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Fishery-dependent Data for Midwater Rockfishes: Workshop Summaries

Isabelle Galko¹, Cheryl L. Barnes¹, Kiva L. Oken², Kate Richerson³, Eric J. Ward⁴

Y. Allen Chen⁵, Peri E. Gerson¹

¹ Coastal Oregon Marine Experiment Station, Oregon State University, Newport, OR

² Fishery Resource Analysis and Monitoring Division, Northwest Fisheries Science Center, Seattle, WA

³ Fishery Resource Analysis and Monitoring Division, Northwest Fisheries Science Center, Newport, OR

⁴ Conservation Biology Division, Northwest Fisheries Science Center, Seattle, WA

⁵ Fishery Resource Analysis and Monitoring Division, Northwest Fisheries Science Center, Portland, OR

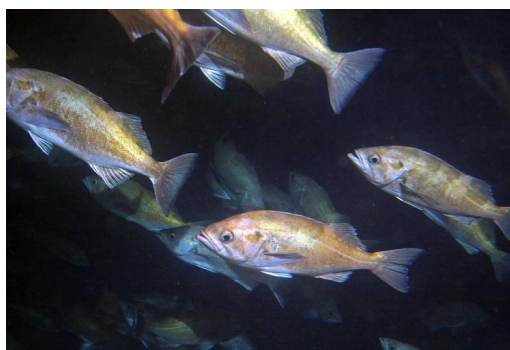


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Abstract

Indices of relative abundance are a key data source for understanding population trends in fishery stock assessments. These indices are often developed from fishery-independent surveys that are standardized to reduce bias and maximize comparability across time or space. Scientific surveys, however, require considerable resources and may not be well suited for all target species. The West Coast Groundfish Bottom Trawl Survey (WCGBTS), for example, is the largest source of fishery-independent data in the California Current but was not designed to produce informative indices of abundance for aggregating midwater rockfishes. Fishery-dependent data may offer a practical alternative to survey-based indices of abundance for species that are not well sampled by the WCGBTS. We convened two workshops with industry members who had ties to midwater trawling along the U.S. West Coast. These workshops were designed to better understand how the fishery operates, with a goal of standardizing fishery-dependent data to develop new indices of abundance from this fleet. One key insight was that markets and processors have an outsized effect on vessel targeting behavior. Another was that there are considerable differences in targeting behavior across midwater rockfish species, where some are consistently avoided, others are consistently targeted, and some are targeted under specific conditions. Drivers of fishery dynamics and other on-the-water insights from these workshops will be used to inform simulation and real-world case studies that investigate the utility of fishery-dependent indices of abundance for future stock assessments.

Key Words

Midwater rockfish, workshop, collaborative research, fishery-dependent data

Introduction

Scientists and members of the fishing industry observe marine environments from different perspectives. Whenever possible, scientists rely on standardized methods to collect representative samples of the population of interest. These scientific surveys provide time series of information that are used to construct trends in distribution, abundance, and demographics of fishery resources that are used to evaluate stock status and provide a basis for management advice (e.g., Edwards et al., 2026; Oken et al., 2025; Wetzel et al., 2025). The collection of fishery-independent data is financially and logistically costly, however, and can limit the number and type of surveys possible. This can lead to surveys being applied to species with varying degrees of availability to the survey sampling gear.

Fishery-dependent data can improve the assessment and management of species with limited scientific information (DeCelles et al., 2017; Yates, 2014), including those that are not well sampled by standardized surveys. Unlike scientific surveys, however, fishing is not random. The aim of commercial fishing industries is to catch their target species. Thus data may be concentrated at times and in locations with relatively high abundances (Bucaram et al., 2013; Sampson, 1991). Detailed information such as fishing effort (e.g., tow duration), location, and catch are often collected but decisions about when and whether to fish, which are driven by things like weather, quota availability, and market demand, are not. The non-randomness of fishing behavior and lack of data about decision points make it challenging to standardize fishery-dependent indices of abundance (i.e., catch per unit effort; CPUE) for use in stock assessment models (Maunder et al., 2020).

