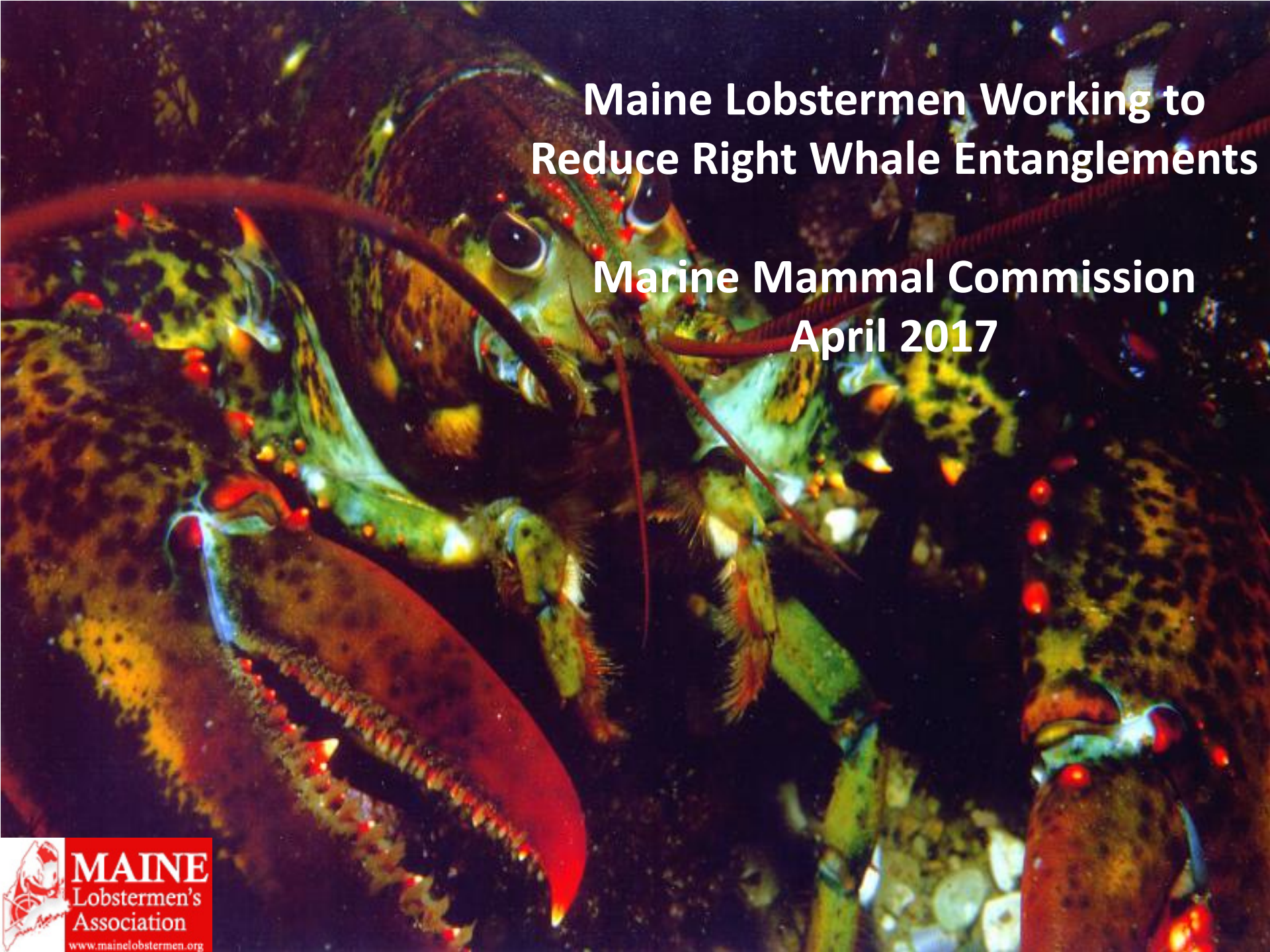
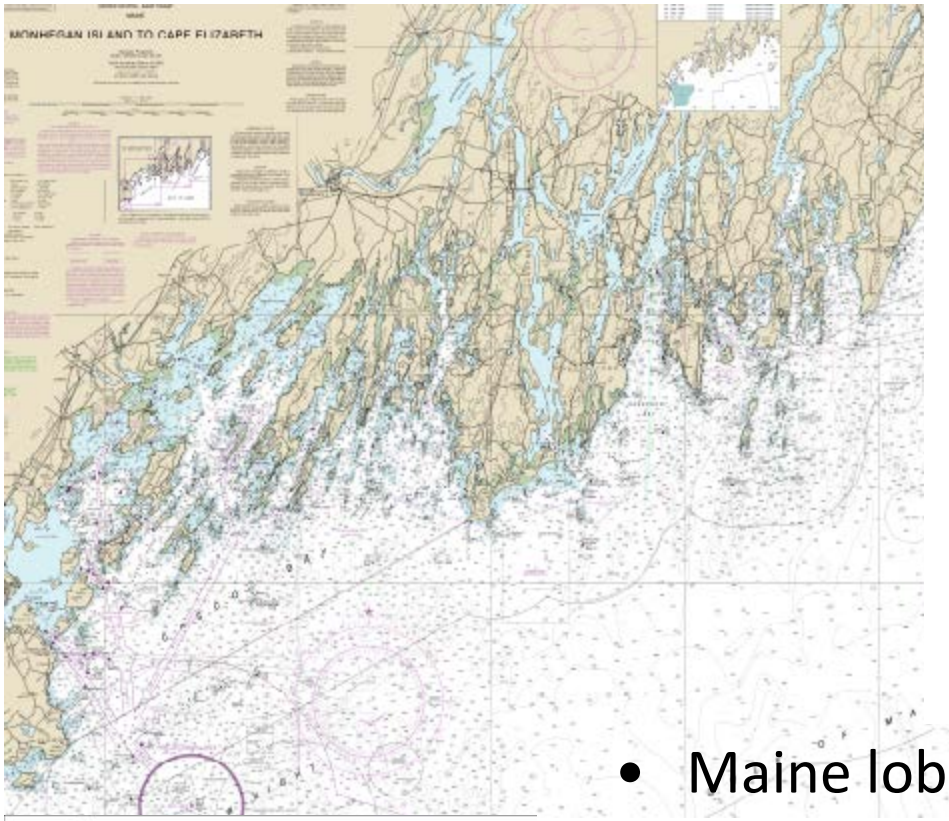


