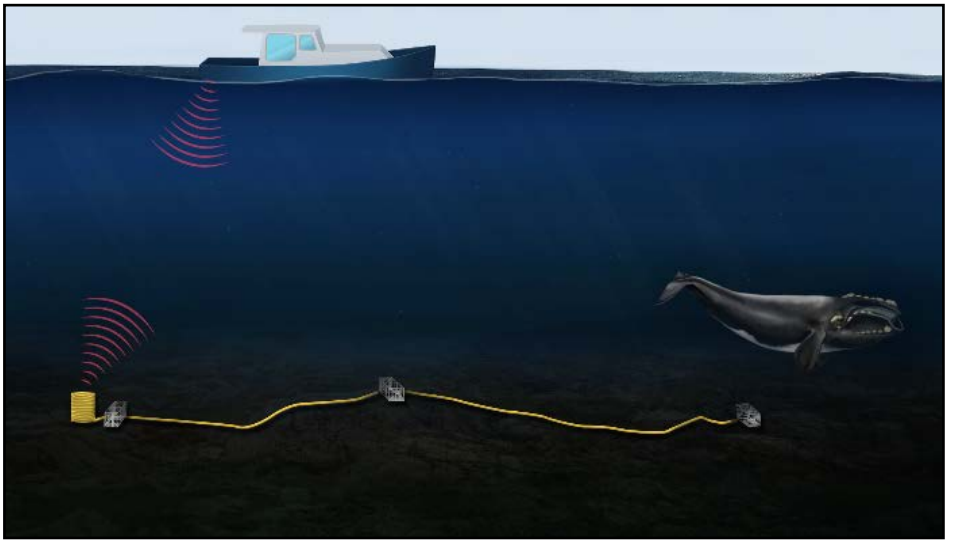
Ropeless Consortium
Annual Meeting





Halifax Convention Center

Halifax, NS, Canada

18-19 November 2026

www.ropeless.org

New England Aquarium

Protecting the blue planet

RCT

ROPELESS CONSORTIUM

ISLAND FOUNDATION

ROPELESS CONSORTIUM
ANNUAL MEETING

18-19 November 2026
Halifax Convention Center

With Special Attendee (Onsite & Remote) Programming on 17 November 2026

MEETING FORMAT AND AGENDA

Pre-Meeting:
Prior to the meeting, all registered participants will receive a unique meeting site login code that will allow them to view all pre-recorded presentations in advance of the meeting. All underlined presentations should be viewed **in advance of the meeting** as they will not be shared live. Those presentations that are not underlined will be shared **live** during the meeting. The six-digit number preceding the presentation title corresponds to the video number on the meeting site.

Participants (both onsite and remote) may submit questions/comments for presenters in advance of the meeting using the question submission link on the meeting page.

Live Meeting:
Remote participants will be able to view the meeting, including live presentations and discussions, using the zoom access links on the meeting site.

Each live presentation will be followed by a short Q&A session with the presenter. Following any live presentations within a session, a discussion panel will take place with all presenters within that session. Presenters who are onsite will gather at the front of the auditorium and presenters who are remote will be available via the virtual meeting platform. The panel will take questions/comments from both onsite and remote meeting participants. Remote participants will be able to come off mute to ask their questions. **Remote participants – please see meeting site for important information on queuing for questions during the meeting.**

*A login is required to access the Meeting page via the NARWC website (www.narwc.org)
*Times listed are AST
*Underlined talks should be viewed **in advance** of the meeting and will not be shared live

All meeting materials (both static and live) are intended for registered participants only and may not be shared in any capacity. All participants have agreed to the meeting Code of Conduct. There is no external recording (including but not limited to video, audio, screenshots, or photography) or sharing (including social media) of any material (including but not limited to presentations, presentation content, discussions) without explicit consent of the presenter, speaker, moderator, etc. The meeting will be recorded to facilitate the synthesis of meeting notes to be distributed to participants only.

The Ropeless meeting is CLOSED to the press.

Meeting Site Information

The onsite meeting will take place at the **Halifax Convention Center on the Argyle Level**. We will be on this level for the entire meeting. Additionally, registration check-in will take place here as well.

Wi-Fi: narwc26

*A login is required to access the Meeting page via the NARWC website (www.narwc.org)
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NARWC and ROPELESS 2026 ANNUAL MEETINGS SPECIAL PROGRAMMING

Tuesday, November 17, 2026 6:30pm

Film Screening: The Right Whale; *Tales of Resilience and Hope*

We will be showing the Award Winning film: The Right Whale: *Tales of Resilience and Hope* at the conclusion of the 2026 NARWC Annual Meeting at 6:30 pm followed by a Q&A with some North Atlantic Right Whale Consortium members featured in the film.

Following up to the rough cut shown at the 2023 NARWC Meeting, this final version of the film by Cheryl and Nick Dean with Spindrift Images has been shown around the world and features many NARWC members.

The film will be streamed via zoom using the Main Meeting link for Tuesday, November 17, 2026 - *no need to RSVP for remote attendance*.

Workshops

There are many workshops being held on the morning of November 18, 2026. These are independently organized - please see Workshop page at narwc.org for more information and registration information.

- 8-10AM: Closing the Loop on Detection, Dissemination, and Boater Response: Defining Effective Metrics to Measure Conservation Success (Room 201)
- 10-12PM: Best Practices for Realtime Sighting, Detection, and Risk Sharing to Mariners (Room 201)
- 9:30-12:00PM Vessel Strike Risk Modeling: Incorporating Whale Behavior to Better Inform Evaluation of Vessel Strike Avoidance Technology (Main Meeting Room)
- 8:30-11:30AM Using AI in the Analysis of Marine Ecological Data (Room 202)
- 8:30-12:00PM 3D Simulation of North Atlantic right whales and fisheries gear (Room 612)
- 8:30-12:30PM Protocols for aerial support of disentanglement and carcass recovery (Room A3)
- 8:30-12:00PM Ropeless Consortium Harvester Workshop (Room 613)
- 9:30-12:00PM CanFISH Gear Lending Program Tours (Offsite, with transportation)
    - Two dates being offered (same tour on each day): Wednesday, November 18, 2026 OR Friday, November 20, 2026

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ROPELESS CONSORTIUM

2026 Annual Meeting

Agenda

Wednesday, November 18, 2026

1230-100PM Check-In

100PM Opening Remarks

Mark Baumgartner, Woods Hole Oceanographic Institution

130PM Panel 1: On-Demand Fishing in California

Moderated by: Sean Brillant, Canadian Wildlife Federation

Panelists:

