



Maximized Retention Electronic Monitoring Pilot Project Underway in Groundfish Fishery

As fisheries worldwide look to improve catch monitoring, cameras (i.e., electronic monitoring) are an increasingly used tool to replace human observers and reduce monitoring costs to the fleet. As of August, three vessels in New England's groundfish fleet, homeported from Maine to Rhode Island, are piloting a maximized retention electronic monitoring model for the fishery.

Vessels in this pilot program keep all of the allocated groundfish they catch while fishing, including fish they would normally discard. Each vessel is outfitted with a camera system, and the video footage from the cameras is used to confirm the vessels retain all their catch. A

dockside monitor meets the vessels when they return to port, and collects catch data on groundfish, including biological samples, that would normally be collected at sea by a human observer.

There is no discarding of groundfish allowed under the maximized retention project, whereas another ongoing electronic monitoring project for the groundfish fishery requires fishermen to count and measure their discards in view of a camera at sea. This difference is key for vessels handling high volumes of fish that cannot reasonably sort and catalog their discards at sea. Under maximized retention, these vessels experience minimal interruption to their normal

fishing operations; instead, they simply retain all of their catch.

This electronic monitoring project is one of several being undertaken by fishermen in the region to test electronic monitoring, including how to incorporate it into on-the-water operations and estimate potential cost savings. The assumption is that using a combination of cameras and dockside monitors may enable fishermen to meet their catch monitoring requirements more affordably and effectively than with a human observer.

The vessels piloting this program are working in partnership with the Gulf of Maine Research Institute. We issued an exempted fishing permit authorizing these vessels to operate under a maximized retention model. We also designed the dockside monitoring program supporting the pilot project, and are working with the vessels and dealers to ensure that the project goes smoothly. The project is scheduled to continue through the 2018 and 2019 fishing years.

For more information on groundfish electronic monitoring projects, contact Claire Fitz-Gerald, Sustainable Fisheries Division, at (978) 281-9255, or e-mail her at Claire.Fitz-Gerald@noaa.gov.

What you should know about overlapping closure areas

Sometimes closed or gear restricted areas overlap, and the intersection of these areas can be confusing. An example of overlapping closure areas are the Fippennies and Cashes Ledge Habitat Management Areas (HMAs) with the Cashes Ledge Groundfish Closure Area. In general, where two areas overlap, the regulations for both areas apply.

The Fippennies Ledge HMA is one of the new closure areas implemented in April 2018 as part of the New England Council's Omnibus Essential Fish Habitat Amendment. This amendment also modified some existing closures, including the Cashes Ledge HMA.

Both the Fippennies and Cashes Ledge HMAs are closed to mobile, bottom-tending gear and overlap the Cashes Ledge Groundfish Closure Area. The Cashes Ledge Groundfish Closure area is closed to all fishing vessels except charter and party vessels fishing with a Letter of Authorization, private recreational vessels, vessels fishing with exempted gears, and vessels participating in the mid-water trawl exempted fishery.