The West Coast Groundfish Bottom Trawl Survey (WCGBTS) is a long-running fishery-independent survey that is used to develop indices of abundance for most groundfish stock assessments on the U.S. West Coast (Keller et al. 2017). However, the net and survey protocol mean the survey cannot trawl over high relief rocky habitat. As a result the WCGBTS produces less informative and more uncertain indices of abundance for species associated with such habitat, either demersally or in the water column (e.g., Dick et al., 2025; Kinneen et al., 2025; Oken et al., 2025). We facilitated two workshops with the fishing industry to better understand how widow rockfish (*Sebastes entomelas*), yellowtail rockfish (*Sebastes flavidus*), canary rockfish (*Sebastes pinniger*), and Pacific ocean perch (*Sebastes alutus*) are commercially caught along the US West Coast. The overarching goal was to inform the development of fishery-dependent indices of abundance for midwater rockfishes that could be incorporated into future stock assessments. The first workshop was conducted online and was specifically designed with this goal in mind. The second workshop was conducted in person as part of a broader ongoing initiative to increase stakeholder engagement in fisheries science and marine resource management; we gave a presentation and facilitated two breakout discussions on fishery-dependent index development as part of this second workshop.

The purpose of the online workshop and in-person breakout discussions was to a) learn from industry stakeholders with knowledge about midwater fishing patterns and practices that influence fishery-dependent data and b) strengthen communication among scientists and industry to develop new sources of information that will inform estimates of stock status in the future.

Online Midwater Trawl Fishery Data Workshop

Collaborators worked with industry partners to identify potential participants and spread awareness about the workshop. Desired participants included anyone with past and recent experience in the midwater trawl fishery along the US West Coast. The workshop was advertised via 1) the Pacific Fishery Management Council meeting in April 2026 (e.g., [C.1.b Supplemental NMFS presentation](#)), 2) an announcement at an open (publicly accessible) discussion group about West Coast data and stock assessments, and 3) flyers that were sent to port biologists and posted at ports with notable midwater trawl landings.

The online midwater trawl fishery data workshop was held via Zoom on 21 April 2026. There were a total of 37 participants (Appendix 1), including agency scientists (NWFSC and ODFW), commercial and recreational fishers, processors, and other fishery representatives. Those who RSVP'd in advance were provided with an agenda prior to the workshop (Appendix 2).

Kiva Oken provided an overview of the workshop agenda, goals, and anticipated outcomes. Participants then introduced themselves and described their affiliation with the midwater trawl fishery. Kate Richerson provided a presentation on index standardization that included what types of data are currently used in stock assessments, the difference between fishery-dependent and fishery-independent indices, and what should be accounted for when developing a fishery-dependent index. Participants were then organized into four breakout rooms to facilitate smaller group discussions. Cheryl Barnes introduced the use of breakout rooms for guided conversations and outlined expectations for conduct while engaging in the discussion.

Breakout rooms were moderated by Cheryl Barnes, Kiva Oken, Kate Richerson, and Eric Ward (coauthors of this report). Allen Chen, Isabelle Galko, and Peri Gerson (coauthors of this report), and Dan Holland (NWFSC economist) took notes during discussion. In these smaller groups, participants were asked to share their experiences in the midwater trawl fishery and responses to several topics of interest, including: 1) factors that guide day-to-day fishing decisions, 2) fishing constraints, and 3) details about the data they collect. Participants were asked to limit the discussion to fishing between 2017 and present day to reflect contemporary management practices and data availability. An initial set of guiding questions were posed to each group, with follow-up questions posed at the discretion of the moderator (Appendix 3). All workshop participants reconvened following breakout discussions, note-takers reported key points from each group, and Eric Ward summarized take-home messages. A post-workshop survey link was administered but only received two responses. Respondents expressed gratitude for being included, indicated that they were interested in participating again, and identified that the synthesis of breakout group discussions could be improved upon at future workshops (e.g., by identifying a member of the fishing industry to summarize main points).