- **Ryan Bartling, California Department of Fish and Wildlife**
- **Bart Chadwick, SubSea Sonics**
- **Rick Hauschel, Dungeness Crab Fisher**
- **Brand Little, Dungeness Crab Fisher**
- **Geoff Shester, Oceana**
- **Greg Wells, National Marine Sanctuary Foundation**
- **Tiffany Wolvek, California Department of Fish and Wildlife**

Presentations to watch Pre-Meeting via 2026 Ropeless Meeting Site:

Panel 1.1 **Fully On-Demand Commercial Dungeness Crab Fishery Authorized and Successfully Executed in California – Details and Lessons Learned**

- *Russ Mullins, Guardian Ropeless Systems*

Panel 1.2 **Alternative Gear in the California Dungeness Crab Fishery**

- *Allegra La Ferr, California Department of Fish and Wildlife*

Panel 1.3 **On-Demand Fishing Gear – Lessons From California**

- *Geoff Shester, Oceana*

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300PM **BREAK**

330PM **Panel 2: On-Demand Fishing in Canada**

Moderated by: Elizabeth Vézina, Canadian Wildlife Federation

Panelists:

- **Haley Welsh, Fisheries and Oceans Canada**
- **Pierre Bélanger, Fisheries and Oceans Canada**
- **Basil MacLean, Area 19 Snow Crab Fisherman's Association**
- **Alden Gaudet, CFA 12 harvester**

445PM **Session 1: On-Demand Fishing on the East Coast US**

Moderated by: Erin Wilkinson, Maine Department of Marine Resources

01.01.01 **Lessons from Authorizing On-Demand Gear in the South Atlantic** (Speed)

- *Katline Barrows, NMFS SERO*

01.01.02 **Comparing Four Years of Experimental Fishery Data** (Speed)

- *Neal McIntosh, NOAA Fisheries Northeast Fisheries Science Center*

01.01.03 **Fishermen Perspectives on Testing Alternative Fishing Gear Technologies in Maine's Lobster Fishery: Maine Innovative Gear Library** (Full)

- *Kate Behrens, Sunrise County Economic Council*

545-715PM **Reception**

Light appetizers and cash bar (a drink ticket will be provided for the first drink and then the bar will be open and will take cash and credit card)

Attendees on own for dinner

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Day 2

Thursday, November 19, 2026

800AM **Check-In**

830AM **Business Meeting**

- Board Elections Discussion

900AM **Session 1: Ropeless Fishing**

Moderated by: Elizabeth Vézina, Canadian Wildlife Federation

02.01.01 **An Update on CanFISH: An On-demand Gear Lending Program to Support Fish Harvesters Impacted By Closures in Atlantic Canada** (Speed)
- *Hannah Drake, Canadian Wildlife Federation*

02.01.02 **Co-development of On-demand Fishing gear as a tool for BC fisheries to eliminate entanglement threats to at-risk whales** (Speed)
- *Ali Gladwell, Canadian Wildlife Federation*

02.01.03 **Collaborative Evaluation of Alternative Gear Retrieval Systems in the Maine Lobster Fishery: Maine Innovative Gear Library Results Through June 2026** (Full)
- *Briony Donahue, Maine Department of Marine Resources*

02.01.04 **From Demonstration to Expansion: Scaling California's Deep-Water On-Demand Trap Fishery** (Full)
- *Kim Sawicki, Sustainable Seas Technology, Inc.*

1000AM **BREAK**

1030AM **Session 2: Manufacturers**

Moderated by: Amy Knowlton, Anderson Cabot Center for Ocean Life, New England Aquarium

02.02.01 **Fishing the Gear Ourselves: A Workflow-Driven, Multi-Configuration Approach to On-Demand Lobster Gear** (Speed)
- *Cormac Hondros-McCarthy, LiftLabs*

02.02.02 **Interoperable Chart Plotter and Deckbox for On-Demand Gear Marking Complete** (Speed)
- *Bob Melvin, Teledyne Benthos*

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02.02.03 **Development and Adoption of Economically Viable On-Demand Fishing Systems for Vertical Line Closures** (Speed)

- *Ryan Halonen, Sub Sea Sonics*
- *Bart Chadwick*

02.02.04 **Latest Technical Features Implemented in the Ropeless RISER™ Product Line to Address Fisherman, Regulator, and Researcher Feedback** (Speed)

- *Harold Vincent, Ropeless Systems, Inc.*

02.02.05 **SMELTS On-Demand Fishing Technology Strategy and Progress** (Speed)

- *Richard Riels, SMELTS*

1130PM **Session 3: Marketing Interests**

Moderated by: Anne DiMonti, Sustainable Fisheries Partnership

02.03.01 **Market Roundtable Session: Whales Are In Our Nature** (Full)

- *Leah Baumwell, The Pew Charitable Trusts*

02.03.02 **Building a Supply Chain for Seafood Caught with On-demand Gear** (Full)

- *Michelle Cho, Anderson Cabot Center for Ocean Life, New England Aquarium*
- *Anne DiMonti, Sustainable Fisheries Partnership*

Additional Panelists:

- **Josh Austin, Senior Manager, Sustainability at High Liner Foods**
- **Daisy Berg, Program & Category Manager for Seafood at New Seasons Market**
- **Ben Coniff, Program Manager at Luke's Lobster**
- **Geoff Irvine, Executive Director of the Lobster Council of Canada**
- **Michael Panasuk, Executive Chef at the Marriott Copley**

1245PM **Lunch**

Manufacturers Exhibits

215PM **Session 4: Technology Innovation and Evaluation**

Moderated by: Mark Baumgartner, Woods Hole Oceanographic Institution

02.04.01 **Understanding Gear Localization and Marking in the Northeast US** (Full)

- *Brian Galvez, NOAA's Northeast Fisheries Science Center*

02.04.02 **A Dual Underwater/Surface Marking System for On Demand Gear** (Speed)

- *Kortney Opshaug, Blue Ocean Gear*

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02.04.03 **Evaluating Interoperability Architectures for On-Demand Fishing Gear in the Northeast U.S.** (Full)

- *Justin Tufariello, MITRE*

02.04.04 **Evaluating the Time Investment and Accuracy of Different Gear Positioning Methods** (Full)

- *Emily Patrick, Maine Department of Marine Resources*

02.04.05 **Interoperability, Governance, and Implementation of the "rmwHUB™", the Aggregating and Sharing Cloud of the Ropeless Manufacturers Workgroup** (Speed)

- *David Capotosto, Ropeless Manufacturers Workgroup*

02.04.06 **Quantifying Environmental Impacts on On-Demand Gear Performance to Inform Management** (Speed)

- *Abigail Costigan, Stony Brook University*

02.04.07 **The Multi-Standard Deck Box Project: Early Results and Performance for Fishery Enforcement** (Speed)

