



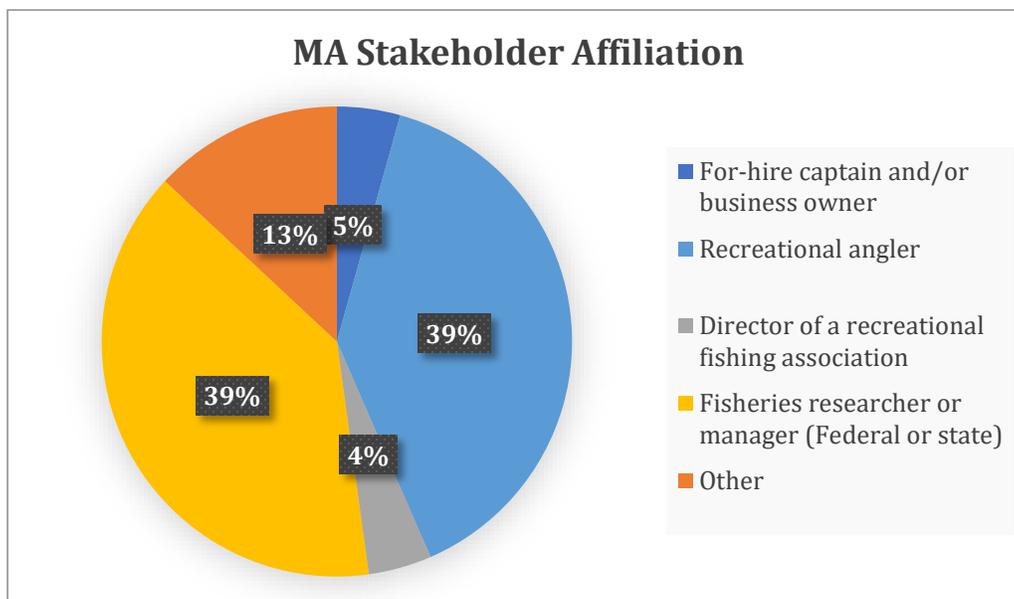
**NOAA
FISHERIES**

Summary

New England Recreational Fishing Workshop Hotel 1620, Plymouth, MA October 19, 2019

Attendance

The Plymouth, Massachusetts workshop had 21 attendees of the 26 registered. The pie chart depicts stakeholder affiliation for the attendees only. There was diverse representation, including participants from charter/party boat captains/business owners, the Vice-President of the Stellwagen Bank Charter Boat Association, private anglers (many of whom are members of the Cape Cod Salties Sportfishing Club), NOAA Fisheries' Greater Atlantic Regional Office, Northeast Fisheries Science Center, New England Fishery Management Council, Massachusetts Division of Marine Fisheries, Massachusetts Marine Fisheries Advisory Commission, Massachusetts Environmental Police, Cape Cod Commercial Fishermen's Association, and Stellwagen Bank National Marine Sanctuary.



Opening Remarks

Moira Kelly of the Greater Atlantic Regional Fisheries Office (GARFO) within the National Oceanographic and Atmospheric Administration (NOAA) began the workshop by highlighting the importance of recreational fisheries. The recreational fishing industry has a \$24 billion economic impact across the U.S., contributing 2.2 percent to the national GDP.

There are 10 million saltwater anglers in the U.S. and the recreational fishery supports 500,000 jobs and 63 million fishing trips annually.

Due to the size of recreational fisheries, they are diverse and difficult to manage. NOAA works collaboratively with fishermen and recreational fishery stakeholders to figure out best management practices for the industry. The workshops are a critical component of the open conversation between NOAA and stakeholders, and a means of generating creative solutions for sustainable and equitable regulations going forward.

Jessica Joyce of Tidal Bay Consulting shared the goals and objectives of the workshop, balancing the biological and regulatory requirements with the economic needs and interests of the recreational fishing community. Participants are gathered to generate both short- and long-term ideas and to consider possibilities for new regulations and pilot studies, even if they are considered “out of the box.”

