New England Fishery Management Council

On-Demand Fishing Gear Conflict Working Group Report: Term of Reference 3B

Recommendations for Reducing Gear Interactions between On-Demand Gear Used in the Northeast Lobster/Jonah Crab Fishery and Other Types of Fishing Gear

September 19, 2025

Working Group Members as of September 2025: Michael Pierdinock (Chair), Ted Platz (Vice Chair), Terry Alexander, Spencer Bode, Erica Fuller, Jennifer Goebel (GARFO), Sonny Gwin (MAFMC), Toni Kerns (ASMFC), Henry Milliken (NEFSC), Drew Minkiewicz, Kenneth Murgo, Allison Murphy (GARFO), Scott Olszewski (NEFMC), Marc Palombo, Renee Zobel (NEFMC), Ross Pearsall, Sam Rosen, Erin Wilkinson (ME DMR)

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1.1 Tables

2.0 BACKGROUND

2.1 On-Demand Fishing Gear Conflict Working Group

At the January 2023 meeting of the New England Fishery Management Council (Council), the Council received presentations on the status of on-demand fishing, including gear trials conducted under the Northeast Fisheries Science Center's (NEFSC) exempted fishing permit (EFP), as well as recent Atlantic Large Whale Take Reduction Team (ALWTRT) work. Following these presentations, the Council agreed that there was a need for a working group to consider potential interactions between on-demand and other types of fishing gear. In Spring 2023, the Council formed the On-Demand Fishing Gear Conflict Working Group (ODWG; working group) to address concerns regarding gear conflict between on-demand fishing gear and other gears used in Council-managed fisheries.

The goal of the working group is to identify strategies for reducing gear interactions between on-demand gear and other fisheries, including mobile, fixed-gear, and recreational fleets. In addition, the working group will identify strategies for reducing interactions between gears that may be caused by measures adopted for sink gillnet and other trap/pot (OTP) fisheries.

The ODWG consists of 19 members, including:

- Four NEFMC members
- Two MAFMC members
- One ASMFC Representative
- Two GARFO representatives (Sustainable Fisheries Division, Protected Resources Division)
- One NEFSC representative
- Members of the public (Representatives of the mobile gear, gillnet, trap/pot, and recreational/charter fisheries in the Greater Atlantic Region; conservation organizations)
- NEFMC staff

Table 1. Past and Present ODWG membership. Current members are in bold.

Name/Affiliation	Membership
Michael Pierdinock (Chair; NEFMC)	Spring 2023-Present
Ted Platz (Vice Chair; NEFMC)	Spring 2023-Present
Terry Alexander (Mobile Gear/Gillnet)	Spring 2023-Present
Spencer Bode (Mobile Gear)	Spring 2023-Present
Colleen Coogan (GARFO Protected Resources)	Spring 2023-Spring 2025
Dan Eilertsen (Scallop)	Spring 2023-Summer 2023
Elizabeth Etrie (NEFMC)	Spring 2023-Summer 2023
Erica Fuller (Conservation Law Foundation)	Spring 2023-Present
Jennifer Goebel (GARFO Protected Resources)	Spring 2025-Present
Sonny Gwin (MAFMC)	Spring 2023-Present
Patrick Keliher (Vice Chair; NEFMC)	Spring 2023-Spring 2025
Toni Kerns (ASMFC)	Spring 2023-Present
Henry Milliken (NEFSC)	Spring 2023-Present
Drew Minkiewicz (Scallop)	Summer 2023-Present
Kenneth Murgo (Trap/Pot)	Spring 2023-Present
Allison Murphy (GARFO Sustainable Fisheries)	Spring 2023-Present
Scott Olszewski (NEFMC)	Spring 2023-Present

Marc Palombo (Lobster)	Spring 2023-Present
Cheri Patterson (NEFMC)	Spring 2023-Spring 2025
Ross Pearsall (Recreational)	Spring 2023-Present
Sam Rosen (Lobster)	Spring 2023-Present
Wes Townsend (MAFMC)	Spring 2023-Summer 2025
Erin Wilkinson (NEFMC/ME DMR)	Spring 2025-Present
Renee Zobel (NEFMC)	Spring 2025-Present

The ODWG has convened eight times to address the terms of reference (Section 3.2). Meeting materials are available on the Council website.

2.2 ODWG Terms of Reference

The Council approved the working group's final terms of reference (TORs) at its September 2023 meeting.

The working group will:

1. Identify the implications of on-demand fishing gear use for Council-managed fisheries.
2. Engage with fishermen, industry members, members of the public, and other relevant stakeholders to identify potential interactions between on-demand and mobile, fixed, and recreational fishing gear use.
3. Develop strategies to reduce gear interactions between on-demand and other types of fishing gear.
    a. Provide advice on reducing gear interactions that may result from risk reduction measures under consideration for gillnets and other trap/pot (OTP) fisheries in the form of a final report by spring 2024.
    b. Develop recommendations on reducing gear interactions between on-demand gear used in the Northeast lobster and Jonah crab fisheries and other types of fishing gear (including the fixed gear, mobile gear, and recreational/charter fleets) in the form of a final report by fall 2025.
4. Explore gear impacts/loss issues related to gear interactions.
5. Coordinate with the Enforcement Committee to identify recommendations to improve the enforceability of on-demand fishing.
6. Suggest what modifications would be required to replace a buoy: technologies that would mark where gear is on the bottom, and to enable vessels to visualize that gear.

2.3 On-Demand Fishing Gear

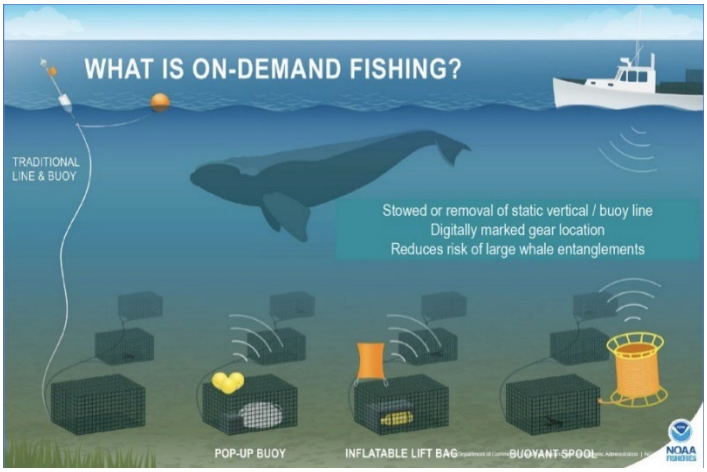


Figure 1. What is on-demand fishing? Image Source: NOAA Fisheries.

On-demand fishing gear, also called ropeless fishing gear, can reduce entanglement risk for large whales and other protected species by minimizing the time that vertical lines are present in the water. Rather than using traditional persistent vertical lines to connect gear to a surface marking (i.e., buoy, radar reflector), on-demand gear utilizes acoustic or timed-release technologies such as pop-up buoys, float bags, buoyant rope spools, and galvanic timed releases to retrieve gear set on the seafloor. This technology can be used with multiple types of fixed gear, including traps/pots and gillnets. The vessel deploying on-demand fishing gear currently marks gear positions digitally when gear is deployed, and gear can be located by the deploying vessels acoustically or using the location information, which can be viewed using a chart plotter or app. Other user groups, including other fixed gear, mobile gear, and recreational vessels, could use these technologies to see gear locations to avoid gear conflict or for law enforcement purposes. However, factors including the lack of surface markers and possible technological limitations may lead to interactions between different user groups. Gear conflict is defined in the Code of Federal Regulations (50 CFR 600.10) as "Any incident at sea involving one or more fishing vessels (a) in which one fishing vessel or its gear comes into contact with another vessel or the gear of another vessel, and (b) which results in the loss of, or damage to, a fishing vessel, fishing gear, or catch." Identifying and addressing these potential conflicts will be an important step towards the widespread adoption of on-demand fishing gear.

There are several on-demand fishing gear trial projects occurring in the Northeast for the lobster/Jonah crab and gillnet fisheries, some of which the ODWG has received updates on at various meetings (Table 2). Because on-demand gear is fished without traditional surface markings as outlined in federal fisheries regulations, fishing activity with this gear in Federal waters occurs under exempted fishing permits (EFPs). Presentations on and discussions around these projects have helped the ODWG meet its terms of reference by providing the working group with a better understanding of how these technologies are working in a real-world setting.

Table 2. On-demand fishing gear testing programs in the Northeast discussed at recent ODWG meetings.

