



New England Fishery Management Council

50 WATER STREET | NEWBURYPORT, MASSACHUSETTS 01950 | PHONE 978 465 0492 | FAX 978 465 3116

John F. Quinn, J.D., Ph.D., *Chairman* | Thomas A. Nies, *Executive Director*

MEETING SUMMARY **VMS/Enforcement Committee and Advisors meeting** **Hilton Garden Inn, Boston Logan**

November 1, 2018

The VMS/Enforcement Committee met on November 1, 2018 near Boston Logan to comment on proposed Habitat actions, discuss the cod-end Compliance Assistance Program (CAP), enforcement of Atlantic Large Whale Take Reduction Program regulations and cod discard regulations, discuss nearshore boardings by the Coast Guard and the frequency of VMS/Enforcement meetings, see a demonstration of the Omega gauge mesh measurement device and discuss its implementation.

MEETING ATTENDANCE: Eric Reid (Chair), Mark Godfroy (Vice-Chair), Terry Alexander, Patrick Keliher, David Pierce, Capt. Kevin King, Timothy Donovan, Sgt. Wesley Mead (for Rene Cloutier), and Patrick Moran; Kirby Aarsheim, William Dunlap, James Kendall, Frederick Ruhlemann, and William Straus (Advisors); Mitch MacDonald (NOAA General Counsel, also an Advisor); LT Andrew Sheehy, Luis Perez, and LCDR Kathryn Cyr (USCG); Michelle Bachman, Robin Frede, and Louis Goodreau (NEFMC staff); William Semrau, Carl Lemire, Don Frei, Jason Berthiaume, David Borden, David Frulla, Domenic Santoro, Maggie Raymond, Spencer Talmage, and several members of the public (did not sign in).

KEY OUTCOMES:

- The Committee and Advisors made recommendations concerning the Habitat Clam Dredge Framework
- The Committee and Advisors made a recommendation to continue the cod-end CAP
- The Committee and Advisors made a recommendation concerning fixed gear markings
- The Committee and Advisors made a recommendation concerning the implementation of the Omega Gauge

Enforcement Committee discussion on the clam framework

Presentation: Michelle Bachman

The Enforcement Committee and Advisory Panel discussed enforcement-related aspects of the Clam Framework, which is primarily being developed through the Habitat Committee for final action at the December 4-6, 2018 Council meeting. Ms. Bachman gave a brief overview of the action, which is considering exemptions for clam and mussel dredges in specific sub-areas of the Great South Channel Habitat Management Area (GSC HMA). The GSC HMA went into effect on April 9, 2018 and will close to

clam dredges on April 9, 2019, unless this action designates specific exemption areas. Mussel dredges are presently prohibited within the HMA but could be exempted via this action.

On August 23, the clam industry identified nine sub-areas within the HMA for potential exemptions. These areas encompass most of the areas where speed-filtered VMS polls indicate fishing activity between 2010-2018. On August 28, five of these were recommended by the Habitat Committee for evaluation as year-round exemption areas, potentially with a rotational component where certain areas are open for a period of years before closing and switching with other areas. The remaining four areas were recommended by the Council as potential seasonal exemptions, to be open during the spring and summer, and closed when cod spawning may be occurring. The Council also recommended consideration of exemptions for mussel dredges within any areas where clam dredges might be exempted.

Four surfclam hydraulic dredge vessels are currently participating in a study fleet to assess the utility of 5-minute vessel monitoring system (VMS) polling as compared to 60-minute polling (30-minute polling for vessels that carry a scallop permit). The purpose of the study fleet is to assess if the 5-minute reporting would be useful for enforcing these nine areas. During these trips, vessels fished exclusively within the boundaries of the 9 areas. Bill Semrau of NOAA Office of Law Enforcement (OLE) presented both the 5- and 60-minute data obtained from these trips. He observed that 5-minute polling would be preferable to 60-minute for enforcing areas of this scale and shape in the clam dredge fishery, showing with charts that the 5-minute polling much more clearly indicates patterns of fishing.

Following Mr. Semrau's presentation, the Committee Chairman presented a possible modification of the nine areas that included adjusted boundaries for East Door, Old South, Rose and Crown, Zone D, and Zone A. This proposal suggested combining East Door and Old South, and removing Zones B, C, and E.