Outcomes

Participants described their on-the-water experience targeting rockfish with midwater gear. Processor locations and requests, season, weather conditions, and available quota were identified as primary reasons for when and how industry members choose to fish midwater rockfish. Primarily, a lack of processors in northern California and southern Oregon has limited participation in the fishery at those locations. Fishing locations are also guided by bycatch and

quota limits. For example, several participants referred to fishing in Washington as “risk management”, mentioning that they actively avoid locations with known abundances of canary, yellowtail, and dark-blotched rockfishes because catching your quota of these constraining species (i.e., non-target species with relatively small quotas) can prematurely end one’s fishing season.

Fine-scale shifts in fishing locations have been guided by individual knowledge about historical catches (e.g., learning where rockfish congregate from family members) and seasonal differences in fish behavior (e.g., larger aggregations during spawning and at certain points of the tidal cycle). Several participants emphasized that they consistently return to the same fishing spots; in some cases, fishing at a single location over the entire year. Fishermen also tend to avoid fishing locations with other boats present because doing so would increase the chance of lower catches per vessel. Some participants mentioned that knowing where other boats are fishing may prompt them to delay fishing at that location or seek out other fishing spots that might have higher abundances of the target species. Other participants mentioned, however, that there is little to no overlap between boats and that they rarely travel to other locations if they have spent a considerable amount of time searching locally.

Participants mentioned several factors that play into decisions about whether a trip is economically feasible, when and where to fish, and how long to go out for. Market preferences and limits, fuel costs, boat capacity, and participation in other fisheries all had an influence. Industry members who participated in the online workshop indicated that trip plans were based on when processors wanted the fish and how much fish could be delivered. Processors have preferences for particular fillet sizes, which can be an important factor when deciding when and where to fish. Fuel costs shape individual decisions about whether a trip is economically viable by constraining the distance traveled or time spent searching for fish. For example, it may be more economical for larger vessels to spend an entire night fishing midwater species, whereas smaller boats may be better equipped to participate in more profitable combo trips that target both whiting and rockfish. If bait and fuel costs exceed what a fisher can make in a day, they may switch to another fishery mid-season.

Across the discussion groups, participants emphasized that quantifying effort can be quite difficult. A “good” trip meant catching target species fast, in areas close to their home port, and without much bycatch. Catching what the processor asks for and keeping fuel costs down by going to nearby locations and finding enough fish in a short amount of time tends to improve the quality of a trip. Capacity differences (e.g., vessel size, net size, horsepower) also factor into how much effort goes into a particular fishing trip. “Bad” trips are characterized by catching non-target species (canary rockfish were repeatedly mentioned) because they use up quota that may force an early end to the season while also limiting the catch of what processors have requested (e.g., due to hold limits). Injury, mechanical issues, bad weather, and breakdowns were also noted as signs of a bad fishing trip. Participants noted that most trips tend to be “good” and that “bad” trips are fairly rare.

Finally, several participants mentioned the use of technologies for locating fish and good fishing spots. Boats with camera feeds (an increasingly common vessel feature) can identify what species are present around a vessel. One fisherman reported that if he deploys his net, he already

knows what he will catch. Captains also share knowledge about the fish seen on camera or via acoustics because these technologies affect the amount of time that a vessel spends searching for target species and avoiding “choke” species.

OAH Fisherman-Scientist Roundtable

The Oregon Coordinating Council on Ocean Acidification and Hypoxia (OAH) has organized semi-annual OAH Fisherman-Scientist Roundtables since 2016. With support from the Oregon Department of Fish and Wildlife (ODFW), Oregon Sea Grant, and Oregon State University (OSU), these in-person meetings have helped foster connections among disparate groups interested in promoting science-informed management decisions related to Oregon’s marine resources. The OAH Fisherman-Scientist Roundtables create space for invited participants to share recent observations, questions, and concerns. These roundtables focus on topics identified by a planning committee and past participants. The structure includes introductory presentations, several thematic breakout groups, and a closing session that promotes the identification of new collaborative research priorities.

