

Ropeless Consortium

Annual Meeting
October 26, 2020

Overview

- 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.
- 2020 represented the third annual consortium meeting, and there have been huge strides in the technology and awareness of ropeless fishing with ~1000 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.
- Due to COVID19, this year's meeting was held virtually with **293** registered attendees, and up to 250 people viewing at any given time. Presentations were pre-recorded and shared with registered guests to allow for productive discussions during the meeting, followed by dedicated breakout sessions.
- 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.

Presentation Discussions

Session 1 – Marking Systems

- Importance of interoperability
 - Need to be able to see deployed gear while both on and off the water, and to be able to see gear from different developers
- Data sharing concerns (i.e. who has access to shared data in a "cloud"? global or regional accessibility? Other fishers? Enforcement?)
- Need a collaborative approach to gear marking solutions (currently, multiple developers are each working on their own gear marking software)
 - Software should be owned by some sort of regulator agency/authority that does not have a stake in the software to influence its design and operations
 - Possible role for the consortium
- Concerns about the need of cellular or satellite coverage to have real-time data of gear locations

- Interviewing fishers of the requirements/specifications needed of what is necessary for gear marking to work in commercial fisheries
 - It will likely be another couple of years before there are devices that meet the criteria

Session 2 – Retrieval Systems and Testing

- Commercial fishing is occurring in Canada with RFS in closed areas for right whales.
 - 10 Area 12 Gulf Crab fishers were using 10 trap trawls
- Gear marking is an incredibly complex problem with several things that need to be incorporated (e.g. enforcement, gear retrieval success, reliability of the RFS, monitoring systems such as cameras), but reliability of the gear needs to be the focus, because if a fisher won't even try the gear then there is no point in spending time and money on developing complex marking software
- Globally, fishers are using RFS for a variety of reasons (e.g. poaching, entanglement).
- May be successful in retrieving gear, but vessels need to be optimized for ropeless fishing which can take several years to achieve the optimal setup. The first year is the learning curve, the second is testing out modifications from lessons learnt in year 1, and year 3 is optimizing those operations.
- Fishing with RFS is more efficient than traditional fishing and results in less losses (e.g. lost gear, time, money)
- Three main things fishers are looking for in an RFS: ease of use, safety and viability.
- All fishers will have different opinions on what type of system works best for them, important to have multiple options and ways to modify gear so that it can be adapted based on the conditions of each fishery/region
- Incentives of using RFS are important to focus on to get more fishers open to the idea of ropeless fishing
- Possibility of eco-certifications of fishers that use RFS as an incentive – increase their profit and availability to international markets.

Session 3 – Market Interests, Management and Policy

-

Panel Discussion

- Safety is the number one priority, especially in regions with extreme weather conditions, followed by performance – any RFS needs to be just as capable to make the same catch as traditional methods. The next priority is ease of use of the gear, followed by reliability to surface then cost
- All failure in retrieving gear have been due to human error and not something technologically wrong with it. There continues to be some safety concerns with some gear, so modifications have been made by the fishers using the gear. The visibility of the gear once it surfaces needs to be improved, especially in poor weather or high seas.

- Need to be able to test gear using hull mounted transducers – currently have to turn off the boat otherwise it interferes with acoustic releases, once this is possible the time to release and haul RFS gear will be just as quick as traditional setups. Gear conflict issues already exist right now with visible highflyers and buoys, the hope is that proper gear marking software for RFS will significantly address this issue, but aware that gear conflict won't be eliminated completely.
- Concerns about safety and reliability of all RFS gear types in extreme conditions and areas with high tides and currents. To date, most issues in trials are because the gear malfunctioned or broke, and not due to human error as has been said by others. Highlights the importance of testing in different regions and conditions to make sure a wide range of available systems are available that can be utilized in diverse areas. Supports the notion that this is not a one size fits all concept, and what might work for one person, won't work for another depending on their fishing conditions.

Breakout Session 1 – Ropeless technologies: Perception vs Reality

Moderated by Mark Baumgartner and Lyne Morissette

A discussion of the current state of ropeless fishing, including what remains to be done to (1) evaluate its operational and economic feasibility, (2) implement at a commercial scale to provide options to fishermen affected by timed-area closures, and (3) consider ropeless fishing as a viable remedy to mitigate whale entanglements across their range.

(1)

- Without hull-mounted transducers, it is not possible to get realistic commercial fishing data during trials. Some developers do not yet have hull-mounted transducers ready.
- When hull-mounted transducers are in place, dunking transducers should also be on board as backup.
- Gear marking and affordability are the two main challenges. Demand and investment will push policy on this.
- Whale safe lobster can be sold at a premium to fund ropeless fishing gear.