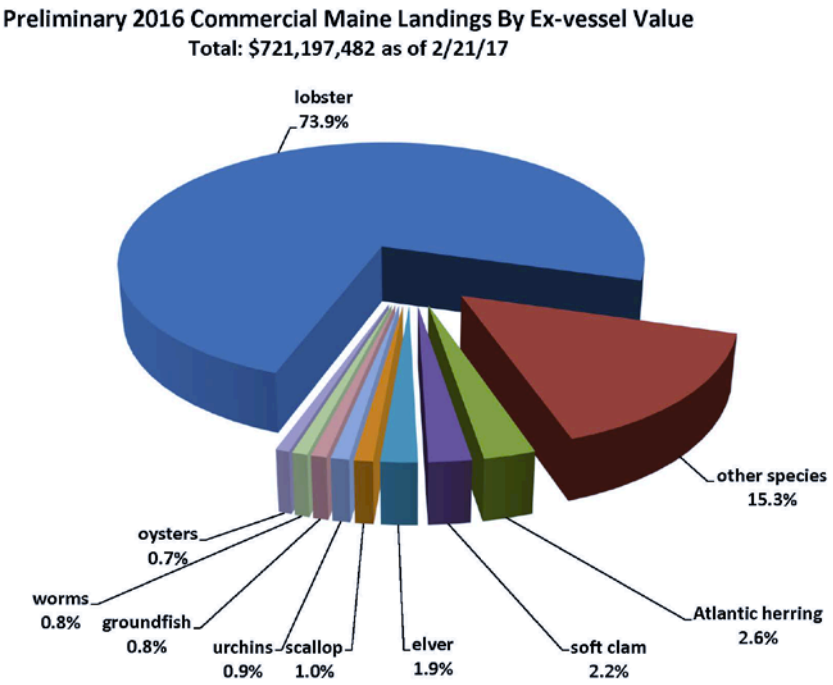
Maine Lobstermen Working to Reduce Right Whale Entanglements

Marine Mammal Commission
April 2017

MAINE Lobstermen's Association
www.mainelobstermen.org

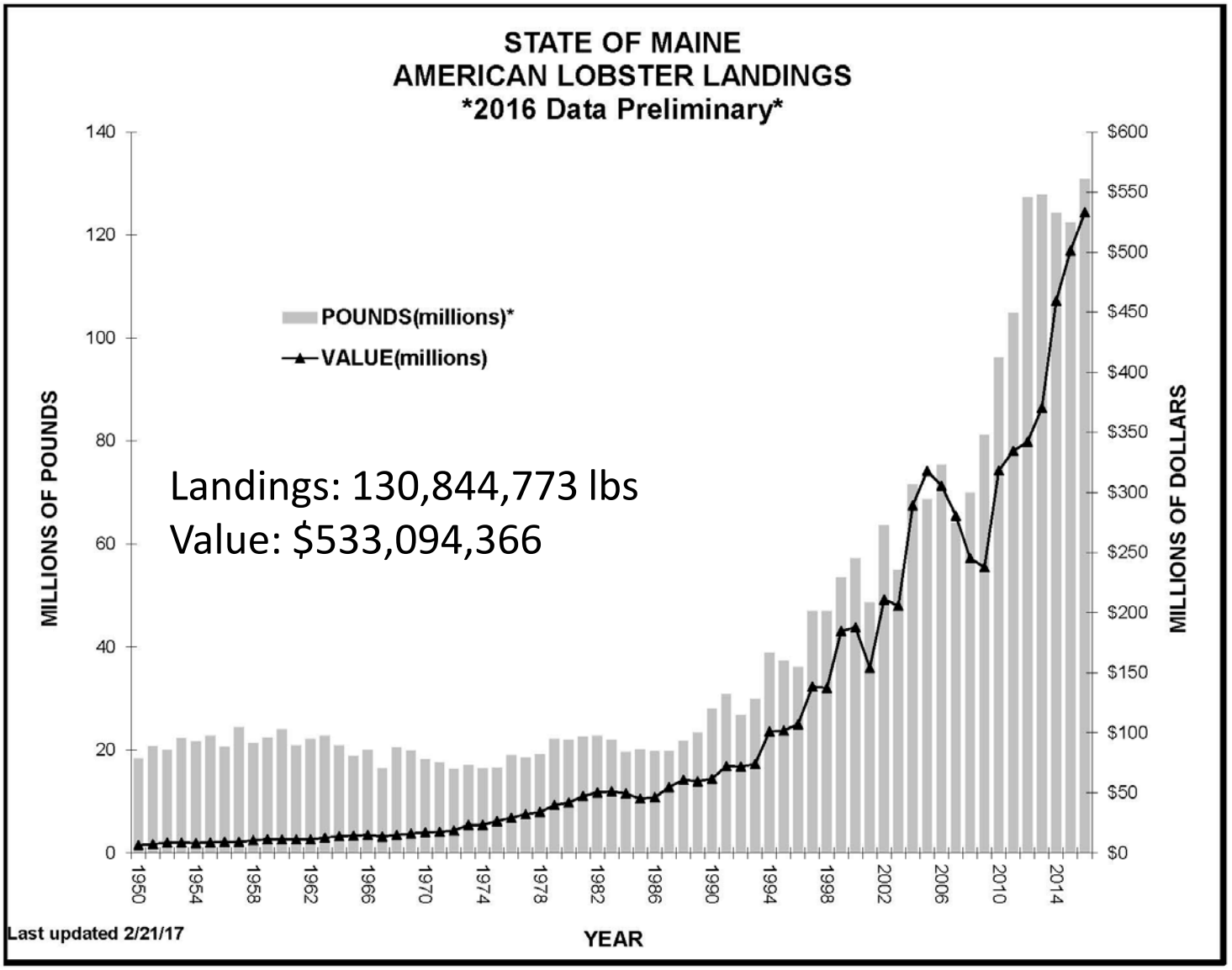
Maine Lobster Industry…. Billion + $ industry