- *Marco Flagg, Desert Star Systems, LLC*

345PM **BREAK**

415PM **Open Discussion**

Moderated by: Sean Brillant, Canadian Wildlife Federation

500PM **Meeting Wrap-Up and Close**

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Comparing four years of experimental fishery data

Amico, M.[1]; Artigues, V.[2]; Asaro, M.[1]; Galvez, B.[1]; Henninger, H.[2]; Khan, C.[1]; Martin, R.[3]; Matzen, E.[1]; McIntosh, N.[1]; Palombo, M.[2]

[1] NOAA Fisheries, Northeast Fisheries Science Center, Woods Hole, MA 02543 (neal.mcintosh@noaa.gov)
[2] Azura Consulting in support of NOAA Fisheries, Woods Hole, MA 02543
[3] NOAA Fisheries, Greater Atlantic Region, Gloucester, MA 01930

The Northeast Fisheries Science Center (NEFSC) Gear Research Team collaborates with fishermen, gear manufacturers, and conservation organizations to develop effective, commercially viable alternatives to static vertical lines in fixed-gear fisheries. On-demand fishing systems use acoustic release technology to eliminate persistent surface lines, reducing whale entanglement risk and enabling access to closed areas. This technology has rapidly advanced in the Northeast U.S. as a promising tool to balance conservation and fishery access. To date, NEFSC has trialed over 23,000 hauls in partnership with more than 60 fishermen. The NEFSC gear team trains and equips fishermen with on-demand gear for experimental fishery use in areas seasonally closed to static vertical lines. In the four years of the Northeast experimental fishery, participants have completed nearly 3,000 lobster trap trawl hauls without surface buoys in areas with seasonal closures to vertical buoy lines. Because gear is not visually marked at the surface, alternative marking systems need to be used to avoid conflicts with other bottom-tending activities. The NEFSC team collaborated with mobile and fixed-gear fishermen, and law enforcement to test digital gear marking and vessel monitoring system -based geofencing tools. These innovations allow ocean users to detect and avoid gear in real time. Results demonstrate the feasibility of using on-demand gear in closed areas while protecting endangered whales. Long-term goals include improving access to this technology, increasing reliability, ensuring safety, and providing managers with accurate spatial data to support adaptive decision-making to support fisheries and protected species conservation

Understanding gear localization and marking in the Northeast US

Amico, M.[1]; Artigues, V.[2]; Baumgartner, M.[3]; Galvez, B.[1]; Martin, R.[2]; Matzen, E.[1]; McIntosh, N.[1]; Palombo, M.[2]; Rugo, J.[4]

[1] NOAA Fisheries, Northeast Fisheries Science Center (brian.galvez@noaa.gov)
[2] Azura Consulting in support of NOAA Fisheries
[3] Woods Hole Oceanographic Institution
[4] Teledyne Benthos

Reliable gear location is crucial for operational awareness on fishing grounds by individual vessels and among fleets, enforcement, and fishery management. This has become a focus as on-demand fishing systems are increasingly adopted in experimental fisheries, serving as an alternative to traditional buoy lines in areas with vertical line restrictions. Without surface markers, gear position must be electronically recorded and shared with digital mapping tools. The Northeast Fisheries Science Center (NEFSC) Gear Research Team and partners have worked to evaluate methods for locating gear deployed without surface buoys to better understand the marking locations in relation to measured positions of gear on the seafloor. Recent field efforts incorporated vessel-mounted ultra-short baseline directional ranging systems, depth measurements, and slant range observations collected in surveys around deployed gear. Through these field measurements, diagnostics were developed to assess positional accuracy and error sources. These methods enabled comparisons between surface marked GPS gear locations, subsurface reported locations, and known surveyed positions, helping to inform position expectations for effective on-demand fishery use.

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Lessons from authorizing on-demand gear in the South Atlantic

Barrows, K.[1]; Shervanick, K.[2]

[1] *Spatial Front Inc., Bethesda, MD, 20817 (katline.barrows@noaa.gov)*
[2] *Southeast Regional Office, National Marine Fisheries Service, St. Petersburg, FL 33701 (kara.shervanick@noaa.gov)*

The implementation of on-demand gear is unique to every fishery. In the Southeast United States, on-demand gear is already an allowable gear type within the Snapper-Grouper FMP managed by the South Atlantic Fishery Management Council (SAFMC). However, its use is restricted in the closed areas in the South Atlantic. While the Southeast black sea bass (BSB) pot closure was implemented to reduce entanglement risks for North Atlantic right whales, its spatial and temporal extent coincides with prime BSB fishing opportunities. Essentially, on-demand gear can be used in areas where there is little incentive to use it, but restricted where the incentive is highest. Since 2020, the SAFMC has engaged stakeholders, supported gear testing, and considered on-demand frameworks in numerous amendments. During this time, the BSB fishery has become ready to operationalize the gear, but a clear regulatory pathway does not yet exist. Currently, the Council is considering authorizing on-demand gear within the BSB pot closure through Regulatory Amendment 40. Final action is tentatively scheduled for March 2027, with National Marine Fisheries Service rulemaking and implementation expected in time for the 2027/2028 winter fishing season. Given the mismatch between the commercial fishery's readiness and the timeline for amendment implementation, the lesson for other regions developing on-demand gear is to begin navigating the responsible regulatory bodies well before the fishery is operationally ready. This presentation will summarize the eight-year effort to advance on-demand gear in the South Atlantic, detail the components of Regulatory Amendment 40, and outline opportunities for public engagement in the process.

Challenges and successes of alternative gear authorization in the California Dungeness crab fishery

Bartling, R [1]; La Ferr, A. [1]

[1] *California Department of Fish and Wildlife, Sacramento, CA 94203 (Allegra.Laferr@Wildlife.ca.gov)*

In 2026 the California Department of Fish and Wildlife (Department) authorized the use of Alternative Gear (pop-up gear) for the first time during closures in the commercial Dungeness crab fishery under the Risk Assessment and Mitigation Program (RAMP). The goal of RAMP is to minimize risk of entanglement using near real time data to inform the use of management measures, including the use of pop-up gear, while maximizing fishing opportunity.

Pop-up fishing gear testing began in 2022 under the Experimental Fishing Permit Program and expanded the following years. Authorization of Alternative Gear through RAMP in 2026 provided opportunities for all commercial Dungeness crab permit holders to continue fishing during area closures. The transition from small scale experimental permits to fleetwide authorization of a new gear type presented unique regulatory challenges while also providing expanded fishing opportunities.

Key challenges included development of conditions to address fishery enforcement needs, proactively minimizing gear conflict, and development of gear marking data reporting requirements that could integrate with the Department's electronic vessel monitoring dashboard. There was also the challenge of implementing a new program across various Department functions.