Lead Agency/Organization	Description of Project
Northeast Fisheries Science Center	• Maintains a gear lending library with several types/manufacturers of on-demand fishing gear for vessels to use under EFPs • EFP: active through 12/31/25 (89 FR 43380) in Areas open to trap/pot and gillnet fishing in Gulf of Maine, Georges Bank, Southern New England, Mid-Atlantic ○ Continuation and expansion of on-demand gear trials for trap/pot and gillnet fisheries ○ Up to 180 lobster vessels (up to 5 using grappling), up to 20 gillnet/OTP (red crab, black sea bass) vessels could replace up to 10 existing trawls each with on-demand gear or other alternatives to static buoy lines. Alternative lobster gear would

	be allowed in ALWTRP restricted areas, alternative gillnet gear would not. No grappling allowed in ALWTRP restricted areas.
Maine Department of Marine Resources	• Maintains the Maine Innovative Gear Library to facilitate testing of alternative fishing gear technologies from several manufacturers • EFP active from May 1, 2024 to November, 2025 (89 FR 18395) in LMA 1; all Maine Lobster Conservation Zones (A-G) (trap/pot), Statistical Areas 513, 514, 515 (gillnet) ○ Up to 65 vessels (up to 58 trap/pot, up to 7 gillnet) ○ 2024-2025: total of 30 active vessels testing gear with hybrid trawl configurations. ○ Testing acoustic positioning systems performance relative to surface buoy and GPS marks, considering vessel speed, distance from gear, and gear density.
Massachusetts Division of Marine Fisheries	• On-demand gear research occurs as part of the Massachusetts Right Whale and Lobster Fishery Research Program • On-demand gear research program: MA DMF provides letters of authorization to fishers to exempt from trap marking requirements ○ 2023-2024: total of 11 vessels testing gear ○ Open season testing with hybrid trawls; closed season testing with fully on-demand trawls since 2023 (portions of SIRA, MRA) ○ NEFSC collecting operational & timing data, locations, depths, environmental data, catch/discards, whale sightings; MA DMF collecting additional data on timing ○ Conducting gear density study to determine what proximities on-demand gear can be set at without conflict, assess functionality of on-demand gear and current GPS marking system, and document how conflict rates vary by setting technique/proximity determination
Blue Planet Strategies	• EFP (89 FR 60879) active through 12/31/25 in various areas ○ 16 trap/pot vessels, 4 gillnet vessels; up to 12 trap/pot vessels trialing fully on-demand gear in ALWTRP restricted areas (modify up to 4 trawls each, max 48 trawls in restricted areas) ○ Trap/pot (LMA 1,3): vessels would modify up to 2 existing trawls to use on-demand devices with either 1 or no buoy lines; targeting areas with less mobile fishing effort to reduce gear conflict ○ Gillnet (Stat area 521 & 538, Georges Bank Regulated Mesh Area): modify up to 2 existing gillnet strings to use on-demand systems with 1 or no buoy lines

3.0 Progress Updates: Terms of Reference

3.1 TOR 1

"Identify the implications of on-demand fishing gear use for Council-managed fisheries."

On-demand fishing gear use could impact Council-managed fisheries in two primary ways. Pending the outcome of the Joint Alternative Gear-Marking Framework (see below), Council-managed fixed-gear fisheries may have the option to utilize on-demand (or other alternatively marked) fishing gear in various spatial and temporal extents. In addition, other user groups fishing for Council-managed species using mobile gear or participating in a recreational/charter fishery may be operating alongside on-demand gear as they currently do with traditionally marked fixed gear.

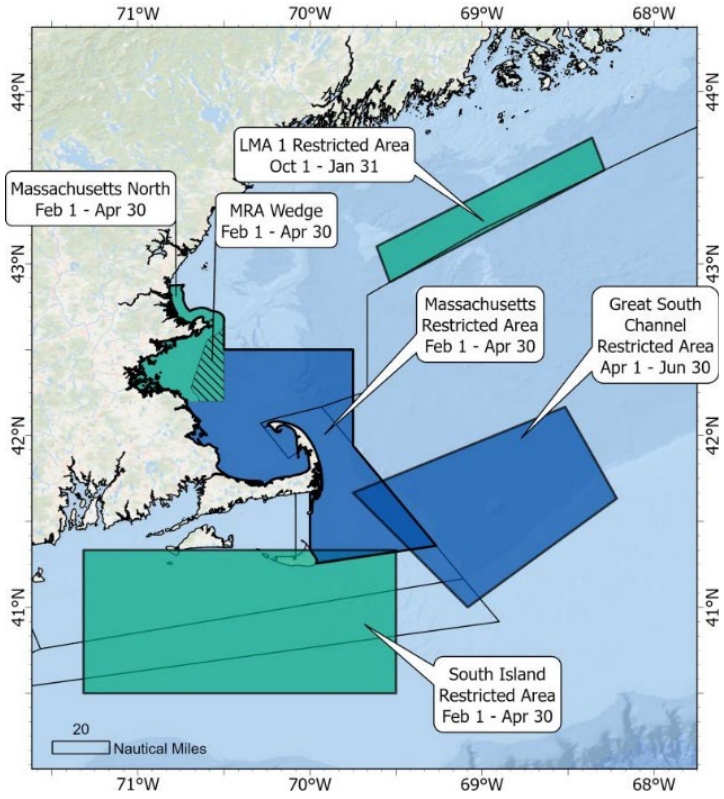
Fixed Gear Fisheries

The use of fixed gear in certain areas and at certain times of the year is impacted by the Atlantic Large Whale Take Reduction Plan (ALWTRP, TRP), which restricts fisheries based on gear type. The ALWTRP restricts the use of traps/pots with persistent vertical lines in the Northeast Lobster/Jonah crab fishery in certain times and areas (Map 1). ALWTRP restricted areas for gillnets and other traps/pots currently prohibit fishing with these gears[1]. Future modifications to the TRP could lead to additional or different areas and times that restrict the use of persistent buoy lines and/or transition these closures to be persistent buoy line restricted areas instead. For on-demand gear (or other alternative gear marking technologies) to be used outside of an EFP, gear marking requirements detailed in federal regulations for multiple Council fishery management plans (FMPs) would need to be changed.

In December 2024, the NEFMC prioritized the development of a joint action with the Mid-Atlantic Fishery Management Council (MAFMC) and the Greater Atlantic Regional Fisheries Office (GARFO) to consider allowing alternative surface gear-marking provisions for fixed gear fisheries in the Greater Atlantic Region. If approved, this action would allow for the use of fixed gear without a persistent buoy line and reconcile fishery management plan regulations with recent and potential future changes to Marine Mammal Protection Act regulations. The NEFMC and MAFMC initiated the framework at their April 2025 meetings and received updates from GARFO staff at their respective June meetings. The NEFMC is anticipated to take final action on the framework at its September meeting, and the MAFMC is anticipated to take final action in October. If the action is accepted and approved, it will apply to all New England Council-managed fisheries utilizing fixed gear, including: northeast multispecies, deep sea red crab, monkfish, and the northeast skate complex. The framework would also consider consistent changes to Mid-Atlantic Council fisheries which use fixed gear. Finally, the National Marine Fisheries Service (NMFS) would consider, through any resulting rulemaking, extending any regulatory changes to the Federal American lobster regulations.

[1] For additional information on ALWTRP gillnet requirements and management areas, see: https://media.fisheries.noaa.gov/dam-migration/northeast_gillnet_2018_alwtrp.pdf

Map 1. Atlantic Large Whale Take Reduction Plan vertical line closure areas. Thes closures only apply to Northeast lobster/ Jonah crab trap/pot fishing, and only restrict trap/pot fishing that use persistent (traditional) buoy lines, except federal waters in the Outer Cape Lobster Management Area which remains closed consistent with the ASMFC's lobster interstate fishery management plan. Source: [NOAA Fisheries](#).



Mobile and Recreational/Charter Fisheries

The ODWG has continued to identify potential impacts of on-demand fishing gear use on mobile and recreational/charter fishing vessels. While mobile and recreational/charter fleets would not be using on-demand gear directly, these vessels will likely continue to fish in the same areas as fixed gear and would need to know where and how on-demand fishing gear is used to avoid conflicting with this gear. To view on-demand gear locations, mobile and recreational/charter vessels may need to utilize some sort of onboard technology to display these locations either through an application on a cell phone/tablet or via chart plotter. Some of the on-demand fishing gear trials outlined in Table 1 include mobile gear vessels testing on-demand gear location visualization technology.

3.2 TOR 2

"Engage with fishermen, industry members, members of the public, and other relevant stakeholders to identify potential interactions between on-demand and mobile, fixed, and recreational fishing gear use."

The working group has worked to address Term of Reference 2 at each of its meetings, which included presentations and discussions to learn more about the current status of on-demand gear development, recent on-demand gear trials, various workshops and meetings related to on-demand gear, and other related topics. All working group meetings are open to the public, and members of the public can ask questions and/or provide comments during meetings. Additional information on previous tasking related to TOR 2 is available in the September 2024 ODWG report. The working group has discussed several potential interactions between on-demand fishing gear and other types of gear fished by the fixed, mobile, and recreational fleets that could lead to gear conflict.

Potential Interactions with Mobile Fleets

The working group has discussed potential interactions between on-demand rigged fishing gear and mobile gear at length. Mobile and fixed gear vessels have historically fished concurrently in various areas, and have been able to work around each other's gears because fixed gear is set with surface markings that are physically visible either to the eye or via radar. Some fishermen also reduce gear conflict through the use of gentlemen's agreements in particular fishing areas, or more casual communication between fishermen/vessels. However, on-demand fishing gear does not have a surface marking and would instead be marked digitally, raising some concerns about how vessels would see the gear locations. If mobile gear vessels are not aware of fixed gear locations, they could inadvertently tow through fixed gear, possibly moving or damaging the gear. Anchoring could also create a conflict with on-demand gear.

The risk of interactions between the mobile and fixed gear fleets could vary by fishing area. At its April 29, 2025 meeting, the working group received a presentation from MITRE, a contractor with NOAA, with an overview of their research to evaluate proposed acoustic interoperability approaches that would allow for on-demand fishing gear to be deployed at scale[2]. As part of this project, MITRE developed gear conflict risk maps for the northeast region, using fixed gear density and mobile gear fishing activity data to identify areas where the risk of gear conflicts occurring may be higher or lower. Overall, according to this analysis, the Gulf of Maine has the greatest cumulative risk of gear conflict, though it was noted that gear conflict risk is location-dependent, and can still occur in areas of low gear density and/or mobile gear activity. MITRE also endorsed the need for a cloud-based gear marking solution based on their findings. These analyses and findings will be detailed in a final report anticipated to be released to the public, which is forthcoming.

