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As the Council's designee to the Atlantic Large Whale Take Reduction Team (TRT), I attended a Ropeless Fishing Workshop on February 1st. The Woods Hole Oceanographic Institution and New England Aquarium hosted the workshop to discuss the feasibility of ropeless fixed gear fishing. The workshop focused mostly on the lobster fishery, but there are other fixed gear fisheries to be aware of (e.g., the Groundfish longline/gillnet fishery, Monkfish gillnet fishery, the Hagfish fishery). Participants included scientists, fishery managers, industry, engineers, and environmental organizations. Canadian managers and industry were also in attendance. All of the meeting materials and presentations can be found on the workshop's website at: https://ropeless.org.

GARFO staff presented on the Atlantic Large Whale Take Reduction Plan and gear marking requirements. Compliance is low in the U.S. anyway. A lot of workshop participants commented about the lack of enforcement offshore since there is currently no capability to haul gear out there. Most of entanglements that they recover the gear from are not compliant. It has been a long time since the rules had been implemented. I personally took my Pinger/Gear marking class in 2002. At that time NOAA was doing a lot of outreach on all the requirements so I asked if they were still doing the compliance mailings to remind people of what they are. Mark did not know when it was last done. I thought that would be a good start at least. Most of the people on these boats probably were little kids when the rules came out and may not even know they aren't compliant. Especially in the lobster fishery.

The Canadian DFO presented the changes they are making to reduce whale entanglements also. They are considering taking away the requirement to have a buoy on both ends of a string of gear and requiring only one end be marked. They are also considering eliminating the buoy requirement and legalizing ropeless fishing. Currently, like in the U.S., it is illegal.

There is some new technology in ropeless fishing. One in particular is used in the Rock Lobster fishery in New Zealand called the 'on call submerged headgear system.' Many workshop participants raised concerns on the scalability of this technology. There are only 300 traps in the New Zealand fishery, and we have 3,000,000 lobster traps alone in New England. The units cost between $750 and $1500 each depending on the depths you are working and have annual repairs of between $75 and $150 depending on which units you have. Very expensive to buy and maintain at the volume that would be required for the lobster fishery in this region. Using these unit costs, a back of the envelope calculation would put the cost at $240,000 per lobster boat, which doesn't include having the boat hauled out to install the transponders and computer gear on the boat to talk to the fusible link.

For this system, your entire rope is packed into a wire cage, similar to lobster trap wire, and it is held to the bottom with an anchor attached to it. Between the anchor and the trap. A fusible link is attached to the cage, and once the link is activated, the buoy on the rope floats up and you haul gear as normal. More information on this technology can be found at: http://www.desertstar.com.

Another ropeless fishing technology presented at the workshop has an airbag set up with the same technology on the boat. For this set-up, there is an airbag attached to the first trap that is activated from the surface. A small scuba tank is attached to the trap, as well as an inflatable plastic bag, that floats the trap to the surface. There was a lot of reservation from the industry about attaching anything to the trap that could affect the way it fishes. As a fisherman I can see that. The folks that build these things build them to the owner's specs and that's what works for them. Any time you mess with somebody's gear that they have worked on for decades to perfect, you had better be able to show them it won't affect the gear's efficiency. More information on this technology can be found at: Smelts.org.

Another system was a spool type sunken buoy. The end line to the trap would be anchored to the bottom and with a release mechanism that would release it. Similar to the submerged headgear system, the buoy would float up and you would haul the gear as normal. The problem I can see with this is the buoys are big and they cannot be reloaded on the boat. So for every string of traps you haul you would need 2 end lines preloaded on the boat. Loading would be done on shore by a private company. If I'm a lobsterman I would change my profession to reloading these spools. That's where the money would be. Many workshop participants also raised safety concerns relative to this technology.