(2)

- Ropeless fishing must be legal so that people can experiment on a large scale while making money. In California, on November 1, 2020, ropeless fishing will be legalized for the Dungeness crab fishery.
- Interoperability regarding which acoustic band is used, what data is being transferred back and forth, and what the protocol is when releasing a ropeless system needs to be agreed upon in order to make a common hull-mounted transducer. This is also important for enforcement, to avoid having multiple transducers on board.
- Determine in which areas ropeless systems will function (need units that can withstand tides up to 6 kt, with 100 fa depths and repeated hauling throughout the season). Need to know if there is feedback in high current, and what gear can overcome tide issues (lift bags?).

(3)

- Mobile fishing (ie. draggers) that are not using traps need to be brought into the conversation. We also need to find places where we can test ropeless with conflicts with mobile fishery, like in a seafood coalition.
- Developers need to know what draggers require for ropeless gear.
- We need more feedback from fishers before gear is standardized and rules are written.
- Improve interface with the public and media to educate on the process we are in and to have a source where the media can go to for easier access to information.

Breakout Session 2 – Testing/trial protocol framework

Moderated by Sean Brilliant.

The term “success” is not specific enough for the purpose of our testing because it needs to include context. How do we define success and failure when testing ropeless fishing gear?

- “Success” is difficult to define because it is subjective, a system may not work in a specific area or in certain conditions. For example, Fiobuoy doesn’t seem to work in areas with strong tides because the unspooling mechanism is too slow, but it may work in areas with little current. There needs to be a standard to differentiate the options.
- “Failure” could be defined as the buoy being unable to surface and needing to be grappled, but this still occurs with normal buoy lines.
- Failures are very important for the development of the technology. There is value in sharing this information to determine in which conditions the systems are operational.
 - Some parties did not share their data out of respect for fisher collaborators.
 - There are no real “failures” because we are still in the prototype phase.
- Success is working with industry and engineers to innovate and address operational issues (through testing) to find solutions we all agree on.
 - It’s important to share feedback with developers so that technology can be tweaked.
- Success can be measured by comparing ropeless to traditional gear: Is ropeless more or less effective than what we are traditionally using?
 - Reviewing historical numbers for gear loss rates.
 - Kim’s testing metrics are on the Sustainable Seas blog and are sent to fishers, manufacturers and NOAA.
 - Do fishers feel comfortable to troubleshoot and properly rig the gear?
 - Incorporate feedback from fishers: differing concerns and challenges. Success and failure can be better defined by each fishery.
 - We need a simple list of questions and answers by fishers and manufacturers.
- Use the term “Trials” instead of “Testing” as it allows room for improvement and doesn’t imply success or failure. Suggested process:

- Step 1: Proof of concept (prototype) - Does it help wildlife and is it practical for fishing?
- Step 2: Full scale, carefully controlled field trials - How much extra time does it take and does it affect the amount of catch?
- Step 3: How do we implement ropeless?
- Consider using Technology Readiness Levels.
- Share information and learn from each other: How do we pool collected information? How can we work together to share our results?
- We should communicate more often and meet more than once a year, considering the current pace of development and urgency of the issue.
- A lot more testing needs to be done, and a framework used to standardize and share information.
 - CWF Framework sets context around testing in different conditions.
- Technological success is different from suitability for a fishery.
 - Will these systems work continuously and consistently?
 - What metrics will fishers use to decide what works? (Safety, time, reliability).

Breakout Session 3 – What level of risk is acceptable?

Moderated by Michael Moore and Sean Brilliant

Vessel strike reductions have embraced strategies that retain some risk. Likewise trawl groundlines between traps have residual risk. How is that risk factored into ropeless deployment plans and discussions?

- It is important to discuss and understand the residual risk presented by RFS, i.e. entanglement in groundline, as trawling up will be commonly done to reduce the costs associated with RFS. How do we quantify this risk and what is acceptable and what is not?
 - Everything has tradeoffs, we are always reducing risk and we cannot delude ourselves into thinking we have eliminated risk thus we need to account for how risk has shifted and impacted the overall risk reduction.
 - Closing an area to fishing reduces the level of entanglement risk to zero, by reintroducing fishing using RFS we will inherently reintroduce some level of risk and we need to be okay with this
- It should be assumed that right whales spend a portion of time at the bottom of every habitat; need to account for the whales use of 3D space in the ocean
 - Some areas of deep-water fishing do not need to be as concerned about the use of sinking groundlines since it is too deep for the whales to reach the bottom; dive depth thus needs to be considered.
 - Whales can encounter a vertical line 100% of the time, regardless of where they are in the water column, but encountering groundlines is dependent on directionality and portion of time spent at the bottom