The working group reviewed an updated estimate of lobster and Jonah crab, gillnet, and other trap/pot vertical lines from GARFO using data included in the Decision Support Tool. These tables (Table 3, Table 4) offer an estimate of the number of vertical lines that were fished in the current vertical line restricted areas before they were implemented in an effort to indicate how much effort could, in theory, be replaced by on-demand fishing gear. The number of endlines were calculated using the Woods Hole Analysis of Line Entanglement Decision Support Tool (Miller et al. 2024) and a fixed-gear fishery layer developed by Miller et al. (2025). Data on the number of endlines were based on trip reports from 2010 – 2020, but the inclusion of different years varies for each fishery subgroup based on data availability and consistency of trip reports. Changes to the Northeast lobster and Jonah crab minimum trap per trawl measures were implemented in May 2022, altering the number of traps per trawl and, in some cases, the numbers of buoy lines required for a trawl. Though the estimates of vertical lines for the lobster and Jonah crab fishery used data from 2010-2020 (before these measures went into effect), the values in Table 3 account for these changes. For federal waters, estimates for the average number of lobster/Jonah crab vertical lines per month were highest in the Lobster Management Area 1 Restricted Area, followed by the Massachusetts Restricted Area with the Wedge, while the other trap/pot average vertical line estimate was highest in the South Island Restricted Area. The Massachusetts Restricted Area (including the MRA wedge area; federal waters only) had the highest average number of gillnet vertical lines per month in federal waters.

[2] MITRE Presentation to ODWG, April 29, 2025: https://d23h0vhsm26o6d.cloudfront.net/5_ODFcouncilWG_MITREbriefv2.pdf

Table 3. Average number of lobster and Jonah crab vertical lines per month by Northeast trap/pot restricted area prior to ALWTRP vertical line restricted area implementation.

Northeast Trap/Pot Restricted Areas	Restricted Period	Average Number of Lobster and Jonah Crab Vertical Lines Per Month (Post 2021 Trawling Up Measures)
Lobster Management Area 1 Restricted Area	Oct 1 – Jan 31	1,644
Massachusetts Restricted Area (State waters)	Feb 1 – Apr 30	3,578
Massachusetts Restricted Area (Federal waters only)	Feb 1 – Apr 30	961
Massachusetts Restricted Area with MRA Wedge (Federal waters only)	Feb 1 – Apr 30	1,354
South Island Restricted Area	Feb 1 – Apr 30	344
Great South Channel	Apr 1 – Jun 30	*
Data Source: Woods Hole Analysis of Line Entanglement Decision Support Tool (Miller et al. 2024) (number of endlines); Miller et al. 2025 (fixed gear fishery layer) Note: Calculations for average number of vertical lines in MRA state waters exclude May fishing days * Fishing effort data prior to the implementation of the GSC (65 FR 80368, December 21, 2000; effective January 22, 2001) is unlikely to be representative of the fishery today.		

Table 4. Average number of other trap/pot and gillnet vertical lines per month by Northeast trap/pot restricted area.

Current Restricted Areas	Restricted Period	Average Number of Other Trap/Pot Vertical Lines Per Month	Average Number of Gillnet Vertical Lines Per Month
Lobster Management Area 1 Restricted Area	Oct 1 – Jan 31	0	7
Massachusetts Restricted Area (State waters)	Feb 1 – Apr 30	21	40
Massachusetts Restricted Area (Federal waters only)	Feb 1 – Apr 30	3	9
Massachusetts Restricted Area with MRA Wedge (Federal waters only)	Feb 1 – Apr 30	3	14
South Island Restricted Area	Feb 1 – Apr 30	10	12
Great South Channel	Apr 1 – Jun 30	*	*
SE Black Sea Bass T/P	Nov 1 – Apr 30	1,120	
Data Source: Woods Hole Analysis of Line Entanglement Decision Support Tool (Miller et al. 2024) (number of endlines); Miller et al. 2025 (fixed gear fishery layer) * Fishing effort data prior to the implementation of the GSC (65 FR 80368, December 21, 2000; effective January 22, 2001) is unlikely to be representative of the fishery today.			

While considering fishing effort data, it is important to note that historic or current fixed-gear fishing effort may not be a completely accurate portrayal of future on-demand fishing effort for a variety of reasons. First, Atlantic Large Whale Take Reduction Plan vertical line restricted areas were implemented

in 2021, which substantially reduced fixed gear fishing effort with vertical buoy lines in these areas at certain times. In addition, the COVID-19 pandemic beginning in Spring 2020 impacted fishing effort across the commercial fishing industry, and could be reflected in more recent fishing effort data. Specific to on-demand fishing gear, individual fishermen/vessels would likely consider the costs and benefits of on-demand fishing gear before opting to purchase and use the gear.

Potential Interactions with Council-Managed Fixed Gear Fleets
Depending on where and when alternative gear marking is approved for use, there could be fixed gear operating in some areas with on-demand gear and some with traditional gear markings (i.e., buoys, high-flyers, radar reflectors). This is not a potential interaction that the ODWG has discussed at length, but could be covered in the future.

Potential Interactions with Recreational/Charter Fleets
The working group has discussed some possible interactions between recreational fishing gear and on-demand gear. Recreational/charter vessels can fish in the same areas as fixed gear, with some working group members noting that fishermen use the buoys from fixed gear as indicators of tides/currents. Recreational fishing gear itself could hook onto on-demand rigged trawls and be damaged or lost. The working group has also noted that anchoring could pose a risk if an anchor is dropped on or near an on-demand trawl, though this may be more of a concern in inshore waters.

3.3 TOR 3A

"Provide advice on reducing gear interactions that may result from risk reduction measures under consideration for gillnets and other trap/pot (OTP) fisheries in the form of a final report by spring 2024."

The ODWG addressed Term of Reference 3A in a report to the Council at its September 2024 meeting. The full report is available here. The working group developed three consensus statements to present to the Council:

Consensus Statement 1: The ODWG requests the Enforcement Committee provide input for the working group as they continue developing recommendations for reducing gear conflict.

Progress on Recommendations: The Council received this recommendation at its September 2024 meeting and passed the following motion: "to recommend that the Council task the Enforcement Committee to provide input for the On-Demand Fishing Gear Conflict Working Group as it continues developing recommendations for reducing gear conflict." The Enforcement Committee convened on November 18, 2024 to provide feedback to the ODWG on recommendations to reduce gear conflict. Additional information on this meeting is included in Section 3.6 and Appendices I and II. The Council received a presentation on the Enforcement Committee's discussion at its December 2024 meeting, and the working group received an update in January 2025.

Consensus Statement 2: The ODWG recommends that the Council prioritize the development of an action starting in 2025 to revise gear marking regulations in the Northeast Multispecies, Monkfish and red crab fisheries to allow for trained vessel operators to fish without surface gear markings.

Progress on Recommendations: In December 2024, the Council passed its 2025 work priorities, including a "joint action with MAFMC and GARFO to revise gear marking regulations across FMPs". GARFO has taken the lead on developing this joint action, forming a Plan Development Team/Fishery Management Action Team (PDT/FMAT) to work on the action. The NEFMC and MAFMC initiated the framework in April 2025 at their respective meetings, and received updates at their June meetings. Final action is anticipated for the September (NEFMC) and October (MAFMC) Council meetings. In terms of New

England Council fisheries, this action would apply to the Northeast Multispecies and Deep-Sea Red Crab FMPs, though it would also impact gear marking in the monkfish and skate fisheries.

Consensus Statement 3: The working group recommends that the Council work with the Mid-Atlantic Fishery Management Council and Atlantic States Marine Fisheries Commission as appropriate.

Progress on Recommendations: The working group continues to coordinate with the Mid-Atlantic Council and ASMFC as needed through their participation in the working group as well as through the alternative gear-marking framework action.

3.4 TOR 3B

"Develop recommendations on reducing gear interactions between on-demand gear used in the Northeast lobster and Jonah crab fisheries and other types of fishing gear (including the fixed gear, mobile gear, and recreational/charter fleets) in the form of a final report by fall 2025."

The ODWG developed recommendations to address this term of reference over the course of three working group meetings (April 29, July 23, and August 26, 2025). Recommendations can be found in Section 4.0 of this document.

In addition to the recommendations provided in this report, the working group discussed other ideas for reducing gear conflict at length but did not make formal recommendations related to these topics at this time. The working group's discussion primarily focused on gentlemen's agreements and pre-trip notifications (or something similar) as options for reducing gear conflict with on-demand fishing gear. While the working group did not arrive at consensus around recommending or not recommending these ideas, the discussion is summarized below for reference. Overall, the working group emphasized the importance of understanding which strategies would be most practical for the fisheries impacted by on-demand fishing gear use.

Pre-Trip Notifications

The working group has discussed pre-trip notifications (or a similar practice) as a strategy for notifying fishermen that on-demand gear is present in a particular area over the course of several meetings. A pre-trip notification could consist of vessels indicating the area(s) where they plan to fish, then they would be alerted if on-demand fishing gear was being used in that area. This could also be supplemented with a geofence if needed. While notifying ocean users of the presence of on-demand fishing gear in a certain area would be helpful for reducing gear conflicts, there could be some challenges with using the pre-trip notification system itself for this purpose. NOAA staff have noted that there could be logistical challenges with using the pre-trip notification system to notify fishermen of on-demand gear presence. This could also create an additional burden for the mobile fleet, where some fisheries already are required to complete pre-trip notifications. While the notification could presumably be updated regularly, it likely would not incorporate real-time data, and therefore may not provide the most accurate information.

A pre-trip notification specific to notifying vessels of on-demand gear presence may not be practical for the scallop fishery. Scallop vessels already must complete pre-trip notifications to access various areas, and adding another notification could restrict or overly complicate fishing activity. It also may not add much of a benefit if there is a real-time system providing gear locations. Similarly, groundfish vessels must complete a pre-trip notification for certain areas, and can travel substantially within these areas on a trip. Adding another pre-trip notification for on-demand gear might limit the areas vessels could fish in on a given trip. Recreational fishing vessels do not have pre-trip notification or Vessel Monitoring System (VMS) requirements, so using a pre-trip notification or geofence to alert vessels to on-demand gear presence would not be practical for this sector.

