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# August 2019 Scoping Meetings Developing Modifications to the Atlantic Large Whale Take Reduction Plan Massachusetts , August 2019

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**NOAA FISHERIES**

# 2019 SCOPING MEETINGS, LARGE WHALE TAKE REDUCTION PLAN MODIFICATIONS

Images collected under MMPA Research permit number 17355.  
Photo Credit: NOAA/NEFSC/Christin Khan

## Agenda:

- Purpose of scoping meetings
- North Atlantic right whale status
- Marine Mammal Protection Act
  - Take Reduction Team Process
  - April 2019 Take Reduction Team recommendations
- Next Steps
- Ground rules for Public Comment



# 2019 SCOPING MEETINGS, PURPOSE, TOPICS

**PURPOSE:** Get public input on scope of analysis needed to evaluate the environmental impacts of modifications to the Atlantic Large Whale Take reduction Plan to reduce risk of serious injury and mortality to North Atlantic right whales to less than 1/year

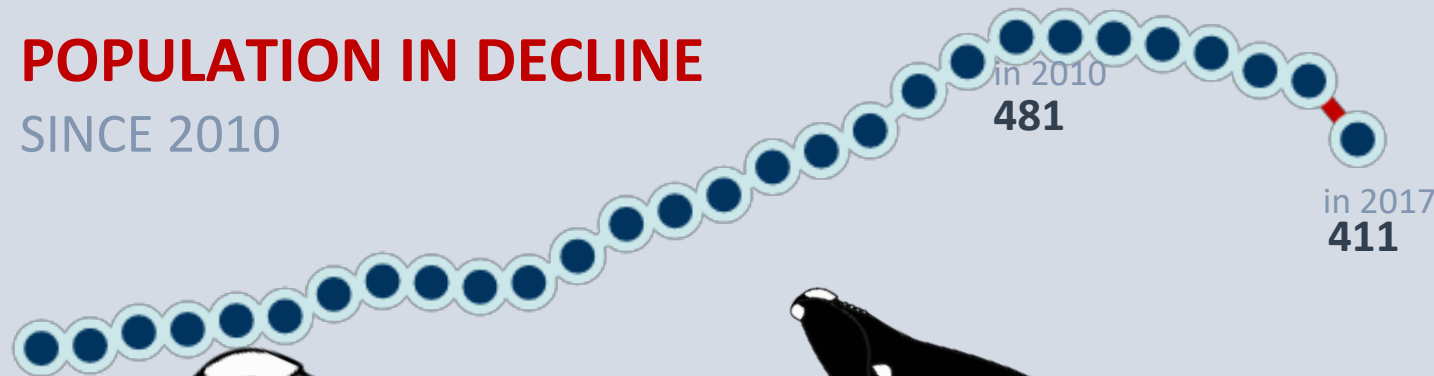
- Scoping is different from public comments on a proposed rule – it is an opportunity to provide input on what we analyze and propose
- We are seeking input on how to reach target risk reduction, considering Take Reduction Team recommendations which include
  - Reducing the number of buoy lines
  - Requiring weak line or weaknesses along the buoy line
  - Modifying buoy line marking requirements
- In partnership with states, we are prioritizing compatible federal water measures

# NORTH ATLANTIC RIGHT WHALES ARE DECLINING



## POPULATION IN DECLINE

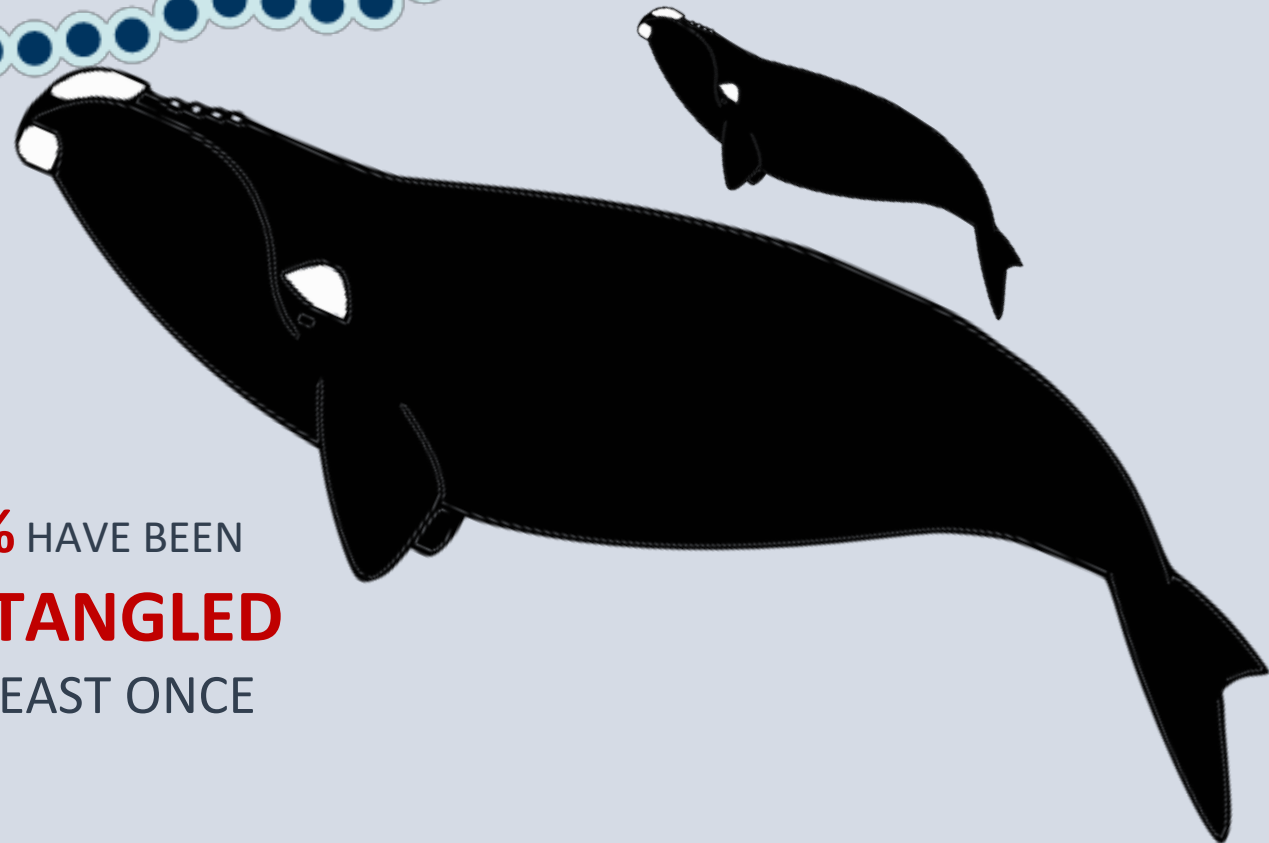
SINCE 2010



in 1990  
268

in 2010  
481

in 2017  
411



**85%** HAVE BEEN  
**ENTANGLED**  
AT LEAST ONCE

**411**  
WHALES  
ESTIMATED  
August 2019,  
Likely fewer than 400

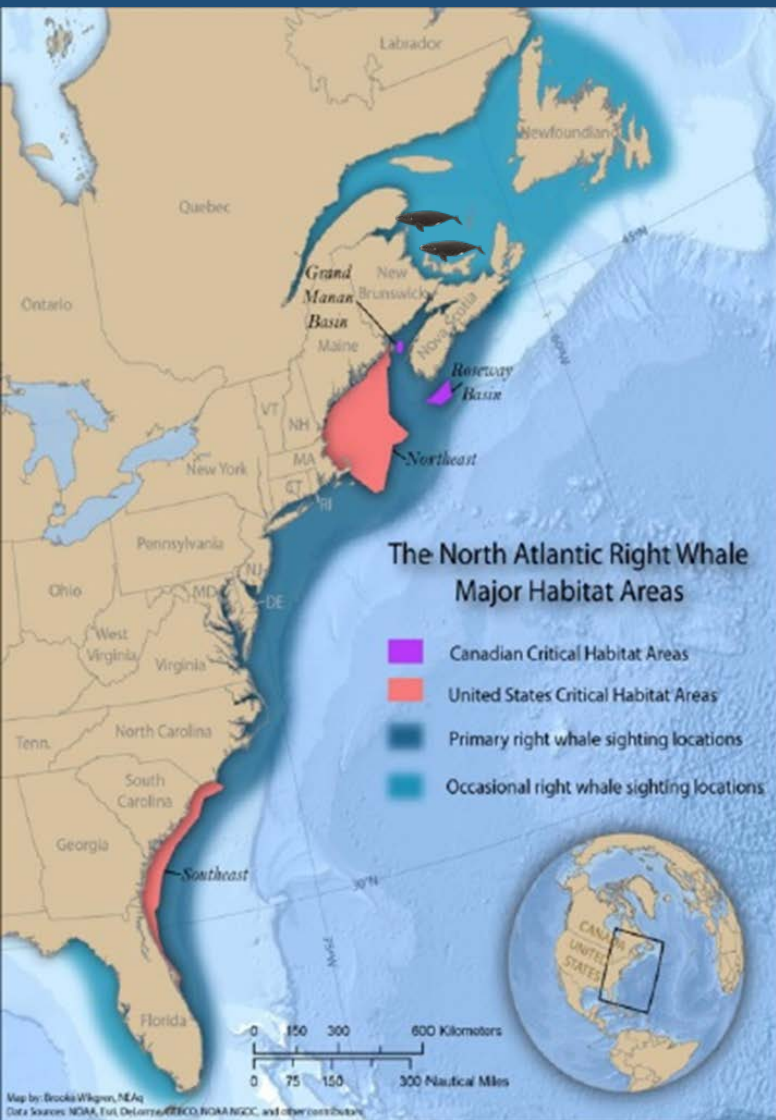
**95**  
POTENTIAL  
MOTHERS  
ESTIMATED  
ADULT FEMALES

**28**  
KNOWN  
DEAD  
JAN 2017 – AUG 2019

**12**  
CALVES  
BORN OVER  
LAST 3 SEASONS

Images collected under MMPA  
Research permit number 17355  
Photo Credit: NOAA/NEFSC/Christin Khan