Despite these challenges, the first year of Alternative Gear Authorization was largely successful. As of late June 2026, landings data show that approximately 30 vessels made 200 unique landings. There were over 134,000 pounds of Dungeness crab landed with an ex-vessel value of ~$1 million dollars. At the close of the first season, one gear type/manufacturer has received authorization, with additional gear types

pending and/or in initial consultations. Pop-up fishing gear shows promise to expand fishing opportunities during periods of high entanglement risk. However, authorization of large-scale use must be done in a thoughtful and measured way to ensure enforceability, reliability, and to minimize gear conflict to help ensure long term success.

Market roundtable session: Whales Are In Our Nature

Baumwell, L.[1]; DiMonti, A.[2]; Vézina, E.[3], Brillant, S.[3]

[1]Pew Charitable Trusts 901 E Street, NW, Washington, DC 20004 (lbaumwell@pewtrusts.org)
[2] Sustainable Fisheries Partnership, 4348 Waialae Avenue, #692, Honolulu, HI 96816 (anne.dimonti@sustainablefish.org)
[3] Canadian Wildlife Federation, 110 Chain Lake Drive, Halifax, NS (Elizabethb@cwf-fcf.org, seanb@cwf-fcf.org)

From June 8–11 in Ottawa, Ontario, Pew and partners hosted a week-long whale conservation event in recognition of World Oceans Day. Known as Whales Are In Our Nature, the program included a reception, film screenings, and roundtables that supported substantive dialogue on challenges and opportunities to build momentum for stronger marine and whale protections in Canada. In collaboration with the Canadian Wildlife Federation and Sustainable Fisheries Partnership, the first workshop during Whale Week brought together Canadian harvester and industry representatives, Fisheries and Oceans Canada (DFO) staff, seafood market representatives, and other key stakeholders to explore the integration of on-demand fishing gear into the commercial Canadian lobster and crab industry, as outlined in Canada's 2026-2030 Whalesafe Fishing Gear Strategy. The Market Roundtable session explored the emerging value chain for whale-safe seafood, with a focus on how on-demand fishing gear can reduce whale entanglements while supporting ecological, community, and economic benefits in fisheries. The session aimed to examine growing buyer interest in Canadian whale-safe products, the role of sustainability commitments in shaping demand, and the opportunities and challenges associated with scaling this market. Discussions centered on barriers to broader adoption, including pricing uncertainty, supply-chain readiness, policy conditions, fishery closures, and market access, as well as the types of incentives, procurement commitments, and buyer signals that could support fishers during the transition. The session emphasized how conservation goals, market demand, and policy can reinforce one another, and concluded by identifying concrete next steps, collaborations, and market signals needed to advance adoption of whale-safe fishing gear.

Fishermen perspectives on testing alternative fishing gear technologies in Maine's lobster fishery: Maine Innovative Gear Library

Behrens, K.[1]; Hachey, B.[1]; Johnson, T.[1]; Donahue, B.[2]; Morgan, R.[2]; Shapiro, M.[2]; Lewis, K.[2]; Garabedian, K.[3]; Miller, M.[4]

[1] Sunrise County Economic Council, Machias, ME 04654 (kate.behrens@maine.edu)
[2] Maine Department of Marine Resources, Augusta, ME 04330
[3] Island Institute, Rockland 04841
[4] Maine Center for Coastal Fisheries, Stonington, ME 04681

Alternative gear technologies, including on-demand or 'ropeless' systems, have emerged as a tool for accessing areas closed to traditional fixed gear with persistent vertical lines. These technologies are intended to reduce the risk of entanglement, a primary threat to the critically endangered North Atlantic right whale. While these technologies have been used in other commercial fisheries, their use within the Maine lobster fishery, one of the largest fixed gear fisheries, is limited. Given the large number of harvesters, high gear density, diverse fishing operations and environmental conditions in Maine waters, it is important to evaluate the performance and operational feasibility of alternative fishing gear technologies under these conditions.

The Maine Department of Marine Resources operates the Maine Innovative Gear Library (MIGL), providing access to alternative gear technologies for Maine fishermen to test. The National Fish and

Wildlife funded Community Engagement Program, operates in conjunction with the MIGL and seeks to understand fishermen's experience while testing and using alternative gear. Through this Program, a series of qualitative semi-structured interviews are conducted with MIGL participants to capture a nuanced understanding of the fishermen's experiences in their own words. Interviews are conducted at three points: initially, midway, and exit. The interviews are recorded and analyzed by Sunrise County Economic Council. Themes include difficulty with gear location, ideas to make the gear effective for use in the Gulf of Maine, necessary fishing operation modifications, experiences of gear conflict and gear malfunction at sea, concerns within the community as a participant in the program, and safety concerns while using the gear. These findings provide necessary first-hand experience of testing alternative gear technologies by Maine commercial lobstermen, which has a significant influence on the form of any future implementation.

Interoperability, governance, and implementation of the "rmwHUB™", the aggregating and sharing cloud of the Ropeless Manufacturers Workgroup

Capotosto, D.[1]; Chadwick, B.[2]; Hondros-McCarthy[3]

[1]*Ropeless Systems, Inc., Biddeford, Maine 04005 (davidcap@ropeless.us)*
[2]*Sub Sea Sonics, San Diego, California 92107*
[3]*LiftLabs, Lowell, Massachusetts 01851*

The Ropeless Manufacturers Workgroup (RMW) is a collaborative consortium of seven leading developers of on-demand fishing systems that was formed in 2020 to advance interoperability, data standards, and industry coordination. A key milestone in 2026 is the transition of the RMW into a formal Public Benefit Corporation (PBC), establishing a legal entity capable of stewarding shared intellectual property, managing standards governance, and supporting long-term sustainability of interoperability frameworks. This structure provides a neutral, industry-led mechanism to balance innovation, competition, and public-interest objectives. Central to the RMW's technical work is the rmwHUB™, an interoperable, virtual gear-marking platform designed to aggregate, standardize, and securely exchange gear location data across manufacturers. The rmwHUB™ enables visualization, enforcement access, and operational coordination by integrating multiple marking approaches into a single inclusive standard validated through multi-year testing. Deployment of rmwHUB™ compatible systems has demonstrated practical success in improving gear tracking, supporting lost gear recovery, and facilitating multi-vendor coexistence in pilot fisheries. These use cases illustrate how interoperability reduces barriers for harvesters and regulators while accelerating real-world adoption of on-demand technologies. Looking forward, the RMW is also working with developers to create regulatory data portals to provide authorized agencies with standardized, near-real-time access to virtual gear location data. This capability is expected to support compliance, enforcement, and the creation of regulatory pathways enabling on-demand fishing as a viable alternative to closures. Together, the RMW, rmwHUB™, and emerging governance framework represent a scalable model for industry-driven interoperability supporting the transition to ropeless fisheries.