Gentlemen's Agreements

Gentlemen's agreements have been, and continue to be, employed at least in part to reduce gear conflict between the fixed and mobile gear fleets. One example of these agreements is fixed gear fishermen in a particular area setting their gear on a certain orientation to create pathways for mobile vessels to fish, reducing the chances of gear conflict. Some vessels coming from other areas to fish (i.e., from southern points to northern fishing grounds) may not be aware of existing gentlemen's agreements as they are generally not recorded, but are rather communicated via word-of-mouth between fishermen. Often times, vessels fishing in new areas will reach out to fishermen in those areas to understand existing agreements. Some working group members felt that existing gentlemen's agreements have worked well, evolving organically over time as needed, and were hesitant to change this process, while others noted that some gear conflicts still occur. Some members expressed that at this point, industry can handle the development and use of gentlemen's agreements without adding a regulatory component. Formalizing these agreements in regulations may limit their ability to be flexible and evolve over time as needed. However, it may be helpful to document these agreements so they are available for reference.

Gentlemen's agreements could work as a tool for reducing gear conflict in discrete areas, but may be less practical if on-demand gear use was more widespread. On-demand gear also does not change how gear is fished, but rather how the gear is marked, so current agreements should still be effective. The working group also discussed enforcement, with some noting that enforcement around gear conflict can be a challenge that may apply to formalized gentlemen's agreements as well. However, there could be improvements in enforceability around conflicts with on-demand fishing gear. Finally, the NEFMC gear conflict amendment sets up a process where if gentlemen's agreements are no longer working, the Council could follow the defined process to address gear conflicts through other strategies.

Addressing Potential Gear Conflict

The Council has pathways available for addressing conflicts between on-demand gear and Council-managed fisheries. In 1997, the Council adopted an amendment to the scallop and groundfish FMPs that allowed measures to resolve gear conflicts to proceed via framework adjustments. This amendment has also been adopted into the Atlantic herring and monkfish FMPs. These measures include:

1) Monitoring of a radio channel by fishing vessels;
2) Fixed-gear location reporting and plotting requirements;
3) Standards of operation when gear conflict occurs;
4) Fixed-gear marking and setting practices;
5) Gear restrictions for specific areas (including time and area closures);
6) VMS;
7) Restrictions on the maximum number of fishing vessels or amount of gear; and
8) Special permitting conditions.

The full text of the amendment and environmental assessment is available on the Council website, and additional information is available in Appendix III.

3.5 TOR 4

"Explore gear impacts/loss issues related to gear interactions."

The ODWG has discussed gear impacts and loss issues related to interactions between on-demand and other types of fishing gear. ODWG members have expressed concerns about the impacts of possible gear conflicts, including damage to fishing gear as well as potential costs incurred due to these damages. Current gear conflict regulations and gear conflict avoidance responsibilities still apply – there is an expectation for fixed gear vessel operators to adequately mark their gear (i.e., with a digital gear mark that can be seen by others), and an obligation for mobile vessel operators to take steps to determine gear locations and avoid interactions.

The working group has also discussed examples of gear conflicts that have occurred with on-demand gear. Most recently, the ODWG received a presentation regarding a gear conflict incident with on-demand gear being tested in the Massachusetts Restricted Area (MRA). Northeast Fisheries Science Center described the gear conflict, which occurred in February 2025 when a mobile gear vessel (likely a scallop vessel) dragged over several trawls rigged with on-demand gear. Some of the gear was able to be retrieved, but some units were unable to be hauled. The NEFSC also worked with the NOAA Office of Law Enforcement (OLE) to place a geofence around a high concentration of gear in the MRA and conducted outreach with scallop fleet representatives and on-demand fishing gear collaborators to notify them of research activities as well as scallop fishing activity. Discussing these gear conflict incidents and resulting remediation has helped the working group to understand current protocols in place and consider strategies to address gear interactions.

3.6 TOR 5

"Coordinate with the Enforcement Committee to identify recommendations to improve the enforceability of on-demand fishing."

At its September 2024 meeting, the ODWG developed a consensus statement to seek input and guidance from the Enforcement Committee on potential revisions to gear marking requirements and the addition of gear conflict avoidance responsibilities to the Federal regulations. The ODWG prepared a list of questions generated from discussions around draft strawman gear marking language that the ODWG reviewed at prior meetings (see Appendix I). A summary of Enforcement Committee discussion at this meeting is available in Appendix II. The Enforcement Committee will continue to be engaged in the ODWG process.

3.7 TOR 6

"Suggest what modifications would be required to replace a buoy: technologies that would mark where gear is on the bottom, and to enable vessels to visualize that gear."

The working group worked towards addressing TOR 6 at the July 17, 2024 and September 3, 2024 meetings by discussing potential regulatory changes including regulations with specific gear standards that could be implemented to allow for the use of alternative gear marking technologies (i.e., on-demand fishing gear). GARFO staff provided a draft strawman document including example gear marking language to help prompt discussion at these ODWG meetings. The question of functional equivalence of a buoy has also risen in the alternative gear-marking framework development process. The ODWG has received updates on this action as it is developed.

4.0 ODWG Recommendations for Reducing Gear Interactions between On-Demand Gear Used in the Northeast Lobster/Jonah Crab Fishery and Other Types of Fishing Gear

The ODWG has developed recommendations for the Council on reducing gear interactions between on-demand gear used in the Northeast lobster and Jonah crab fisheries and other types of fishing gear, including the fixed gear, mobile gear, and recreational/charter fleets. The working group discussed and developed recommendations over the course of three meetings from April until September 2025, and presents these recommendations based on the information they were able to receive and discuss through the end of August 2025. The recommendations put forth in this document were developed along a similar timeline to the Joint Alternative Gear-Marking Framework action process slated for final action in September (NEFMC) and October (MAFMC) and, therefore, are not informed by the outcome of this action. Some working group members were hesitant to put forward specific recommendations before knowing the outcome of the framework as well as receiving additional industry input on certain topics, but the working group was able to provide the following consensus statements with some recommendations for further work.

Consensus Statement 1: The ODWG recommends that all approved alternative gear visualization systems show alternatively marked gear locations in real time. Likewise, approved alternative gear marking systems should also operate in real time.

The working group recognizes the need for further discussion on these systems before implementation, and recommends soliciting industry input regarding possible specifics of these systems, including the definition of "real time". The working group also recommends identifying legal questions related to implementing a gear marking and detection system (specific to fishing location data and data sharing).

Discussion: The working group had a brief discussion about data sharing and confidentiality, noting this as a topic for further exploration by legal counsel. Depending on the option employed for sharing on-demand fishing gear locations, it may be necessary for mobile vessels to share their location to get the appropriate window of data. While some fisheries already have tracking requirements that involve sharing location data, such as the scallop fishery, some do not, such as recreational fleets. Working group members noted that GARFO is considering these questions, and a working group from the Ropeless Consortium has also developed a report covering some of these topics. Revisiting this topic as some sort of system is developed and considered will be helpful.

Over the course of a few meetings, the working group has discussed several different components of a universal marking and detection system that would benefit from further industry input as these technologies develop to ensure that these systems would be functional for fishermen. This list of topics includes:

- Definition and necessity of "real-time" on-demand fishing gear location data
- Availability to various user groups
- Viewing distance
- Data sharing options

Definition and Necessity of Real-Time Gear Location Data

The working group has identified a need for accurate and regularly updated locations for alternatively marked fishing gear to reduce the potential for gear conflict. While the working group felt it was important for gear locations to be accurate and available to other users as soon as possible, the actual definition of "real-time" has yet to be identified for this application. The working group had a lengthy discussion about how to define "real-time" at its August 26th meeting, but did not identify a specific threshold that would be considered real time. Some data services can provide real-time updates, while

others could have a lag time of 5 or even 20-30 minutes. While a 20 to 30-minute lag time might not be considered real time, it may be close enough that it would be sufficient for this application. Even with vendors/ hardware that can provide updated locations as soon as they are marked by vessels fishing the on-demand gear, there is likely to be some sort of lag time. Identifying a low threshold that would determine whether a system was operating in real time or not may, at this point, unnecessarily preclude some systems with a higher lag time that may still be sufficient for certain sectors. Needs for gear detection frequency may also vary by management area. For example, if a mobile vessel were fishing in an area with high fixed on-demand gear density, it may be more critical for that vessel to have up to date gear locations than if the vessel were fishing in an area with very little on-demand fishing gear. There was a brief discussion of recreational and for-hire vessels that may not be equipped with satellite connectivity, for whom an option to access data before leaving the dock using a free app or similar technology may be helpful.

Availability to Various User Groups
The working group has discussed the need for various user groups to have the ability to access on-demand fishing gear locations to reduce gear conflict, including the mobile and recreational fleets.

Viewing Distance
The working group has discussed the viewing distance for on-demand fishing gear over the course of several meetings. Table 5 summarizes some discussion about different types of vessels from previous working group meetings.

Table 5. Past ODWG discussion regarding on-demand fishing gear viewing distance for different vessel types.