Status of the Recreational Fishery

Emily Keiley of GARFO presented background information on how recreational groundfish species are managed in New England. Gulf of Maine (GOM) cod and haddock are the only two groundfish species with a recreational allocation. GOM cod and haddock have sub-annual catch limits (ACL) and accountability measures (AM). Management measures are designed to achieve, but not exceed the sub-ACLs. Other stocks may be allocated to the fishery if they meet two criteria: (1) Recreational catch that is 5 percent or more of the total catch; and, (2) the stock is fully utilized. Ms. Keiley reviewed the recreational management measures for the last 10 years, as well as an overview of the management process, including recent changes to how Georges Bank Cod was managed in fishing years 2018 and 2019, with a recreational catch target.

Moiria Kelly gave a presentation on the status of three-year transition to the Marine Recreational Information Program (MRIP), including information on the collaboration between the states and federal government to develop, improve, and implement surveys to better understand how many trips anglers take and estimate catch based on a sample survey method. The Fishing Effort Survey (FES) measures shore and private boat effort utilizing a mail-based survey and has resulted in more accurate information and a response rate three times higher than the previous Coastal Household Telephone Survey (CHTS). Effort is also measured with a for-hire survey of charter/party and head boats, as well as Vessel Trip Reports (VTRs), and a large pelagics telephone survey. Catch is estimated through the Access Point Anger Intercept Survey (APAIS), with dockside intercepts and at-sea sampling on for-hire boats. Starting in 2016, sampling is conducted by state partners. While FES estimates are several times higher than those from the CHTS, it does not necessarily mean overfishing has been or is occurring. At this time, one goal for MRIP is to develop and certify a census-based trip reporting design for determining catch from for-hire fisheries, considering electronic logbook reporting, compliance monitoring, and dockside validation.

Scott Steinback of NOAA's Northeast Fisheries Science Center (NEFSC) presented on the trends in recreational catch. He discussed how there is variability in the MRIP catch estimates. In the cod fishery, since 2014 cod have primarily been released and cod are being caught less than haddock. Early in the time series (1982-1999) GOM haddock was not caught, but then catches increased significantly starting in 2000. It is not clear why GOM haddock had a big decline in 2018. In the GOM, cod and haddock are mostly caught by private boats. Catch estimates of Georges Bank cod have also experienced a general decline, with 2018 catches representing the third lowest in whole time series (1982-2018).

GOM pollock catch has also been decreasing, but not as significantly as cod catches. Pollock has some shore and for-hire catch, but it is mostly caught by private boats. GOM angler trips have been declining since 2012 and 2013. In the GOM, about half of the trips report catching nothing during their trip. The top five recreational species caught in the GOM are mackerel, striped bass, haddock, pollock, and cod. The top landed species in the GOM are mackerel, menhaden, haddock, pollock, and striped bass.

Dr. Brian Linton of NEFSC presented the stock assessments that were part of the 2019 groundfish management track assessments, using data through 2018. GOM cod, GOM haddock, and pollock were assessed using the Age Structured Assessment Program (ASAP). Georges Bank cod is analyzed using an index-based method, based on survey indices and recent fishery catch. The GOM cod assessment uses data from 1982 to 2018, and looks at the commercial fishery and the recreational fishery as a combined, single fleet. The new recreational catch estimates for GOM cod are scaled up compared to the old estimates. GOM cod recreational discards have become a concern, as some cod die after being released. The recommended status for GOM cod is overfished and overfishing is occurring. Georges Bank cod stock status cannot be determined using the index-based method, but the status is declared to be overfished due to poor stock conditions and the overfishing status is unknown. GOM cod and Georges Bank cod are considered distinct from each other, so these fish populations are managed separately. A reassessment of cod stock structure is underway, which will determine how these populations are managed going forward. The status of the GOM haddock stock is not overfished, and overfishing is not occurring. The status of GOM pollock stock is not overfished and overfishing is not occurring.

Recent Fisheries Research

In Plymouth, Matt Ayer of the Massachusetts Division of Marine Fisheries (MA DMF) presented recent research on release survival estimates and best practices for promoting survival in the GOM recreational groundfish fishery. In recent years there has been an increasing number of releases due to shifting management measures and conservation ethic. In order to inform stock assessments and fishery management decisions, it is essential to have robust estimates of release survival rates. Yet, direct research on this is limited. In order to assess the GOM recreational groundfish fishery, acoustic telemetry was used to track the survival of fish in their natural environment for extended durations. By tracking the movements of tagged fish and collecting data, it is possible to estimate the release survival of the tagged fish and then scale up to generate a fishery-scale release survival estimate. These estimates may then inform best practices in the fishery.