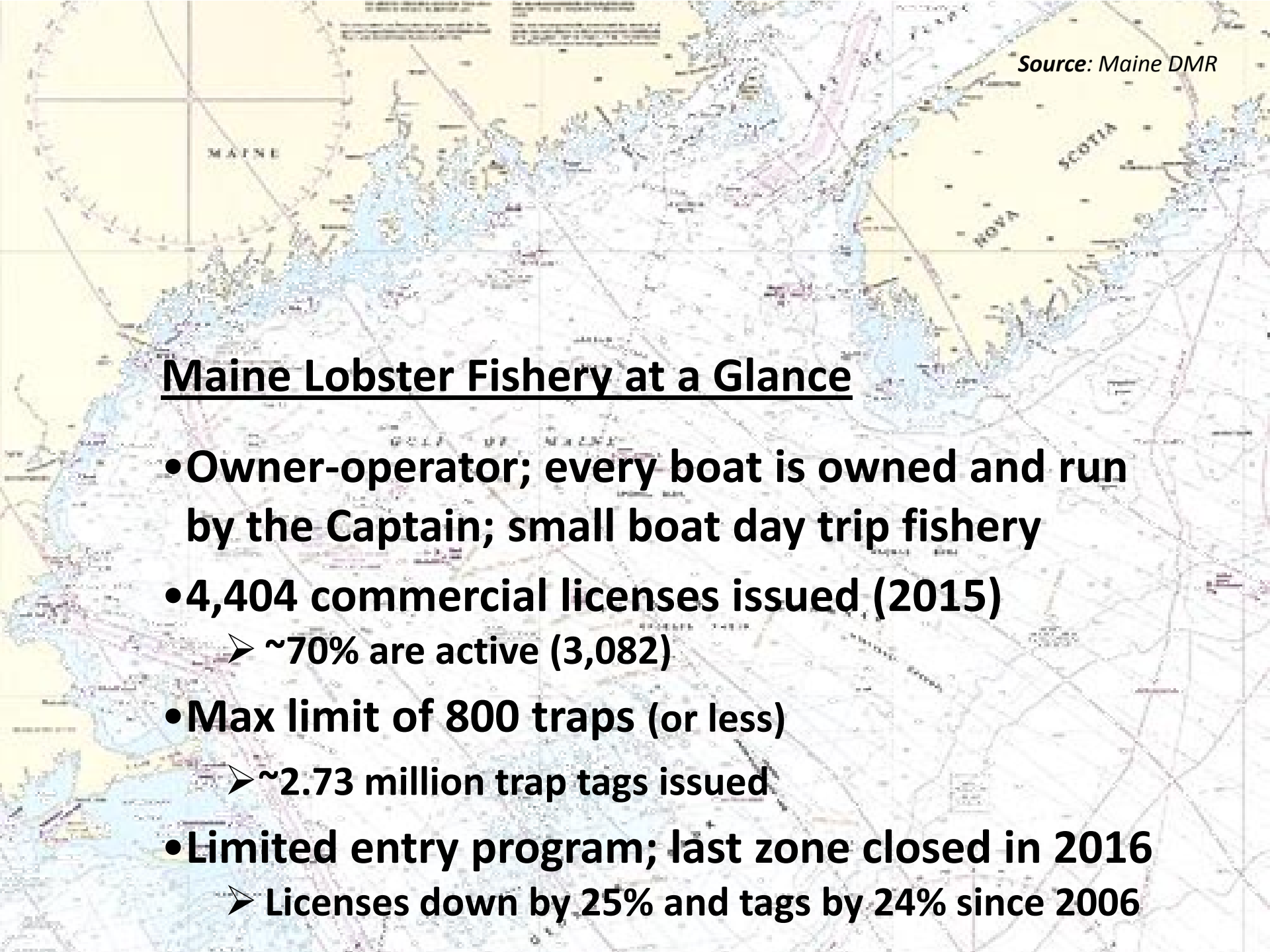




- Maine lobstermen live along 3,500+ mile coastline in small, rural communities
- Lobster represents ~75% value of commercial fishing
- Maine coast is dependent upon lobstering

Record lobster landings and value





***Source**: Maine DMR*

Maine Lobster Fishery at a Glance

- **Owner-operator; every boat is owned and run by the Captain; small boat day trip fishery**
- **4,404 commercial licenses issued (2015)**
  - **~70% are active (3,082)**
- **Max limit of 800 traps (or less)**
  - **~2.73 million trap tags issued**
- **Limited entry program; last zone closed in 2016**
  - **Licenses down by 25% and tags by 24% since 2006**

NOAA 3NM
Fisheries management areas
East Coast
Lobster zones

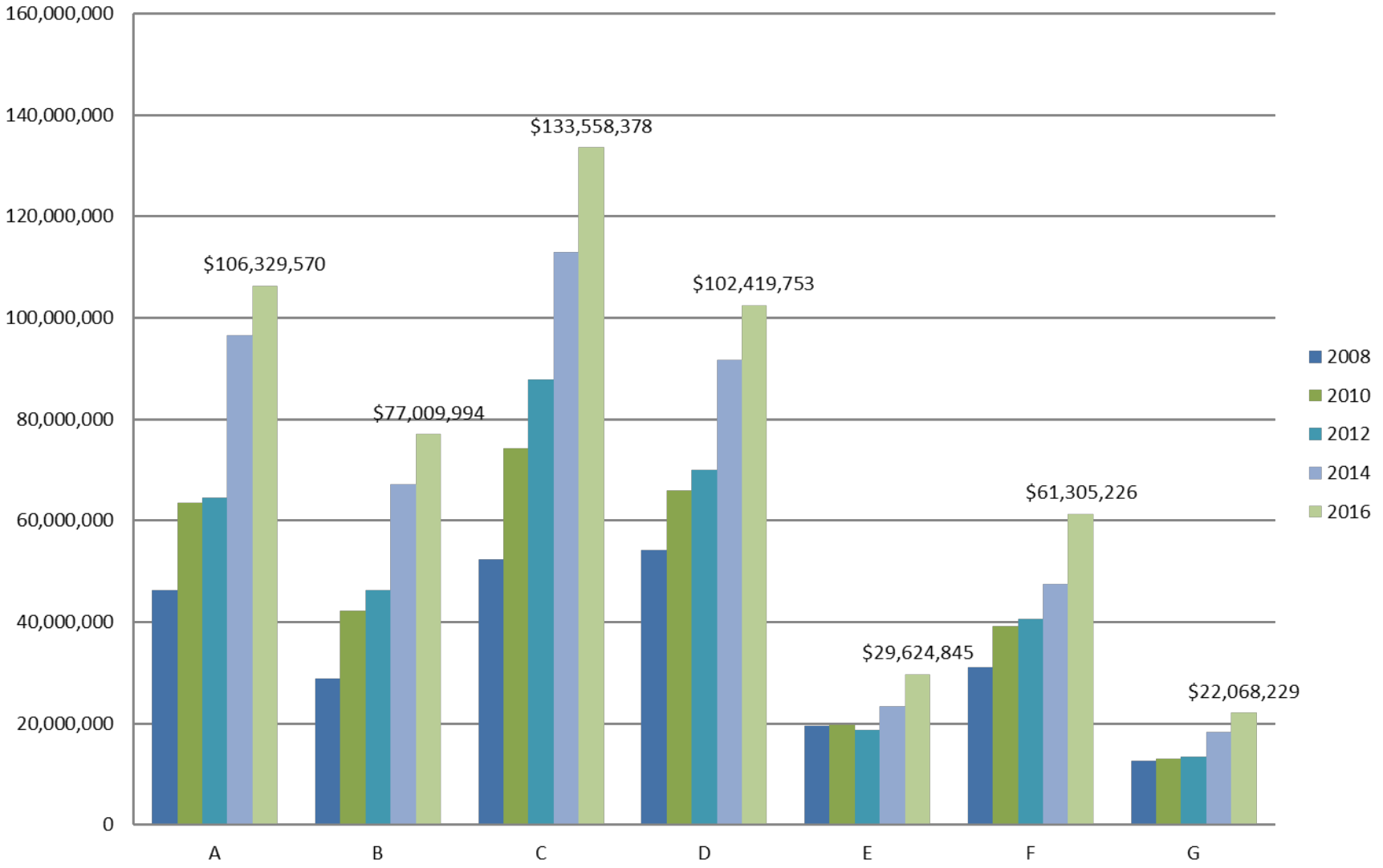
Only 20% hold permit to fish federal waters (~1,300)
No new federal permits issued