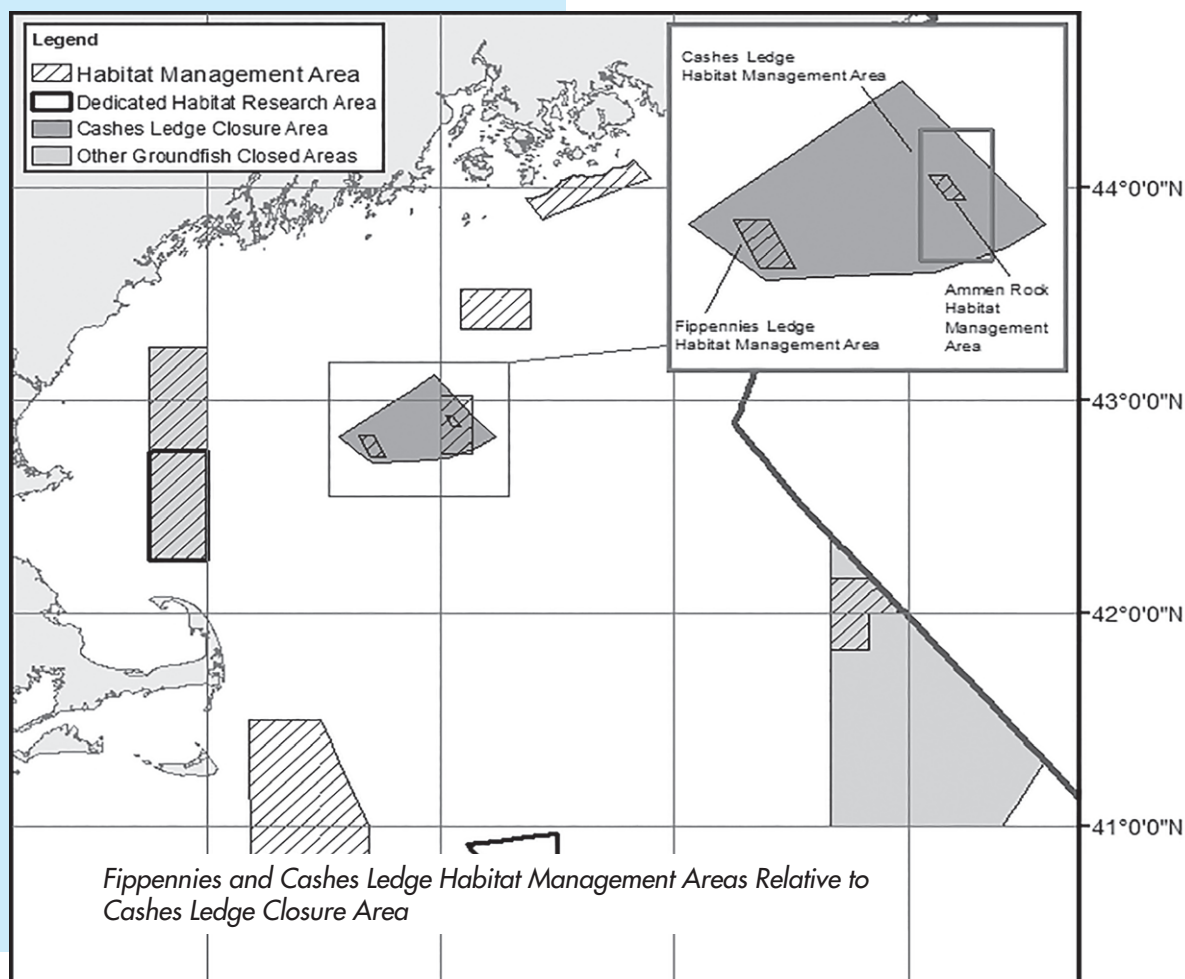
As shown in the figure, the Fippennies Ledge HMA is completely within the boundaries of the Cashes Ledge Groundfish Closure Area. A vessel anywhere within Fippennies Ledge HMA would be subject to the restrictions of both the Fippennies Ledge HMA and the Cashes Ledge Groundfish Closure Area.

The Cashes Ledge HMA only partially overlaps with the Cashes Ledge Groundfish Closure Area. A vessel within the portion of the Cashes Ledge HMA that overlaps with the Cashes Ledge Groundfish Closure area would be subject to the restrictions of both areas. However, a vessel in the portion of the Cashes Ledge HMA that does not overlap with the Cashes Ledge Groundfish Closure would only be subject to the restrictions of the Cashes Ledge HMA (i.e. prohibition of mobile bottom-tending gear).

To ensure compliance with closure areas, please reference the official coordinates for each closure area.

Maps and closure area coordinates are available on our website at www.greateratlantic.fisheries.noaa.gov/regs/info.html.

For assistance or more information about closed areas, contact Spencer Talmage, Sustainable Fisheries Division, at (978) 281-9232, or email him at Spencer.Talmage@noaa.gov





The NOAA FISHERIES NAVIGATOR

Weak Links Protect Whales

Wweak links help reduce the risk of entanglement of large whales in trap/pot and gillnet gear. Required under the Marine Mammal Protection Act's Atlantic Large Whale Take Reduction Plan (Plan), weak links enable the release of the buoy, flotation or weighted device from a line if encountered by a large whale. Because they release in a way that does not result in a knot at the end of the line connected to a floating or weighted device, they reduce the potential for entangling a whale.