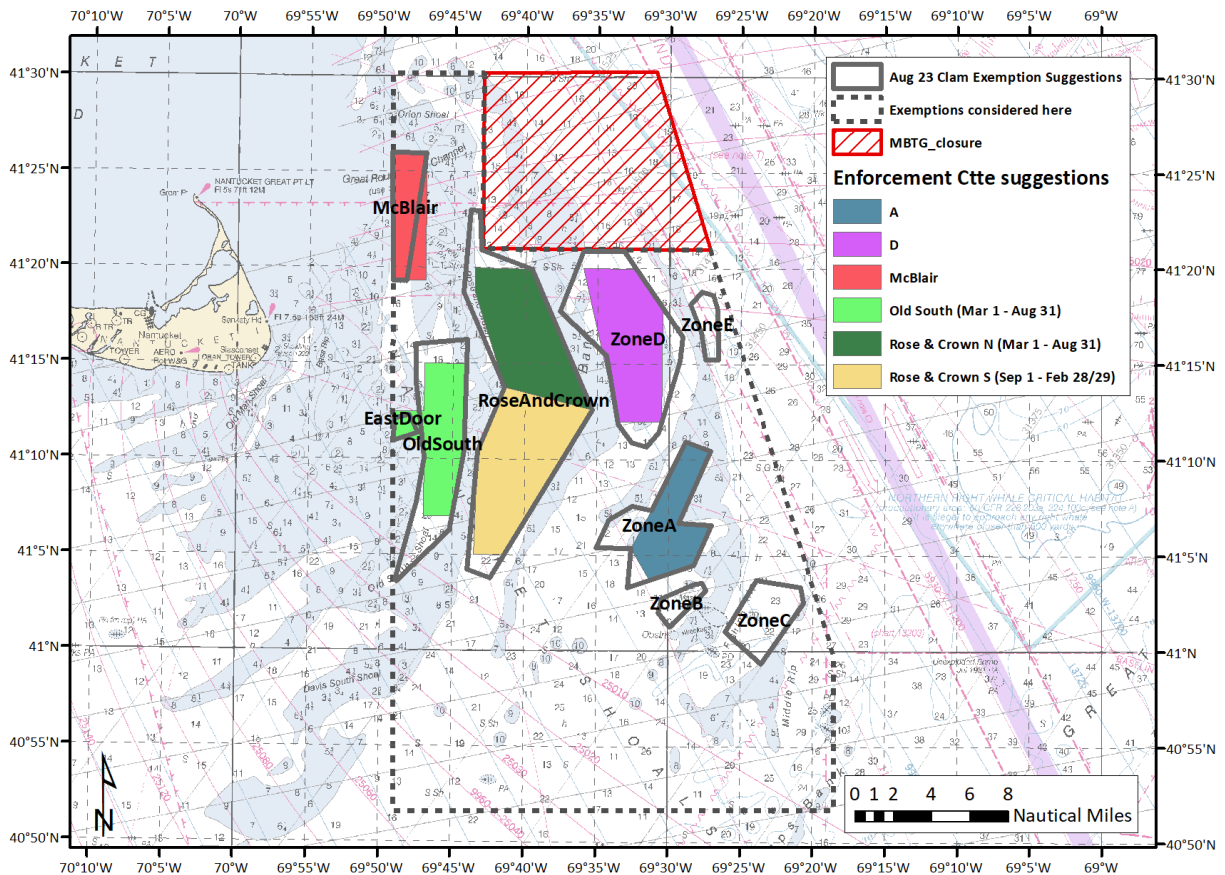
Following this initial briefing and time for questions, the Committee and Advisory Panel members discussed enforceability of these potential exemption areas and developed the following consensus statements. Relevant comments and questions under each topic are provided below each statement.

- 1. To facilitate enforcement, the Enforcement Committee and Advisors recommend that the McBlair area should be extended to form a rectangle by shifting the southeastern corner to the east by about $\frac{3}{4}$ mile.**

As recommended by the clam industry, the southern boundary of the McBlair area is less than one mile wide, while the northern boundary is over a mile and a half wide. The Committee agreed that area dimensions or spacing between adjacent sub-areas should be at least one mile, and suggested a distance of 1.5 miles was preferred where possible. Industry members indicated that since it is closest to port, the McBlair area is important to have access to when the weather is poor.