All ME lobstermen may fish in state waters (4,400 lobstermen)

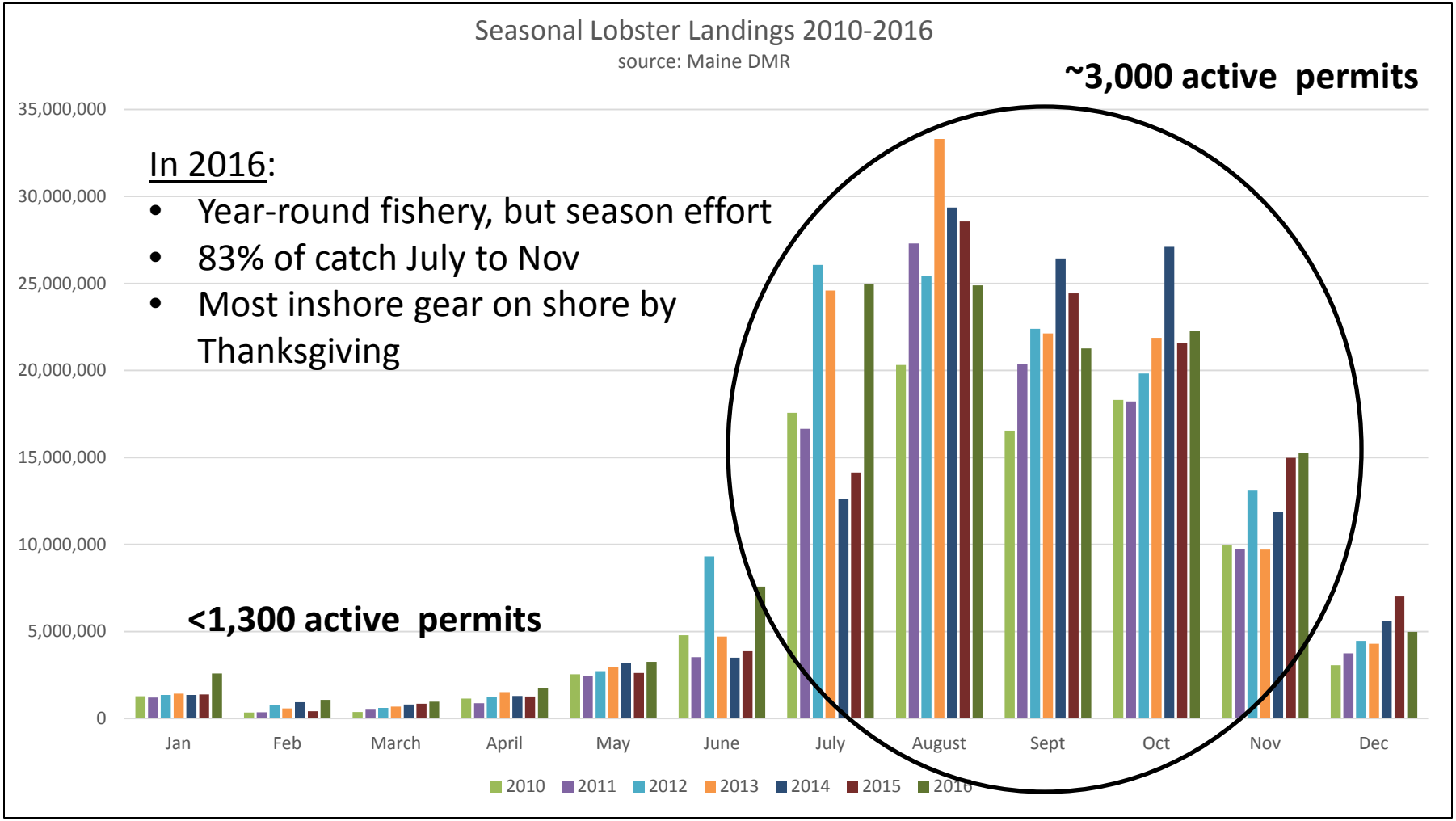
Fishery is spatially limited; only 49% gear outside home zone; covers state and federal waters