Vessel Type/ Sector	Discussion from Previous ODWG Meetings
Scallop dragger	• Slower moving (3-4 knots) • Likely do not need large visibility window
Other mobile gear (i.e., groundfish)	• Can fish close to fixed gear (within ¼ mile), closer if in communication with fixed gear fishermen • 3-4 mile visibility window likely adequate
Recreational vessels	• Sometimes fish very close to buoys; can fish within 10-20 feet depending on tides/currents

Vessel maneuverability may also impact the viewing distance needed for various types of vessels. Maneuverability can vary depending on a variety of factors, including vessel size, gear type, weather conditions, and fishing area. In its current gear trials, the Northeast Fisheries Science Center uses a 5-mile window of visibility for viewing on-demand fishing gear, meaning that a vessel must be within 5 miles of an on-demand unit to see the gear on a chart plotter or app equipped to view digital gear marks. This value was selected as a proxy for the viewing distance of a traditional physical buoy, but it could be modified at any time. The range could also vary for different vessels/ fisheries if desired. While some working group members have noted that the 5-mile window would likely work, more industry input on this topic would be beneficial.

At the July 23, 2025 meeting, the working group discussed vessel maneuverability and viewing distance for on-demand fishing gear. While the working group had some input, they identified this as an area where more industry input is needed. Council staff developed a few draft questions based on ODWG

discussion – these questions could be further developed and presented to the Council's Advisory Panels to gather more information on these topics.

- How much time and space is needed to maneuver vessels once gear is deployed? How quickly can vessels turn or otherwise adjust course to avoid other gear?
- How far out do vessels need to know the location of on-demand gear in order to avoid gear conflict? In other words, what would the ideal range of visibility be for on-demand gear locations displayed on a chart plotter/ other visualization tool?

Data Sharing Options

The working group has received presentations on several different data sharing options for on-demand fishing gear location data. These data sharing options would define how alternatively-marked gear location data would be distributed and accessed by various user groups, including on-demand gear users as well as other groups who need access to location data to avoid gear conflict. When evaluating these options to apply in this use case, there are several factors to balance, including data location privacy for both fishing gear and fishing vessels. Fishing vessel locations may be needed for some options to send a certain window of data based on a vessel's location.

- Send limited data to each vessel based on location
- Send all available data to all vessels (filtering onboard to only display gear in a certain range)
- Area-based curation of data based on permit

The working group has discussed these data sharing options at various meetings but did not indicate a preference. Sharing data locations on a wider scale (i.e., further distances) could allow fishermen to plan where they may fish before travelling to fishing grounds, though some other fishermen have expressed concerns with sharing a wider radius of locations. Some current and upcoming reports and work could also provide guidance on best practices regarding alternative gear marking systems and location systems, which may help to inform future discussions and recommendations. It may also be helpful to identify which aspects of this type of system might be universal across fisheries and which ones may require more specificity for different fisheries.

Consensus Statement 2: The ODWG recommends that vessels operating in areas with alternatively marked gear have the technology to visualize that gear.

The working group recognizes the potential for economic effects to the mobile gear fleets and recommends that an economic evaluation be conducted to better understand the effects. The ODWG recommends discussing potential cost mitigation strategies/benefits of digital marking and visualization. The working group also recommends further discussion regarding the nature of gear conflicts with recreational fisheries, the potential economic effects, and best practices for avoiding such conflicts.

Discussion: The working group discussed the challenges of determining who would be responsible for the costs of widespread on-demand fishing gear use, acknowledging some of the equity concerns between the burden on the mobile and fixed gear fleets. Using on-demand gear would allow fixed gear fishermen to access areas previously closed to persistent vertical lines, and it may be appropriate to ensure that mobile vessels could detect the gear to reduce the possibility of lost or damaged fixed gear. However, a cost-prohibitive visualization requirement for the mobile fleet could create de-facto closures in areas where on-demand rigged fixed gear is in use. It would be informative to conduct an economic evaluation in part to understand the costs of real-time on-demand gear location visualization and the costs to industry of potential lost or damaged gear.

Additional Discussion: The working group has also discussed a series of topics related to accessing on-demand fishing gear data at prior working group meetings, including satellite connectivity costs and

options. Any vessels needing to access real-time on-demand gear locations may need internet connectivity, either using cellular data or a satellite connection. Satellite connectivity does require a vessel to purchase hardware as well as a monthly subscription for data. Equipping a vessel with satellite connectivity could be cost prohibitive for some vessels, particularly fleets that would not typically need satellite internet access for other purposes. For example, many recreational or for-hire vessels do not have tracking requirements or other needs for satellite connectivity and therefore may not have those capabilities on their vessels already.

There are several potential options for satellite data access either currently available or in development, ranging from $25 to $200 per month plus the costs of hardware. Vessels would likely select a satellite connectivity vendor depending on a variety of factors, including uses other than on-demand fishing applications onboard the vessel. Several options are available for satellite connectivity depending on the amount of data a vessel would use - for example, a Starlink plan with 50 GB per month of data available may be a more cost-effective tool for vessels looking to use on-demand gear and other Internet applications, while an Iridium plan could be more cost-effective for those with less data needs. The working group reviewed a report prepared for NOAA Fisheries detailing the various providers of satellite internet connection and the best options for various on-demand gear applications[3].

The working group has also discussed members' real-world experience with cellular connectivity on the water, and examined data provided by Maine DMR regarding cell signal strength for lobster vessel trackers. Generally speaking, cellular connectivity is less reliable further from shore, so depending on cellular service alone may not be practical for accessing on-demand fishing gear locations in a timely manner.

5.0 References

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[3] Unlocking Ropeless Fishing: A Satellite-Driven Path to Sustainable Fisheries: https://www.fisheries.noaa.gov/s3/2025-06/CR-NOAA-101-PUBLIC-Final-2-08c.pdf

APPENDIX I

New England Fishery Management Council
50 WATER STREET | NEWBURYPORT, MASSACHUSETTS 01950 | PHONE 978 465 0492
Rick Bellavance, *Chair* | Cate O'Keefe, PhD, *Executive Director*

MEMORANDUM

DATE: November 12, 2024
TO: Enforcement Committee
FROM: Michael Pierdinock, Working Group Chair
SUBJECT: **ODWG Questions for Discussion at the November 18, 2024 Enforcement Committee Meeting**

Background Information:

The On-Demand Fishing Gear Conflict Working Group (ODWG) was formed in Spring 2023 to identify strategies for reducing gear interactions between on-demand gear and other fisheries, including mobile, fixed-gear, and recreational fleets. To begin addressing its goals, the ODWG completed a report regarding term of reference 3a, to provide advice on reducing gear interactions that may result from risk reduction measures under consideration for gillnets and other trap/pot fisheries. While considering this topic, the working group began discussing the potential for changing gear marking regulations to allow for alternative gear marking technologies, such as on-demand fishing gear. On September 3, 2024, the ODWG developed the following consensus statements:

Consensus Statement 1:

> *The ODWG requests the Enforcement Committee provide input for the working group as they continue developing recommendations for reducing gear conflict.*

Rationale: Feedback from the Enforcement Committee would be helpful in identifying further recommendations to the Council regarding potentially moving forward with developing gear marking regulations that would allow for the use of alternative gear marking technology.

Consensus Statement 2:

> *The ODWG recommends that the Council prioritize the development of an action starting in 2025 to revise gear marking regulations in the Northeast Multispecies, Monkfish, and red crab fisheries to allow for trained vessel operators to fish without surface gear markings.*

Rationale: Revised gear marking regulations would help to address gear conflict between on-demand fishing gear and other gear types.

Consensus Statement 3:

> *The working group recommends that the Council work with the Mid-Atlantic Fishery Management Council and the Atlantic States Marine Fisheries Commission as appropriate.*

Rationale: There are Mid-Atlantic and Commission managed fisheries that will be impacted by the new regulations and they are not currently represented.

During its September 24-26, 2024 meeting, the New England Fishery Management Council (Council) received the ODWG's report on reducing gear interactions resulting from management measures under consideration for the gillnet and other trap/pot fisheries, which included the three consensus statements. Following some discussion of this report, the Council passed the following motion:

> *to recommend that the Council task the Enforcement Committee to provide input for the On-Demand Fishing Gear Conflict Working Group as it continues developing recommendations for reducing gear conflict.*
>
> The motion ***carried*** by unanimous consent.

Enforcement Committee Discussion:

To help the Enforcement Committee provide input, the ODWG has developed a list of questions for discussion. The ODWG is also forwarding for discussion purposes a draft strawman document containing examples of potential gear marking regulatory language that would allow for alternative gear marking. In addition, if the Council was interested in pursuing clarifications to a vessel's responsibility to avoid gear conflict to aid in enforcement under present or future gear marking requirements, some potential regulatory text was also included in the strawman. This document has been discussed at two ODWG meetings, and comments/questions from working group members are included in the draft document to provide additional context.

Questions for Enforcement Committee Discussion:

- The ODWG has discussed two potential avenues for how to include gear standards in gear marking language thus far: 1) gear performance standards are specified in detail in regulations, or 2) regulations reference gear performance standards as listed on a NOAA Fisheries webpage. How might enforceability differ between these two strategies?
- The working group has also discussed where alternative gear marking technologies might be used, i.e., in areas closed to persistent vertical lines only, or in additional areas, or in all areas. Does the Committee have any feedback on where alternative gear technologies might be most appropriate/feasible?
- Are there particular gear standards that are important for enforceability?
- What type of information (if any) must necessarily be available to enforcement via gear marking/ location technologies? What information would enforcement find helpful to support enforcement activities/actions even if its availability is not strictly necessary?
- If gear was retrieved by enforcement officials, what would the protocol be for setting it back? Does inspection authority differ between states? How much lead time is needed for law enforcement training before a specific gear configuration is approved?
- What state/Federal resources are available 24/7 for fishermen to report gear conflict events? Is it necessary to have such resources available 24/7?
- Does enforcement have concerns about how widely available (i.e., distance/ area of visibility) an individual fisherman's gear location data is shared with other commercial and recreational fishermen?
- Do you have any feedback on the accuracy of location information for on-demand gear locations? How accurate does location information need to be?
- Would more specific gear conflict avoidance regulations assist state and Federal enforcement agencies with making cases when gear conflicts are reported? If so, is there an example in the strawman that would be more helpful or would the Committee recommend different strawman language?
- How could a requirement for other vessels to ascertain position and extent of already placed on-demand gear at certain intervals (i.e., before leaving the dock, once an hour, in real time) be enforced for various fisheries/ vessels?
- With respect to on-demand gear conflicts, does the 1996 Gear Conflict Amendment provide helpful guidance on resolving relevant enforcement concerns? Would the Committee recommend modifications to the Amendment?