Development and adoption of economically viable on-demand fishing systems for vertical line closures

Chadwick, B.[1]; Halonen, R.[1]; Mullins, R.[2]; Sawicki, K.[2]

[1]*Sub Sea Sonics, San Diego CA, www.subseasonics.com* (ryan.halonen@subseasonics.com)
[2]*Guardian Ropeless Systems, Bellingham WA, www.guardianropeless.com*
[3]*Sustainable Seas Technology, Middle Haddam CT www.sustainableseastechnology.org*

With funding from the National Fish and Wildlife Foundation (NFWF), Sub Sea Sonics (SSS), Guardian Ropeless Systems (GRS), and Sustainable Seas Technology have accelerated the development, testing, commercialization and adoption of complementary acoustic release and line-handling technologies designed to support a broad range of

New England fisheries and operating conditions. The objective is to provide economically viable, operationally practical, and rapidly scalable on-demand fishing systems that can be adapted to diverse vessel sizes, fishing practices, and environmental conditions.

SSS has continued development on two commercially available acoustic release platforms and the associated gear marking app, Trap Timer. Enhancements of the AR4RT+ has increased the depth rating to 100 fathoms, enabled additional acoustic feedback and interoperability with Teledyne Benthos topside systems. Field testing of the DAR4RT have confirmed slant ranges up to 1 mile. The Trap Timer app has implemented a trawl path feature as well as has dozens of other UI enhancements based on broad user feedback

Efficiency gains from thru-hull transducers have increased their adoption, with some users reporting communications up to 10 knots.

GRS has designed a family of Guardian line- and buoy-handling systems optimized for use with SSS acoustic releases across a variety of fisheries. For shallow-water fisheries using short trawls, a modified commercial trap integrates the release and line-handling system within a compact enclosure, making it well suited for vessels with limited deck space. Midwater Guardian systems continue to evolve with multiple weight, buoyancy, and line-capacity configurations to meet fishery-specific requirements. A deepwater Guardian platform, designed for offshore fisheries requiring up to 200 fathoms (366 m) of ½-inch line and increased buoyancy, has been deployed and is undergoing operational field evaluation.

NFWF support has been instrumental in advancing practical, cost-effective on-demand fishing technologies as an alternative to fishing closures.

Fully on-demand commercial Dungeness crab fishery authorized and successfully deployed in California

Chadwick, B.[1]; Halonen, R.[2]; Mullins, R.[3]

[1]*Sub Sea Sonics, San Diego CA, www.subseasonics.com*
[2]*Sub Sea Sonics, San Diego CA, www.subseasonics.com*
[3]*Guardian Ropeless Systems, Bellingham WA, www.guardianropeless.com (russ@guardianropeless.com)*

Following three years of research conducted under an Experimental Fishing Permit (EFP), Sub Sea Sonics (SSS) and Guardian Ropeless Systems (GRS) successfully obtained authorization from the State of California to conduct a fully on-demand Dungeness crab fishery. The authorization enabled the reopening of the spring fishery, which had remained closed for six consecutive years because of the risk of whale entanglement in persistent vertical buoy lines, resulting in substantial economic hardship for the commercial fleet.

The State approved fishery-wide use of on-demand gear for all licensed fishers, with operational requirements designed to minimize whale entanglement risk, reduce gear conflict, and ensure regulatory enforceability. To date, 51 commercial crab vessels have been outfitted with approximately 650 pop-up systems configured in trawls of up to 25 traps. All gear was purchased directly by the fishermen without government subsidy.

With support from Sustainable Seas Technology (SST), SSS and GRS provided mandatory pre-season training covering system operation, regulatory compliance, and use of the Trap Timer electronic gear-marking application. Although high-density fishing areas were expected to present significant gear-conflict challenges, the Trap Timer application performed exceptionally well. The few reported gear “lay overs” occurred early in the season, were attributed primarily to initial user learning or technical issues, and were quickly resolved.

California's regulatory framework and successful implementation of a fully on-demand commercial fishery provide a practical model for reopening fisheries—or avoiding complete closures—in other regions affected by whale conservation measures. Operating conditions, including water depths, currents, sea states, vessel characteristics, trawl configurations, and fishing densities, closely resemble those found in many New England fisheries facing similar whale-protection restrictions.

Building a supply chain for seafood caught with on-demand gear

Cho, M.[1]; DiMonti, A.[2]

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Despite efforts to differentiate seafood products in the US marketplace that were caught with on-demand gear from products caught with traditional gear, challenges remain, due in part to the inability to trace the product through the supply chain, grading of lobster for different markets, low volume of product, and proximity of landing ports to seafood dealers. As presented at the 2025 Ropeless Consortium, individuals from the seafood supply chain participated in a workshop in September 2025 to discuss these challenges. Building on the outcomes of the workshop and shared partnership, the New England Aquarium (NEAq) and Sustainable Fisheries Partnership (SFP) have continued to advance collaborative efforts throughout the seafood supply chain to support the adoption and market viability of on-demand lobster and crab fisheries. SFP has partnered with processors, seafood buyers, and government agencies to expand industry engagement and foster broader support for these innovations through targeted outreach, stakeholder convenings, and participation in industry events such as the Seafood Expo North America. NEAq partnered with fishers, seafood buyers, and foodservice industry to host a lobster pop-up during Massachusetts' and Maine's school vacation week in April 2026, which is a heavily trafficked time for attendance at the Aquarium and coincides with the closed season in Massachusetts' restricted areas. The pop-up featured lobster caught with on-demand gear by a MA lobster fisherman. Additionally, in July 2026, NEAq and SFP held a supply chain roundtable. The roundtable was designed to discuss opportunities to develop a supply chain for seafood caught by early adopters of on-demand gear to the companies interested in selectively purchasing this product. Participants discussed emerging opportunities and practical strategies that support market access, regulatory compliance, fishery sustainability, and supply chain resilience, while strengthening collaboration and information sharing among stakeholders to align priorities.

Central to these efforts is fostering collaboration between marine conservation stakeholders and seafood supply chains. Through these methods, NEAq and SFP continue to shift the market toward fishing practices that support right whale and other marine wildlife conservation in addition to healthy fisheries.