There are several ways to maintain weak links at

the proper breaking strength. More information can be found at www.greateratlantic.fisheries.noaa.gov/Protected/whaletrp/

UNIVERSAL WEAK LINK REQUIREMENTS FOR TRAP/POT AND GILLNETS INCLUDE:

All buoys, flotation devices and/or weights must be attached to the buoy line with a weak link having a certain breaking strength as defined for each management area below.

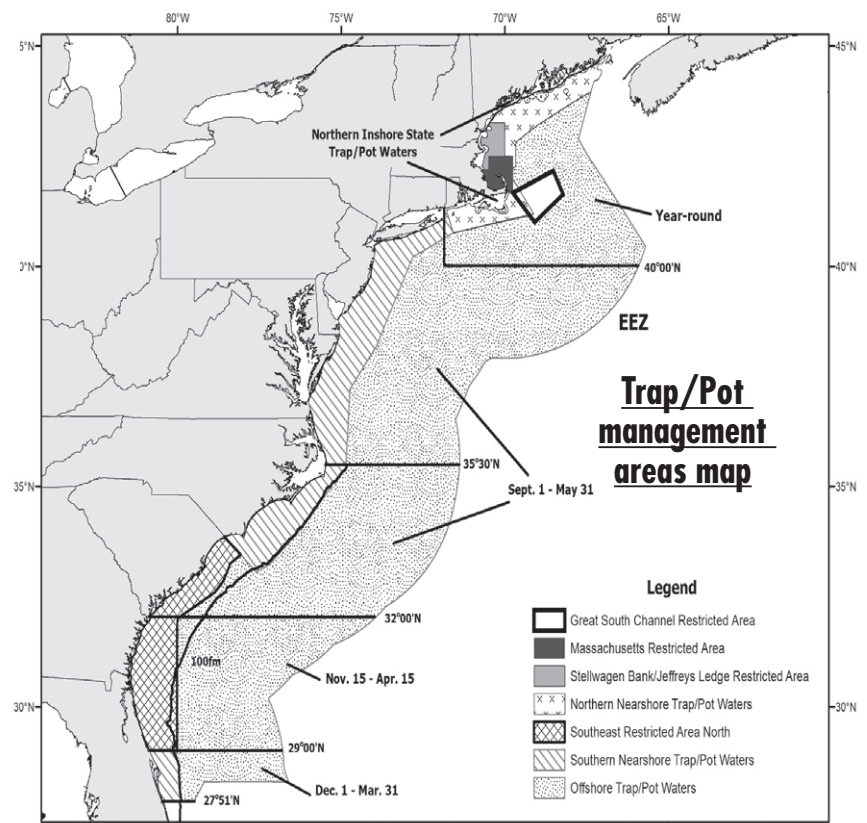
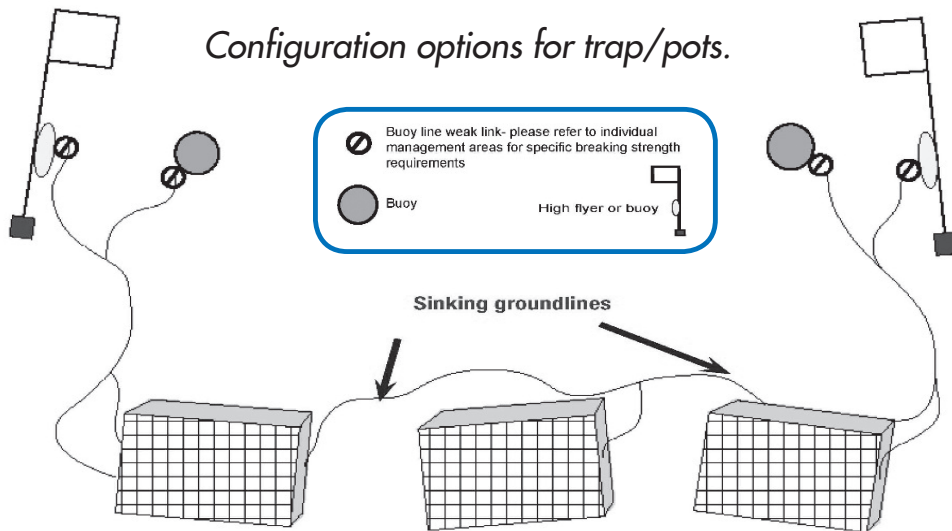
Weak links must be chosen from the list of our

approved gear, which includes: off the shelf weak links, rope of appropriate breaking strength, hog rings, and other materials or devices approved in writing. Weak links must be designed in such a way that the bitter end of the buoy line is clean and free of any knots when the weak link breaks.