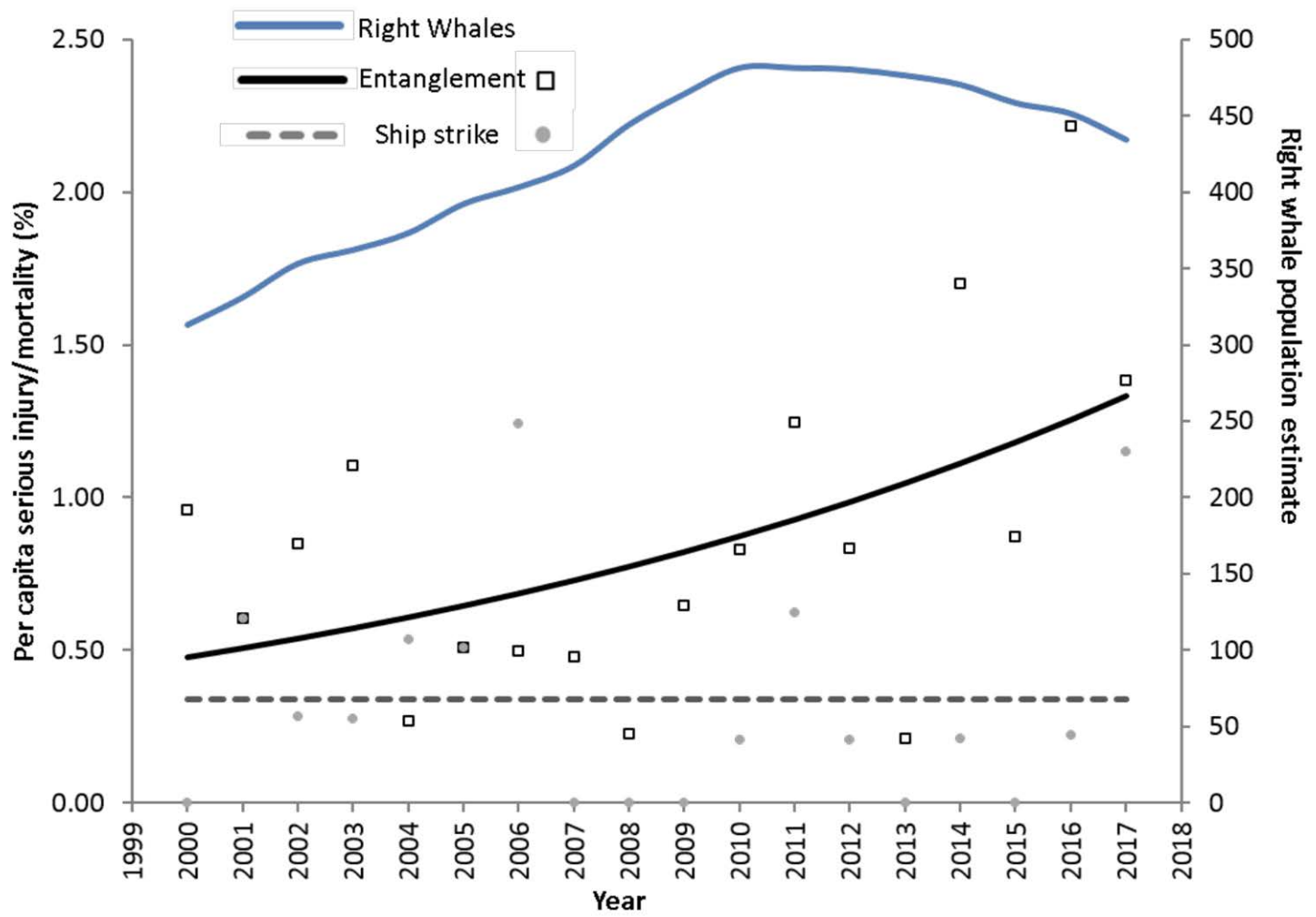
# RIGHT WHALE USE OF NORTHERN RANGE HAS INCREASED



- Increased energetic costs of extended migration
- Continued human impacts throughout range
- Increased exposure to Canadian fisheries and vessel traffic
  - Evidence of snow crab entanglement from 2013 fishing year.
  - Substantial increase in right whale presence in Gulf of St. Lawrence since 2015 (Canadian Science Advisory Secretariat; Science Advisory Report 2019/028)
  - High mortalities in Gulf of St. Lawrence:
    - 2015 (3), 2017 (12), 2019 (8), including ship strikes and entanglements



# TRENDS RELATED TO ENTANGLEMENT ARE INCREASING



# WHAT DO WE KNOW ABOUT ENTANGLEMENTS, WHAT DO WE KNOW ABOUT ENDLINES?

ENTANGLEMENTS: 1,462 entanglement interactions (scars) analyzed; 1980-2016

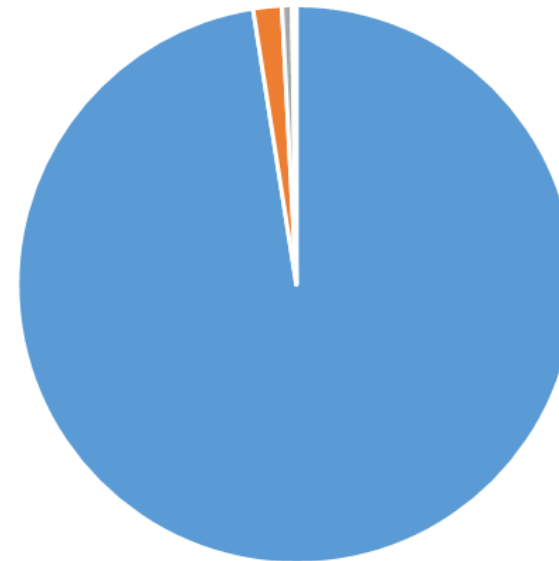
- 110 with attached gear (Knowlton, pers comm.)
- 13 that NMFS Gear Team could trace to original set location

US FIXED GEAR LINE estimates:

- Excludes waters inside ColRegs Line
- Average across all months

IEC Line Model, 9/26/18 run, 2015 and 2016 state data

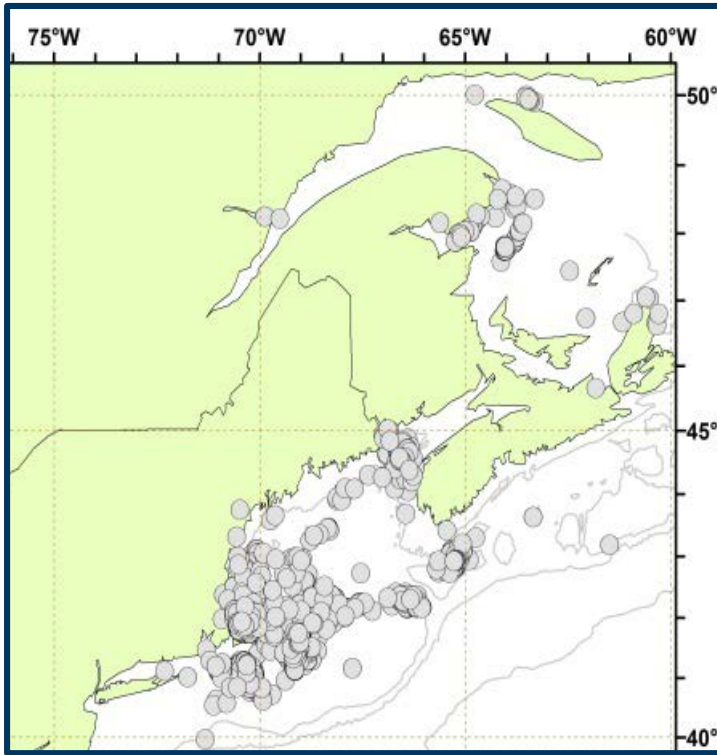
Estimate of Vertical Lines



■ Lobster Trap/Pot ■ Other Trap/Pot ■ Blue Crab Pot ■ Sink Gillnet



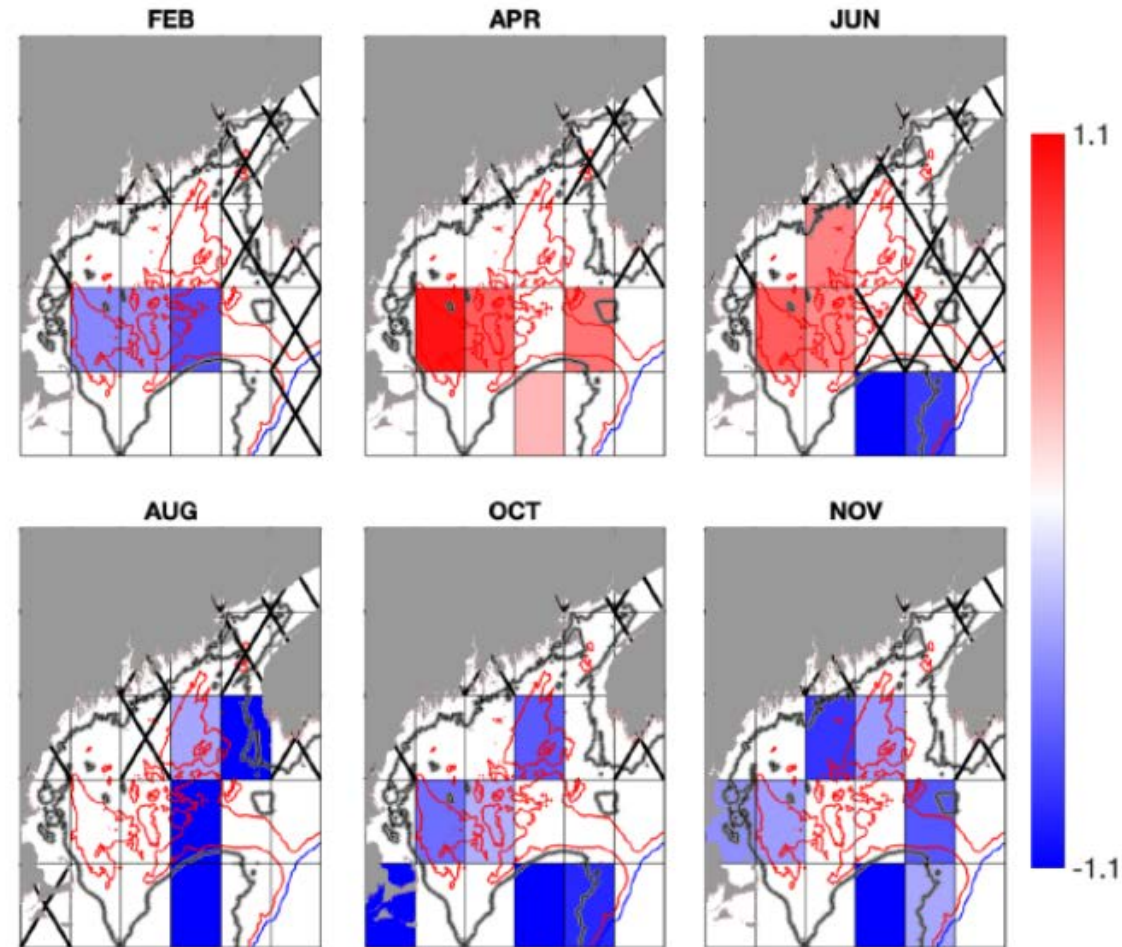
# UNCERTAINTY ABOUT CURRENT AND FUTURE NORTH ATLANTIC RIGHT WHALE DISTRIBUTION



North Atlantic Right Whale Sightings,  
2012 – 2016

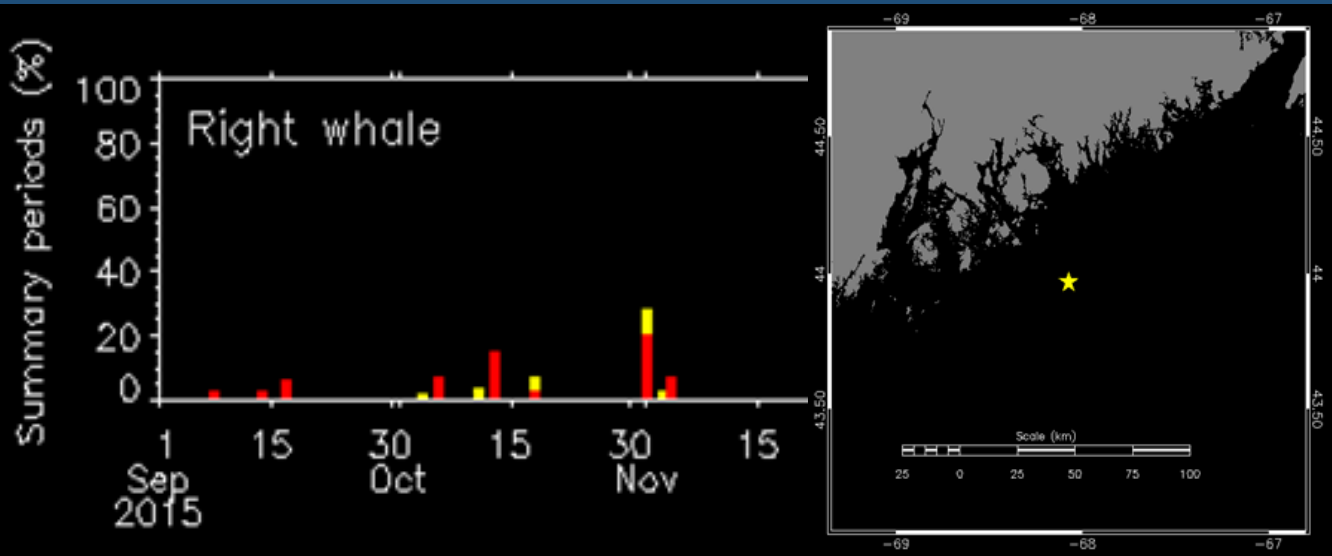
N. Record et al 2016:  
Changes (increase in red,  
decrease in blue) in  
distribution of prey  
between 2004-2008 to  
2012-2016. Before and  
after recent decline