Then there is the grappling system. The grappling system consist of a transponder on each end trap of a trawl. The boat would come up to a string of gear and see where it is on their plotter and grapple for it. All the boats could see there was a string of gear there, but the only one that knows who owns the gear is you if you own it. Other than that they only see a string of gear. The problem I see here is that the prototype transponder was $18,000 to build. As they gear up to build these things they get down to $281 if you mass produce 1 million of them. I'm not confident that number is achievable. I believe this is developed by the engineers at the New England Aquarium.

All these things would require all the boats in the fleet, including the trawl fleet, to put the gear aboard to receive information as to where the fixed gear is. Gear conflicts would be the first thing to come to my mind with this. Gear conflicts are not what people on either side of this wants. It destroys the lobster gear and can destroy a trawl net and make for some costly repairs for both. It would also turn the ocean into a junkyard. Nobody wants that. That gear is in its infant stage and is a long ways from being a viable option in my opinion at this point.

I asked the question, "What has changed in the fishery that has led to increased entanglements?" One workshop organizer suggested that there is more gear is in the water than before vertical line rules came into effect. However, a number of participants from the lobster fishery countered this conclusion. They noted the amount of gear in the water is less than it was in 1997, which is the first year they started to track that. I know each zone is different but in Maine for every 3 people to get out of the fishery only 1 is allowed to enter and those are the most liberal of the zones. Some are more than that. Another factor is the rope has changed since we started tracking lobster gear. They have invented steel line that is much stronger than the ropes they used in the 90s. They cause more injuries and deaths from entanglements. The State of Maine is working on testing breakings strengths in rope to see what the industry could live with for breaking strength in the lobster fishery. I talked to DMR staff about doing some tests on my gillnet boat to see what we could get by with for a minimum strength rope in that fishery.

Biology I believe has also changed. The females are not producing young like they did. Until 2010 the birth rate was fairly high to replenish the stock as it died, but now, if you look at the birthrates, I believe it's the lowest since they have been tracking them except for 1999 and 2000. That supposedly was during a time when there was a lack of food and that is not the case this time. The hypothesis is that the whales are either injured or stressed and they aren't producing calves like they used to. Scott Kraus's presentation on ropeless.org provides an overview of status and trends of the right whale population.

Next steps that GARFO is initiating are a series of meetings for the subgroups. I am a member of both. Here is the schedule. If anyone has questions let me know and I will ask at the meetings for you.

Kickoff Teleconferences:

February 26th: Due to a conflict for the Maine Lobstermen's Association on our alternate proposed date, both kickoff calls will be held on 2/26. Detailed agenda, materials, and call-in information will be sent out at least a week prior to the calls:

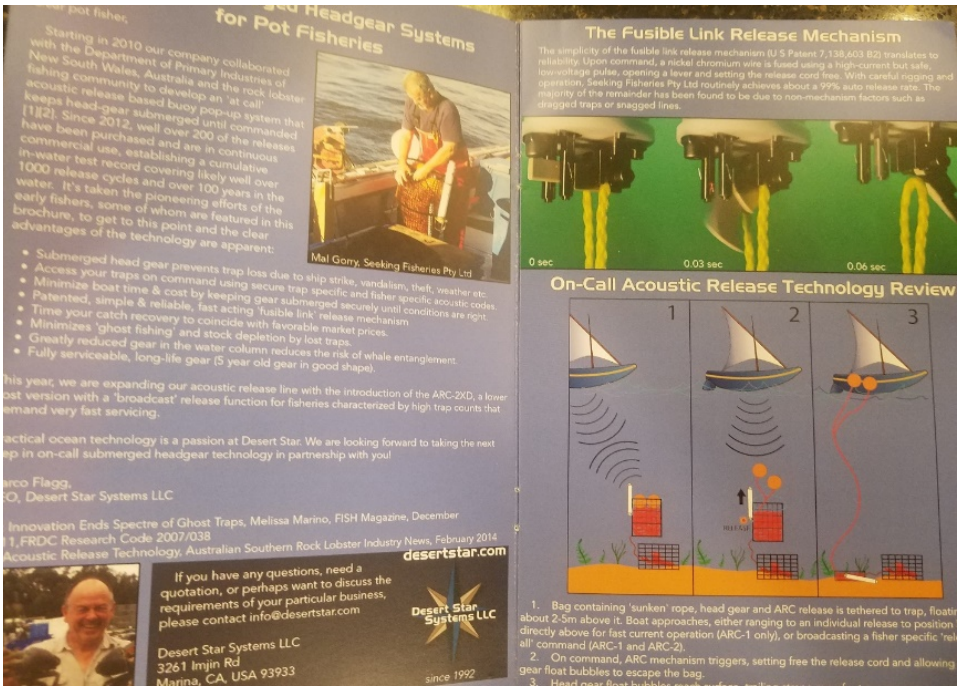
10 am EST til Noon - Ropeless Feasibility Subgroup call

