to find lost gear and notify the owner of that gear so that this can cut down on the amount of ghost gear in the ocean.
- In trials, there are still some substantial steps to be made before fully interoperable, multiple fishery solutions are reached.
- There is a need for more study as to how the acoustic pinging of the trap units will affect the soundscape of the marine environment.
- For fishers there is a strong need for getting this data available for viewing on chart plotters, since fishers use a number of different plotters there is a need for the data to be able to accessible to all chart plotters and/or apps. No matter what the viewer chooses the hope is that there is one master cloud database that can inform the data.
- Currently, for displaying locations of ropeless gear on chartplotters we are in a similar situation that we were in when AIS first started being required for vessels by the IMO. In order to cut down on the amount of technological equipment being used on vessels, NMEA created a standard message with required AIS information and chartplotter manufacturers chose to update their equipment to accept those messages and allowed buyers to get one that could see the AIS information. So once the ropeless fishing community is all on the same page, a NMEA message could be designed so that adoption into chart plotters could be similar to how the AIS information is now available on chart plotters.
- The technology is available today, however there are supply chain issues and equity issues that prevent this from being used more broadly. In some places Law Enforcement have started to be trained, but this is a crucial step in the success of Ropeless Fishing.
- In order to help with phantom data, in addition to remove a step for the fisher, trials with RFID tags and scanners will be happening soon so that gear can be marked as it goes over the side of the boat.
- General consensus that it is important to move forward with some sort of cloud-based data that would bring together all locations of both roped and ropeless gear and for it to be available for all fixed gear and mobile fishers to access along with law enforcement.
- A key piece of this is that vessels have to be equipped with the ability to transmit data either via cell (inshore) or satellite communications.
- Currently, you need a buoy line to fish and you need to get an exemptive permit to fish ropeless. This is one reason why ropeless fishing isn't happening more.
- **All the stakeholders need to come together to get on the same page in a working group/committee/workshop, maybe using the Gear Fund to support this (?), to develop standards and then propose it to NOAA to move ropeless fishing forward.**

### Session 3: Trials

- The most cost-effective fisheries to switch to ropeless will be the fisheries with longer trawls.
- Trials with gill nets have gone well and the lift bag system seems to be able to handle/help to raise heavy nets/strings of nets that can be filled with fish. Current permitting does not allow trials of fully ropeless gill nets.

- Permitting in the US for an exemptive permit currently takes a few months from start to end in order to get a permit for trials of ropeless gear.
- To fish ropeless in Canada you need a scientific permit and a partner who can manage the fishery. In Canada, there are some fishers that can land and sell their catches from ropeless fishing in closed areas, about a million pounds were fished in this way in 2022.
- There is a stigma in the MA lobster industry to transition to ropeless, the average age of lobster fishers in MA is about 65, nearing retirement age. It is some of the younger fishers who are willing to try ropeless. In MA, about 14 fishers have gained permits to fish ropeless in open areas, however the permits that have come in for fishing in closed areas have not been approved yet for various reasons, some have to do with conflicting with mobile gear.

#### **Session 4: On-Demand Fishing**

- Fishers in the room shared some of the biggest challenges with scaling the use of ropeless up. There is a huge learning curve, both captains and their crews need to be trained and some crews experience a high turnover. There is a hesitancy among fishers to go ropeless about setting gear on top of someone else's gear, especially in high density areas. Also, cost of systems is currently high. Also, if more people come on board to trying ropeless there is going to be a lot of trial and error adjusting to working with lots of fishers at once.
- Right now, many of the fishers have a few different through-hull transducers on their boat for some of the different systems. This has made a huge difference in usability for fishers, it is much easier compared to having to stop the boat and use an over-the-hull-transducers. But if fishers are switching mid-season from buoys to ropeless they can't pull out their boat and install a through-hull transducer. In some areas some fishers also use wet boxes so they can more easily put a transducer over the side if they need.

#### **Session 5: Regulatory Process and Permitting**

- Currently, it is not recommended for individual fishers to apply for an exemptive permit in either Canada or the US, it is recommended that they apply through either an NGO or academic center since these permits are for gear testing (either answering a scientific question or improving fishing) all within the current regulations.
- To change the regulations as they stand right now, it is very complicated process. There is a legal environment associated with the issue. Need perspective from NOAA Office General Council and others re: liability issues, insurability, etc will play into feasibility.
- In order for regulations to be changed, there needs to be data showing that the On-Demand systems are the same or better than the current systems. We are getting there with all the advances in geolocating gear, but not entirely there yet.
- Resolving both geolocating gear and resolving potential gear conflicts with mobile gear continue to be a stumbling block (the latter is a big deal – that side of regulatory environment involves politics an process that are outside of gear testing. Involve multiple levels (NEFMC, ASMFC, state agencies, etc).

## **Session 6: Enforcement**

- Foreseen challenges by law enforcement include having officers be generalists on all different types of gear that could possibly come up, they will have to know how to operate all of it and reset it.
- Opportunities with ropeless fishing include (1) the ability to find the gear more easily if it is geo-marked and (2) they won't accidentally run over lines while searching for traps.

## **Discussion: Moving Ropeless Forward**

- We need dedicated funding in both Canada and US!
- Gear needs to be more accessible to fishers and there needs to be a way for fishers to afford the gear.
- Need more conversations between fixed and mobile gear fishers. We need mobile gear fishers to be in the room
- More fishers need to get the gear in hand and get trained to use it.
- Involve more of the wholesalers in the conversation as well, there needs to be a market for ropeless fished product.