Predicting right whale  
distribution will become  
more challenging with  
increasing environmental  
variability





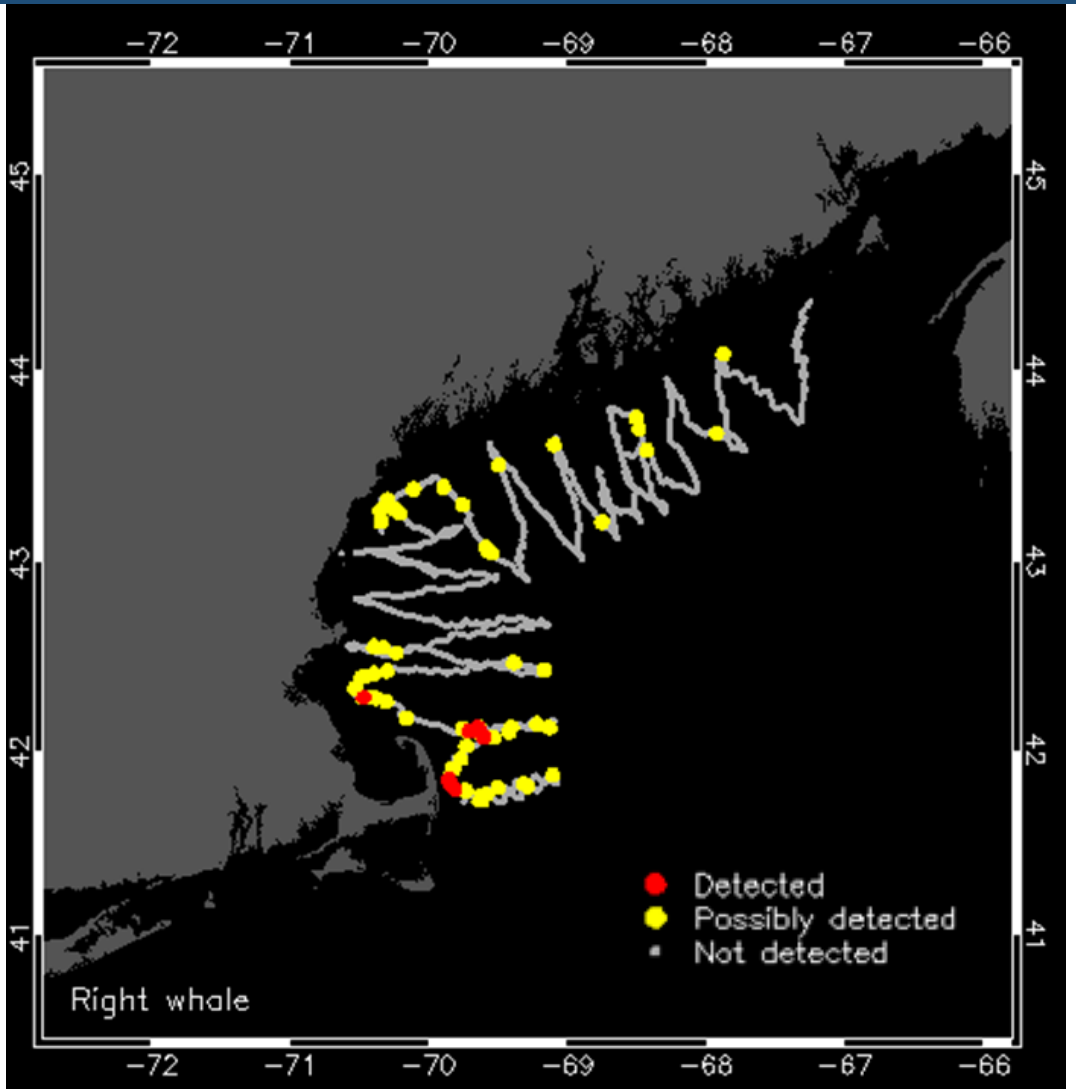
# RIGHT WHALES ARE DIFFICULT TO SPOT WHEN NOT AGGREGATED; ACOUSTIC MONITORING



Above: Moored buoy, Mount Desert Rock, Fall 2015

From Baumgartner, Woods Hole Oceanographic Institution Robots4Whales

Right: Glider track, Gulf of Maine, December 2018 – April 22, 2019.



# MARINE MAMMAL PROTECTION ACT

The MMPA prohibits take of marine mammals - but provides conditional exception for incidental take in commercial fisheries

## TAKE REDUCTION TEAM PROCESS:

- **Required** if incidental mortality and serious injury exceeds Potential Biological Removal (less than one right whale)
- Take Reduction Planning:
  - develop and recommend take reduction measures, consensus-based
- NMFS has the ultimate responsibility to take action