- 2. To facilitate enforcement, the Enforcement Committee and Advisors recommend modifying the potential exemption areas as follows: (1) square off McBlair as noted above; (2) simplify and reduce the size of Old South, East Door, Rose and Crown, Zone D, and Zone A, combining Old South and East Door into a single area; (3) drop Zones B, C, and E from consideration; (4) close the southern part of Rose and Crown during the season in which the East Door/Old South area is open by drawing a line between 69°41'26.16"W,**

41°13'46.38"N and 69°35'19.44"W, 41°12'36.06"N (i.e. a diagonal line between two vertices of the zone as originally proposed).



NEFMC Habitat PDT, November 2, 2018

There was general agreement that straighter lines and fewer vertices make for simpler and more enforceable areas. Other modifications increase the dimensions of the areas in places where they were narrow, and increase the distance between adjacent areas. Expanding the dimensions of the East Door area puts it directly adjacent to Old South, so the two areas were combined. The areas suggested for elimination (B, C, E) are generally smaller and would be more difficult to enforce. While in one location the spacing between Rose and Crown and Zone D remains a bit tight (around one mile), the group agreed that this was not a particular issue as there is a greater separation over most of the boundary. Overall the boundary changes and suggested area removals represent roughly a 30% reduction in the area covered by the potential exemptions, but only a 13% reduction in 2010-2018 clam dredge hours fished. (These numbers will be double-checked with the updated boundaries prior to the December Council meeting.) Industry members noted that vessels typically fish along northeast to southwest tracks, depending on the tides.

3. **To facilitate enforcement, the Enforcement Committee and Advisors recommend that the following elements be required as part of the clam exemption program: (1) 5-minute VMS polling required of all clam vessels fishing in the GSC HMA, (2) vessels should request an annual letter of authorization to participate in the GSC HMA fishery, (3) vessels should**

declare into the fishery with each trip, (4) 5-minute polling should be triggered when a vessel declared into the fishery crosses into a 3 nm buffer zone around the GSC HMA.

The suggestion of 5-minute polling originated with the clam industry. The group agreed that this resolution of position information provides a much better sense of how fishing activity is distributed (i.e. a “better resolution of the trackline”), and that polling at this rate was important for detecting any departures from the exemption areas, especially the smaller ones. When NOAA OLE is viewing a trip in real time, they see these positions, as well as a speed estimated by the V-track system. Speeds below approximately 4 knots are generally taken to indicate fishing, while faster speeds indicate transit. In practice during the study fleet trips there are two distinct modes in the speed data, with a fishing speed around 3 knots and a transit speed around 6-8 knots. The group acknowledged that low speeds could represent any number of activities other than fishing, such as repair of the gear. There was no intention to require a minimum speed during transit. It is intuitive that more frequent polls show activity more realistically as they correspond much better with the timing of fishing events than hourly polls, since tows are often between 5-10 minutes, or less.

At present, while all four of the type-approved VMS units in the Greater Atlantic Region can collect data at this frequency, only three of the four (Woods Hole Group’s “Thorium Triton”, SkyMate’s “I1500”, and Network Innovations’ “Sailor Platinum”) can be triggered to do so remotely by NOAA OLE. This remote activation of the increased polling rate is important to the integrity of the enforcement system, so a vessel would need to have one of these three VMS types if they wished to fish under this program. This capability could be added by other vendors in the future.

The group also agreed on other aspects of the management program which would facilitate enforcement. Requiring vessels to request a letter of authorization annually would allow the permit office to confirm with NOAA OLE that vessels have an appropriate VMS unit, and trip declarations would signal to NOAA OLE staff that they need to monitor the trip for fishing in the specific exemption areas. The group agreed that vessels crossing a 3-mile buffer line around the entire HMA would make sense as the trigger for when enhanced polling begins. The simplest way to implement the VMS requirement is that every clam vessel given an LOA to fish in the GSC HMA has their reporting rate increased to 5 mins anytime they enter the GSC HMA buffer zone, whether they intend to fish there or not. The Georges Banks and Nantucket Shoals fleets are comprised of distinct groupings of vessels so non-HMA clam vessels could also be transiting the management area.