A
B
C
D
E
F
G

Value by Zone 2008 to 2016



Seasonal lobster landings



The Whale Plan

Lots of Unknowns

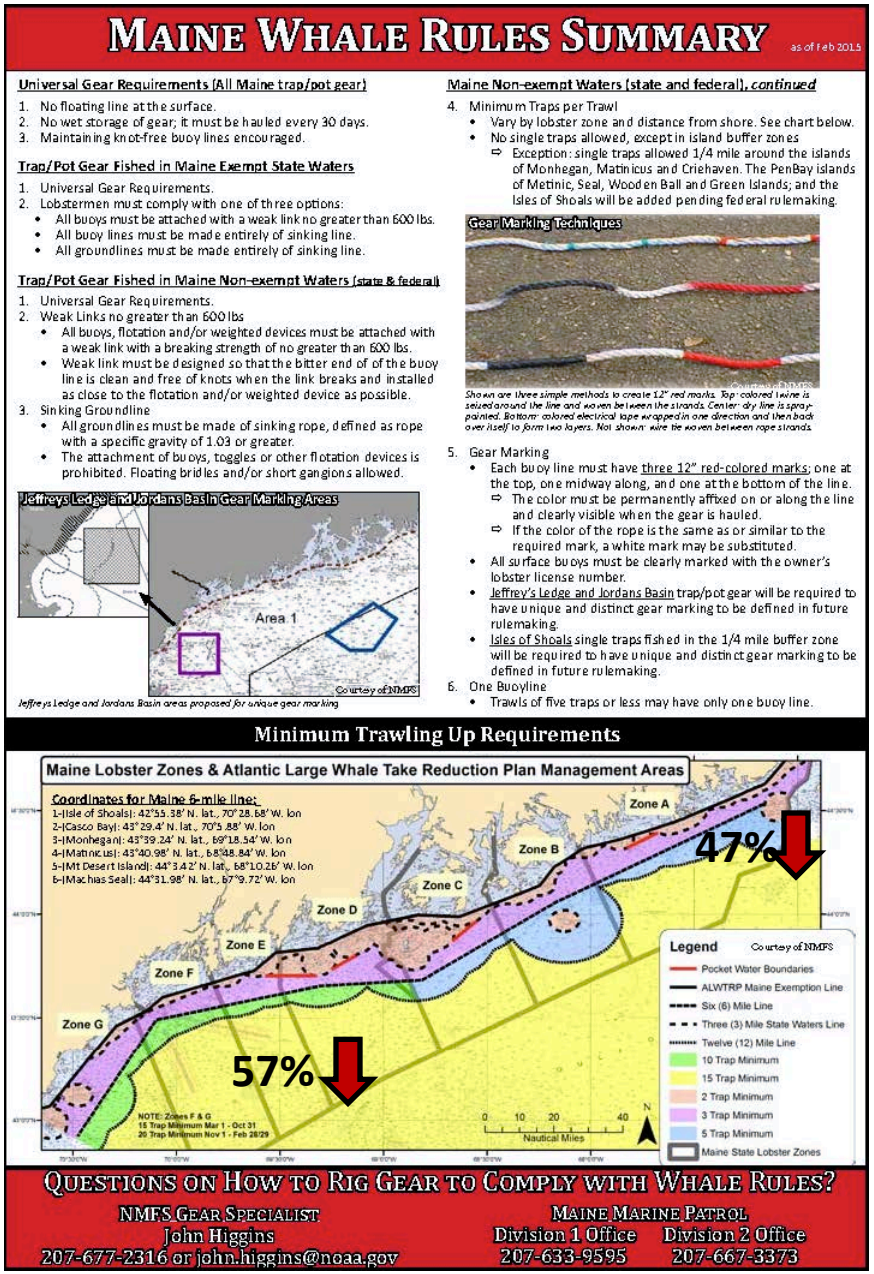
Whales

- How do whales become entangled?
- When are whales most at risk? (feeding, diving, calving, transiting, etc)
- Risk in portion of water column? (surface, middle, bottom)

Fisheries

- Canada does not participate in whale plan
- Little known about role of different fisheries, gear types and origin of gear
- Which component of gear poses greatest risk? (VL, groundline, surface system, rigging style, etc)

Whale Rules



MAINE WHALE RULES SUMMARY

as of Feb 2015

Universal Gear Requirements (All Maine trap/pot gear)

1. No floating line at the surface.
2. No wet storage of gear; it must be hauled every 30 days.
3. Maintaining knot-free buoy lines encouraged.

Trap/Pot Gear Fished in Maine Exempt State Waters

1. Universal Gear Requirements.
2. Lobstermen must comply with one of three options:
   - All buoys must be attached with a weak link no greater than 600 lbs.
   - All buoy lines must be made entirely of sinking line.
   - All groundlines must be made entirely of sinking line.

Trap/Pot Gear Fished in Maine Non-exempt Waters (state & federal)

1. Universal Gear Requirements.
2. Weak Links no greater than 600 lbs
   - All buoys, flotation and/or weighted devices must be attached with a weak link with a breaking strength of no greater than 600 lbs.
   - Weak link must be designed so that the bitter end of of the buoy line is clean and free of knots when the link breaks and installed as close to the flotation and/or weighted device as possible.
3. Sinking Groundline
   - All groundlines must be made of sinking rope, defined as rope with a specific gravity of 1.03 or greater.
   - The attachment of buoys, toggles or other flotation devices is prohibited. Floating bridles and/or short gangions allowed.

Jeffreys Ledge and Jordans Basin Gear Marking Areas

Jeffreys Ledge and Jordans Basin areas proposed for unique gear marking

Maine Non-exempt Waters (state and federal), *continued*

4. Minimum Traps per Trawl
   - Vary by lobster zone and distance from shore. See chart below.
   - No single traps allowed, except in island buffer zones
     - ⇨ Exception: single traps allowed 1/4 mile around the islands of Monhegan, Matinicus and Criehaven. The PenBay islands of Metinic, Seal, Wooden Ball and Green Islands; and the Isles of Shoals will be added pending federal rulemaking.

Gear Marking Techniques

Shown are three simple methods to create 12" red marks. Top: colored twine is seized around the line and woven between the strands. Center: dry line is spray-painted. Bottom: colored electrical tape wrapped in one direction and then back over itself to form two layers. Not shown: wire tie woven between rope strands.

5. Gear Marking
   - Each buoy line must have three 12" red-colored marks; one at the top, one midway along, and one at the bottom of the line.
     - ⇨ The color must be permanently affixed on or along the line and clearly visible when the gear is hauled.
     - ⇨ If the color of the rope is the same as or similar to the required mark, a white mark may be substituted.
   - All surface buoys must be clearly marked with the owner's lobster license number.
   - Jeffrey's Ledge and Jordans Basin trap/pot gear will be required to have unique and distinct gear marking to be defined in future rulemaking.
   - Isles of Shoals single traps fished in the 1/4 mile buffer zone will be required to have unique and distinct gear marking to be defined in future rulemaking.
6. One Buoyline
   - Trawls of five traps or less may have only one buoy line.

Minimum Trawling Up Requirements

Maine Lobster Zones & Atlantic Large Whale Take Reduction Plan Management Areas

Coordinates for Maine 6-mile line:
1-[Isle of Shoals]: 42°55.38' N. lat., 70°28.68' W. lon
2-[Casco Bay]: 43° 29.4' N. lat., 70°5.88' W. lon
3-[Monhegan]: 43°39.24' N. lat., 69°18.54' W. lon
4-[Matinicus]: 43°40.98' N. lat., 68°48.84' W. lon
5-[Mt Desert Island]: 44° 3.42' N. lat., 68°10.26' W. lon
6-[Machias Seal]: 44°31.98' N. lat., 67°9.72' W. lon

QUESTIONS ON HOW TO RIG GEAR TO COMPLY WITH WHALE RULES?

NMFS GEAR SPECIALIST
John Higgins
207-677-2316 or john.higgins@noaa.gov

MAINE MARINE PATROL
Division 1 Office 207-633-9595
Division 2 Office 207-667-3373

- Reduce probability of encounter
  - No float line at surface
  - No wet storage
  - Sinking groundlines
  - Minimum traps on trawl
    - Most aggressive where whale density highest
    - Inshore: pairs; Nearshore: triples, then 5's and 10's; Offshore: 15's and 20's