Quantifying environmental impacts on on-demand gear performance to inform management

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Commercial adoption of on-demand (ropeless) fishing gear depends on reliable acoustic communication and predictable gear retrieval under diverse ocean conditions. However, the environmental factors controlling retrieval performance and the spatial requirements for acoustic communication remain poorly understood. To address this gap, we analyzed acoustic localization and retrieval data collected by the Maine Department of

Marine Resources to quantify the effective acoustic communication footprint and identify the environmental drivers of retrieval success. Vessel speed, transceiver configuration, distance from the vessel to the gear, and modelled water density stratification were used to define a footprint of uncertainty around a gear location, which must be smaller than local gear density to avoid increased fishery conflicts. Collaborative trials were conducted with fishermen using acoustic releases with lift bags and with stowed rope. Data was split into soak- and haul-phases and Binomial Generalized Additive Models (GAMs) with cubic regression splines described how oceanographic variables interacted with the gear during these different phases. The soak-phase model explained higher deviance than the haul-phase model, indicating that environmental conditions over time impact success more than conditions during retrieval. By integrating environmental impacts on acoustic geolocation performance and gear retrieval success, this study provides quantitative guidance for optimizing on-demand fishing operations, reducing gear conflicts, and improving the reliability and commercial viability of on-demand fishing technologies.

Collaborative evaluation of alternative gear retrieval systems in the Maine lobster fishery: Maine Innovative Gear Library results through June 2026

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The Maine Innovative Gear Library (MIGL) has conducted collaborative testing of alternative gear retrieval systems through a research initiative designed to evaluate the operational performance of on-demand fishing technologies in Maine fixed gear fisheries. The participants tested commercially available acoustic on-demand systems from seven different manufacturers under hybrid trawl configurations.

Since 2024, the MIGL has collaborated with 33 Maine lobstermen across all 7 lobster management zones to collect data from more than 5,000 hauls using on-demand stowed-rope and lift bag fishing gear technologies. Participating fishermen record data from each hauling attempt, enabling DMR to quantitatively evaluate system performance under close-to-normal fishing operations and diverse environmental conditions. While the project is designed to reflect close to normal fishing practices, participants often adjust fishing locations to minimize gear conflict. Data collection is focused on evaluating the operational performance of these on-demand systems, including deployment and retrieval success rates, the time required to haul hybrid on-demand trawls, environmental conditions that may influence gear performance, and the operational factors affecting the reliability, efficiency, and overall success of the technology. Testing has been conducted primarily in State waters across a range of trawl configurations representative of Maine's commercial lobster fishery and in varying substrates and environmental conditions.

The collaborative approach has expanded technology evaluation in Maine waters, providing valuable feedback to manufacturers, researchers, and managers. Continued testing across additional areas, fishing configurations, and environmental conditions will further inform the development of alternative fishing technologies in Maine and advise future conversations, should implementation be considered.

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The multi-standard deck box project: Early results and performance for fishery enforcement

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The transition to “ropeless” on-demand fishing gear requires law enforcement to have a practical method for inspecting submerged traps and pots. Currently, the ropeless industry offers a diverse selection of acoustic release systems, utilizing various frequencies and protocols to optimize actuation range, cost, operating depth, and acoustic ranging and reporting for specific fisheries. However, this proliferation of acoustic standards—each traditionally requiring a proprietary deck box and transducer—presents a significant logistical challenge for fishery enforcement personnel inspecting multi-manufacturer fleets.

To address this, Desert Star Systems, with funding from NFWF, collaborated with five other gear manufacturers to develop a single multi-standard deck box (MSD-1). Concluding in early 2027, this project equips law enforcement with a unified deck box, a wide-band transducer assembly, and a common app called "Ropeless Inspector." The system overcomes the technical hurdles of operating across a broad acoustic frequency range and bridges diverse communication protocols and operating methods into a single user interface.

With the hardware completed and supporting nearly all participating protocols by November 2026, this presentation will review early field results. We will demonstrate how the MSD-1 establishes communication and triggers pop-ups across different manufacturers' devices. Additionally, we will highlight the system's integration with the RMWhub cloud gear database, utilizing confidential PIN codes managed by fishery departments to securely identify and haul registered gear.

The presentation will conclude with a long-term outlook, discussing support for future protocols, realistic technical limitations, and the expected impact on equipment procurement, maintenance, and training for law enforcement agencies navigating the evolving landscape of on-demand fisheries.

Co-development of on-demand fishing gear as a tool for BC fisheries to eliminate entanglement threats to at-risk whales

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Entanglement in fishing gear is a conservation threat to marine wildlife species worldwide. In British Columbia (BC), Canada, humpback (*Megaptera novaeangliae*) and grey (*Eschrichtius robustus*) whales are vulnerable to entanglement in fishing gear, yet management efforts remain largely reactive, focusing on response and disentanglement efforts. On-demand (i.e., ropeless, pop-up) fishing gear offers a preventative solution by removing the vertical buoy line of fixed gear fisheries from the water column. Though tests have occurred in other locations, on-demand gear had not been evaluated for BC fisheries prior to this project. This project introduced and evaluated the suitability of on-demand fishing gear to a new community of harvesters, based on similar programs on the east coast of Canada. Using a structured trial framework, 179 deployments of five different system types were assessed in collaboration with fish harvesters. Results demonstrated technical suitability for this gear in BC fixed gear fisheries and identified potential solutions to encourage future adoption by industry participants. These findings provide a foundation for proactive whale entanglement prevention in BC, while allowing harvesters to maintain access to important fishing grounds. This project highlights the value of

collaborative trials and industry-conservation partnerships in supporting the adoption of sustainable fishing practices.

Fishing the gear ourselves: A workflow-driven, multi-configuration approach to on-demand lobster gear

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As on-demand fishing gear moves past early reliability challenges, the next frontier is workflow: getting ropeless systems to fit seamlessly into how fishing vessels actually operate. LiftLabs has approached this by lobster fishing with their own lobster boat for the past year, creating a direct development loop: fish with the gear, identify friction, iterate on design, validate on their own vessel, and deliver updates to partner fishermen.

That process has produced concrete improvements. Working with NEFSC, LiftLabs developed an inshore sled configuration for the EchoLift system, tested it aboard their own vessel, and deployed it with fishermen. Additional iterations refined how the EchoLift attaches to traps, updated rope configurations to match real-world rigging practices, improved on-deck hauling workflow, condensed the gear refill station by eliminating the table docking station, and produced modular holder designs transferable to other lobstermen's vessels.

This iterative process revealed that a single gear configuration cannot serve the full diversity of the lobster fleet. Two deployment configurations have emerged: a top-of-trap mount, favored by smaller vessels with limited deck space, and a sled configuration, preferred by larger boats where a dedicated unit can be handled separately. Combined with two depth variants — inshore (≤35 fathoms) and offshore (up to 100 fathoms), LiftLabs is building a portfolio of options designed to meet fishers where they are rather than asking them to adapt to a single system.