Weak links must be placed in the appropriate configurations (see diagram).

Visit the Plan website for more information on achieving appropriate weak links strengths.

Each management area has specific weak link breaking strength requirements.

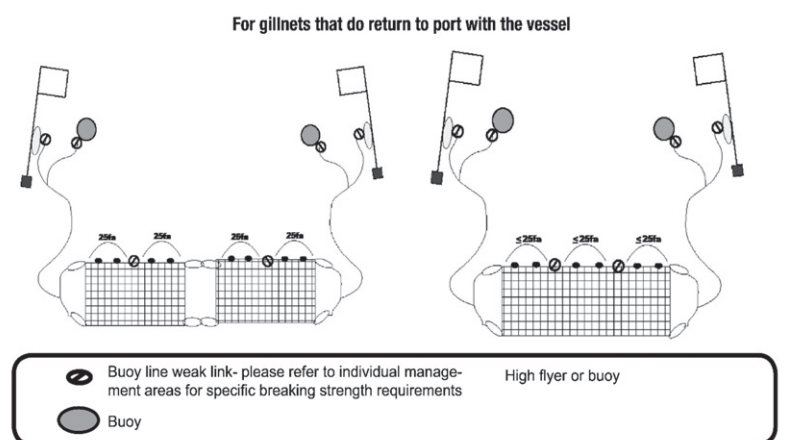


	TRAP/POT MANAGEMENT AREA	DATES	WEAK LINK BREAKING STRENGTH REQUIREMENTS
NORTHEAST	Northern Inshore State Trap/Pot Waters	Year Round	≤ 600 lbs.
	Massachusetts Restricted Area	May 1 to January 31	≤ 600 lbs.
	Stellwagen Bank/Jeffreys Ledge Restricted Area	Year Round	≤ 600 lbs.
	Great South Channel Restricted Area	July 1 - March 31	≤ 1,500 lbs. for LMA 3 and 2/3 overlap. ≤ 600 lbs. in LMA2 and Outer Cape overlap.
	Northern Nearshore Waters (Northeast)	Year Round	≤ 600 lbs.
	Southern Nearshore Waters (Northeast)	Year Round	≤ 600 lbs.
	Offshore Waters (Northeast)	Year Round	≤ 1,500 lbs. offshore, 2,000 lbs. for thered crab trap/pot
MID-ATLANTIC	Southern Nearshore Trap/Pot Waters	Sept. 1 - May 31	≤ 600 lbs.
	Offshore Trap/Pot Waters (Mid-Atlantic)	Sept. 1 - May 31	≤ 1,500 lbs. and ≤ 2,000 lbs. for the red crab trap/pot fishery
SOUTHEAST	Southern Nearshore Trap/Pot Waters (South of the Southeast Restricted Area North Trap/Pot Area)	Dec. 1 - March 30	≤ 600 lbs.
	Southern Nearshore Trap/Pot Waters (North of the Southeast Restricted Area North Trap/Pot Area)	Sept. 1 - May 31	≤ 600 lbs.
	Offshore Trap/Pot Waters (Southeast)-North of 32° N. lat.	Sept. 1 - May 31	≤ 1,500 lbs. and ≤ 2,000 lbs. for the red crab trap/pot fishery
	Offshore Trap/Pot Waters (Southeast)-Between 32° N. lat and 29° N. lat	Nov. 15 - April 15	≤ 1,500 lbs. and ≤ 2,000 lbs. for the red crab trap/pot fishery
	Offshore Trap/Pot Waters (Southeast)-Between 29° N. lat and 27° 51' N. lat	Dec. 1 - March 31	≤ 1,500 lbs. and ≤ 2,000 lbs. for the red crab trap/pot fishery