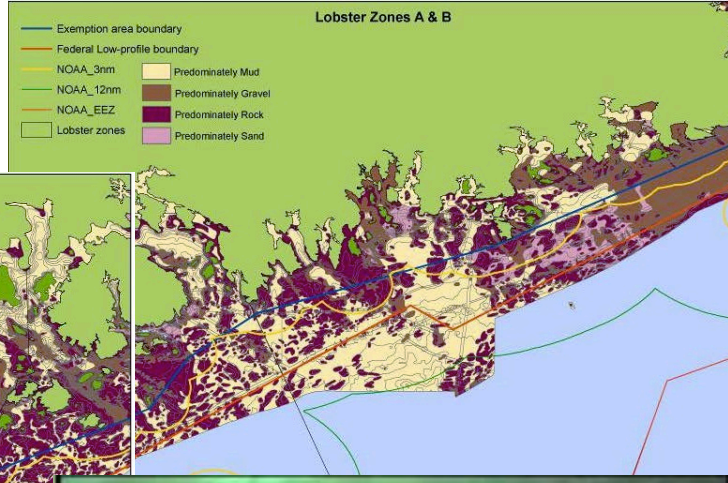
1.5 mil lbs Float rope ⇩

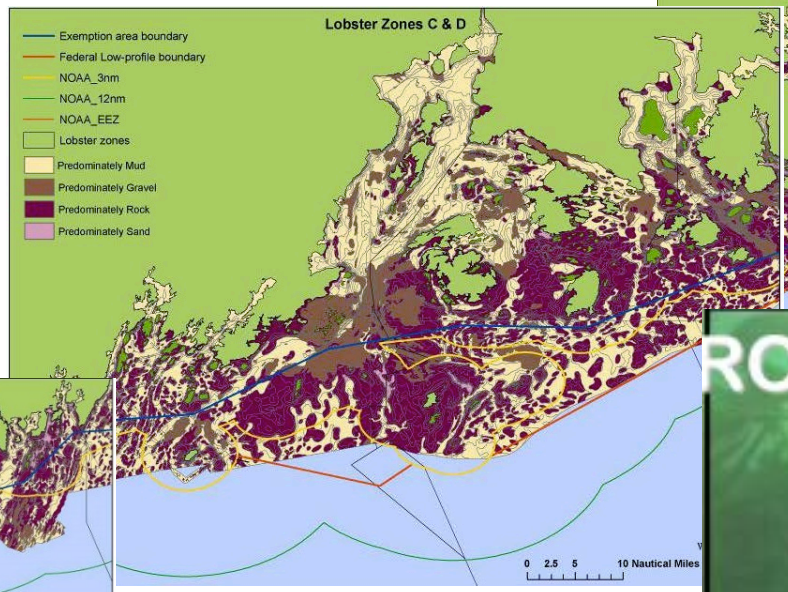
25% VL ⇩

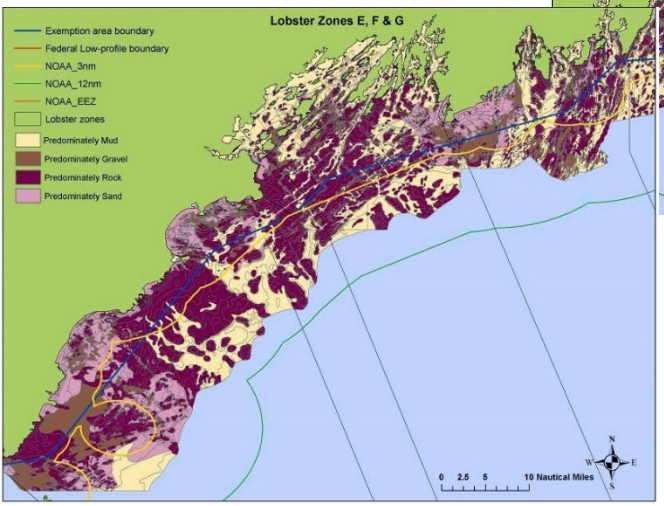
- Reduce entanglement risk
  - 600 lb weak link
  - 1 buoy line on trawls of 5 traps or less
  - Rope as knot-free as possible
- Gear Marking
  - Three x 12" red marks on VL
  - Jeffreys, Jordans and Isles of Shoals extra marking
- Maine exempt waters
  - Universal measures (no float rope at surface, no wet storage, knot-free rope)
  - 1 whale safe measure (sinking groundline or VL or weak link)