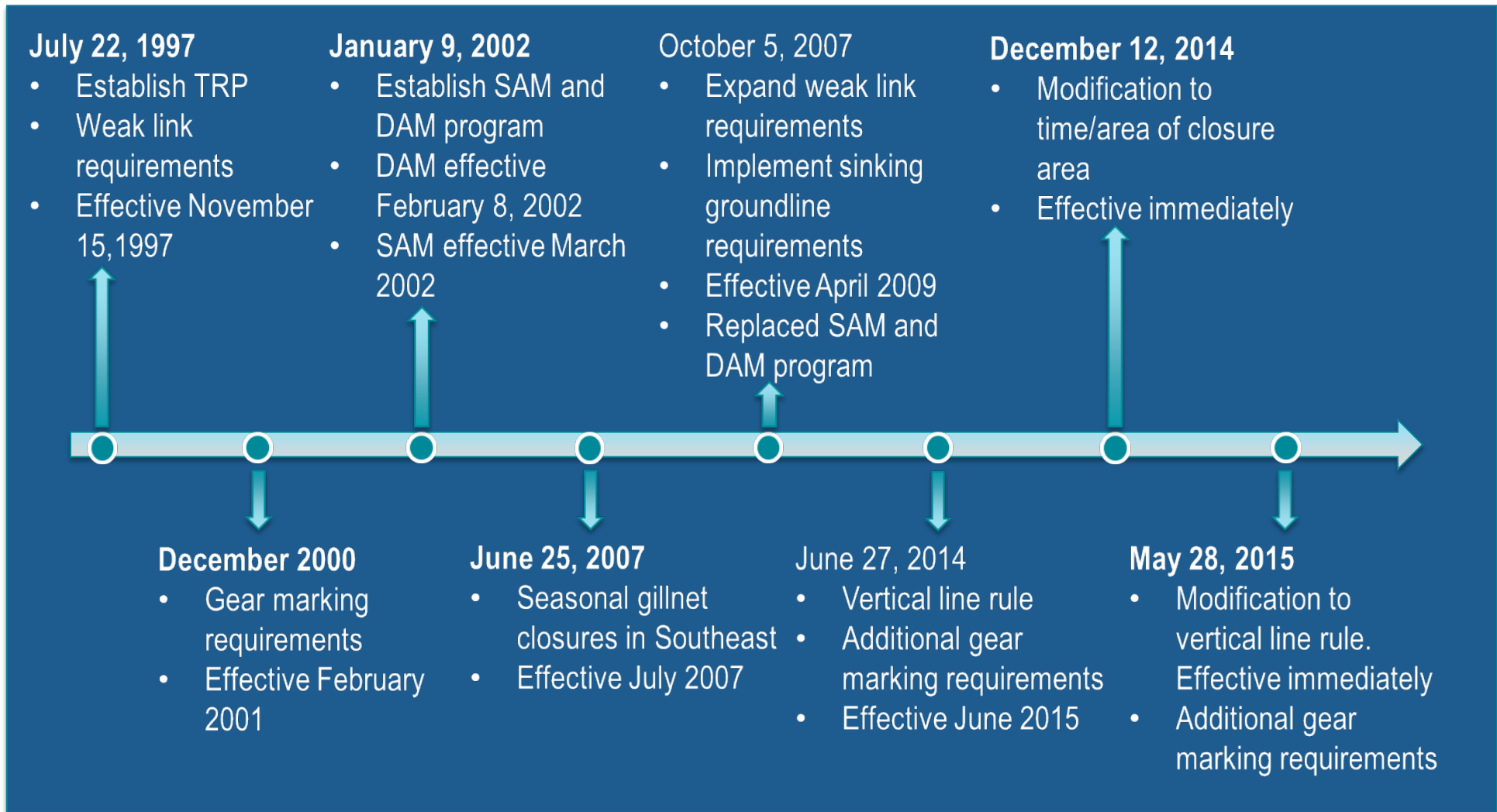
# ATLANTIC LARGE WHALE TAKE REDUCTION TEAM



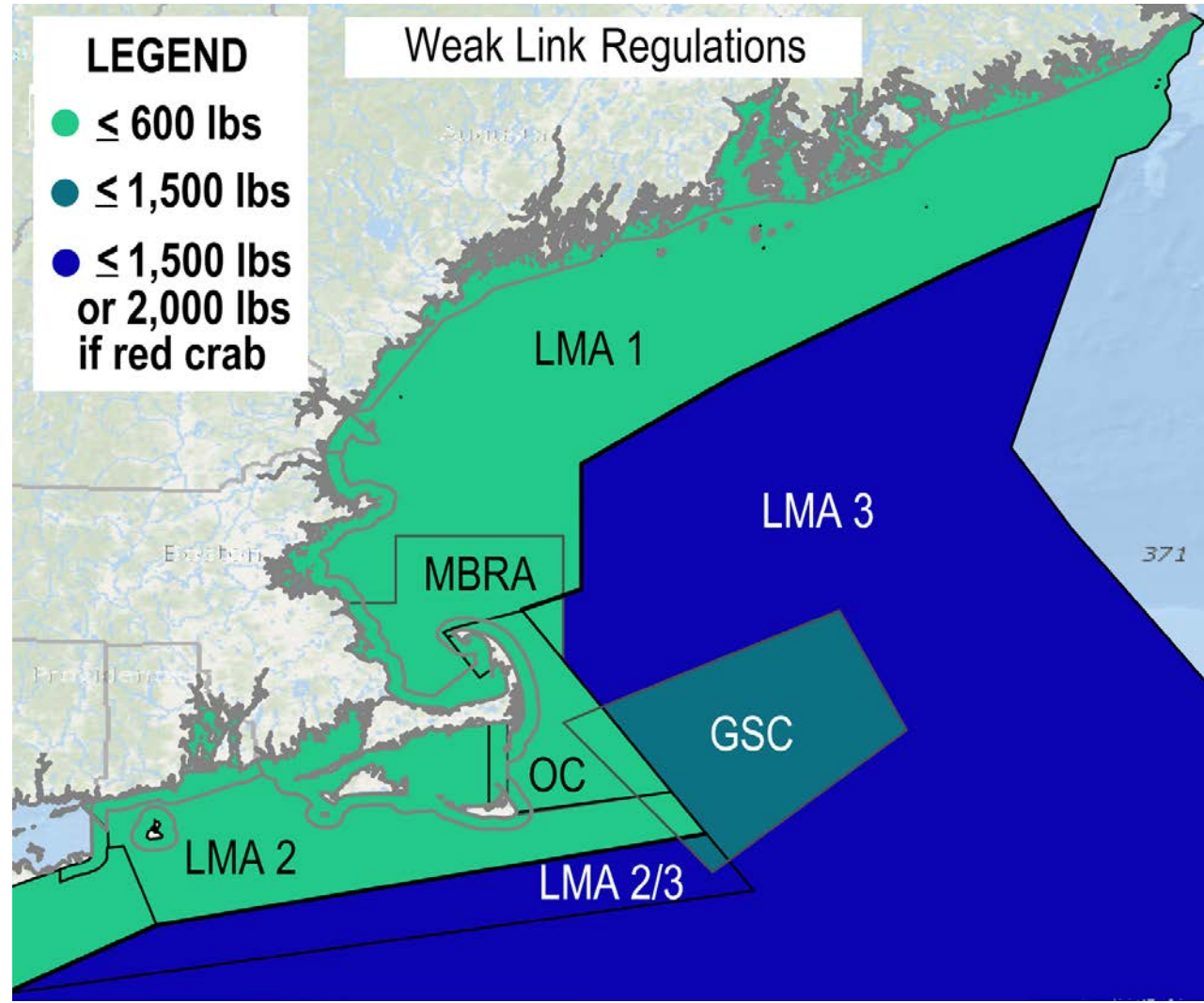
Photo by Jim Hain, Right Whale News

Group	Number of Members
Trap/Pot Fishery	18
Gillnet Fishery	5
Conservation/ Environmental	6
Academic/ Scientific	9
State Managers	14
Federal Managers	5
Fishery Management Organizations	4
Total	61

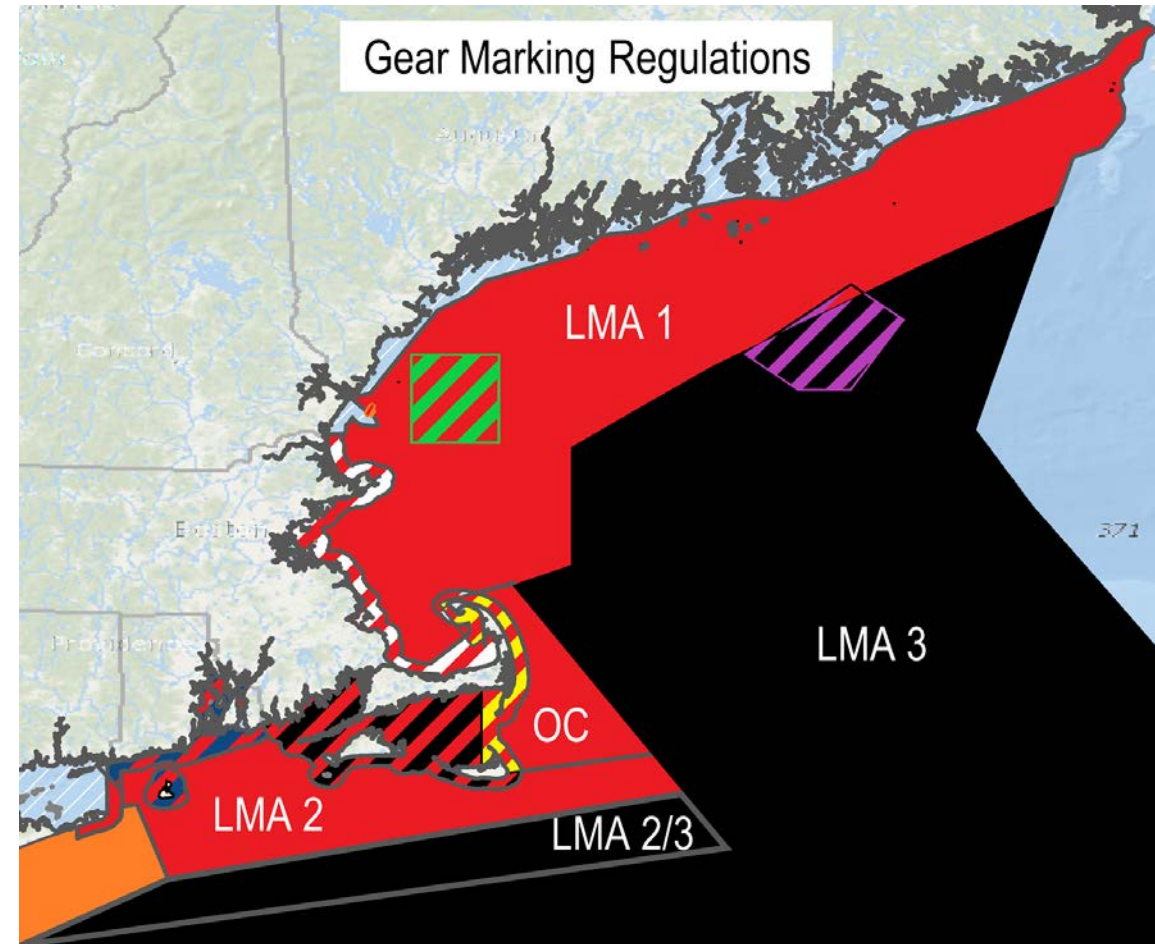
# Atlantic Large Whale Take Reduction Plan