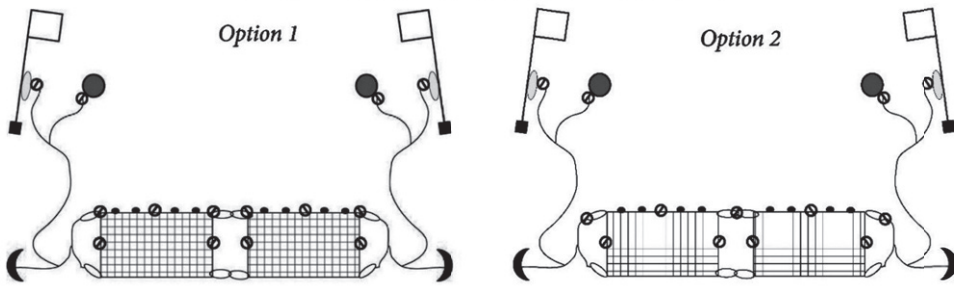
FOR GILLNETS:

For gillnets: individual weak links are not required in locations where rope of appropriate breaking strength is used. Additionally, if no up and down line is present, than weak links are not required at that location. Gillnet panel weak links must be chosen from the list of our approved gear, which includes: off the shelf weak links, rope of appropriate breaking strength, hog rings, and other materials or devices approved in writing.

For nets which do not return to port with the vessel: weak links must be incorporated into net panels following one of the two configurations



For gillnets that do not return to port with the vessel:



Option 1

For all variations in panel size:

- One weak link must be placed in the center of each of the up and down lines at both ends of the net panel; and
- One weak link must be placed as close as possible to each end of the net panels on the floatline.

For net panels 50 fathoms or less in length:

- One weak link must be placed in the center of the floatline.
- One weak link must be placed at least every 25 fathoms along the float line.

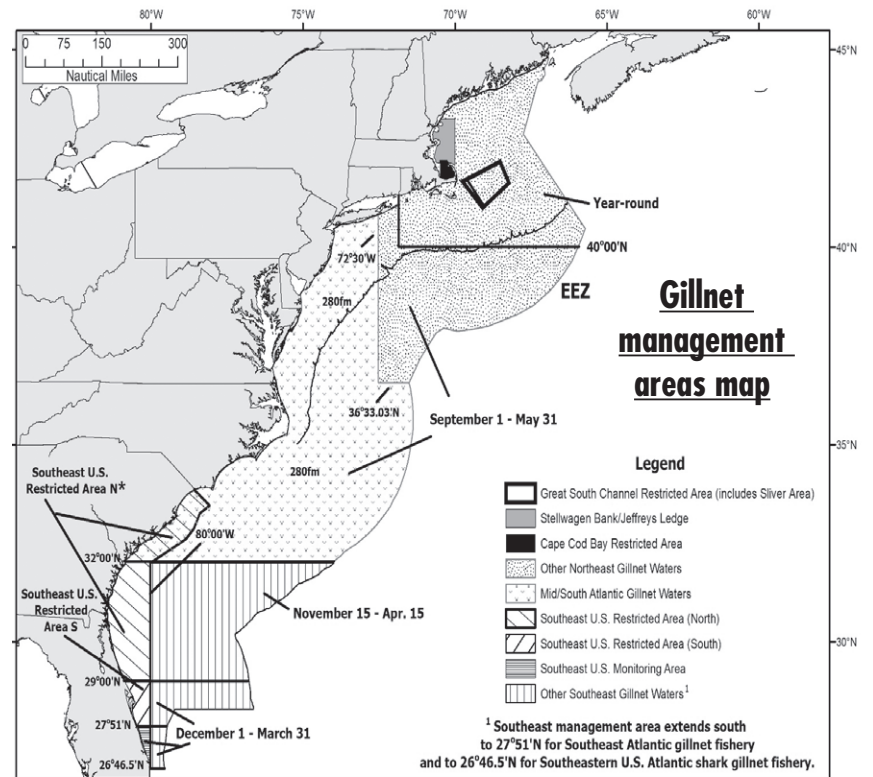
Option 2:

For all variations in panel size:

- One weak link must be placed in the center of each of the up and down lines at both ends of the net panel; and
- One weak link must be placed between floatline tie-loops between net panels; and
- One weak link must be placed where the floatline tie-loops attach to the bridle, buoy line, or groundline at each end of a net string.