In terms of cost, this is negotiated between the vessel owner and their VMS provider, but the typical rate per poll is around \$0.07. Given typical trip durations this amounts to around \$25-30 per trip (Chris Shriver, Atlantic Capes, personal communication).

- 4. The Committee and Advisors agreed that during transit between exemption areas vessels should have the dredge on board the vessel, but that it was not necessary to bring the hoses aboard and stow them.**

Hydraulic dredge vessels use a hose and pump system to deliver high-pressure water to the seabed to dislodge the clams from the sediment. The clams are then gathered into the dredge. When a vessel arrives on the fishing grounds the hoses are deployed prior to the first tow, and they are typically not retrieved until the end of the trip. The hoses are quite heavy especially when full of water, and retrieval presents a safety issue under normal conditions. Obviously transit between exemption areas would not

constitute a violation, but fishing in between the areas would be in violation of the management program. Thus, the question is how can fishing in between exemption areas be detected? The group discussed whether it would be necessary to bring the hoses on board the vessel when transiting between exemption areas during a single trip to facilitate overflight enforcement. The Coast Guard agreed that it would be sufficient for the dredge to be on deck during transit between areas, and that the hoses could remain in the water when moving between exemption areas. This is important to the fleet as their preference (and current practice) is to fish within more than one of these areas per trip.

The group also discussed what would happen if a vessel is detected in the closed area via VMS data alone. There was agreement that successfully prosecuting a violation based solely on VMS data is challenging, although not impossible. In these cases, 5-minute data would certainly help establish that a pattern of vessel positions and speeds indicated fishing activity outside the exemption area. For at-sea enforcement, vessels may adjust their behavior as a Coast Guard cutter approaches. In these cases, it would be helpful to have additional vessel positions from around that time to better evaluate the vessel's activity.

As is done for currently existing closures, if NOAA OLE detected incursion into a closed area at fishing speeds, they would notify the vessel. Mr. Semrau encouraged captains to proactively notify them if they were experiencing an issue that was causing the vessel to be moving at slow speeds suggestive of fishing within a closed area, such as in bad weather or for repairs.

5. The Committee and Advisors agreed that similar monitoring approaches should be used for mussel dredge vessels if they are authorized to fish in the HMA, including trip declaration requirements.

At present, the mussel fishery is not a VMS-required fishery.

Coast Guard report – ALWTRP

Right whales are an important issue, and the Coast Guard targets operations to patrol restricted areas (Attachment 1, page 2). From April through September 2018, USCG conducted three operations to check gear markings and weak links on lobster and gillnet gear. During two of these operations, 55 at-sea gear inspections were conducted and 1 violation for weak links was issued. It was mentioned that the picture on slide 2 was a stock photo of an entangled right whale, which may not have been taken locally. One recent operation focused on unattended gear in the water to inspect portions of the gear visible at the surface for buoy markings, weak links, and line markings (Attachment 1, page 3). Similar operations are continuing. As a result, the Coast Guard recommends that one of the required line markings should be required within ten feet of the surface to facilitate confirmation of compliance with line marking requirements from a surface vessel without hauling gear.

The Coast Guard does not have the capability to haul gear, however, the states of Maine, New Hampshire, and Massachusetts do. These three states partner with sectors and rely on Joint Enforcement Agreement funding for this capability. These states have ongoing discussions, within ASMFC, concerning several issues:

- Enforcement, including hauling gear, in offshore areas
- Adding capabilities, an over 70 foot patrol boat is being acquired
- Adding VMS requirements to the lobster fleet, including a Bluetooth capability to detect hauling

To enhance enforcement of Atlantic Large Whale Take Reduction Program regulations:

It is the consensus of the VMS/Enforcement Committee and Advisors that fixed gear vertical lines should be required to have additional markings within ten feet of the surface in order to facilitate visual inspection of gear from surface vessels.

Cod-end Compliance Assistance Program (CAP)

Nine vessels currently participate in this program, and there are several boardings to date. Collection of mesh measurements and tag data suffers from the limited number of participants. The Coast Guard identifies three areas for concern:

- Low number of participants results in low number of boardings
- Low number of boardings results in limited repetitions for training
- Limited training results in issues with data collection

The Coast Guard is focusing on more training and data collection has improved. The Coast Guard is not targeting CAP participants. CAP participants are boarded in the execution of routine Coast Guard enforcement activities. As a result, the low number of participants has resulted in a low number of boarding and limited data collection.