# Current Plan – Weak Links



# Current Plan – Gear Marking

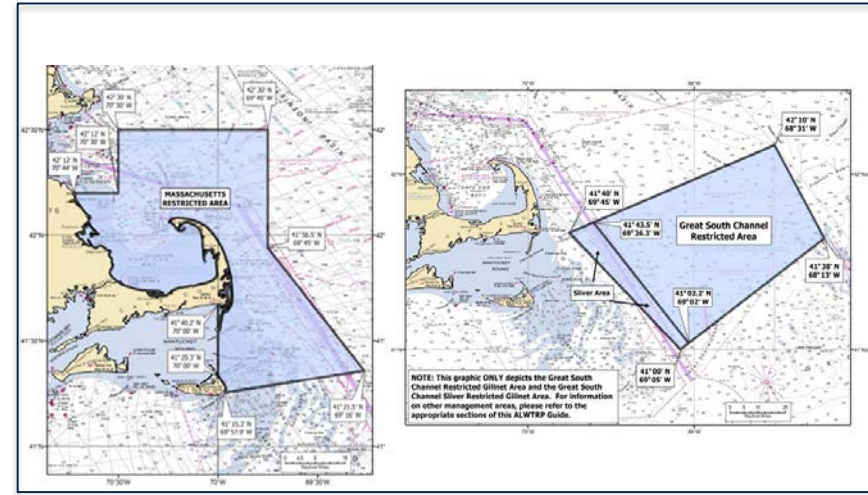


And other measures; see [webpage](#) for complete Plan details

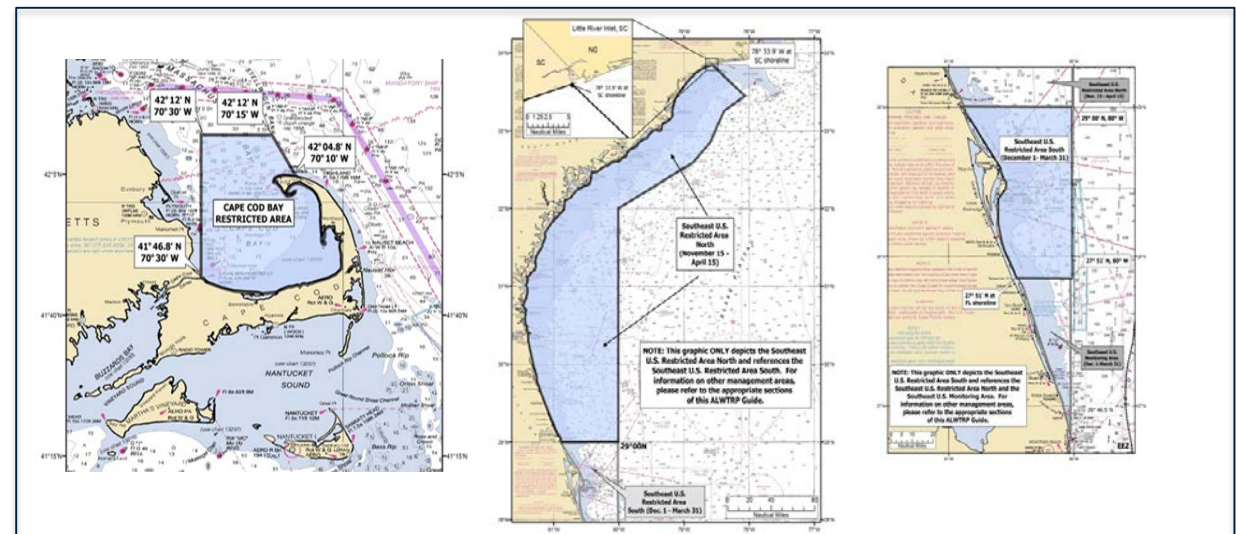
# Current Plan – Closures

## Area closures:

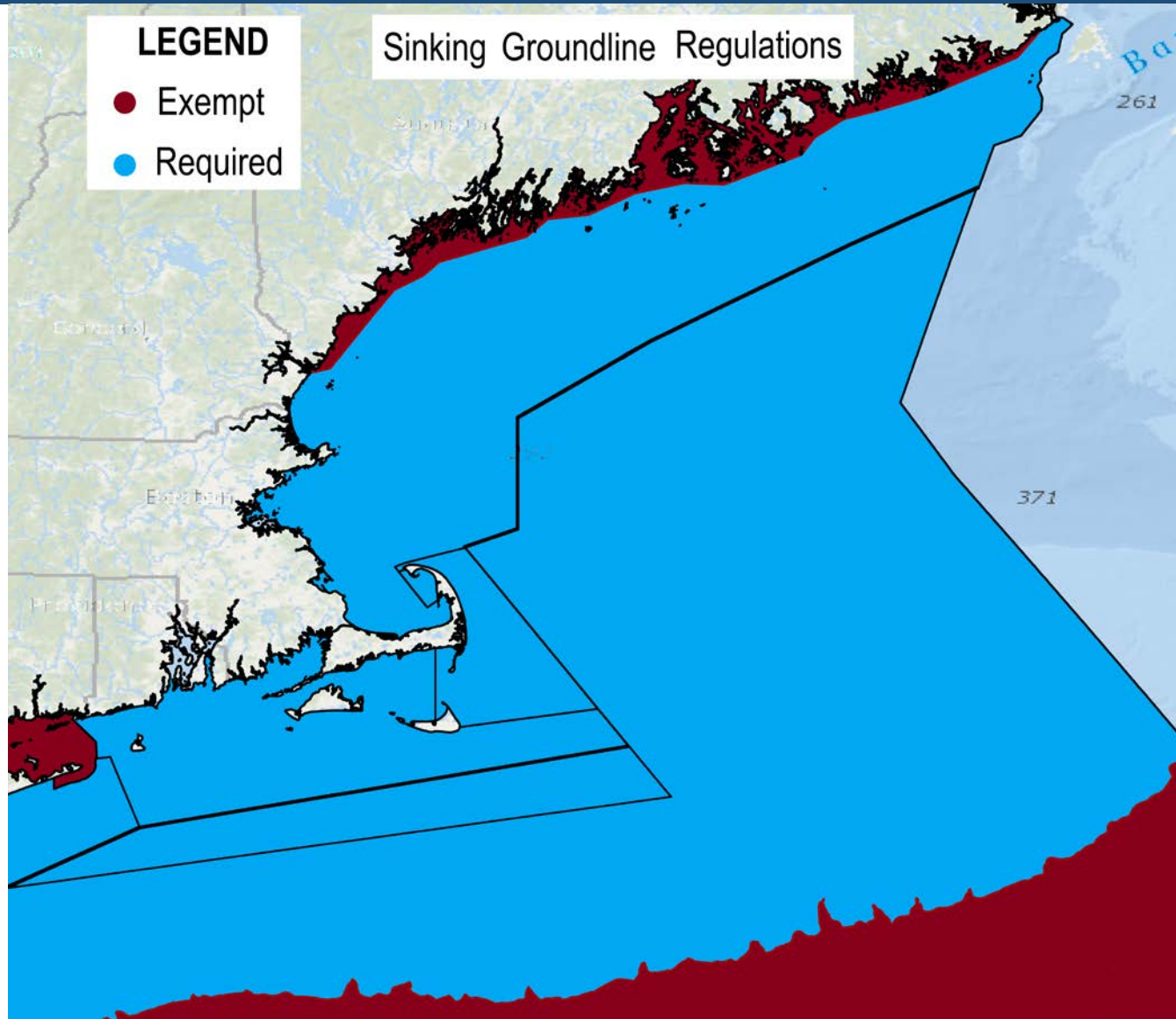
- Trap pot closures: two areas, over 6,300 mi<sup>2</sup>. seasonally closed to trap/pot fishing for three months each



- Gillnet closures: over 28,000 mi<sup>2</sup> seasonally closed to gillnetting for 3 to 6 month periods

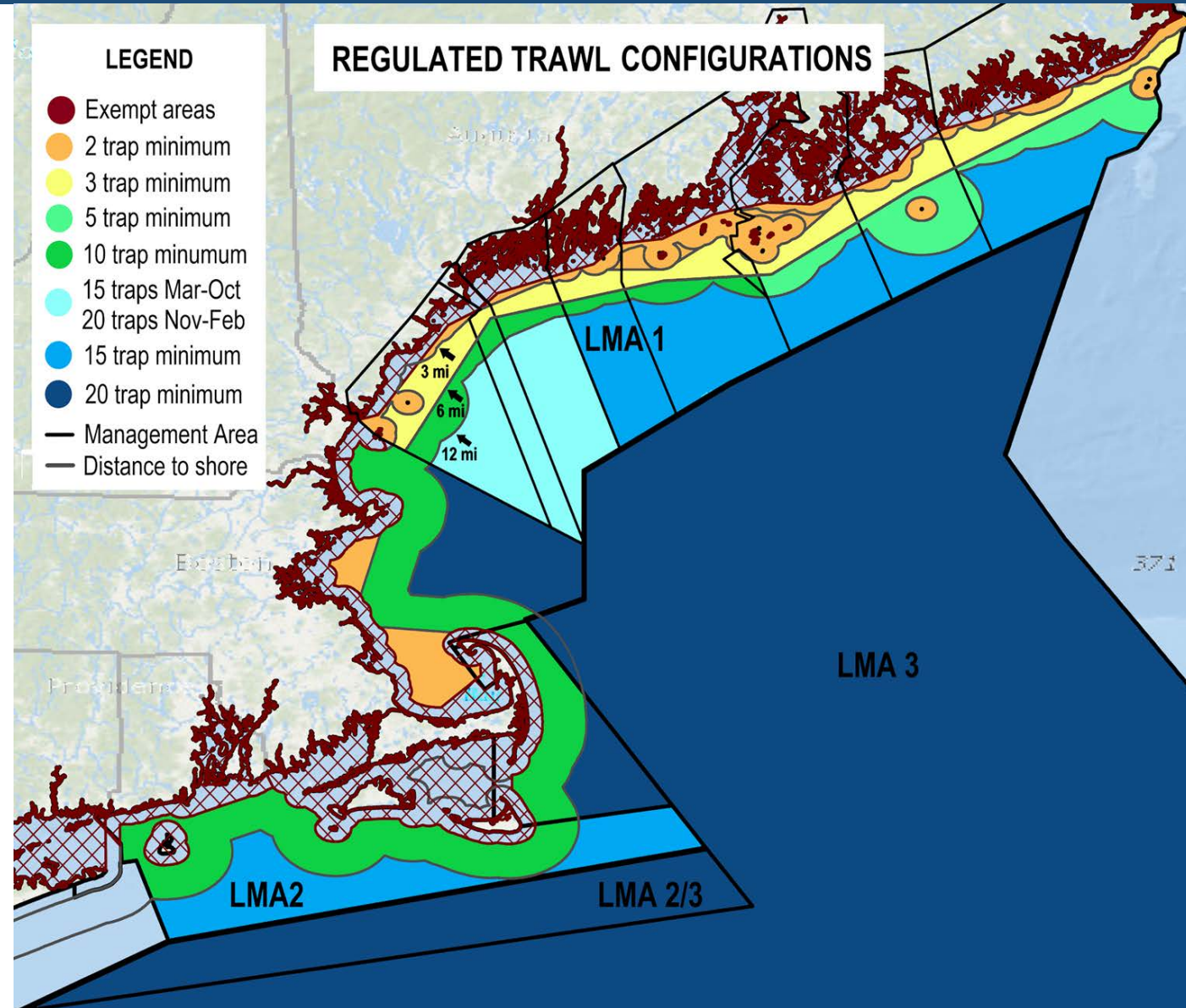


# Current Plan – Sinking Groundlines



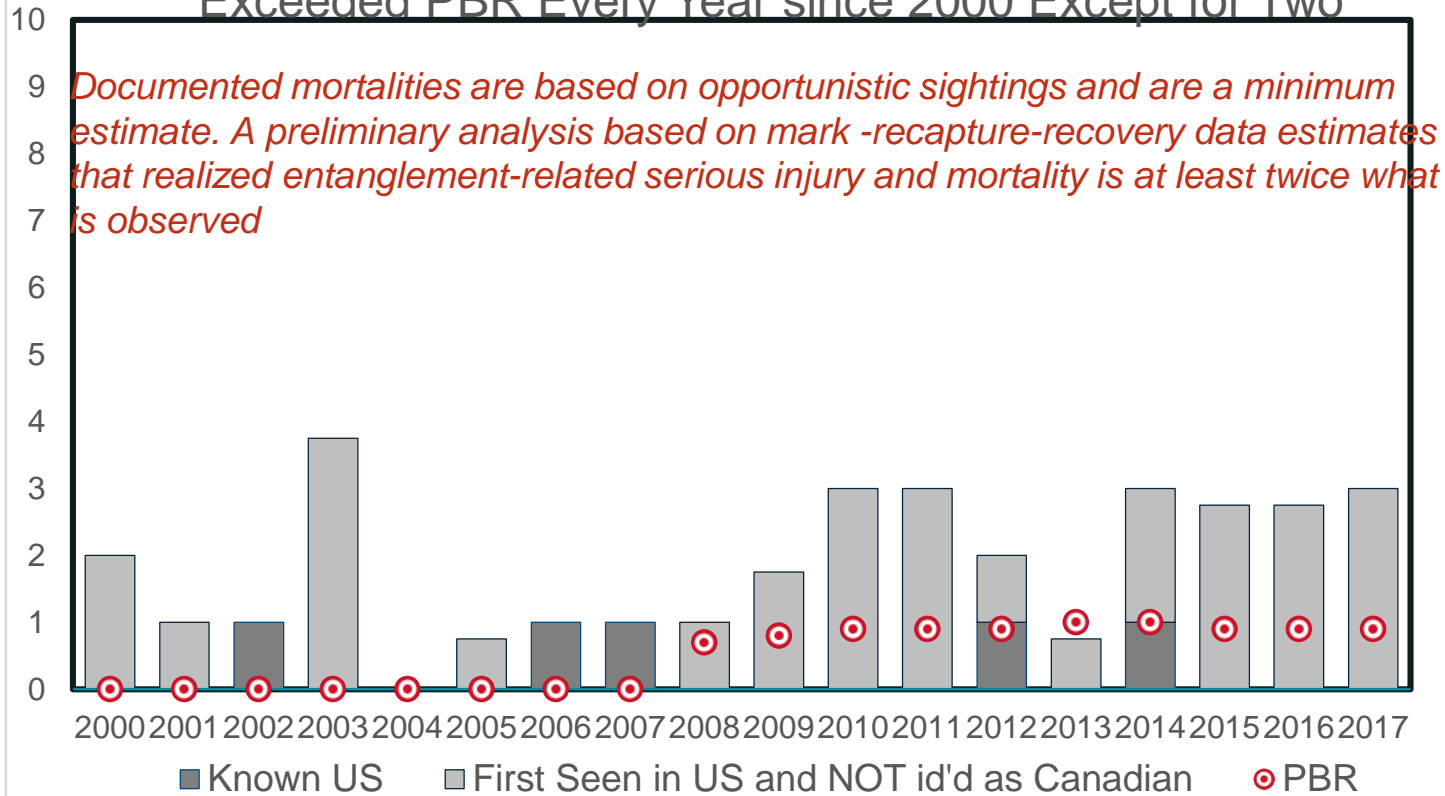


# Current Plan – Trawling Up



# RIGHT WHALE MORTALITIES IN US COMMERCIAL FISHERIES STILL EXCEED PBR

Serious Injury and Mortality from Documented Entanglements of Right Whales first seen in US Waters and NOT known to be Canadian gear has Exceeded PBR Every Year since 2000 Except for Two



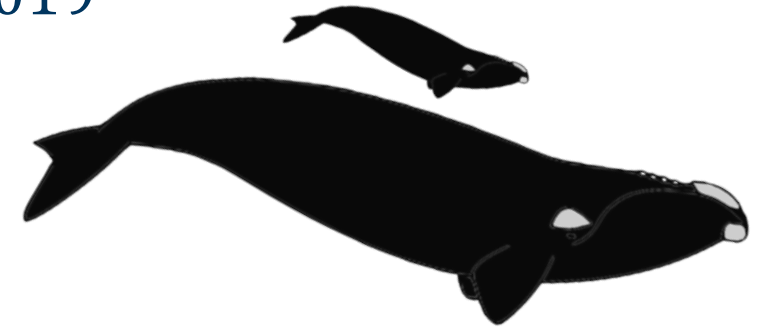
Estimate of serious injuries and mortalities that occur unobserved: 40%