APPENDIX II

New England Fishery Management Council

50 WATER STREET | NEWBURYPORT, MASSACHUSETTS 01950 | PHONE 978 465 0492

Rick Bellavance, *Chair* | Cate O'Keefe, PhD, *Executive Director*

MEETING SUMMARY

Enforcement Committee

In-Person - Wakefield, MA

November 18, 2024

The Enforcement Committee met on November 18th, 2024, to provide feedback to the On-Demand Fishing Gear Conflict Working Group and to the Council, as they continue developing recommendations for reducing gear conflict, and other challenges related to on-demand gear.

MEETING ATTENDANCE: Committee members present; Patrick Keliher (Chair), Rob Beal (MEDMR), Jason Berthiaume (NOAA OLE), Clint Prindle (USCG). NEFMC staff; Emily Bodell, David McCarron. Public and Agency Staff; Kevin Staples (MEDMR); Tom Bleifuss, Stephanie Oatway (USCG); Colleen Coogan, Allison Murphy (GARFO); Sam Duggan, Katie Pohl (NOAA Office of General Counsel); Heidi Henninger (NEFSC), Brett Alger (NOAA HQ), Erica Fuller.

KEY OUTCOMES:

- Provided feedback on whether gear performance standards should be specified in detail in regulations or referenced to a NOAA Fisheries web page.
- Provided feedback on where alternative gear marking technologies might be most appropriately used (e.g. closed areas only, additional designated areas, or all areas).
- Identified what type of ownership information must be available to enforcement via gear marking and location technology.
- Provided feedback on the protocol for enforcement setting gear back after retrieving it, and how gear inspection authority differs between states.
- Provided feedback on the accuracy of location information needed for on-demand gear, and how that may differ in high-density vs. low-density fishing areas.
- Discussed the gear conflict avoidance framework that currently exists in Council FMPs and how that framework might be changed to assist enforcement.
- Discussed data retention and access policies for any on-demand gear location data to support enforcement needs.
- Recommended that the next Enforcement Committee meeting include a deep-dive into the latest developments in on-demand gear capabilities.

Chair Keliher opened the meeting at 10:00 am. There were no changes to the agenda.

AGENDA ITEM # 1: PROVIDE FEEDBACK TO THE ODWG ON RECOMMENDATIONS TO REDUCE GEAR CONFLICT (EMILY BODELL, NEFMC)

Chair Keliher conducted introductions around the table and the audience. Mr. McCarron explained the use of a portable audio system for recording the meeting and asked participants to step up to the microphone for better transcription. Chair Keliher discussed the ODWG's recent report to the Council and their request to address law enforcement concerns and provide input. The Chair's option to conduct a closed session if necessary was noted.

Ms. Bodell provided an overview of the On-Demand Gear Working Group (ODWG) and its goals. The working group aims to identify strategies for reducing interactions between on-demand fishing gear and other fisheries. The group has six terms of reference, including identifying implications of on-demand gear use and developing strategies to reduce gear interactions.

The first deliverable from the ODWG was a report on reducing interactions related to risk reduction measures for gillnet and other trap pot fisheries, presented to the Council in fall 2024. The report included consensus statements requesting input from the Enforcement Committee and prioritizing developing an action for revising gear marking regulations by 2025. The next deliverable is a final report by Fall 2025 on reducing gear interactions between on-demand gear in lobster and Jonah crab fisheries.

The New England Council adopted a gear conflict amendment in 1996 to address gear conflicts in scallop, northeast multispecies, and the lobster plan. The amendment outlines processes for identifying and developing management measures to address gear conflicts, including mandatory monitoring, fixed gear location reporting, and gear restrictions, which can be incorporated into various FMPs via a framework process. Finally, Ms. Bodell presented several questions prepared by the ODWG for the Enforcement Committee to discuss.

Chair Keliher then led the Enforcement Committee in discussions of each question prepared by the ODWG.

1) *The ODWG has discussed two potential avenues for how to include gear standards in gear marking language thus far: 1) gear performance standards are specified in detail in regulations, or 2) regulations reference gear performance standards as listed on a NOAA Fisheries webpage. How might enforceability differ between these two strategies?*

Some Committee members expressed concerns about the enforceability of regulations that reference evolving standards on a webpage. NOAA General Counsel emphasized the importance of including performance standards within regulations to ensure enforceability. Chair Keliher described how the State of Maine normally doesn't reference documents or websites outside of their control, with the exception of the NOAA weak link standards website due to the constant changes with those contrivances, while another committee member explained that states are required to provide certified copies of regulations, so maintaining portions of standards on a webpage could create an additional challenge for prosecution. The Chair also noted that the agencies involved would be responsible for communicating any changes on the webpage to the industry. A committee member stated that while regulations are stronger and

easier to enforce, it may be helpful to have supplemental information available via a webpage. **The final consensus of the Enforcement Committee: Performance standards should be included in future regulations.**

2) *The working group has also discussed where alternative gear marking technologies might be used, i.e., in areas closed to persistent vertical lines only, or in additional areas, or in all areas. Does the Committee have any feedback on where alternative gear technologies might be most appropriate/feasible?*

The committee discussed the feasibility of using alternative gear marking technology in closed areas versus all areas. The need for clear, defined areas for on-demand gear use was highlighted to manage enforcement and gear conflicts effectively. The implications of widespread use of on-demand gear are not known and could be significant. Use of on-demand gear in closed management areas would be more manageable and easier to address gear conflict with permitted gear in closed areas. Coast Guard noted that allowing on-demand gear in navigation areas (i.e., shipping lanes) could impact vessel traffic schemes if they had to haul and inspect that gear in a congested area. A member of the public raised the idea that using on-demand gear for market reasons (i.e., 'whale-safe' labeling) and how it could benefit the industry, but the Committee was not comfortable with that as a short-term goal and remained focused on enforcement priorties. The committee was encouraged that some areas could be "hybrid" (one endline on a trawl) and generally felt that using that approach was preferable. **The final consensus of the Enforcement Committee: On-demand gear should only be used in closed areas until such time that technology and enforcement techniques are more finely developed.**

3) *Are there particular gear standards that are important for enforceability?*

A committee member emphasized the importance of real-time data to reduce gear conflicts, and highlighted interoperability of various technologies as a concern moving forward, particularly for enforcement personnel who would need to access on-demand gear. Another committee member recommended having some sort of stamp to certify that gear meets these standards.

The committee had a long discussion on distinguishing between what are performance or regulatory standards and what are technical standards. Performance standards shouldn't change too often and could be codified into regulation, while technical standards would evolve with gear technology. Approved on-demand gear systems would have to meet all performance standards and could do so with each manufacturer having distinct technical standards. **The final consensus of the Enforcement Committee: On-demand gear must have real-time data uploads to ensure gear conflicts can be avoided and to better aid law enforcement personnel. The Committee feels that it should be updated regularly as this technology is developed.**

4) *What type of information (if any) must be available to enforcement via gear marking/location technologies? What information would enforcement find helpful to support enforcement activities/actions even if its availability is not strictly necessary?*

Chair Keliher noted that gear marking and identification are not confidential. Buoys are marked with colors and stamped with names and permit numbers. Enforcement needs this information to be effective on the water. New technology should not preclude all fishermen and enforcement from talking to each other and sharing details about how gear is set on the bottom.

Committee members suggested including information such as the lead trap/end trap location, number of traps per trawl, time set, gear type, target species, and device status/health. The

device status is important for enforcement to ensure that there is enough battery/ air/ etc. remaining on the device for fishermen to haul the gear again. There was also the question of what data might be helpful to have shoreside, such as the type(s) of on-demand gear enforcement may need to access, to ensure that vessels have the appropriate supplies to conduct hauls. **The final consensus of the Enforcement Committee: On-demand gear development must ensure transparency related to gear identification. Allowing harvesters from all sectors to know whose gear it is, and where, will allow them to interact as they do now, allowing them to avoid possible conflicts. This is another area that the Committee would like to remain engaged in as the technology advances.**

5) *If gear was retrieved by enforcement officials, what would the protocol be for setting it back? Does inspection authority differ between states? How much lead time is needed for law enforcement training before a specific gear configuration is approved?*

The committee highlighted the need for training and equipment acquisition for law enforcement to learn how to handle on-demand gear. The committee discussed the importance of having a protocol for setting gear back if it is retrieved by enforcement officials. Major Beal noted that on-demand gear would be replacing a lot of information that the buoys and buoy positions can provide on the water, such as tidal influence, which can help enforcement re-deploy traps in the same area. Maintaining the ability to conduct covert enforcement operations on on-demand gear will be critical. Finally, staff will compile state and federal regulations regarding inspection authority to ensure there are not gaps related to the inspection of on-demand gear. **The final consensus of the Enforcement Committee: Agencies must prioritize training for all LE officers (state and federal). Furthermore, systems must allow for the convert hauling and setting of gear without the license/permit holder being aware. Losing this ability to covertly haul gear will eliminate a key inspection tool used for the conservation of species such as American lobster.**

6) *What state/Federal resources are available 24/7 for fishermen to report gear conflict events? Is it necessary to have such resources available 24/7?*

The importance of having clear protocols for reporting gear conflicts and the role of law enforcement in addressing these issues was discussed. Coast Guard indicated that their operations center is available around the clock and has a protocol for documenting and addressing gear conflicts as they happen. Similarly, NOAA OLE has a 24/7 duty agent available, and state law enforcement agencies can be called by 911 dispatch. Mr. Alger noted that it may be important to have some sort of contact if there are technological issues (i.e., not seeing gear on screen, data issues, etc.). **The final consensus of the Enforcement Committee: The Committee recognizes the need for 24/7 enforcement contacts to help the industry maintain voluntary compliance. While outside the purview of enforcement, the Committee agrees that technical assistance for permit holders will be key to ensure operational viability.**

7) *Does enforcement have concerns about how widely available (i.e., distance/area of visibility) an individual fisherman's gear location data is shared with other commercial and recreational fishermen?*

Chair Keliher discussed the need for visibility of all fishing activities, especially for enforcement purposes. Differences between inshore and offshore fisheries were highlighted, with offshore activities requiring more visibility. The committee discussed the importance of having accurate

and real-time location information for on-demand gear and the need for gear conflict avoidance regulations. The challenges of enforcing requirements for other vessels to ascertain the position and extent of already placed on-demand gear are considerable. **The final consensus of the Enforcement Committee: Ensure that the visibility and accessibility of individual fishermen's gear location data to other fishermen is maintained with real-time data**.