- Suggested that RFS should not be used in closed areas and only implemented outside protected areas, as we should not be increasing risk at all to right whales
 - The line is the risk, the ship is the risk. Whales will likely return when we don't expect them to so we should expect to see whales entangled year-round, therefore the risk is always there. However, if we do not allow fishers a chance to test RFS and move forward, then the whales won't stand a chance. Even if there is residual risk, trawling up and RFS does reduce the main risk of vertical lines.
 - What is the incentive to test RFS if using it won't let fishers back into closed areas?
 - Removing endlines is a good start, but late to change why RFS is being developed and tested
 - Need to understand the closure type and what would be an available area for RFS to be used; suggested that areas with high densities of whales may be off-limits, but closed areas away from the main aggregation may be okay
 - Need to develop criteria of what is an acceptable area to reintroduce residual risk from RFS.
- There are other species besides NARW that are being entangled
- Suggested that if a fisher wants to enter a closed area, they must do so using RFS singles and no trawls to eliminate groundline risk.
 - This has a huge concern about affordability. GSL snow crab trials went from singles to trawls because of this issue.
 - Cost-benefit tradeoffs of gear configurations need to be considered
 - Lobster is not a schooling species like crab, so you need a lot of traps to make your catch and make it worthwhile for fishers
- Suggested to improve gear marking on groundlines of RFS deployed in closed areas, that way if an entanglement were to happen it could be identified as RFS groundline.
- Need to account for increased vessel traffic in closed areas from fishing vessels moving in and out to deploy and haul their RFS
 - Noted that closures are worse for vessel traffic, which is inherently riskier, as displaced fishers need to stem through closed areas (e.g. in the GSL) to reach available fishing grounds.
- Is it riskier to have increased groundlines or fish with weak rope/weak links?
 - There is a risk mitigation hierarchy; weak rope would decrease the severity of the injury but not reduce the probability of it occurring. Risk mitigation is about reducing the probability of the event occurring and RFS could do this.
- Need to develop criteria for what is mature technology (i.e. ready to be used) versus RFS that still needs more work. This way everyone can be comfortable with how the gear works and have it be allowed in a closed area.

Breakout Session 4 – Ropeless Consortium role and looking forward

Moderated by Michael Moore and Mark Baumgartner

Review of the consortium's achievements to date, and what it can usefully do in the next few years.

- Reminder that the Ropeless Consortium is not currently an entity of any type, there is no funding except for what is allocated to Heather Pettis to organize the Consortium.
- There have been suggestions in the past for the Ropeless Consortium to hold databases for gear marking and/or ropeless trial data; however, it has no capacity for this at present.
- The potential conflict of ropeless fixed gear fishing with mobile gear is currently a hole in research presented and discussions held at the Ropeless Consortium.
- Should we be expanding the mission of the Ropeless Consortium? If so, who will take responsibility and/or contribute to this?
- It was suggested that the RC should hold a repository for data from all of the ropeless trials that have been conducted. It was also suggested that there should be more education and outreach to share information, ideas, knowledge and to give media a place to go for information.
 - Excellent ideas but someone needs to write a proposal to get money to fund this expansion of work.
- It was suggested that fisheries managers should have access to trial results to know whether ropeless can be used as a management tool.
 - Restrictions on data use and sharing will come into play here.
- A RC Board member suggested it would be inappropriate for the Consortium to deal with ropeless trial data (i.e. house, share it).
- A suggestion was made that the RC should put pressure on regulators to allow ropeless fishing without experimental fishing permits (EFPs).
 - More trials are needed, 1000s instead of 100s, in order for ropeless to become a more realistic and viable solution.
 - California will be allowing ropeless fishing beginning on November 1st, 2020; perhaps this will lead by example.
 - Development will occur more quickly with more fishers trialing the gear.
- Bycatch.org was discussed as a forum that could be used as an example for the RC:
 - Individuals globally are dealing with the same issues, are asking the same questions, etc.
 - Bycatch.org allows researchers to upload their own data and/or studies as desired to share with others. No work on the back end is required (after the website is first developed).
 - Funding opportunities could also be shared on such a platform.
 - Collaborative teams could be created to submit proposals and complete projects together.
 - Idea sharing, tool suggestions.
- But where to go from here without funding?

Questions/Action Items

- What are the operational issues with RFS? The technology is still developing, so need to work with industry to work on this
- Need to get more gear into the hands of fishers
- Need to test in more areas with harsh conditions (high currents (4 knots +), large tides, extreme weather)
- Collaborative approach and need for interoperability of gear marking software
- Need to bring mobile gear fishermen into the discussion as they will also need to use gear marking software to know where fixed-gear is located (i.e. addressing gear conflict/interference issues)
- Criteria of mature RFS technology that can be allowed to be used in closed areas
- Criteria of what is an acceptable area for RFS to be deployed in (e.g. avoiding large aggregations of whales, but still within closed areas)
- Need funding if there is desire to expand the scope of work undertaken by the Ropeless Consortium. Who will look for this funding? Who can do the work?