For net panels 50 fathoms or less in length:

- One weak link must be placed in the center of the floatline.
- One weak link must be placed at least every 25 fathoms along the floatline.



Gillnet management areas map

Legend

- Great South Channel Restricted Area (includes Sliver Area)
- Stellwagen Bank/Jeffreys Ledge
- Cape Cod Bay Restricted Area
- Other Northeast Gillnet Waters
- Mid/South Atlantic Gillnet Waters
- Southeast U.S. Restricted Area (North)
- Southeast U.S. Restricted Area (South)
- Southeast U.S. Monitoring Area
- Other Southeast Gillnet Waters¹

¹ Southeast management area extends south to 27°51'N for Southeast Atlantic gillnet fishery and to 26°46.5'N for Southeastern U.S. Atlantic shark gillnet fishery.

* The area north of 32°00' N lat. is included in the Southeast U.S. Restricted Area from Nov. 15 - April 15, and Mid/South Atlantic Gillnet Waters from Sept. 1 - Nov. 14 and April 16 - May 31.

Weak Links

Continued from previous

examples and have breaking strengths as defined for each management area described below.

(Mid-Atlantic) For nets that return to port each day with the vessel: net panels are required to have a weak link at the center or each floatline or at least every 25 fathoms along the floatline of a panel longer than 50 fathoms (see configuration examples).

IMPORTANT REMINDER

Please remember, weak links are not the only requirements for gillnets and trap/pots in these areas. Sinking groundlines, trap restrictions or restrictions on wet storage of gear also exist. Specific gear and buoy marking is also required. There may also be closures during certain seasons. For these details, please visit the Plan's website: www.greateratlantic.fisheries.noaa.gov/Protected/whaletrp/

	GILLNET MANAGEMENT AREA	DATES	WEAK LINK BREAKING STRENGTH REQUIREMENTS
NORTHEAST	Cape Cod Bay Restricted Area	May 16- Dec. 31	≤ 1,100 lbs.
	Stellwagen Bank/Jeffreys Ledge Restricted Area	Year round	≤ 1,100 lbs.
	Great South Channel Restricted Area (Including the Sliver Area)	July 1- March 31	≤ 1,100 lbs.
	Other Northeast Gillnet Waters (North)	Year round	≤ 1,100 lbs.
MID-ATLANTIC	Other Northeast Gillnet Waters (Mid-Atlantic)	Sept. 1- May 31	≤ 1,100 lbs.
	Mid/South Atlantic Gillnet Waters	Sept. 1- May 31	≤ 1,100 lbs. Configurations differ for gillnets returning to port and those that do not. **
SOUTHEAST	Other Southeast Gillnet Waters - North of 29°00'N lat.	November 15- April 15	≤ 1,100 lbs.
	Other Southeast Gillnet Waters - South of 29°00'N lat.	December 1- March 31	≤ 1,100 lbs.

** Gillnets set within 300 yards (900ft) of the shoreline in NC, that do not return to port with the vessel, will also have an optional gillnet configuration: net panels configured with 5 or more weak links per net panel, depending on panel length, with a breaking strength no greater than 600 lbs. and be anchored with the holding power of at least an 8-lb Danforth-style anchor on the offshore end of the string and a 31-lb dead weight on the inshore end of the string. The entire string must be set within 300 yards (900 ft) of the shoreline.