The 10th OAH Fisherman-Scientist Roundtable was held in-person at OSU’s Hatfield Marine Science Center in Newport, Oregon on 19 May 2026 (10AM to 4PM). The roundtable was coordinated by Melanie Bukovec (ODFW) and co-facilitated by Angee Doerr (Oregon Sea Grant). Discussion topics focused on recent climate-related changes in the ecosystem, the use of fishery-dependent data for stock assessment purposes, and socioeconomic impacts in fisheries.

A total of 42 community members participated in the roundtable (Appendix 4). This included 21 scientists, 10 commercial fishers, 4 recreational fishers, 5 observers, and 2 facilitators. Some participants also attended the online midwater trawl fishery data workshop on 21 April 2026. Attendees were provided with an agenda prior to the OAH Fisherman-Scientists Roundtable (Appendix 5). The roundtable began with introductions from all participants and brief presentations on each of the three discussion topics. For the stock assessments section, Eric Ward (NWFSC, NOAA) summarized ongoing work related to the development of fishery-dependent indices of abundance for midwater rockfishes (following a similar format as presented in the online midwater trawl fishery data workshop). Participants were then divided into two breakout groups (45 min each) for more focused discussion. Cheryl Barnes (OSU) and Kate Richerson (NWFSC, NOAA) facilitated the two breakout groups focused on the fishery-dependent indices of abundance. The goal of these breakout discussions aligned with those from the online workshop and included an additional objective of soliciting more detail on questions that were left partially unanswered.

Outcomes

The OAH Fisherman-Scientist Roundtable provided additional opportunities for engaging with fishermen and scientists about fishery-dependent indices of abundance in a small group setting. Participants discussed the limitations of current survey techniques (e.g., WCGBTS) and discussed potential new surveys or tools to supplement existing data streams, especially for midwater rockfish species. Several fishers suggested that camera or acoustic surveys may be more effective at sampling midwater rockfish species than the WCGBTS. Participants also mentioned the potential benefit of forage fish surveys or eDNA sampling given that trawl surveys are limited to depths greater than 100 feet.

Breakout groups also discussed how and why people target midwater rockfish species. For commercial fisheries, processors and market demand tend to guide the target species and goals related to catch. Trips are generally decided with processors or buyers in mind. Prices tend to vary (e.g., by port) and requests are inconsistent from one day to the next. As fish processing has become more automated, processors have become much more particular in their requests (e.g., only wanting certain fish species on a specific day of the week). Some fishers mentioned traveling further to find a processor that would offer more pay for the same catch while other fishers try to take advantage of the fresh market, which fetches a higher price per pound than frozen fish. Fresh market trips are preferred because they require less fishing effort and minimize fuel costs. A volume limit on catch for the fresh market often means that fishers will split loads between fresh and frozen fish.

One of the breakout groups also discussed larger structural changes that have had an impact on fishing decisions. Due to historical collapses in processing power, there are no longer shore-side processors in northern California or southern Oregon. Fishers will no longer fish in these areas because it is too expensive (or logistically infeasible if trying to sell fresh fish) to transport catch to processors in Newport or Astoria. Other structural shifts in commercial processing include the use of automated filleting machines, which limits the sizes of fish that processors want to buy, increased international competition, and geopolitical shifts (e.g., the conflict in Ukraine had a negative effect on the whiting fishery). The instability associated with these changes has caused some to leave the fishery in search of a more predictable business model.