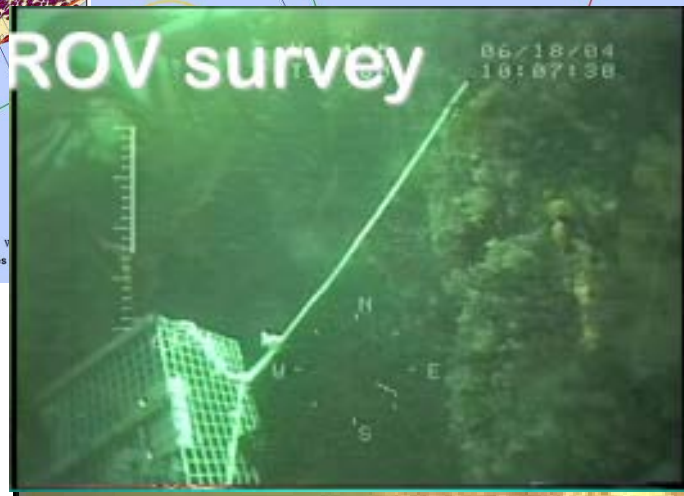
Challenges of Whale Plan

- Sinking groundlines on rocky bottom







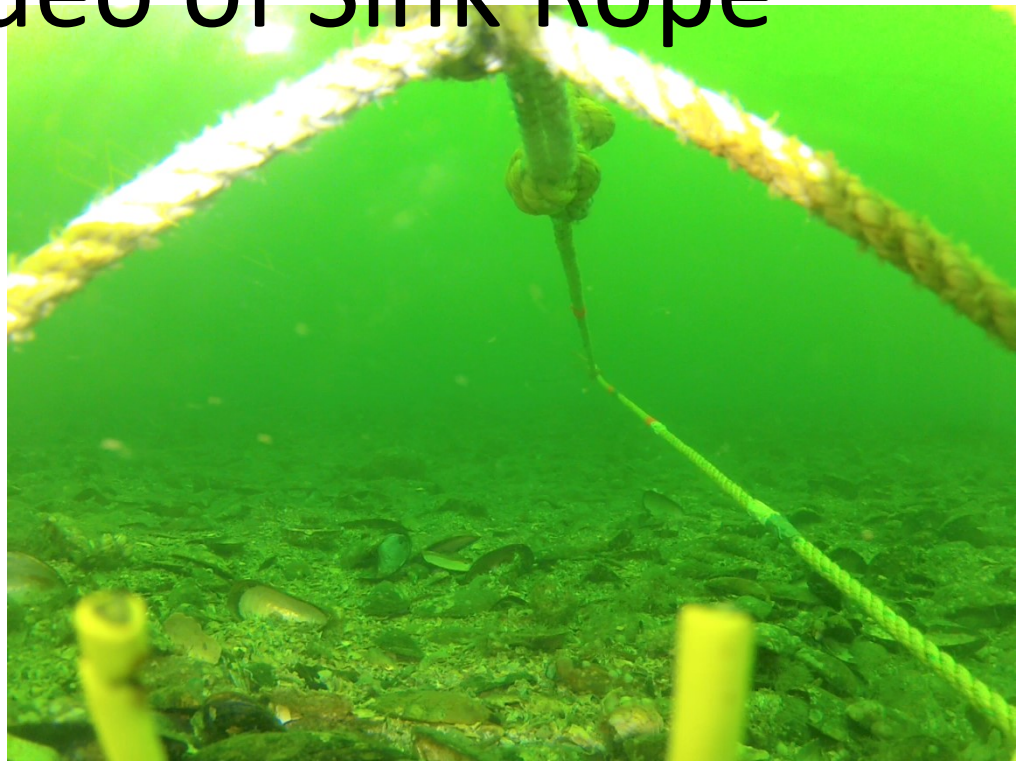


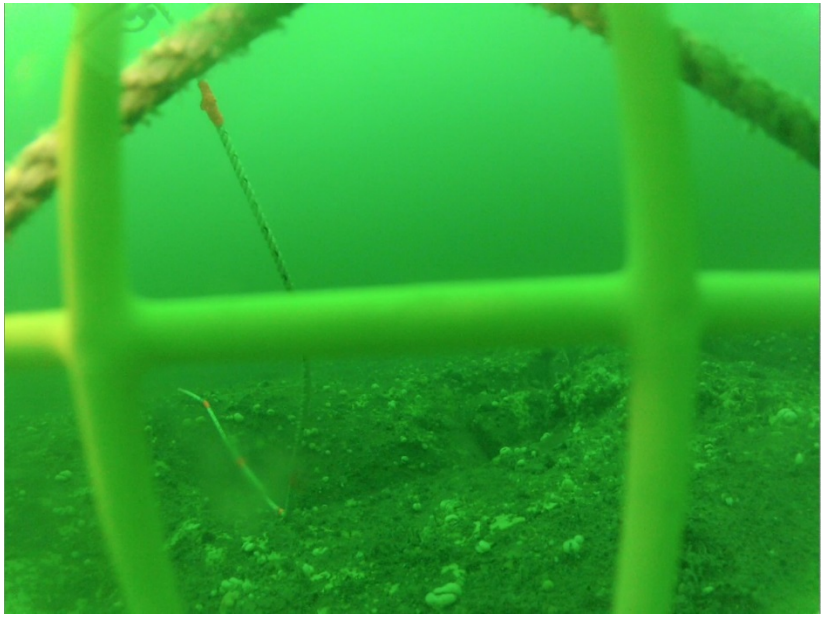
- Loss of productive bottom/loss of income
- Gear loss from hang downs and chaffing
- Cost and replacement (replace 4x more often than float rope; cost 50% more
- Safety and operational concerns

Challenges Sinking Groundline

Operational **Safety** **Economic**

Underwater Video of Sink Rope



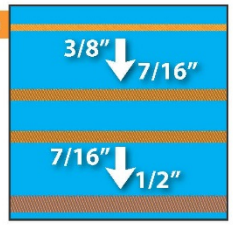


Partner: Bycatch Consortium/ New England Aquarium

Document what has worked

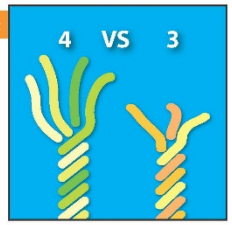
SUCCESSFUL IDEAS
FROM MAINE LOBSTERMEN

A-1



Size up the diameter of sink rope groundline to get more strength (from 3/8 -> 7/16 -> 1/2 inch).

A-2



Use a 4-strand rope instead of 3-strand.

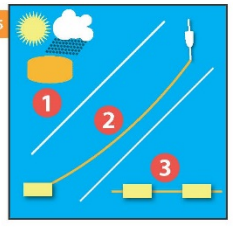
A-3

Cut out trouble spots and knot (instead of splice). Knot seems to resist chafe.

A-4

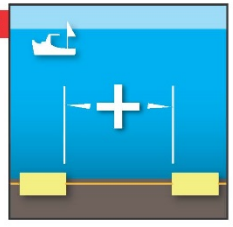
Steady clips are helpful to reduce rope chafing on trap -- bend the tail warp into the clip on top of the trap before setting back. Or, use a "poor man's steady clip" and simply tuck the line into the mesh on the top of the trap.

A-5



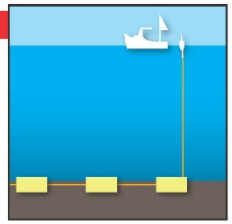
Leave new coils of sink rope outside and fish sinking rope on buoy line for several seasons before rotating to groundline, to increase tightness of lay and harden rope. *(Caution - May make rope more difficult to handle on deck.)*

B-1



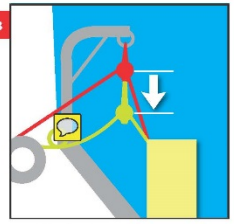
In deep water, lengthen spreaders between traps on 20-trap trawls to reduce strain on rope in hauler.

B-2



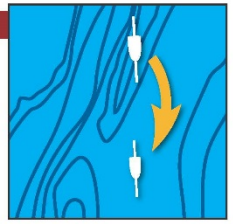
Keep the boat over the gear while hauling; haul slower, use shortest endline and the smallest buoy(s) possible to reduce swing in scope.

B-3



Consider hauler modifications such as reducing the angle between block and fairlead; or increasing the angle between sheaves.

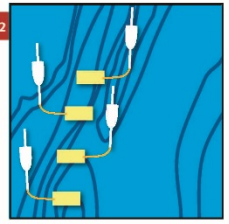
C-1



Move gear off hard bottom (onto mud, gravel, sand) to avoid hangdowns.

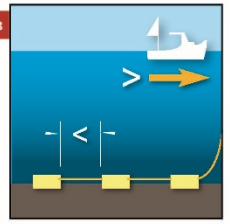
SUCCESSFUL IDEAS
FROM MAINE LOBSTERMEN

C-2



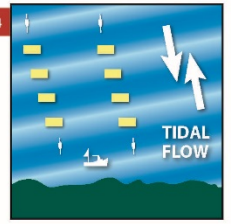
Fish singles on hard bottom that is too productive to move off of.

C-3



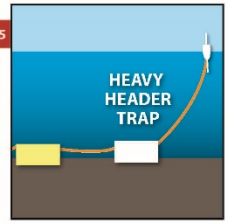
On triples, shorten distance between traps, and increase set speed to keep rope taut.

C-4



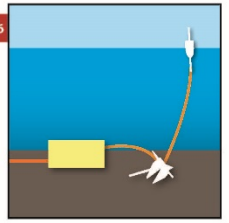
Set parallel to (with) the tide to decrease rope movement on bottom, and reduce hangdowns.

C-5



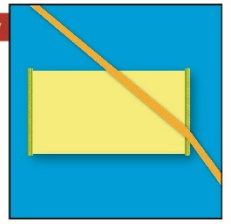
In smaller trawls, weight the first trap to reduce movement on bottom. Using a heavier end trap may reduce wear on rope at first trap by reducing movement caused by the buoy/surface system.