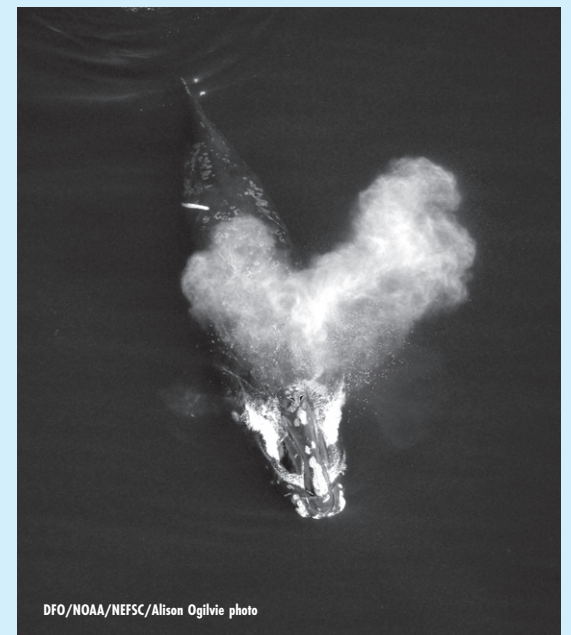
Science Center's Aerial Team Aids Canadian Right Whale Summer Survey Efforts

By the end of May, most North Atlantic right whales have left waters off Cape Cod and the Gulf of Maine, so the Northeast Fisheries Science Center's (NEFSC) aerial survey team headed north to Canada in its Twin Otter aircraft to survey in the Gulf of St. Lawrence for the summer.

In recent years, right whales have been spending less time in their usual summer feeding grounds in the Bay of Fundy instead gathering further north in the Gulf of St. Lawrence, possibly in search of more food and colder temperatures. "Once we started seeing just a few right whales in Cape Cod and Massachusetts Bay in the late spring and few in the Gulf of Maine, we knew many had likely moved further north into Canadian waters and into the

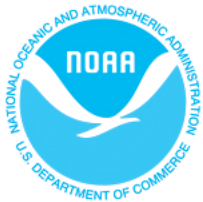
Gulf of St. Lawrence," said Tim Cole from the NEFSC's aerial survey team. "Canada's Department of Fisheries and Oceans invited us to come help them conduct surveys over the summer. They have aircraft of their own conducting surveys in different areas of the Gulf?"

Assisted by staff from the Provincetown Center for Coastal Studies, Florida Fish and Wildlife Research Center, and Department of Fisheries and Oceans Canada, the NEFSC team, based for the summer in Moncton, New Brunswick, looked primarily for endangered right whales but also recorded sightings of other large whales. They worked in the western part of the Gulf, making six-hour flights several times a week and as often as possible, weather permitting, at an altitude of 1,000 feet.



DFO/NOAA/NEFSC/Alison Ogilvie photo

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Assessing Safety at Sea and the Welfare of Fishing Crews

The Northeast Fisheries Science Center's Social Sciences Branch is working on several projects to evaluate factors impacting safety at sea in the groundfish fishery, and to assess the current social and economic conditions of commercial fishing crews in the New England and Mid-Atlantic states. The Social Sciences Branch (SSB) conducts economic and sociocultural research related to the management of commercial and recreational fisheries, and is committed to performing independent, relevant, and accessible studies to provide useful input to the fisheries management decision-making process. The NEFSC's Cooperative Research Branch and GARFO's Port Agents are working with the SSB to facilitate interviews with industry members for these studies. Information collected through these projects will be kept confidential and will not be released for public use except in aggregated statistical form without identifying individual sources.

Risk Assessment of the Northeast Multispecies Fishery

Last spring, the SSB collaborated with staff from our regional office and science center to undertake a safety risk assessment for the Northeast multispecies (groundfish) fishery. This project will determine the major safety hazards facing commercial groundfish fishermen and whether certain groups of fishermen may be exposed to more risk than others.

Between June and August, 2018, our researchers interviewed eleven commercial groundfish fishermen in seven ports from Rhode Island to New Hampshire. The majority of the interviews completed so far focused on safety-related topics such as physical hazards associated with commercial fishing, impacts of fishery regulations on safety, finding and retaining crew, navigational



hazards in different ports, and safety measures adopted by fishermen. Information from these interviews and some with fishery observers and marine safety professionals will help identify major hazards and safety trends within the commercial groundfish fishery.

Fishery managers and regulators will use study results to inform the development of management alternatives for the groundfish fishery, and may also help fishermen, managers, and safety professionals develop tools or programs to improve safety. For questions or to participate in this study, please contact Maria Vasta (maria.vasta@noaa.gov), Katie Connelly (kathryn.connelly@noaa.gov), or Doug Christel (douglas.christel@noaa.gov).