(From [2018 Right Whale Stock Assessment Report](#) extending the methods from Pace et al. (2017))

# APRIL 2019 ALWTRT MEETING

Meeting goal: Identify and recommend modifications to the ALWTRP to further reduce impacts of U.S. fixed gear fisheries on large whales and reduce mortality and serious injury to below PBR (0.9/year) for right whales

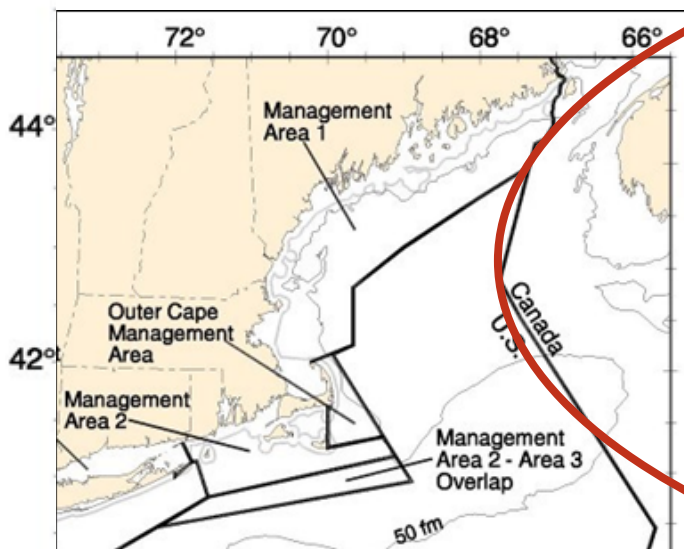
Objective: Risk Reduction Focus: Develop consensus recommendations on a suite of measures that will achieve a 60 to 80% reduction in mortalities and serious injuries of right whales in U.S. fisheries to support NMFS rulemaking that will be initiated in May 2019



Relative Risk Reduction Decision Support Tool:

$RISK = \text{Whale Density} * \text{Gear Density} * \text{Relative risk of gear configuration}$

# NEAR- CONSENSUS AGREEMENT

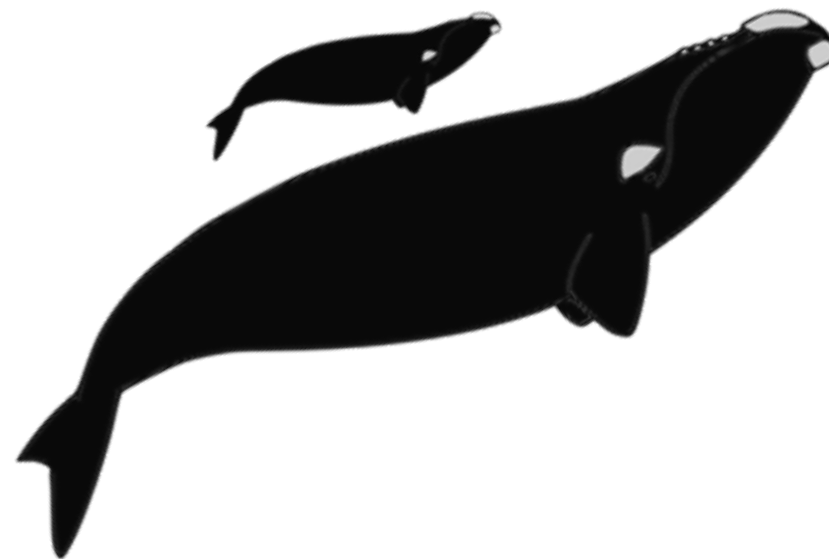


Lobster management areas (LMAs) created for fishery management purposes

State/Jurisdiction	Vertical Line Reduction	Gear Modification	Est. % Risk Reduction
Maine permitted vessels through LMA1	50% vertical line reduction through LMA1 (50% risk reduction)	LMA 1 - Weak rope outside of 3 miles on $\frac{3}{4}$ length of buoy line (toppers) (11.6% risk reduction)	<b>61.6%</b>
NH LMA1	30% vertical line reduction (30% risk reduction)	1700lb breaking strength or sleeves (28.5 % risk reduction)	<b>58.5%</b>
Massachusetts LMA1 and Outer Cape	Mass Bay Restricted Area Closure (24% risk reduction)	Sleeves or 1700lb breaking strength or equivalent (11% risk reduction)	<b>60%</b>
	30% vertical line reduction, not including MBRA fishermen (25% risk reduction)		
LMA 2 - Massachusetts and Rhode Island	18% (2018 - 2020) vertical line reduction (18% risk reduction)	1700 lb or equivalent (42% risk reduction)	<b>60%</b>
LMA 2 / 3 Overlap - Massachusetts, Rhode Island	Trawling up to 30 traps (from 20) (30% risk reduction for that area)		
LMA 3	Accelerate planned line reduction 18% by 2020	Rapid research on alternatives to introduce weak rope or weak link elements in to offshore line	<b>18% + TBD Commitment to 60%</b>

# APRIL 2019 ALWTRT RECOMMENDATION: Considerations

- “Dwight Carver safety exemption” for skiffs and students.
- Revisit need for weak links in trap/pot gear
- Decision Support Tool Improvements
- Accommodate regionalization, gear innovations
- Take Reduction Plan monitoring, to include:
  - Whale surveys - numbers and distribution
  - Lines – numbers and trends
  - Monitor socioeconomic impacts post implementation



# NEED INPUT ON ELEMENTS OF APRIL 2019 ALWTRT RECOMMENDATIONS

1. Line Reduction Measures
2. Weak Rope
3. Gear Marking
4. Closed Areas



# 1. Line reduction measures

Endline reduction	Potential considerations	Potential benefits
Assess existing effort reduction plans	<ol style="list-style-type: none"><li>1. No new costs</li></ol>	<ol style="list-style-type: none"><li>1. Application toward risk reduction goal</li></ol>
Trawling up	<ol style="list-style-type: none"><li>1. Equipment cost</li><li>2. Labor cost</li><li>3. Catch impacts</li><li>4. Gear loss</li><li>5. Additional crew</li><li>6. Vessel modification</li><li>7. Safety</li></ol>	<ol style="list-style-type: none"><li>1. Savings on endlines and buoys</li><li>2. Savings on fuel</li></ol>
Endline allocation	<ol style="list-style-type: none"><li>1. Similar to above list</li></ol>	<ol style="list-style-type: none"><li>1. Fishermen choose reduction method</li></ol>
Trap reduction	<ol style="list-style-type: none"><li>1. Catch impact</li></ol>	<ol style="list-style-type: none"><li>1. Savings on endlines and buoys</li><li>2. Savings on traps</li><li>3. Savings on other lines</li></ol>



# Line reduction considerations: LMA 2 Ongoing Effort Reduction

## TRT Line Reduction Goal: 18% by 2021 under ongoing effort reduction measures

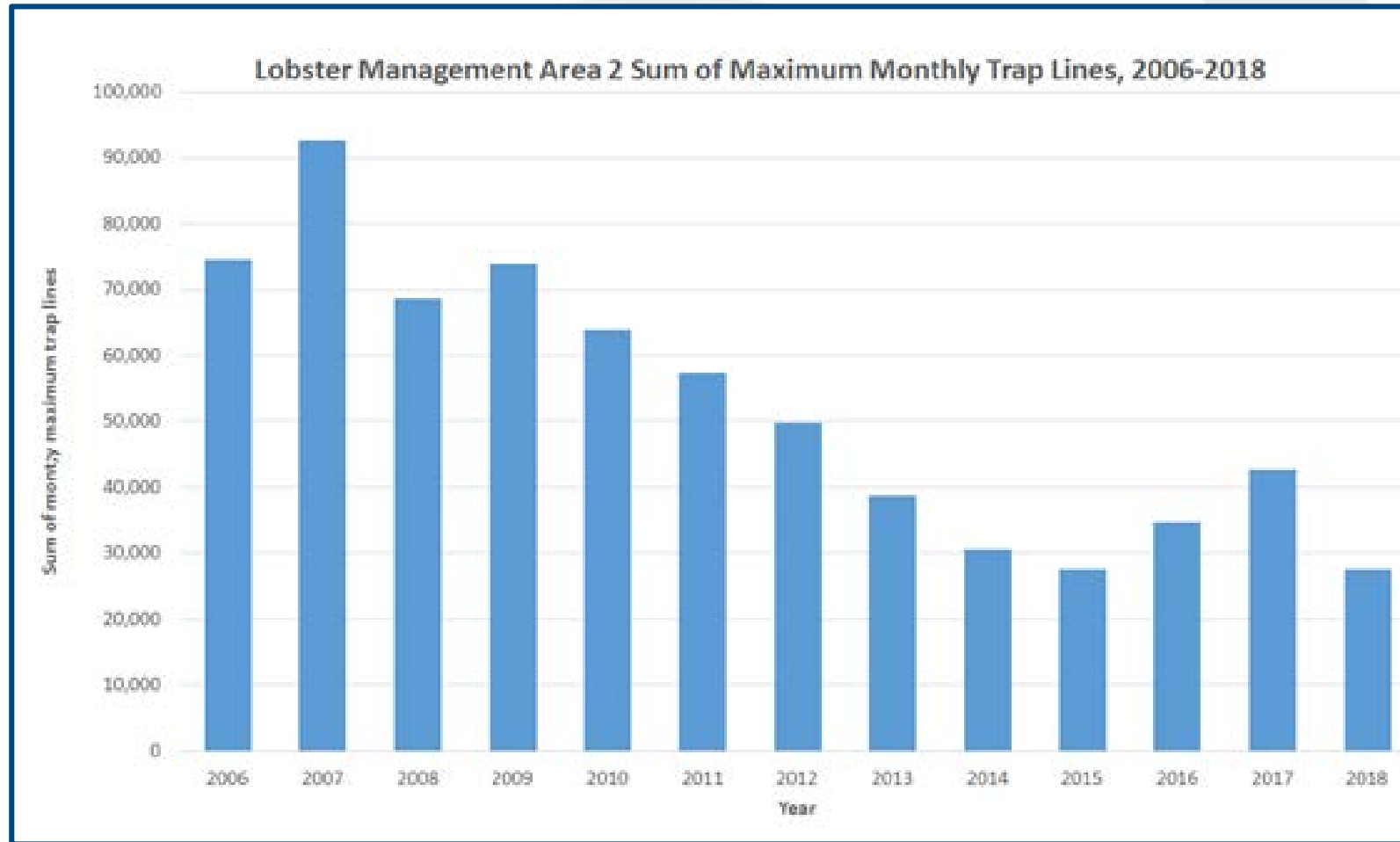
### LMA 2 Trap Allocation Reduction Schedule

Start of Fishing Year	% reduction
2016	25%
2017	5%
2018	5%
2019	5%
2020	5%
2021	5%

Line Reduction Achieved Since 2017	
Rhode Island Estimated % Endline Reduction	Massachusetts Calculated % Endline Reduction
- 8.10%	- 10.44%