Increasing participation in the CAP is challenging for many reasons. Outreach explaining this voluntary program and encouraging participation relies on the efforts of a handful of fishermen and dealers. Using cod-end tags does not prevent mesh measurements or violations, but may be considered by General Council Enforcement Section (GCES) when issuing a NOVA. A net manufacturer, TrawlWorks, claims the mesh should retain its original size for 18 months, but there may be a range around this time frame. That, in fact, is what the data being collected under the CAP may corroborate, but the program has run only 6-8 months and it may take a long time to gather an adequate database. Although the manufacturers do not charge for the tags, we still do not have all 50 trawlers in the program. Also, twine hardens and shrinks over time, and depends on the degree and type of net use.

Establishing a timeline for net hardening will be a great result from the CAP, whether the wedge or potentially the Omega gauge is use for measurement. After several months, none of the tagged cod-ends that were checked required replacement. The first time a tagged cod-end fails the mesh measurement test, it may result in a warning, to replace the net, rather than a fine. Participation in the CAP demonstrates a willingness to help establish a data base on net hardening and it also demonstrates a good-faith effort to comply with mesh size regulations which will be considered by GCES if the net ultimately hardens to an illegal mesh size.

Establishing a net hardening timeline and including the entire trawl fleet in the CAP were considered by the group. The discussion turned to requiring tags (with date sold and mesh size) on all cod-ends, which raised several issues including:

- Suppliers can only be encouraged to tag cod-ends, as we do not have the jurisdiction to require them
- Recommend, not require, fishermen buy new, tagged cod-ends from authorized dealers, which requires a definition of 'authorized' dealers
- Many fishermen buy mesh and build their own cod-end; these cod-ends could not be tagged

- All tagged cod-ends must be reported to NOAA so they are enrolled in the program and boarding teams know to look for a tagged cod-end
- If a cod-end tag falls off, then the mesh is measured under the current requirements, but fishermen should provide their invoice for the previously tagged cod-end
- The current CAP is voluntary, any requirement changes that and must be implemented as a regulation
- Whether voluntary or required, a successful CAP should limit risk for the vessel (warning vs. fine), make enforcement easier, and provide data to establish a timeline for cod-end hardening
- Any changes to the CAP must be discussed with the participants
- The CAP should continue, and the Groundfish Committee advised to encourage more participation

The consensus of the VMS/Enforcement Committee and Advisors is to continue the Cod-end CAP, for another year, in order to collect additional data in order to verify mesh changes over time .

Cod discards

During the summer of 2018, the Coast Guard received numerous reports from different sources about the discarding of legal-sized cod. The area in question, off Cape Ann, was targeted and numerous boardings made, with no evidence of discards except in one case. The one documented case occurred in the WGOM area and the crew discarded dozens of legal-sized cod, some wolfish, grey sole, skate, and other fish.

The Coast Guard asserts that groundfish retention is difficult to enforce at sea because they must catch fishermen in the act of discarding. The Coast Guard asks if the Observer program or At-sea monitoring should be expanded to address the issue (see slide 6 of Coast Guard presentation). In response to reports at the April 2018 Council meeting on discards of legal-sized cod, the Groundfish PDT analyzed Observer data, including length frequencies and disposition codes, of discarded Gulf of Maine cod on trawl trips from 2006 through 2017 (Attachment 2, page 7). The PDT did find records of discarded cod well over the minimum size in recent years. The PDT acknowledged caveats of this analysis, mainly the low samples sizes due to that lower Observer coverage during the later years examined. The PDT also acknowledges that an 'Observer effect' may occur in which fishing behavior differs between observed and un-observed trips, based on separate ongoing PDT analysis. The PDT noted that observed trips were difficult to analyze for evidence of discards of legal-sized cod, while un-observed trips are nearly impossible, but it will continue to analyze the data available while developing Amendment 23.