The second breakout session discussed stock assessments and fishery regulations more broadly. Participants discussed hardships related to historical regulations, namely that of changes to canary rockfish quota. Reduced allowable catches led to a decline in the small-boat fishery, which relied on rockfish fishing during winter when income from other fisheries is limited (due to lower catch rates or seasonal closures). The loss of the small-boat fishery means that recent increases in quota (e.g., for lingcod) now go unfilled. Participants also shared that high fuel costs and vessel monitoring systems (VMS) fees tend to outweigh the financial benefits of higher quotas. Participants have also noticed that consumers have moved onto other fish species, resulting in a decreased demand for rockfish. Finally, participants discussed the shift from federal to state management, anticipating additional hardships during that transition.

Overarching Conclusions

The two workshops provided an opportunity for scientists to learn about various strategies and behaviors in the midwater trawl fishery. Scientists learned about different factors that influence effort, define “good” and “bad” trips, and shape tow or search time. This information is valuable as scientists work to develop fishery-dependent indices of abundance for possible use in stock assessments for midwater rockfishes.

Acknowledgments

Jeff Lackey provided crucial industry support for planning and facilitating workshops, including recruiting members of the fishing community to participate. Dan Holland provided extremely helpful guidance on breakout group discussion questions and took notes in one breakout group. Kristin Marshall shared materials from a previous online stakeholder workshop that served as a

valuable example for this work. ODFW, Oregon Sea Grant, and OSU's Cooperative Institute for Marine Ecosystems and Resources (CIMERS) planned, facilitated, and/or funded the OAH (Oregon Coordinating Council on Ocean Acidification & Hypoxia) Fisherman-Scientist Roundtable. Many members of the fishing community volunteered time and energy to share their experience and knowledge in support of this work.

AI Statement

No generative AI tools were used in the creation of this report. All content was generated independently by the authors listed and standard editing tools (i.e., grammar and spell check) were used. All authors have reviewed the text and take full responsibility for its content.

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Appendix 1. Participants at the online midwater trawl fishery data workshop on 21 April 2026 (coauthors not listed).

Name	Affiliation	Role	Location
Ethan Bohannon	FV Arctic Fury	Commercial Fisherman	Westport, WA
Steve Branstiter	FV Sea Storm	Commercial Fisherman	Seattle, WA
Kurt Cochran	FVs Marathon, New Life, Bay Islander	Commercial Fisherman	Siletz, OR
Chris Cooper	FV Predator	Commercial Fisherman	Newport, OR
Mark Cooper	FVs Predator, Pacific, Leslie Lee	Commercial Fisherman	Toledo, OR
Sheryl Flores	ODFW	Port Sampler	Astoria, OR
Peri Gerson	OSU	Notetaker	Newport, OR
Steve Godin	Oregon Coast Anglers	Recreational Fisherman	Coos Bay, OR
Sharon Goolsby	ODFW	Port Sampler	Astoria, OR
John Harms	NWFSC, NOAA	Survey Scientist	Seattle, WA
Travis Hunter	FV Fishwish, FV Warrior II	Commercial Fisherman	Eureka, CA
Jeff Lackey	FV Miss Sue	Workshop Facilitator; Vessel Manager	Newport, OR
Scott Malvitch	ODFW	Port Sampler	Newport, OR
Jim Marchetti	ODFW	Port Sampler	Astoria, OR
Jasen Nash	FV Pacific Future	Commercial Fisherman	Warrenton, OR
Sarah Nayani	Arctic Storm Management Group	Processor Representative	Seattle, WA
Yelena Nowak	Oregon Trawl Commission	Industry Representative	Portland, OR
Joel Prickett	ODFW	Port Sampler	Charleston, OR
Chelsae Radell	Pacific Seafood	Processor Representative	Kodiak, AK
Kyle Rethford	FV Excalibur	Commercial Fisherman	Newport, OR
Mike Rethford, Jr.	FV Excalibur	Commercial Fisherman	Newport, OR
Mike Rethford, Sr.	FVs Excalibur and Winona J	Commercial Fisherman	Newport, OR
Arik Roberts	FV Miss Sarah	Commercial Fisherman	Brookings, OR
Cam Sharpe	ODFW	Comm. Finfish Field Operations Supervisor	Newport, OR
Greg Shaughnessy	Ocean Gold Seafoods	Processor Representative	Westport, WA
Mike Shirley	Bornstein Seafoods	Commercial Fisherman; Vessel Manager	Astoria, OR
Victor Simon	NWFSC, NOAA	Survey Scientist	Seattle, WA
Lori Steele	West Coast Seafood Processors Assoc.	Processor Representative	Astoria, OR
Tyler Sturrock	Bornstein Seafoods	Commercial Fisherman	Astoria, OR
John Wagner	FV Pacific	Commercial Fisherman	Astoria, OR