Telemetry and analyses identified injury as a primary release survival predictor in cod. The research determined derived tackle-specific and fishery-scale release survival rate estimates. A jig was found to have lower survival, with 78.8 percent survival compared to an 84.6 percent survival rate using a baited hook. The mean survival rate across fishermen was 83.5 percent, with fish injury increasing due to longer fight time, handling time, and the shorter the length of the fish; and depending on gear type and experience of the angler. Mortality is higher when a jig is used and with novice anglers.

It was also revealed that release survival is highly dependent on the season. In the spring, large haddock that are released have an 89 percent survival rate and small haddock have a 69 percent survival rate, whereas in the autumn, large haddock only survive 53 percent of releases and small haddock survive 28 percent of releases. The release survival average is 37 percent which is lower than the previously assumed 50 percent survival rate.

Additionally, Mr. Ayer presented recent research regarding cusk barotrauma. Research findings indicate that barotrauma is present in over 96 percent of observed cusk. By using a descending device to release cusk at the bottom instead of the surface, fishermen can increase survival rates of cusk from 26 percent to 74 percent.

In order to reduce the chance of catching cod and promote sustainable fishing practices in the GOM, it is recommended that fishermen use baited hooks. This gear change results in fishermen catching 2.5 times more haddock than cod. Future research will focus on understanding angler motivations and behaviors in order to improve outreach.

Mr. Ayer also gave a presentation on cod bycatch avoidance. Research indicates that recreational discards are now the largest source of GOM cod mortality. In order to improve cod conservation measures and help fishermen avoid cod in the water, a map is being developed that classifies target areas and avoidance areas. The map will color code target areas in green where there are more haddock and fewer cod. If fishermen stay in these green areas, it is possible to reduce cod catch by 60 to 70 percent. The map combines seafloor topography, NOAA charts, and class areas. The map will be available in print and as an app, and changes by season as cod populations migrate. The maps will be released for the next fishing season, and the project aims to include citizen science based on anglers' feedback to further groundtruth the target and avoidance areas.

Dr. Richard McBride of NEFSC gave a presentation regarding the current cod management units in the GOM and Georges Bank. A key assumption to this division is that GOM cod and Georges Bank cod act differently. GOM cod have been shown to grow slower and mature later than Georges Bank cod. However, questions remain regarding whether the number of management units and the boundaries are right. More research is needed on the biological and ecological data of cod.

Among the cod in the southwestern Gulf of Maine, cod that spawn in the spring are genetically different than cod that spawn in the winter. These different genetic populations mix during the non-spawning season and are caught together, which poses a management

challenge to allocate the catch by fleet to each population. Cod from these spawning events in the southwestern Gulf of Maine are also dispersed, as eggs and larvae, and settle, as juveniles, into the Georges Bank Management Unit, as far as southern New England. This dispersal violates the assumption that fish are staying within their management units during their entire life.

Management Approaches

Based on the stakeholder discussions during the break out and group sessions, the attendees proposed the following recommendations:

Long-term management approaches (*Attendees were provided with four different questions for break-out groups, and were allowed to self-select and contribute to up to three different groups.*)

New management measures

- Instead of having a minimum size, there could be a mixed bag regulation with maximized retention where fishermen keep the first 10 fish caught, therefore reducing discards and associated discard mortality.
- Another stakeholder suggested that shorter seasons are instituted for some stocks that currently have a year-round or a 10-month open season. For example, groundfish stocks could be open from April through mid-June, then closed through winter to reduce stress on fish populations and fishermen can target other fisheries. Another example was for a 6- to 8-month season.
- Consider multi-year regulations with triggers and associated adjustments to management measures that could be specified to ensure that catch was not too far above, or below, the sub ACL.

Business adaptation

- Another recommendation proposed catching different species on the same trip, perhaps targeting a certain species in the morning and then a different species in the afternoon. One charter boat captain described how he fishes for mackerel in the morning and then targets a groundfish like haddock in the afternoon.

Timeline of regulations

- Fishermen emphasized the importance of coordinating federal and state regulations. They must remain consistent across jurisdictions, and be simple and memorable so that fishermen can remember the rules.
- Stakeholders stated that they would like to know the regulations as soon as possible, describing how the earlier they know the regulations the better as they can plan for the upcoming fishing season. Ideally, fishermen would know the regulations by January or February each year. This would allow them to incorporate the information into their meetings in the spring, and improve advertising and marketing of trips.