8) *Do you have any feedback on the accuracy of location information for on-demand gear locations? How accurate does location information need to be?*

Chair Keliher asked for feedback on the accuracy of location information for on-demand gear. The committee discussed the importance of accurate data in high-density areas. General Counsel highlighted the need for accurate location information for prosecution purposes and understanding the margin of error associated with each manufacturers gear systems. Real-time data and sharing are critical to enforceability. There was a discussion of how long gear marking data would be stored in the cloud for enforcement purposes.

Chair Keliher asked about emerging technology for automatic marking of when gear is deployed from a vessel. NEFSC staff described how companies are integrating Bluetooth technology into their systems to automatically capture each gear set. Chair Keliher noted this would make the gear easier for fishermen to use. There was also a discussion about gear defaulting to an "I am lost" mode after a period of time without being hauled. **The final consensus of the Enforcement Committee: Automated deployment marking should be developed to eliminate operational errors**.

9) *Would more specific gear conflict avoidance regulations assist state and Federal enforcement agencies with making cases when gear conflicts are reported? If so, is there an example in the strawman that would be helpful or would the Committee recommend different strawman language?*

Chair Keliher asked how to enforce other, non-on-demand vessels' ascertainment of gear positions and again emphasized the importance of real-time data. The committee discussed by what authority gear marking data would be collected and retained and if the 'rule-of-three' would apply and how that could be challenging for preventing gear conflicts. Staff indicated that data policies will definitely have to be developed as technologies are implemented. The committee and General Counsel also discussed the legal concept of 'duty of care' and the importance of every vessel being able to demonstrate the measures that they take to meet the standards of gear conflict avoidance. **The Enforcement Committee had no recommendations but acknowledged that more time is needed to consider regulatory language. Again the committee focused on the need for real-time data.**

10) *How could a requirement for other vessels to ascertain position and extent of already placed on-demand gear at certain intervals (i.e., before leaving the dock, once an hour, in real time) be enforced for various fisheries/vessels?*

This question could largely be addressed with the utilization of real time data. There was also some discussion of data storage for various uses, and the confidentiality restrictions that may impact it. **The final consensus of the Enforcement Committee: Systems should be developed so data is uploaded in real-time.**

11) With respect to on-demand gear conflicts, does the 1996 Gear Conflict Amendment provide helpful guidance on resolving relevant enforcement concerns? Would the Committee recommend modifications to the Amendment?

Chair Keliher asked if the 1996 gear conflict amendment provides helpful guidance to the committee. Ms. Bodell asked if there are any omissions in the gear conflict management measures that on-demand gear would need. The Chair suggested that 'real-time' should be added to the 'Fixed gear location reporting and plotting requirements' bullet. **The final consensus of the Enforcement Committee is to keep this question open for future discussions.**

12) Future Enforcement Technology Presentations

Chair Keliher suggested having an in-depth technology presentation at the next Enforcement Committee meeting and emphasized the growing body of work at the science center and the gear libraries. New Hampshire Fish & Game is hosting an on-demand gear workshop on December 9th, the next in a series of enforcement workshops related to on-demand fishing gear

With no other business, the Enforcement Committee meeting adjourned at 1:20 pm.

APPENDIX III

New England Fishery Management Council
50 WATER STREET | NEWBURYPORT, MASSACHUSETTS 01950 | PHONE 978 465 0492
Rick Bellavance, *Chair* | Cate O'Keefe, PhD, *Executive Director*

MEMORANDUM

DATE: April 23, 2025

TO: On-Demand Fishing Gear Conflict Working Group

FROM: Emily Bodell, Council Staff

SUBJECT: **NEFMC Gear Conflict Amendment Summary**

BACKGROUND

In summer 1996, the New England Fishery Management Council (Council) proposed an amendment to the Northeast Multispecies, American Lobster, and Atlantic Sea Scallop Fishery Management Plans (FMPs) that added a process for resolving gear conflicts involving the fisheries managed by each plan. Effective February 10, 1997, the amendment included a framework procedure for identifying gear conflict issues and implementing appropriate management measures. The amendment added the following generic management measures to each FMP as items that can be implemented via framework adjustments: 1) mandatory reporting of a radio channel by fishing vessels; 2) fixed gear location reporting and plotting requirements; 3) standards of operation when gear conflicts occur; 4) fixed gear marking and setting practices; 5) gear restrictions for specific areas (including time and area closures); 6) vessel monitoring systems; 7) restrictions on the number of fishing vessels or amount of gear; and 8) special permit conditions[1]. These framework measures were also incorporated into the Atlantic Herring and Monkfish FMPs[2].

This gear conflict framework process was intended to resolve problems where fishermen using different gear are targeting different species in the same area, as opposed to issues between fishermen using the same gear or fishing for the same species. Gear conflict is defined in the Code of Federal Regulations (50 CFR 600.10) as "Any incident at sea involving one or more fishing vessels (a) in which one fishing vessel or its gear comes into contact with another vessel or the gear of another vessel, and (b) which results in the loss of, or damage to, a fishing vessel, fishing gear, or catch." In this case, the concern regarding gear conflict is between vessels using on-demand gear on traps, pots, and possibly gillnets and other vessels using fixed (i.e., gillnets) or mobile (i.e., trawls) gear.

GEAR CONFLICT FRAMEWORK PROCESS

The framework procedure outlined in the amendment was designed to allow groups of fishermen to request management assistance and make changes to the rules for fishing in specific gear management areas through the Council process. The process begins with fishermen bringing a gear conflict issue to the Council. The Council would then discuss the issue and define a proposed gear conflict management area, which should not exceed 2,700 square nautical miles. The proposed area can change during the development phase but should be defined before announcing the first framework meeting. The Council

[1] Final Rule: https://d23h0vhsm26o6d.cloudfront.net/97-590.pdf
[2] Atlantic Herring; Monkfish

can develop similar and/or parallel management measures for contiguous gear conflict management areas where gear conflict issues are similar, and one framework adjustment can be developed for multiple adjacent areas with similar issues/concerns.

Next, the Council would seek industry advice by holding public meetings where the fishing industry can discuss possible solutions to be implemented in the gear conflict management area through forming an ad-hoc industry advisory committee for each gear management area or a standing industry advisory committee on gear conflict (i.e., the On-Demand Fishing Gear Conflict Working Group (ODWG)). Through this process, the Council will help fishermen to come up with a solution to reduce potential gear loss, improve operating efficiency, and give fishermen access to most productive fishing grounds during most productive seasons.

Industry representatives will then report outcomes to the pertinent oversight committee; if action is necessary, the Council will develop and analyze recommended management actions over at least two meetings per framework protocol. At the first framework meeting, industry members and the oversight committee can make recommendations to the Council. After this first meeting (including an opportunity for public comment), the Council can either: refer the issue back to the gear conflict committee for further consideration; make adjustments to proposed measures; or approve measures and begin developing framework adjustment documents. If the Council approves a proposed framework adjustment, the Council will identify possible and/or preferred alternatives at that meeting. The Council will also appoint impacted fishermen to a monitoring committee for the gear conflict management area. The monitoring committee would alert the Council if any adjustments to the gear conflict measures are needed.

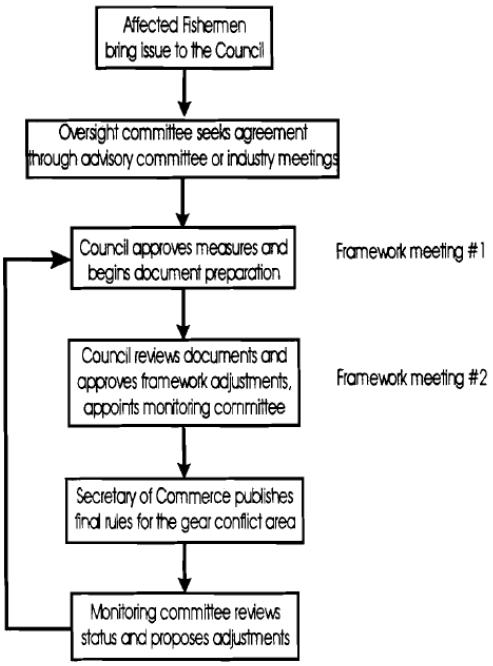

Figure 1. Framework action development process for addressing gear conflict. Source: NEFMC 1996.

If the framework action is approved, it is submitted to the Secretary with recommendations on whether it should be published as a final rule.