The Committee observed that, in the table on page 7 of the report, in the column for 2017, nearly 90% of the discarded cod were recorded as being too small (disposition code 12). Additionally, less than 1 % were recorded as being discarded because the quota was exceeded (disposition code 14). Remember that Observers do not have an Enforcement role, but Enforcement may examine Observer data to detect potential violations. That may be because quota of legal-sized cod in excess of the individual vessel quota may be transferred within their sector, and possibly purchased from other sectors. In fact, while the data in the PDT report is from both sector and common pool boats the data in the most recent year (2017) is from sector boats only.

The discussion turned to whether within sector transfers, and inter-sector transfers, are accounted for, particularly as a review of sector performance is ongoing. Such transfers within or outside sectors are

not transparent to the Committee. The question arose, why check for discards at sea, if they are accounted for at the dock, via sector transfers. There may still be a need for at sea enforcement on non-sector vessels.

Fishermen attest the fish can be leased, and every week a quota sheet offers many species including cod for lease, but the price may be prohibitive. Also, fish that may be 1 or 2 cm (about ½ inch) over legal size may shrink to ‘illegal’ size from sea to dock. The PDT maintains that many are close to legal size, but there are some very large cod being discarded as well, and un-observed trips are a concern. Without 100% Observer coverage, fishermen are expected to fish differently if not observed.

From the Sector Management viewpoint, the Observer program does not typically notify sectors about recorded discards. When notified, for instance, the Sustainable Fishery Sector addresses the issue. If an operator does not have enough quota, the manager issues a ‘stop fishing’ order. Sector managers expect that just-legal fish, when caught, will shrink by the time they are landed. The Sustainable Fishery Sector is composed of two sub-sectors, the inshore Gulf of Maine (e.g., Stellwagen Bank), and one that operates east of 70 degrees W to avoid concentrations of cod. It is the biggest sector.

The Committee did not make a recommendation with respect to cod discards.

Nearshore boardings

Coast Guard boardings conducted on trawl vessels fishing in areas significantly influenced by tidal currents may be perceived as interference by those fishermen, particularly when an early haul-back is conducted. This is due to the short fishing windows dictated by tidal currents. The Coast Guard’s practice is to make every effort to conduct boardings with the least possible impact to fishing while still effectively enforcing laws and regulations. Sometimes a haul-back may be requested if the tow is expected to last an extended period of time that cannot be supported by the Coast Guard unit. The USCG has the authority to require an early haul-back if deemed necessary to complete a boarding.

State enforcement agencies also enforce federal fishing regulations in the nearshore (but outside 3nm) environment under the Joint Enforcement Agreement (JEA) program. The current federal budget may cut OLE’s funding by \$20 million next fiscal year, which would end the \$6 million used in the Northeast to fund the JEA program. This \$6 million is distributed among the 10 northeastern states, the largest being Maine and Massachusetts, enabling the states to help enforce federal fishery regulations. OLE considers the loss of the JEA program a major hardship, with the loss of 450 deputies who assist OLE’s 10-12 field agents and would request much more help from the Coast Guard.

The Councils cannot lobby for funding of the JEA, or any other program, the loss of which it considers a significant impediment to law enforcement. The loss of so many people, particularly in Maine and Massachusetts, will have an incredible impact on OLE. They fear that Fishery Management Plans would go unenforced without them.

The Council may only respond to documented requests for information from Congress on any funding issue. Individual states like Maine are informing their congressional delegations of the consequences of reduced funding but anticipate continuing resolutions through the current fiscal year. The ASMFC’s Law Enforcement Commission (LEC) suggested a letter to its Executive Council highlighting the funding issue. The Council, however, may prepare a response to a request for information on the funding of the JEA

program from Congress, ahead of time. ASMFC can lobby for enforcement funding, and the states can take action through their congressional delegations.

VMS/Enforcement Committee meeting frequency

This committee has not met for two years (November 3, 2016). The Coast Guard acknowledged the benefits it received from today's meeting. Waiting until the final vote on Council actions is too late to provide credible enforcement input. The enforcement aspects of management alternatives should be included at the beginning of development. The participation of the VMS/Enforcement Committee's Advisory Panel (AP) may be enhanced by having it meet separately and with a chairman and vice chairman.