# Line reduction considerations: Similar trends seen in preliminary review of LMA2 VTR data

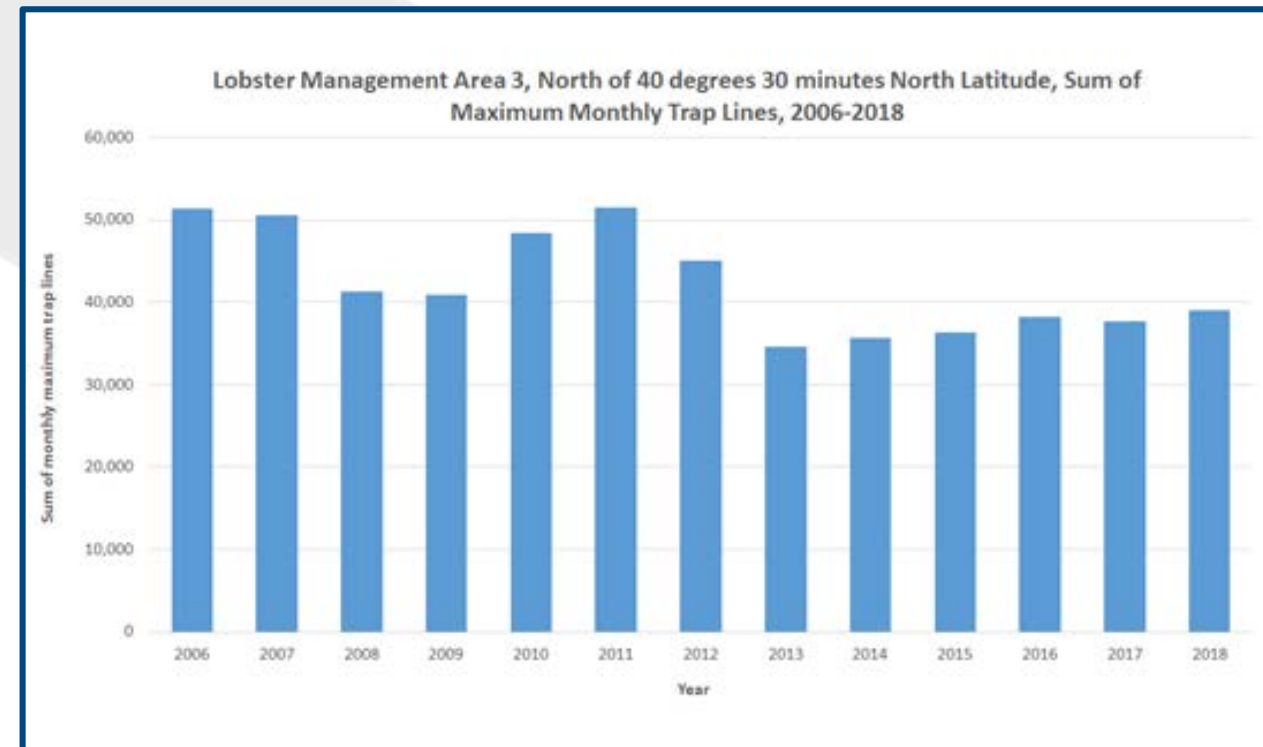


Currently, not all permitted lobster fishermen are required to submit Vessel Trip Reports (VTR), so this is not a complete census, but is considered evidence of general trends of line numbers as derived from VTR reports received.

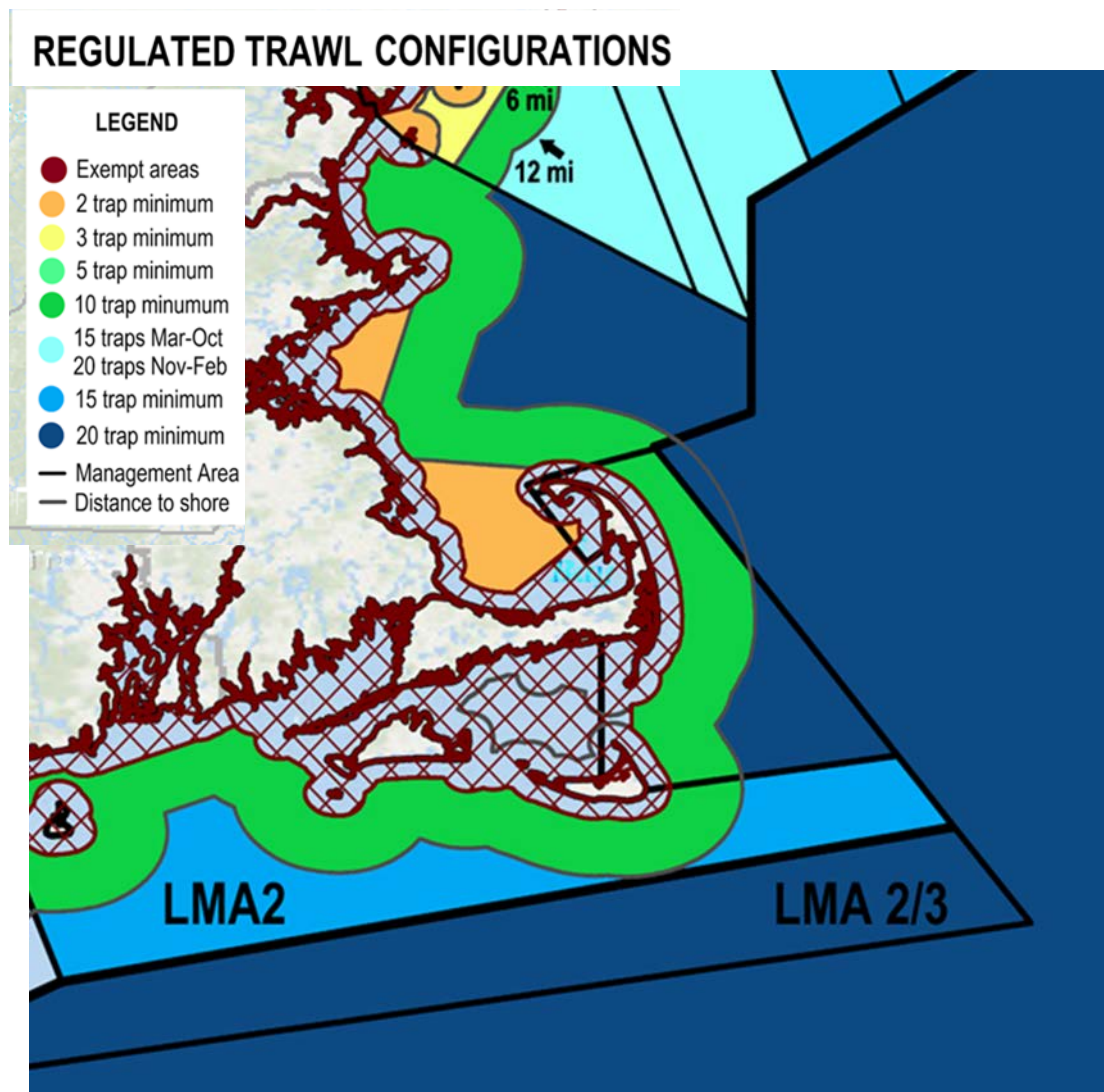


# Ongoing effort reduction: LMA 3 Trends

Preliminary review of VTR data does not show a declining trend in endlines in LMA 2/3 overlap or LMA 3



# 1. Line reduction measures: Outer Cape and LMA1



Trawling Up Examples:  
Estimate for mandating doubles  
in Outer Cape for vessels >29ft  
= 34% risk reduction for OCC

Estimated for 24 traps/trawl  
outside of 12 nm in LMA1 for  
MA permitted vessels: 0.2% risk  
reduction for MA/LMA1 vessels



## 2. Weak rope and weaknesses in buoy line: Why?

A review of 132 rope segments recovered from 70 whale entanglements showed few whales, and no right whales carrying gear with breaking strength of less than 1700 lbs. The authors believe that right whales are capable of breaking free of rope with breaking strengths of 1700 lbs and less.  
[\(Knowlton et al., 2015\)](#)

This is consistent with an estimate of the maximum thrust and force of that right whales are capable of based on their anatomy. [\(Arthur et al., 2015\)](#)



# Weak Rope examples



South Shore Sleeve, other weak inserts include spliced in 5/16<sup>th</sup> rope and other devices that break at 1700 lbs.



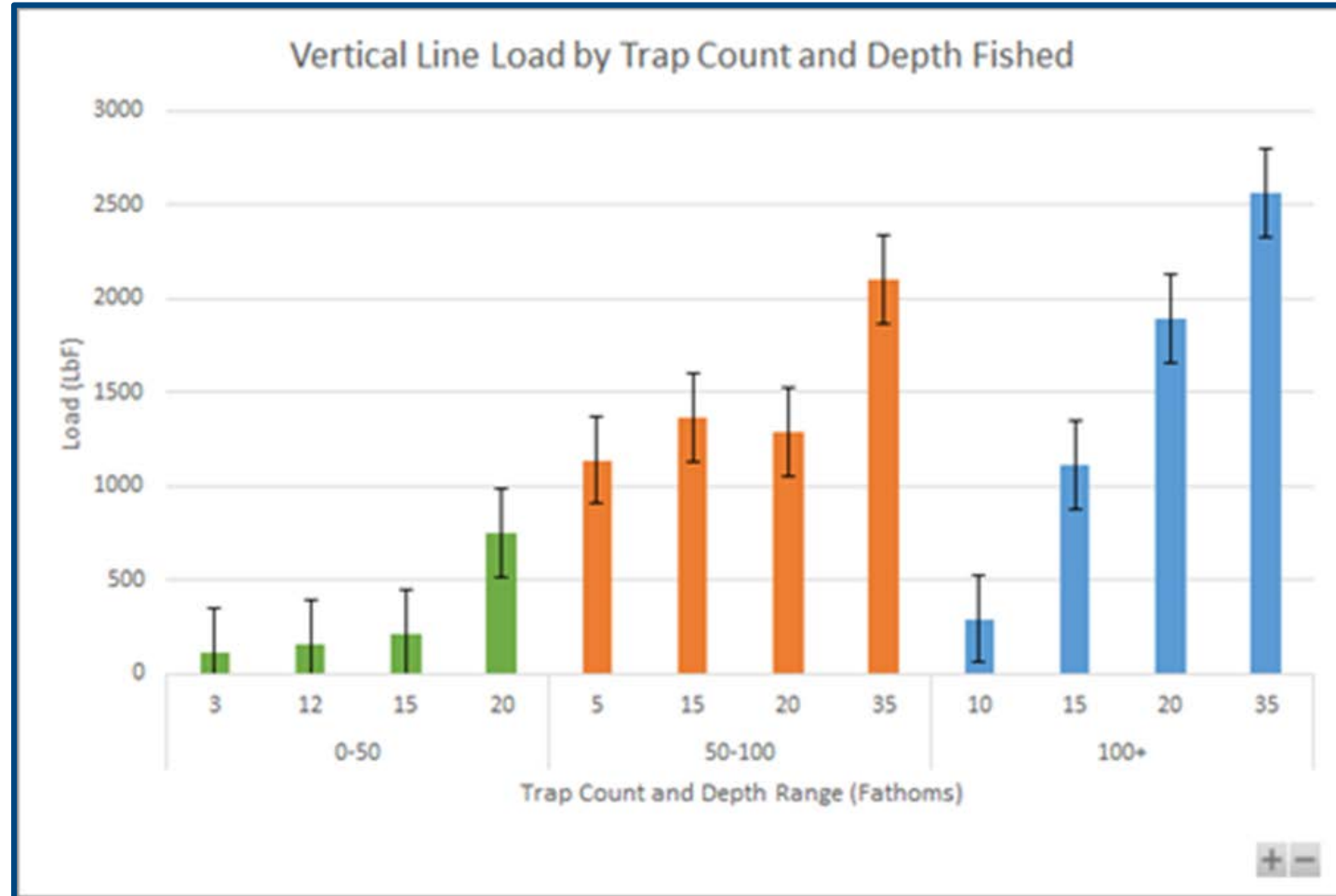
Examples of “weak” rope obtained for testing by the Massachusetts Lobstermen’s Association: Ketchum rope and Shippagan rope