Socio-Economic Survey of Hired Captains and Crew in New England and Mid-Atlantic Commercial Fisheries

In August, the SSB launched a project to assess the current social and economic conditions of commercial

fishing crews, including hired captains, in the New England and Mid-Atlantic States. Until recently, the majority of economic and social studies focused on vessel owners. Little information is available about the experiences of commercial fishing crew members, a critical part of the commercial fishing industry.

Data collected by this project includes demographic information on crew, wage calculations systems, well-being, fishing practices, job satisfaction, job opportunities, and attitudes toward fisheries management. Comparisons will be made with a baseline study conducted in 2011/2012 to determine how and why commercial crew working conditions have changed over time.

Industry participation these studies is vital to improve and shape fishery management decisions. To date, nearly 100 captains and crew members have been interviewed for this project. Results from this survey will help fisheries managers better understand socioeconomic influences on crew members and the impacts of management decisions on commercial crew. This survey will also produce new and timely social science data for use in broader economic impact studies. The SSB plans to follow up on this study every three years to understand changes in crew demographics, attitudes, and composition over time.

To view all survey results, go to https://www.nefsc.noaa.gov/press_release/pr2018/other/crew-survey-2018/

For general information and to participate in the study, contact Lisa Colburn (lisa.l.colburn@noaa.gov) or Matt Cutler (matthew.cutler@noaa.gov) with the SSB.

Whales *Continued from previous page*

Listening for Whales in Real Time

The team deployed specially-rigged buoys on many of the surveys to record acoustic data near groups of right whales and to transmit those sounds to researchers by radio. Called "sonobuoys", these instruments are sometimes used in Cape Cod Bay and in the Gulf of Maine.

Sonobuoys are cylinders containing underwater microphones – called hydrophones – and are outfitted with a radio transmitter. The cylinders are about five inches in diameter and three feet long and are deployed from a special tube in the belly of the aircraft. When they drop into the ocean, a float inflates to keep the transmitter above the water's surface, while the hydrophones drop deeper into the ocean to listen for underwater sounds, in this case from whales. The whales can be miles away and are often out of sight of the researchers on the plane. Receivers on the aircraft can record whale vocalizations as long as the aircraft is within 30 to 40 miles of the buoy. The data help researchers compare and relate visual sightings and behaviors with the whales' underwater sounds.

Which Whales Are These?

"We worked with scientists from all of the Canadian Provinces who share responsibility for marine mammal research in the Gulf of St Lawrence. We provided an estimate of the number of right whales that are in the Gulf," Cole said. "and took photographs from the plane when the whales were at the surface. After the flights, we used the natural markings and scars on the whales to identify each whale."

We compared the images we took to those of all the previously photographed whales in the North Atlantic Right Whale Catalog, which is curated by the New England Aquarium. The Aquarium catalog provides life history information about each whale including their age, sex, and where and when they were last seen. According to Cole, many of the whales seen in the Gulf this summer were seen earlier this spring in Cape Cod Bay by the Center for Coastal Studies aerial survey team.

Sightings included fin, humpback, blue, and North Atlantic right whales. In June, the

team recorded 79 fin whales, 4 blue whales, 21 humpback whales, and 301 right whales. Many of the right whale sightings are repeated sightings of the same whales. No dead whales were found this year, but there were some whales with evidence of recent entanglements. In one instance, a whale was sighted gear-free in the morning, and was then seen a few hours later carrying gear. Since right whales can be individually identified, preliminary photo identification indicates that 136 individual right whales were sighted, which is almost a third of the population.

In addition to the surveys, the NEFSC team also worked with Dalhousie University and the Royal Canadian Air Force on a sonobuoy project, assisted Transport Canada with drone testing, and trained biologists from the Department of Fisheries and Oceans in right whale photo-identification.

To learn more about the NEFSC aerial survey team and to see where whales are being sighted, visit the NEFSC interactive right whale sightings map at <https://www.nefsc.noaa.gov/psb/surveys/index.html>