Conservation and education

- Anglers recommended an increase to the minimum size of haddock to allow more time for spawning. This suggestion was also part of a larger theme regarding protecting species for the long-term benefit of the fishery. There is an interest in incorporating ecosystem level assessments and rules into regulations in order to promote conservation.
- Stakeholders emphasized creating educational materials that help fishermen understand how to fish better and increase knowledge of regulations. This would include increased outreach on the benefits of using a hook and bait instead of a jig in order to reduce cod bycatch. Education could occur through social media in YouTube videos, or through local tackle shops, fishing shows, harbor masters, USCG auxiliary, etc.
- One angler recommended having captains and anglers report every single fish kept, similar to Alaska.
- In order to improve reporting, participants stated that there must be an education campaign to increase awareness of the importance and role of MRIP interceptors. This will help encourage fishermen to participate in the program and protect the fishery in the long run.

Short-term management approaches (*Attendees were all provided with the same question for the short-term break out groups: considering long-term approaches as well as existing measures and new approaches, how can we take steps in the short-term to achieve, but not exceed quotas?*)

In order to queue up the groups, Ms. Keiley briefly presented on the recreational management measures ‘tool box’, and provided innovative management examples from the commercial fishery.¹

New measures

- Stakeholders thought that utilizing tags (as part of an individual quota) might be an option, and that perhaps fishing could occur at any time of the year, but remain at a certain level of tags. Tags are hard to enforce without a reporting program, and it is difficult to verify data. Tags could also be utilized as an incentive for participating in MRIP.
- There was interest in using the cod avoidance areas (maps) as a tool to inform people to stay away from cod. Citizen science could not only groundtruth the data based on catches, but also send the track lines of where fishermen traveled on that trip.
- Utilize short-term (e.g., monthly/seasonal) spatial openings for areas with low cod bycatch (based on MA DMF maps) rather than blanket closures in an area.
- Stakeholders were uncertain about the success of split measures by mode.
- Slot limits:

¹ Refer to the Recreational Management Measures Toolbox handout on the workshop website for more information.

- Concern that the use of slot limits could hurt the fishery if the minimum size includes too many fish and then decimates the species. It is also difficult to predict the effectiveness of slot limits since it is challenging to accurately model fishermen's behavior.
- There would also need to be consistency with state and federal regulations.
- There is uncertainty regarding the impact of full retention and whether people would be interested since they may not want to keep all of the allowed fish, or may not know how to use them at home in cuisine.
- There was a recommendation to have seasonal rules that change retention regulations based on knowledge around the change in discard mortality rates in autumn vs. spring. However, it was acknowledged that enforcing this would be challenging.
- Gear modification is important, but stakeholders believe that perhaps changes should first be voluntary and then mandatory ("education before regulation").

Education

- Participants focused on the importance of education to improving recreational fishing and protecting fish species through increasing release survival and bycatch avoidance. Stakeholders discussed how education should be made a mandatory part of the licensing process. Education can occur through social media, clinics and demonstrations at trade shows or association meetings, and materials sent to license holders, with an emphasis on videos. Education materials should be distributed at those moments when people are looking for information about recreational fishing, such as purchasing a license or on the NOAA website looking for regulations. At trade shows, educational information could be suited for a range of people, including more technical notes on gear modification or coloring books for children about fish species. It is important to give people information at those times when they are willing to learn and engage with new material. NOAA and other organizations could also distribute education materials at seasonal intervals to inform stakeholders of changes, updates, and other useful information regarding regulations or best practices.

Next Steps

Going forward, the ideas generated from these workshops will inform future recreational fisheries management strategies. Participants learned that the findings of these workshops will be summarized and shared with the New England Fishery Management Council, including its Groundfish Committee and Recreational Advisory Panel. The proposed recommendations produced during the workshops will be considered within the current Council process for developing recreational management measures with continued public input. Further, any recommendations applicable to state programs and/or the Atlantic States Marine Fisheries Commission will be communicated to the appropriate individuals.

In addition, the Stellwagen Bank National Marine Sanctuary has an annual funding opportunity for mini-grants focused on education, outreach, and conservation projects that forward the mission of the sanctuary, engage the recreational fishing community, and

promote sustainable recreational fishing targeting species found in the sanctuary. This funding opportunity will be posted on their website in spring of 2020.