# Measurements of force of hauled gear

353 hauls using load cells to measure force used:

- Smaller trawls in < 50 fathoms required < 1700 lbs
- Approaching 1700 lbs for trawls of 15-20 pots/trawl in 50-100 fathoms,
- Over 1700 for:
  - > 25 pots/trawl in 50-100 fath
  - > 20 pots/trawl in > 100 fath

> 50 fath - weak toppers



Preliminary data from Maine Dept. of Marine Resources assessment of vertical line in Gulf of Maine region under NOAA Fisheries Grant NA18 NMF4720084

# Weak rope measures: Options and Considerations

Weak Rope	Potential considerations	Potential benefits
Weak Rope	<ol style="list-style-type: none"> <li>1. Gear replacement costs</li> <li>2. Gear modification (time) costs</li> <li>3. Gear loss costs</li> <li>4. More frequent replacement</li> <li>5. Increasing operating risks</li> <li>6. Safety</li> </ol>	<ol style="list-style-type: none"> <li>1. Avoids area closure</li> <li>2. Savings when replacing new ropes</li> </ol>
Intermittent weak rope: Sleeves, spliced in weak rope, etc, every 6 - 10 fathoms	Similar to above	<ol style="list-style-type: none"> <li>1. Avoid area closure</li> <li>2. Costs less than full replacement</li> <li>3. Menu for flexibility</li> </ol>
Timed Tension Line Cutter	<ol style="list-style-type: none"> <li>1. Device costs (TTLC not yet available)</li> <li>2. Gear loss due to device failure or gear conflict</li> <li>3. Can result in extensive lengths of line on whales</li> </ol>	<ol style="list-style-type: none"> <li>1. Avoid area closure</li> <li>2. Fish with original gear sets</li> </ol>

Preliminary Risk Reduction Estimate for MA vessels in LMA1:

1700lb every 10 fathoms everywhere < 50 fath = 37%

1700lb toppers everywhere >50 fath = 1.55%



# 3. Gear marking measures: Options and Concerns

## Options:

- TRT recommendation: everywhere year round, no exemptions (not just New England)
- Supported: 3 foot solid mark within two fathoms of buoy; addition to current 1 foot requirements for mark in top, middle and bottom sections
- Modify to delineate country, support for state colors, consider adding additional area marks
- Allow sleeves/weak inserts as gear mark

Potential costs	Potential benefits
1. Equipment 2. Labor	Increase the probability of identification of recovered lines from whales to reduce uncertainty of location of entanglement





## 4. Area closure measures: Not in Team Recommendation

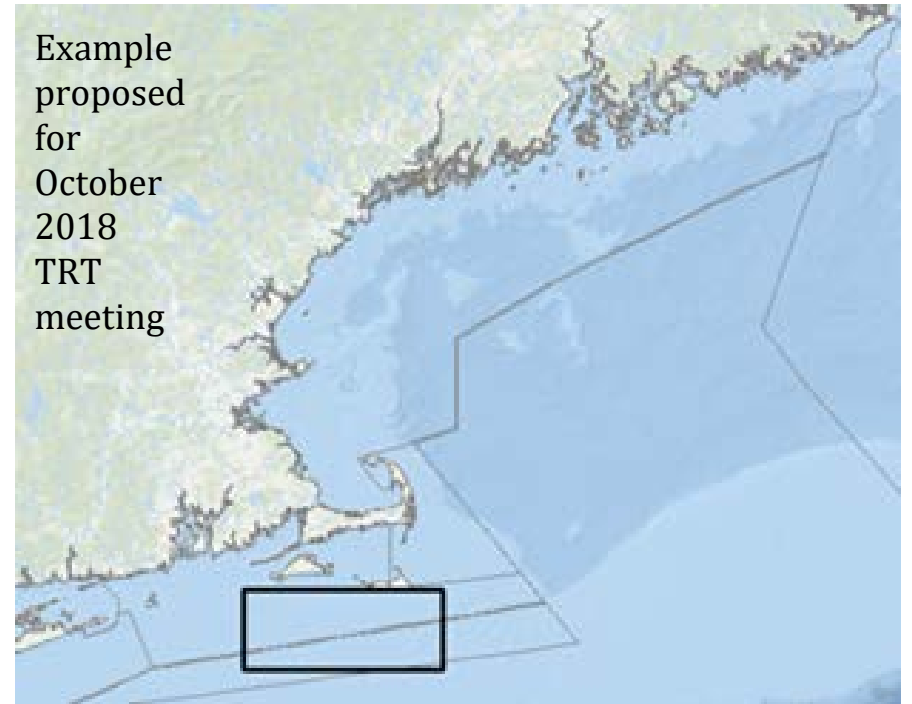
	Potential considerations	Potential benefits
Gear in (move to other areas)	<ol style="list-style-type: none"><li>1. Fuel costs</li><li>2. Less catch</li></ol>	<ol style="list-style-type: none"><li>1. Exploring new fishing ground</li><li>2. Maintain income stream to support year round costs</li></ol>
Gear out (move to dock)	<ol style="list-style-type: none"><li>1. No catch</li><li>2. Extra trips to move gears</li><li>3. Storage costs</li><li>4. Cash flow/payments costs</li></ol>	<ol style="list-style-type: none"><li>1. Reduce operating costs: Bait, fuel, etc.</li><li>2. Labor savings</li><li>3. Better catch in the future (more and higher quality)</li></ol>
Ropeless as alternative to closure	<ol style="list-style-type: none"><li>1. Device costs</li><li>2. Gear loss costs due to device failure or gear conflicts</li><li>3. Costs to mobile fisheries and enforcement for detection</li><li>4. Safety</li></ol>	<ol style="list-style-type: none"><li>1. Alternative to area closure</li><li>2. Fish with original gear sets</li></ol>



# Example area closure measures:

Risk Reduction Estimates generated upon request at TRT meeting:

- Nantucket for Feb - May 15 (gear removed)  
~ 1% risk reduction
- Half year LMA1 closure Jan - May:  
~ 29.2% risk reduction,  
~ 16.1% reduction of lines



\*LESSON: To be effective, need to be large and for long periods of time

# Examples suites of measures that reach the target

## 1. TRT Framework:

Universal line reductions varying by management areas/jurisdictions  
+ extensive weak rope

## 2. Universal weak rope

+ line reduction under existing fishery management effort reduction plans (LMA  $\frac{2}{3}$  18% anticipated)  
+ large area closures 2-3 months

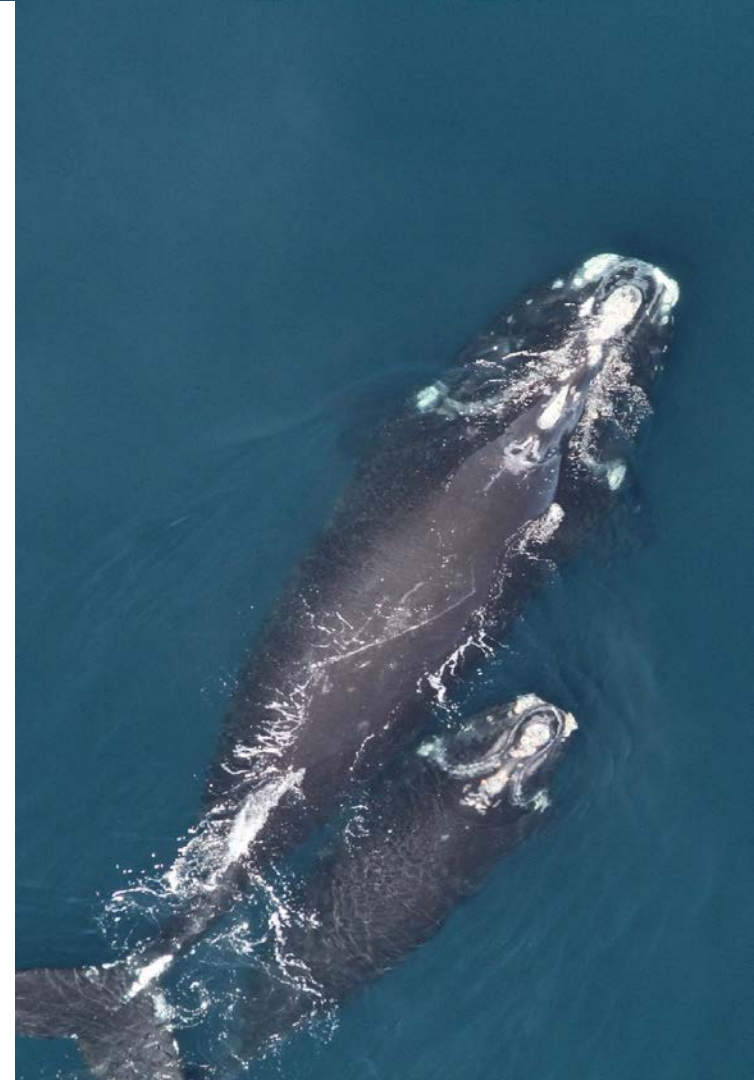
## 3. Universal weak rope

+ entire fishery closure Feb-May 14

The TRT alternative appears more reasonable

# NEXT STEPS

- Consider information from scoping meetings and share with states
- Draft Environmental Impact Statement (DEIS) to analyze risk reduction alternatives
- Request comments on DEIS late in 2019
- Parallel state rulemaking
- Draft proposed rule for Federal waters and to mirror state rules
- Proposed Rule will be published for comments



# 2019 SCOPING MEETING PROTOCOLS

**Help us define the alternatives and elements we will analyze and provide input on how these alternatives will affect your business**

- Active and focused participation requested
- Respectful interaction; please keep an open mind and listen to others
- Make good use of everyone's time:
  - Please limit comments to 3 minutes so other can participate and
  - Please restrict comments to the meeting goal (scope of alternatives and elements to be analyzed)
  - There is no need to repeat other comments verbatim, just indicate support
- Comments should be directed to NOAA Fisheries and Massachusetts Division of Marine Fisheries

# 2019 SCOPING MEETING PROTOCOLS



**Using the order on the sign in list, I will call you up to the microphone.**

**If you did not sign in but want to speak, we will try to give you that opportunity after running through our initial list**

## **Written comments are welcome:**

Under subject line (or write on outside of envelope):

“Comments on Atlantic Large Whale Take Reduction Plan Scoping.”

 By Email: [nmfs.gar.ALWTRT2019@noaa.gov](mailto:nmfs.gar.ALWTRT2019@noaa.gov)

 By Mail: Address to Michael Pentony, Regional Administrator, National Marine Fisheries Service, 55 Great Republic Drive, Gloucester, MA 01930-2276