The Council should consider the following factors if it is determined that management measures should be published as a final rule:

- Whether the availability of data on which the recommended management measures are based allows for adequate time to publish a proposed rule, and whether regulations have to be in place for an entire harvest/fishing season
- Whether there has been adequate notice and opportunity for participation by the public and members of the affected industry in the development of the Council's recommendation
- Whether there is an immediate need to impose management measures to resolve gear conflict and reduce economic loss
- Whether there will be a continuing evaluation of management measures adopted following the promulgation as a final rule

The gear conflict amendment document also contains the following information on multiple management authority: "If more than one management authority (Mid-Atlantic Fishery Management Council, Atlantic States Marine Fisheries Commission, NMFS for pelagic species) is involved and has incorporated a gear conflict framework procedure into its plans, the negotiated measures would be formally proposed by the New England Fishery Management Council to the other authority. In the case of multiple management

authority, framework adjustments would ultimately be submitted only if all authorities agree to take action. If there is disagreement between these authorities, the Council will return the proposed framework adjustments to its gear conflict committee for further review and discussion."

Framework Management Options to Reduce Gear Conflict

The amendment included eight management measures that could be implemented through framework adjustments to address gear conflicts. For each measure, this section includes the description included in the gear conflict amendment, additional context from the amendment document if available, and potential applications for the measures. In some cases, unrelated to this amendment, other efforts related to on-demand fishing gear research utilized similar strategies to reduce gear conflict. These efforts are identified below where relevant (see "Similar Efforts" sections where applicable).

1. Mandatory Monitoring of a Radio Channel by Fishing Vessels

Description: Vessels fishing within a gear conflict management area would be required to continuously monitor a certain radio channel. These vessels also could be required to have an audible on-deck speaker. Violations would occur if a vessel was fishing within a gear conflict management area and could not be raised by the United States Coast Guard on the specified radio channel.

Additional Context: One could presume that other vessels in a gear management area are aware of gear locations if they are being broadcast via a radio channel. Other vessels within range could verify when broadcasts occurred if there was gear damage.

Potential Applications: Alert vessels to on-demand gear presence within a gear management area via radio broadcast.

2. Gear Location Reporting by Fixed Gear Fishermen and Mandatory Plotting by Mobile Gear Fishermen

Description: A more proactive system could involve a reporting system and monitoring of fixed gear locations and notification of those locations to mobile gear vessels working in specified areas. Under this system records would be maintained of fixed gear locations. Whenever fixed gear was moved into or removed from an area, fixed gear fishermen would be required to provide notification of their gear's location. When a mobile gear fisherman wanted to fish in a specific area, he would be required to provide notification of his intent. The location of fixed gear in the area would be provided and the vessel would be required to note them in his vessel log and plot their locations. Fixed gear vessels within a gear management area that failed to report the gear's location or a mobile gear vessel that failed to record the reported location of fixed gear would be in violation of this provision.

Most of this reporting and logging of fixed gear locations could be automated in fisheries where vessel monitoring systems are required. Under potential gear conflict regulations, fishermen could be required to send a message and location report when fixed gear is deployed. This message data could be stored at a central site for downloading to other vessels upon request. The printed copy of the fixed gear locations, downloaded via the vessel monitoring system, could be a required element of a fishing vessel's log. Vessel monitoring systems will be required when the system is implemented on all limited access sea scallop vessels and on multispecies vessels fishing under individual days at sea. Lobster vessels are not currently required to have on board vessel monitoring systems.

Additional Context: Gear location data and vessel logs would show when and where vessels were deploying/ retrieving or transiting near gear, which would reduce the need to have witnesses attesting to proper communications.

Potential Applications: Would allow for on-demand gear users and other user groups (i.e., mobile gear vessels) to locate on-demand fishing gear for retrieval or awareness/avoidance.

Similar Efforts: Technology is currently being developed to mark on-demand gear locations as well as distribute this information to necessary user groups via an app (i.e., EarthRanger). There is the potential to integrate gear location reporting and plotting with existing chartplotters and similar technologies.

3. Standards of Operation when Gear Conflict Occurs

Description:

a. Release or retention of entangled gear: example rules
   i. When disentangling another vessel's gear, it should be removed in a way that minimizes damage to the major components of the gear. For example, it might be acceptable to cut the groundline to remove the tangled gear, but it should be re-tied once it is returned to the water.
   ii. If gear is returned to the water, fishermen should discard it or repair it so that it is marked by a float and anchored so it shouldn't drift away.
   iii. If the gear cannot be returned to the water in the above condition, or if a vessel can stow the gear and is nearing the end of its trip, the damaged gear should be retained on-board and returned to the owners vessel at sea or brought to shore.
   iv. Whenever gear is returned to the water or retained for eventual return to its owner, the captain should attempt to contact the owner of the damaged gear to let him know of its location.
   v. If unmarked or rogue gear is found by fishermen, they might be able to retain the gear and turn it in, or if authorized by law enforcement, render the gear inoperable so it cannot catch and retain fish, crabs, or lobsters.
   vi. In some or all of the above cases, the vessel might be required to notify law enforcement of accidental gear damage, its condition and location, and whether the owner can be identified from the gear markings. If the gear is fishing in areas set aside for mobile gear, law enforcement might be authorized to take enforcement action against its owner.

Potential Applications: In the future, a clear standard of operation could be developed for when vessels encounter on-demand gear.

Similar Efforts: If fishing vessels in on-demand gear testing areas accidentally tow up an on-demand unit, they are asked to retain the unit and alert the NEFSC's Gear Research Team by email or phone (See https://www.fisheries.noaa.gov/new-england-mid-atlantic/marine-mammal-protection/2025-northeast-experimental-demand-gear-system).

4. Fixed Gear Marking and Setting Practices

Description:

a. Marking requirements
   i. The Council could consider improved marking requirements for fixed gear to ensure visibility under normal and adverse conditions. The marking requirements could also be designed as a form of communication, for example marking the offshore end of a set differently for each gear type, since some type of markings may not be practical for all situations. The types of markings that could be considered include colored polypropolyne balls, flags on a buoyed mast, radar reflectors, lights, active responders, and any other device which would alert a vessel to the gear's location.

The Council could also consider requirements for fishermen to space markers at appropriate distances from one another.

b. Length of gear
    i. The Council could adjust rules for this management measure to limit the amount of fishing area taken up by fixed gear.
c. Deployment
    i. Adjustments to management measures could require fishermen to set gear in a certain direction or along specified bottom contours. Mobile gear fishermen might be required to fish their gear within defined lanes through a gear management area.
d. Monitoring of fixed gear
    i. In place of requirements to improved marking of untended gear, or of setting requirements, or of separate gear management areas, fishermen using fixed gear might be required to continuously monitor their gear. Continuously monitoring gear might mean being with a short distance (e.g. ½ nautical mile) of an end buoy or marker. It also might allow fishing other gear as long as the vessel was within radio range. At the very least, vessels would have to bring all its gear to port then the vessel returns to shore.

Potential Applications: This measure could include the implementation of more formalized "gentlemen's agreements" to set gear in a certain orientation/ along particular contours, or avoid certain areas. There may be some areas where particular deployment strategies (and corresponding notifications) could be appropriate recommendations for reducing on-demand gear conflict.

5. GEAR RESTRICTIONS FOR SPECIFIC AREAS (INCLUDING TIME AND AREA CLOSURES)

Description: Fishing areas would be set aside for specified periods to allow access by one or more gears. Fishermen using an incompatible gear type would be given access to those grounds during other seasons.

a. Separation buffers
    i. To reduce the potential for gear damage and allow for minor errors in fixing a position or controlling the location of gear, the Council would be able to establish boundaries around adjacent gear management areas where fishing is prohibited.
b. Transitions
    i. The Council could consider various options to reduce gear damage during these transitional times if gear management areas were established. For example, mobile gear fishing might be suspended for a few days or a couple of weeks to allow fixed gear fishermen to relocate gear. Other options such as assistance programs to relocate gear (transfer barges, assistance from mobile gear vessels) or gear location reporting could also be considered.

6. VESSEL MONITORING SYSTEMS

Description: Any vessel fishing within a gear conflict management area would be required to have functioning VMS equipment aboard. The capabilities of this system could allow vessels to report and receive the locations of fixed gear on a certain schedule. Vessels that transit the management area might be required to properly stow fishing gear so that it was unavailable for immediate use.

Additional Context: VMS can be used to monitor location of vessels relative to gear management areas and identify fixed gear locations. This may improve enforcement efforts, though the efficacy depends on VMS reporting requirements as well as the requirement to have VMS onboard vessels.

7. RESTRICTIONS ON THE MAXIMUM NUMBER OF FISHING VESSELS

Description: One potential option for controlling the density of fishing effort might be to set a ceiling on the amount of fixed gear and trawling activity that is permitted in a defined area. The Council would base this decision on physical factors, such as the amount of trawlable bottom, the amount of bottom that is available for setting fixed gear, or on the strength of the prevailing tidal currents. Limiting the amount of fishing gear or the frequency of a type of fishing would be based on reducing gear conflict and not on conservation or localized abundance of the target species.

Unlike a limited entry system, a fixed number of fishing permits would expire and be reissued as long as a given type of fishing were allowed in a gear management area. When permits become available or the area reopened to a type of fishing, the permits could be reissued on a first come, first serve or lottery basis. No pre-qualification conditions would be required via a framework adjustment.

8. SPECIAL PERMITTING CONDITIONS

Description: This management option would revise the permitting procedures so that special conditions or industry agreements would become an integral part of a vessel's permit and apply when it is fished within a gear conflict management area. NMFS would distribute the industry-based agreements and require fishermen to acknowledge receipt of these agreements or conditions before the vessel could fish within an affected area. Failing to have a special permit onboard while fishing within an identified gear management area would be a violation of this provision.

Potential Applications: A special permitting condition or industry agreement could be developed for vessels fishing in gear management areas.