Appendix 2. Agenda for the online midwater trawl fishery data workshop on 21 April 2026.

Goals for the workshop included:

- All participants increase their knowledge about midwater rockfish ecology, fishing practices, and assessment
- Fishery participants share knowledge about midwater rockfish from their fishing experience and provide feedback to inform modeling choices relevant to fishing practices
- Scientists share knowledge about indices of abundance and how they are used in stock assessments
- All participants increase their knowledge about midwater rockfish ecology, fishing practices, and assessment
- Fishery participants share knowledge about midwater rockfish from their fishing experience and provide feedback to inform modeling choices relevant to fishing practices
- Scientists share knowledge about indices of abundance and how they are used in stock assessments

Time	Topic
1 - 1:30PM	Welcome and overview of the meeting Goals and outcomes Introductions
1:30 - 1:55PM	What drives rockfish CPUE in the midwater fishery? Presentation (Kate Richerson)
1:55 - 3:15PM	Small group discussions 5-10 min (break around 2:15PM) Overarching question: What impacts catch per unit effort (as recorded by EM/observer data) other than fish abundance?
3:15 - 4PM	Wrap-up and next steps Discussion groups report out Synthesize themes Reiterate workshop goals outcomes Specify next steps and timelines
4PM	Adjourn

Appendix 3. Questions for breakout groups during the online midwater trawl fishery data workshop on 21 April 2026.

- In a minute or less, tell us what is your association with midwater fishing.
- What made you decide to attend this workshop?
- Walk us through a typical trip that targets rockfish with midwater gear.
- How do you decide where and when to fish?
- What kind of information impacts your decisions during the trip?
- How do processors, markets, and prices impact your targeting choices?
- How does a good trip compare to a bad trip?
- For a trip that targets whiting, what sort of factors do you think influence how much rockfish you catch of different species?
- Closing question: What are the biggest things you feel like scientists don't understand about the data from your trips? Especially things we haven't touched on in our discussion already.

Effort, targets, and other fishing decisions.

- How do you decide where, when, and how deep to fish?
- What is your target strategy and why?
- How do you decide where to fish at the beginning of a trip?
- How much time do you spend searching for aggregations versus actually trawling? How do you decide where and when to put the net down?
- How would you define fishing effort for your trips? E.g., tow time, number of hauls, trip time, tow distance from VMS.
- What determines how much fish you catch in a particular tow?
- What determines how much fish you catch on a trip.
- When you're heading out, how do you decide where to fish, and does that decision change depending on which species you're targeting? For example widow versus yellowtail rockfish?
- How do you search for fish? What information do you use? From your own experience, other people, technology? Has this changed over time, e.g. better technology?
- How does fishing change over the course of a year? Are there seasonal patterns in how and where you fish?
- How do you decide what time of day to fish? For example, we've heard you target widow rockfish at night when they aggregate. How does that make it easier to catch them?

Fishing Constraints

- What factors unrelated to the fish and the ecosystem most strongly affect your catch rates in a given year or season – things like management actions, quota availability, fuel costs, market prices, and/or weather?
- How do you decide how many hauls to do on a trip? Or when to head back to port? (e.g., demand for fresh vs. frozen fish).
- Is there a way we might be able to identify these hauls/trips in the data?