2 pm EST til 4 - Whale Release Rope/Gear Marking Feasibility Subgroup call

In-person Meetings:

March 15 and 16th: Ropeless Feasibility. Location and start time to be determined

April 3rd and 4th: Whale Release Rope/Gear Marking Feasibility. Location and start time to be determined


Headgear Systems
for Pot Fisheries
Starting in 2010 our company collaborated with the Department of Primary Industries of New South Wales, Australia and the rock lobster fishing community to develop an 'at call' acoustic release based buoy pop-up system that keeps head-gear submerged until commanded [1][2]. Since 2012, well over 200 of the releases have been purchased and are in continuous commercial use, establishing a cumulative in-water test record covering likely well over 1000 release cycles and over 100 years in the water. It's taken the pioneering efforts of the early fishers, some of whom are featured in this brochure, to get to this point and the clear advantages of the technology are apparent:
Mal Gorry, Seeking Fisheries Pty Ltd
Submerged head gear prevents trap loss due to ship strike, vandalism, theft, weather etc.
Access your traps on command using secure trap specific and fisher specific acoustic codes.
Minimize boat time & cost by keeping gear submerged securely until conditions are right.
Patented, simple & reliable, fast acting 'fusible link' release mechanism.
Time your catch recovery to coincide with favorable market prices.
Minimizes 'ghost fishing' and stock depletion by lost traps.
Greatly reduced gear in the water column reduces the risk of whale entanglement.
Fully serviceable, long-life gear (5 year old gear in good shape).
his year, we are expanding our acoustic release line with the introduction of the ARC-2XD, a lower ost version with a 'broadcast' release function for fisheries characterized by high trap counts that emand very fast servicing.
actical ocean technology is a passion at Desert Star. We are looking forward to taking the next ep in on-call submerged headgear technology in partnership with you!
rco Flagg,
O, Desert Star Systems LLC
Innovation Ends Spectre of Ghost Traps, Melissa Marino, FISH Magazine, December
1,FRDC Research Code 2007/038
Acoustic Release Technology, Australian Southern Rock Lobster Industry News, February 2014
desertstar.com
If you have any questions, need a quotation, or perhaps want to discuss the requirements of your particular business, please contact info@desertstar.com
Desert Star Systems LLC
3261 Imjin Rd
Marina, CA, USA 93933
Desert Star Systems LLC
since 1992
The Fusible Link Release Mechanism
The simplicity of the fusible link release mechanism (U.S Patent 7,138,603 B2) translates to reliability. Upon command, a nickel chromium wire is fused using a high-current but safe, low-voltage pulse, opening a lever and setting the release cord free. With careful rigging and operation, Seeking Fisheries Pty Ltd routinely achieves about a 99% auto release rate. The majority of the remainder has been found to be due to non-mechanism factors such as dragged traps or snagged lines.
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On-Call Acoustic Release Technology Review
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1. Bag containing 'sunken' rope, head gear and ARC release is tethered to trap, floati
about 2-5m above it. Boat approaches, either ranging to an individual release to position
directly above for fast current operation (ARC-1 only), or broadcasting a fisher specific 'rel
all' command (ARC-1 and ARC-2).
2. On command, ARC mechanism triggers, setting free the release cord and allowing
gear float bubbles to escape the bag.


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EXIT