Enforcement participation and input on Council actions developed by the species committees involves the Coast Guard (at-sea enforcement), OLE (dockside and some at-sea enforcement, VMS, investigation), coastal states (shore based, inshore at-sea enforcement), and GCES (legal), at some point in management alternative development. The interaction of these four entities with species committees and fishermen occurs in many ways:

- VMS/Enforcement meetings (ad hoc) bring all four enforcement entities together, with fishing industry involvement by the handful of Council and AP members who happen to be on the Committee, as well as any public participants
- Quarterly meetings of OLE, GCES, and USCG; public participation is limited as part of these meetings are closed
- Biennial meetings of ASMFC-LEC, among all the states from Florida to Maine
- Monthly species committee meetings, at which agents from Coast Guard, OLE, and/or GCES may attend on an ad hoc basis or invitation

The information flow among these four entities is somewhat opaque, as individuals involved in any of them may bring information or advice to another, much as happened today. The VMS/Enforcement Committee could act as a clearing house to keep all these various organizations aware of each other's activities, as it has members from all of them.

The group is unanimous in recognizing that enforcement input should be provided at the beginning of management alternative development. For instance, enforcement could have provided input on the clam framework (today's first agenda item) earlier, at the Habitat PDT meeting in August, and avoid the situation where enforcement advice proposes eliminating 4 of the nine exemption areas, among other changes, as the Habitat Committee prepares to make its final decision next week. One idea is to meet prior to each Council meeting (5 times a year) and review all actions coming before the Council. The Coast Guard has had its personnel attend PDT and species committees in the past, but both Coast Guard and OLE could assign agents to follow specific committees, and actively participate from time to time, especially on high profile committees. Council members on the VMS/Enforcement Committee are also on several species committees and could function as a conduit and could propose enforcement alternatives. Enforcement alternatives are most important when new management measures are being developed. Should the Coast Guard be expected to scan Councils' meeting notices for potential issues, or should committees be expected to request enforcement input at an early stage of development?

Three Executive Committee members present today could bring these issues up at that committee's next meeting, in two weeks.

Omega mesh measurement gauge

The Coast Guard, following a brief presentation (Attachment 1, pages 9 and 10), demonstrated the Omega gauge. In 2016, 19 Boarding Officers tested the Omega gauge against the weight/spade for net mesh measurements and time, at their training center. During 2018, two Coast Guard Cutters conducted 13 boardings with the Omega gauge to test it operationally and receive feedback from boarding officers on its durability and practicality in the maritime environment. The Omega gauge is faster, eliminates nearly all potential for human error, and almost identically matches the results from the weight and spade. Overall, Omega gauge measurements had smaller standard deviations and more precisely measured the net mesh. Omega gauge measurements averaged less than 3mm, approximately one-tenth of an inch, larger than the weight and spade. The Omega gauge measurements were somewhat quicker during pierside testing, but 50% faster during operational tests.

Other advantages of the Omega gauge are:

- Reduce boarding equipment by 60 pounds
- Measurement precision to 1 mm
- Stores measurement data internally and exports to an Excel file
- Demonstrated no complications in the operational environment (sea spray; not tested in snow or rain); however, it was utilized by the European Union from 2008 to current date in all environment types, where it is presumed to have snowed or rained
- Cost per unit is \$4500 (versus \$3000 for weight and spade)

The Omega gauge has been used by 14 EU countries for the past ten years. Fishermen who witnessed the operational testing say it was smoother and removed the human error of recording the measurements, claiming that this represents a majority of the mistakes with weight/spade. The Coast Guard did manually record measurements to compare with the electronically recorded measurements in the Omega gauge, which matched perfectly.

One Omega gauge was used during the testing, although the Coast Guard has two more in hand. To become fully operational, approximately 50 gauges are needed to provide one for each Cutter and small boat station that conducts Living Marine Resource patrols. Both Omega gauge and weight/spade would be available, at least until the Coast Guard has a full complement of gauges. Still, the weight/spade would remain available as a backup tool in the event of Omega gauge failure, damage, or loss. The Omega gauge is waterproof but does not float.

Pierside comparisons measure the same 20 meshes with both weight/spade and Omega gauge, and the average standard deviation was 1.7mm by the Omega gauge versus 4.1mm by the weight and spade. During operational comparisons, the Omega gauge has a standard deviation of 3.24, but this is an average from different size nets. Also, part of the reason for differences between pierside and operational results may be the difference between measuring dry and wet nets.