The central lesson from a year on the water: commercial adoption of on-demand gear will not be driven by technology alone. It will be driven by gear that fits the workflow of the vessels using it, and by manufacturers willing to fish their own product to find out.

A dual underwater/surface marking system for on demand gear

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As adoption of on demand gear has increased, so has the need for determining gear location acoustically while it is submerged, allowing for enforcement to ensure where gear is set using on demand equipment and other pot fishers to avoid setting their gear on top of the submerged gear. Currently, different topside deck boxes and vessel-mounted transducers are required to check status and range for on demand gear from multiple manufacturers.

To address this issue, a system has been developed to provide a common means of determining position for submerged gear, since then only one topside unit would be required for location. Blue Ocean Gear's original Smart Buoy is designed as a gear locator at the surface, with satellite transmission of GPS position provided to the cloud and integration with chart plotters for data display. In a joint project with SMELTS, Teledyne, and Blue Ocean Gear, Smart Buoy technology has extended to incorporate acoustic communications, creating a means of locating gear underwater (range and bearing) that is entirely separate from the acoustic release mechanism. This is accomplished by integrating a Teledyne acoustic modem following a standard communications protocol into the same architecture as the Smart Buoy. The buoy can be attached to timer or passive acoustic ropeless gear as well, providing a means of locating gear that has no modem. The Acoustic Buoy reports GPS position to the cloud via

satellite upon resurfacing, as with the original technology. Results from the first field tests of the Acoustic Buoy deployed on a SMELTS lift bag system are presented, including the incorporation of Automated Deployment Marking (ADM), enabling positions where gear entered the water to be displayed on a navigational chart plotter automatically. A mobile app to check range and bearing is available to facilitate operating the deck box.

Evaluating the time investment and accuracy of different gear positioning methods

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Replacing persistent vertical lines with on-demand retrieval systems requires reliable gear marking to communicate location for retrieval, mitigate conflicts, and enforce regulations. In lieu of a traditional surface buoy, acoustic geolocation technology calculates location by communicating between a vessel at the surface and gear on the seafloor, while GPS marking depends on the vessel operator or automated system to identify gear deployment locations at the surface. Through funding from the National Fish and Wildlife Foundation, the Maine Department of Marine Resources has conducted trials with commercial fishermen to extend comparisons of different acoustic positioning methods and evaluate operational tradeoffs between the methods in terms of position accuracy and time to acquire. Fishing vessels and gear outfitted with various acoustic positioning system components were used to deploy devices and record the position via the acoustic systems, multifunction displays, and GPS loggers attached to surface buoys. Fishermen operated their vessels at different distances around various gear densities while acoustic ranges were acquired to assess potential impacts on geolocation performance and to simulate the approach & navigation within areas of deployed fixed gear. The distance from a most likely mapped position was calculated for each method in addition to the time it took to render that position. These parameters were compared across marking methods for the various vessel distances from gear and gear densities. This research may inform fishery manager and individual user decisions regarding the application and use of different marking methods in American lobster fisheries, as they seek to understand the balance of on-seafloor gear positioning accuracy with both the financial and time costs of acquiring that information.

SMELTS on-demand fishing technology strategy and progress

Riels,R.; Rand, K.; Komar,H

SMELTS, Sedro Woolley, WA 98284

SMELTS delivers on-demand gear directly and indirectly to commercial harvesters, through collaborative, grant and contract funded trial partnerships. With federal and foundation grant support, we manufacture and subsidize advanced on-demand units; SMELTS Lift-Rafts™ providing them to fisheries for active, real world deployment without prohibitive upfront costs. The feedback from harvesters has been immensely constructive. Captains report that SMELTS Lift-Rafts™ have performed reliably under intense commercial conditions. While adapting to deck workflow modifications requires a learning curve, the opportunity for operational access in restricted zones that are being closed for large whale bycatch risk is promising for harvesting and food security.

Beyond harvesting, SMELTS actively is advancing shipboard systems and marking of gear with no surface buoys. SMELTS has integrated real-time gear location marking and cloud telemetry via vessel based Starlink connectivity. SMELTS in partnership with Teledyne Marine have developed the Ocean Asset Retriever software and multi-function navigation displays to accurately log subsea asset coordinates, streamlining localized gear tracking. SMELTS also in partnership with Pinpoint Earth are working to perfect automatic gear marking using Vessel Monitoring technology paired with scanned Radio Frequency Identification tags.

SMELTS builds broad based and multi-functional technology but also works to target operational needs. SMELTS has concentrated targeted engineering efforts on adapting gear for distinct regional environments specifically offshore, deep-water fisheries operating at depths between (100 Fathoms, 600', 182m) - (400 Fathoms, 2400', 731m), optimizing robust acoustic systems and specialized valves for extreme lifts off the deep seabed.

SMELTS project is on a structured, multi-year scaling trajectory. Having successfully serviced our initial production runs, SMELTS is currently scaling manufacturing capacity to deliver larger batches of Lift-Rafts™ over the next 12 to 18 months. Full commercial availability and broad-scale regional integration are targeted within the next two to three years.

Interoperable chart plotter and deckbox for on-demand gear marking complete

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Over the past three years, Teledyne Benthos with partners Raymarine, Sea Mammal Education Learning Technology Society (SMELTS), and EdgeTech, have been developing and testing an interoperable chart plotter based shipboard system. The chart plotter is an integral part of the bridge on any fishing vessel and a clean interface for on-demand gear is essential for its adoption. The past year we added Sub Sea Sonics to the list of compatible acoustic devices adding both Liftlabs and Guardian Ropeless Systems interoperability. Also, the FONTUS protocol was implemented and compatibility with the new NFWF funded release from delResearch was demonstrated preparing for potential standardization.

The chart plotter system consists of a Raymarine multi-function display, Blue Ocean Box, speaker, and an in-hull or remote transducer. For accurate gear marking on the seafloor the system measures both range and bearing to the trap using the Teledyne DAT (Directional Acoustic Transponder) coupled with a GPS, heading, and optional depth sounder.

The chart plotter system is now able to set and haul traps with Teledyne, EdgeTech, or Sub Sea Sonics acoustic releases. Fishermen using SMELTS, EdgeTech, LiftLabs, and Guardian Ropeless Systems gear can be controlled. Access to the Earth Ranger cloud is through the rmwHUB. Regulators would be able to see and control all gear on the plotter screen using an administrator login. Weekly testing by SMELTS has led to many improvements including naming conventions and simplified commanding with the goal of easy, intuitive operation.