Data Considerations

- How do you decide what to put in the “target” and “depth” fields of your logbook?
- Are there important things you think are not captured in the data we are looking at?
- We'd like to identify some thresholds to exclude hauls or trips with small amounts of landed catch – can you help us refine these?

Appendix 4. Participants at the in-person OAH Fisherman-Scientist Roundtable on 19 May 2026 (coauthors not listed).

Name	Affiliation	Role	Location
Justin Ainsworth	ODFW	Scientist	Newport, OR
Aaaron Ashdown	FV The Misty	Commercial Fishermen	Port Orford, OR
Aaron Berger	NOAA	Scientist	Corvallis, OR
Caren Braby	PSMFC	Scientist	Newport, OR
Chris Cooper	FV Predator	Commercial Fisherman	Newport, OR
Elizabeth Daly	OSU	Scientist	Newport, OR
Henry DeRonden-Pos	FV New Dawn	Commercial Fisherman	Newport, OR
Dawn Dougherty	OSU	Scientist	Newport, OR
Bob Eder	FV Timmy Boy	Commercial Fisherman	Newport, OR
Jeff Feldner	salmon and crab	Commercial Fisherman	Newport, OR
Jennifer Fisher	NOAA	Scientist	Newport, OR
Jon Fram	OSU	Scientist	Corvallis, OR
Steve Godin	Oregon Coast Anglers	Recreational Fisherman	Winchester Bay, OR
Bob Kemp	FV My LEE	Commercial Fisherman; Planning Committee	Newport, OR
Dave Kuehn	Oregon South Coast Fishermen	Recreational Fisherman	Brookings, OR
Marylou Kuehn	Oregon South Coast Fishermen	Recreational Fisherman	Brookings, OR
Jeff Lackey	FVs Miss Sue and Seeker	Commercial Fisherman	Newport, OR
Nate Lewis	EPA	Scientist	Newport, OR
Connor Lewis-Smith	NOAA	Scientist	Seattle, WA
Ashley Lowe Mackenzie	ODFW	Scientist	Newport, OR
Brett Montague	FV JO EL	Commercial Fisherman	Newport, OR
Kyle Retherford	FV Excalibur	Commercial Fisherman	Newport, OR
Terry Thompson	rockfish	Commercial Fisherman	Newport, OR
Waldo Wakefield	OSU	Scientist	Depoe Bay, OR
Jessica Watson	ODFW	Scientist	Newport, OR
Laurie Weitkamp	NOAA (retired)	Scientist	Newport, OR

Appendix 5. Agenda for the in-person OAH Fisherman-Scientist Roundtable on 19 May 2026.

Time	Topic
10 - 10:30AM	Welcome and Introductions
10:30 - 11:15AM	Climate Updates and Ocean Conditions Jennifer Fisher & Elizabeth Daly Roundtable discussion of ecosystem and on-the-water observations
11:15 - 11:30AM	Coffee Break
11:30AM - 12:15PM	Stock Assessments: Fishery-dependent Indices of Abundance for Midwater Rockfishes Eric Ward
	Socio-economic Impact of Fisheries Ashley Lowe Mackenzie & Abigail Golden
12:15 - 1PM	Catered Lunch
1 - 1:45PM	Small Group Discussions Climate and Ecosystem Observations <i>Mary Hunsicker</i> Informing West Coast Groundfish Stock Assessments <i>Cheryl Barnes & Kate Richerson</i> Socio-economic Impact of Fisheries <i>Angee Doerr</i>
1:45 - 2PM	Transition/Coffee Break
2 - 2:45PM	Small Group Discussions Climate and Ecosystem Observations <i>Mary Hunsicker</i> Informing West Coast Groundfish Stock Assessments <i>Cheryl Barnes & Kate Richerson</i> Socio-economic Impact of Fisheries <i>Angee Doerr</i>
2:45 - 3PM	Coffee Break
3 - 4PM	Large Group Discussion, Reflections, Wrap Up, and Conclusions