The Omega gauge performs a self-test calibration when turned on and must be sent back to the manufacturer if it fails. The manufacturer also offers an annual system check/update, but the Coast Guard can run this calibration as well. Calibration is a two-step process: 1) the jaws are tested for

accuracy prior to each use, and 2) the accuracy of the force is tested every six months. As part of their fisheries training, every Coast Guard boarding officer (BO) will learn to calibrate and use the Omega gauge.

It runs on battery with no power limit; if it fails calibration when turned on, it shuts off. The Omega gauges are durable, as the same ones have been used by the French navy since 2008.

The Omega gauge is certified by the manufacturer, and it is important to certify its accuracy in court. Maine Marine Patrol needs certification of devices from that state's Weights & Measures authority, before they may be used in court. Most states certify commercial scales by their Weights & Measures authority.

The boarding officer must select the force to use the Omega gauge, which should be set at 125 Newtons (1 Newton is the force to accelerate 1 kg, 1 meter, per second per second) for all mesh sized greater than or equal to 2.17 inches. The 125N force is applied horizontally, while the 8 kg weight/spade is a vertical (gravity) measurement.

The challenge of a comparable measure between the weight/spade and Omega gauge is key to presenting the results in court. How does the manufacturer equilibrate a 125N lateral force with the lateral force exerted by an 8 kg weight and spade combination? The Coast Guard is researching that calculation with the manufacturer.

What is the effect on fisheries management, in terms of escapement? Given no complaint from management or fishermen, it appears that the Omega gauge will not undermine fisheries management. The Omega gauge provided bigger mesh measurements (one-tenth of an inch) than the weight/spade, during testing by the Coast Guard. We may argue to the court that the Omega gauge is reliable, accurate (precise), and supported by fishermen, management, and enforcement. NOAA may wish to discover how the Omega gauge's measurements are presented to European courts, after ten years of use.

At present, the Omega gauge will be used to measure trawl nets, including 5-1/2, 6, and 6-1/2 inch mesh. In the future, it could be used to measure twine tops on scallop dredges, and even the metal rings themselves.

The Committee looked at proposed wording to make the Omega gauge an alternative to the wedge-shaped gauge (Katherine Pohl, July 23, 2018, attached). The Coast Guard could insert the specifications into this language; type of gauge, number of caliper sets, force range requirements, etc. The use should be the same; measure 20 or 10 meshes depending on the size of the net.

More testing may be needed, and some questions answered before presenting to a court, including:

- How does the manufacturer equilibrate a 125 Newton force (Omega gauge) with an 8 kg weight /spade?
- Is the Omega gauge more accurate, more precise, or both, relative to the weight/spade?
- Is the Omega gauge's automatic calibration sufficient?
- Is the manufacturer's certification adequate, or should federal/state Weights&Measures agencies be consulted?

Coast Guard Headquarters has approved the Omega gauge for use pending NOAA approval. The Coast Guard will work with GCES to answer any questions and provide additional testing required by GCES to

ensure Omega gauge measurements will hold up in court. OLE supports adding the Omega gauge as a tool, because it reduces the time necessary for mesh measurement. Coast Guard procedure is to calibrate the gauge and show it to the master, perform the measurements, then re-calibrate the gauge and show it to the master again.

The group sees the utility of the Omega gauge over the weight/spade. The best way to answer some of these questions is to continue to use and test the Omega gauge.

It is the unanimous consensus of the VMS/Enforcement Committee and Advisors to recommend the Council recommend that NOAA use its authority to adopt use of the Omega gauge to enforce measuring mesh size, once GCES satisfies its legal requirements.

Upon this recommendation, NOAA should seek to answer the questions posed above. NOAA's authority would result in a Secretarial Amendment to add the Omega gauge as a tool to measure mesh size.

The Committee and its Advisors, and everyone involved in this process, wish to convey great thanks to the Coast Guard for its diligence in showing the Omega gauge's effectiveness, consistency, and accuracy.

Other Business

OLE indicated that 3 new agents will fill vacancies this year, as well as an additional position to analyze enforcement data (position code 805) in the VMS office. Two of the vacancies were not filled for some time, so it is an effective increase to current capabilities.