From demonstration to expansion: Scaling California's deep-water on-demand trap fishery

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California's experimental brown box crab *(Lopholithodes foraminatus)* and California king crab (*Paralithodes californiensis*) fishery remains the only commercial trap fishery in the state required to operate exclusively with on-demand fishing gear to reduce whale entanglement risk. Following successful demonstration of commercial feasibility, the 2025–2026 field season expanded participation while continuing to evaluate multiple commercially available on-demand systems, hybrid gear configurations, electronic monitoring platforms, and interoperable virtual gear-marking technologies under active commercial fishing conditions.

Unlike established fisheries, California's Experimental Fishing Permit combines technology

testing with a structured management framework designed to evaluate biological sustainability, operational feasibility, regulatory enforceability, and economic viability before commercial authorization. New participants complete regulatory approval, standardized training, competency verification, and supervised field operations before independently fishing under the permit while meeting comprehensive biological, operational, and electronic reporting requirements.

Unusually warm ocean conditions associated with an El Niño period coincided with fishing activity at greater depths as participants followed changing crab distributions. These conditions required testing deeper-water gear configurations, modified rigging strategies, and alternative deployment and retrieval techniques beyond those evaluated during previous seasons.

Performance was assessed using retrieval reliability, gear recovery, operational efficiency, electronic monitoring, virtual gear-marking accuracy, and regulatory compliance. Ongoing collaboration among fishers, manufacturers, researchers, and regulators continued to refine both technology and operational practices while supporting the successful integration of new participants into the fishery.

As California considers broader authorization of on-demand gear, this project demonstrates how structured management, standardized training, collaborative technology development, and adaptive fishing practices can support the responsible expansion of whale-safe commercial fisheries under changing environmental conditions.

Moving from experimental testing to commercial alternative gear approval for on-demand gear in two California fisheries

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The state of California implemented new regulations in 2026 that allow commercial fishers to use alternative fishing gear during fishing zone closures to conventional Dungeness crab fishing between April 1-July 15. This is the first US fishery where on-demand gear has been approved for use outside of experimental testing. The approval followed multiple years of experimentation, reliability trials, and commercial testing through the state's Experimental Fishing Permit program, where only those systems that meet regulatory criteria may be approved. Sub Sea Sonics/Guardian On-Demand and EdgeTech 6112 systems were approved in early 2026. California regulators also allowed for the voluntary use of on-demand gear in the coonstripe shrimp fishery. These regulatory approvals include general and system-specific conditions to ensure legal use and avoid unintended consequences. The first season of use provided important lessons that may warrant revisions in future years and can inform other jurisdictions as they create regulatory pathways to approving on-demand gear following testing in region. This presentation reviews the process leading up to the approval, the details of the approval itself, and the experiences and data from the first season of authorized use of on-demand gear in two West Coast fisheries.

Evaluating interoperability architectures for on-demand fishing gear in the Northeast U.S.

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The use of on-demand (ropeless) fishing gear presents an opportunity to reduce large whale entanglement risk along the U.S. East Coast by reducing the number of vertical lines in the water and allowing fishing to occur in areas closed to vertical lines. However, the absence of an accepted interoperability framework among competing vendor systems introduces operational, regulatory, and enforcement challenges. A central question is whether a universal acoustic standard, a protocol which enables communication between any combination of

different gear makes, is necessary to achieve safe, scalable, and compliant on-demand fishing operations, or whether a proprietary acoustics approach supported by a universal cloud database and enforcement deck box is sufficient. This presentation will outline key findings from a multi-faceted technical evaluation of proposed on-demand gear interoperability architectures in the Northeast U.S. conducted by MITRE and published by NOAA in 2026. The analysis integrates geospatial gear conflict risk mapping, vendor hardware and cost assessments, acoustic compatibility testing against open-standards requirements, and underwater acoustic emissions modeling within vertical line restricted fisheries to provide a quantitative analysis of interoperability requirements in the Northeast U.S. Gear conflict risk was assessed by fusing fixed-gear density data from the Decision Support Tool (DST) fishery data layer with Vessel Monitoring System (VMS) telemetry across Northeast U.S. fisheries. Cumulative acoustic emissions were modeled and analyzed to determine if acoustic emissions from on-demand gear could pose a risk to marine life based on thresholds determined under the Marine Mammal Protection Act (MMPA). A discussion of these results and remaining data gaps will be presented, as well as recommendations for next steps.

An update on CanFISH: An on-demand gear lending program to support fish harvesters impacted by closures in Atlantic Canada

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The CanFISH Gear Lending Program was established in 2022 as a fisheries assistance program to facilitate the use of adaptive technologies designed to mitigate entanglement of large whales. Targeted to lobster and snow crab fisheries, the program is available to fish harvesters throughout Nova Scotia, New Brunswick, and Prince Edward Island. While early work included the trial of low-breaking strength gear contrivances, since 2023 the program's focus has been providing access and training for the use of on-demand (i.e. ropeless, pop-up) fishing gear by fish harvesters through the removal of associated costs and other barriers. The primary objective of the program is to support fish harvesters impacted by North Atlantic right whale time-area closures to continue fishing when traditional gear is not permitted; however, limited trials in open fishing areas are also supported. In its fifth year of operation, CanFISH responded to closures by delivering and training harvesters at seven ports, including: North Lake, Tignish, and Souris, PEI; and Cribbons Point, Chéticamp, Inverness, and Margaree, NS. Additionally, we supported seven harvesters fishing with on-demand gear during their open fishing seasons to gather data on gear functionality under the operational and environmental conditions of their fisheries. In 2026, CanFISH was also contracted by Fisheries and Oceans Canada's enforcement branch, Conservation and Protection, to conduct on-land and at-sea information sessions about on-demand gear and its use in Gulf and Maritimes regions. In addition to this, key focus areas over the past year of the program have been insuring robust training of harvesters ahead of fishing with on-demand gear, and monitoring gear use through two cloud databases – EarthRanger and RMWHub. Success rates and insights from harvesters who used on-demand gear will be shared, along with lessons learned and next steps to facilitate further development of on-demand fisheries in Canada.

Latest technical features implemented in the Ropeless RISER™ product line to address fisherman, regulator, and researcher feedback

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Ropeless Systems first introduced the Ropeless RISER™ in 2019 as an airbag-based recovery system integrated with underwater acoustic positioning. It was designed from the ground up to address the specific requirements of commercial fishing. This

presentation will summarize recent significant technological advancements to further facilitate the unique nature of on-demand fishing operations. As on-demand adoption continues, fishermen and regulators have requested advanced features for gear location marking, lifecycle management, fishing operations and continued research. The presentation will demonstrate how these are being implemented in the Ropeless RISER™ product line. Features to be described include – integrated acoustic (in-water) and RF (on-deck) communications for hands-free life cycle management, hands-free gear location marking and cloud syncing, multipoint non-straight trawl display, and acoustic positioning display tools for researchers.