C-6



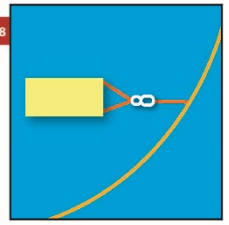
If you use anchors on your trawl, consider using float rope for the line between the anchor and first trap - not considered part of the groundline which is strictly the portion of line between traps.

C-7



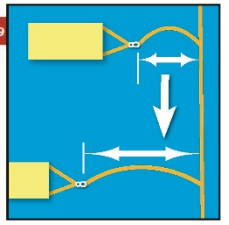
Add a wear plate on the wire to reduce rope wear. Wear plate is a piece of wire *(7 meshes)* which bends over the edge to cover up the corner. Or wire tie a piece of garden hose along top edge of trap to prevent rope and wire coating from chafing.

C-8



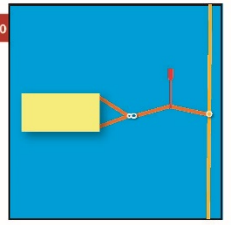
Use dog bones (a white plastic figure-8 piece) on the bridle to prevent spinning and unlaying of rope.

C-9



Use float rope (polypropylene) bridle and becket or gangion to keep rope away from the trap and reduce wear at the first trap. Increase length of gangion from 1fa to 2fa or more.

C-10



Use a toggle on a sink rope becket.

Excellent Compliance

Maine DMR survey 2009-2010

- 243 lobstermen
- 93% compliance sinking groundline & weak links

NOAA OLE FY 15

- 585 lobster vessels checked
- 95% compliance


Staying Engaged
lots of meetings!

Participate in the process

- ALWTRT since inception
- Partner with researchers
- Outreach with lobstermen
- Newsletter articles

about us | programs | support | mla website | contact us | news | Search

MAINE LOBSTERMEN'S COMMUNITY ALLIANCE

Protecting the Future, Preserving the Past

SUPPORT MLCA
Donations

Search Results for: whales

SO YOU WANT TO KNOW: WHERE HAVE THE BAY OF FUNDY WHALES GONE?

By Amanda LaBelle

First published in Landings, November, 2013. In October, news outlets in New Brunswick and Nova Scotia reported a total of five sightings of North Atlantic right whales in the Bay of Fundy this summer. In ... Continue reading →

21 *November 2013* Category: Science

RESEARCH SHOWS TROUBLING SIGNS IN ENTANGLED WHALES

By Melissa Waterman

First published in Landings, July, 2013. In a report released in May, Woods Hole Oceanographic Institute (WHOI) scientists provided a new assessment of how fishing lines change a whale's diving and swimming behavior. They found ... Continue reading →

23 *July 2013* Category: Science

MAINE LOBSTERMEN'S COMMUNITY ALLIANCE: FINDING WAYS TO KEEP WHALES OUT OF VERTICAL LINES

By Melissa Waterman

First published in Landings, June, 2013. One of the major regulatory issues facing lobstermen in New England is the imminent promulgation by the National Fisheries Service of new rules regarding entanglement of endangered whales in ... Continue reading →

26 *June 2013* Category: Management

REPORT CARD ON NORTH ATLANTIC RIGHT WHALES RELEASED

By MLA Staff

First published in the MLA Newsletter, December, 2012. The North Atlantic Right Whale Consortium, formed in 1986 by five research institutions to share data among themselves, was expanded in 1997. Currently, the Consortium membership is ... Continue reading →

10 *December 2012* Category: Science

INCREASING NOISE IN THE OCEAN AFFECTS RIGHT WHALES

By Sarah Paquette

First published in the MLA Newsletter, October, 2012. We all rely on senses (sight, smell, taste, touch, and sound) to navigate our world. When one of those senses does

How do whales get entangled? Examine gear removed from whales

- Visit warehouse of gear removed from whales
- Brought gear removed from whales and case studies to Maine
- Participated in reverse engineering workshop

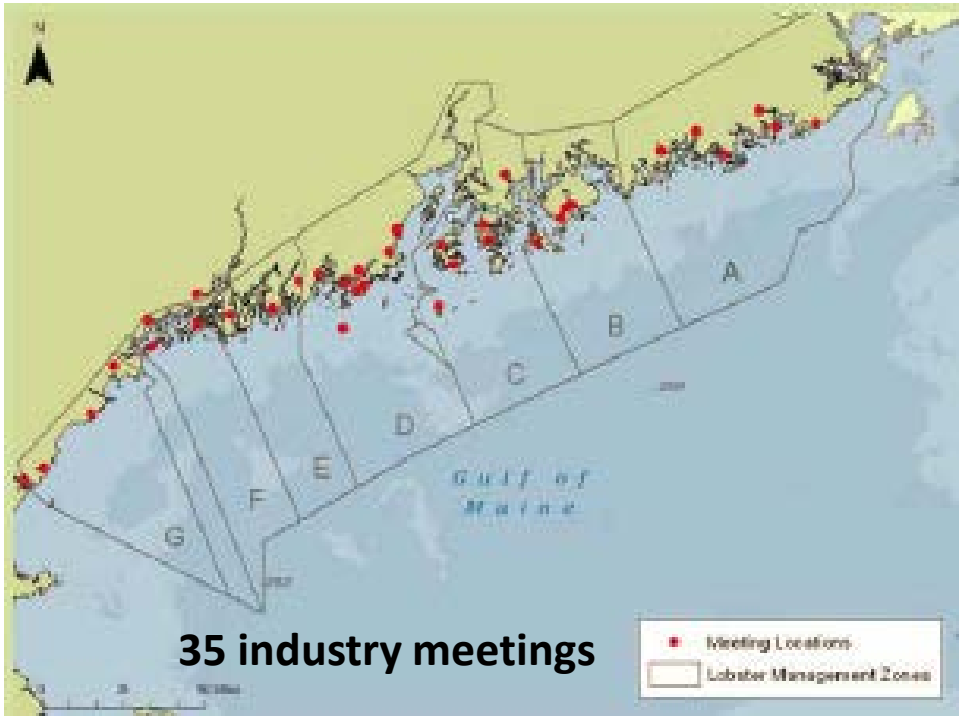
Lots of Collaborative Research

- 1990's
  - Worked with NMFS (gear profiles, weak links, exploring gear mods)
- 2000's
  - Establish methods for weak links (NMFS, DMR)
  - Buoy line marking methods (NMFS, DMR)
  - Lobstermen host ROV survey (DMR)
  - Test neutrally buoyant, low profile and sink ropes (DMR, BC)
  - Measure rope profiles with pressure sensors (DMR)
  - Test vertical line mods; glow and stiff rope, cutters (BC)
- 2010's
  - Map lobster industry (gear configurations) (BC)
  - Develop fishing gear/whale risk model (WHOI)
  - Document sink rope chafing and profiles (BC)
  - Explore ideas for best practices (BC)
  - Produce sink rope report (BC)
  - Exploring "weak" ropes

Tools of the Fishery

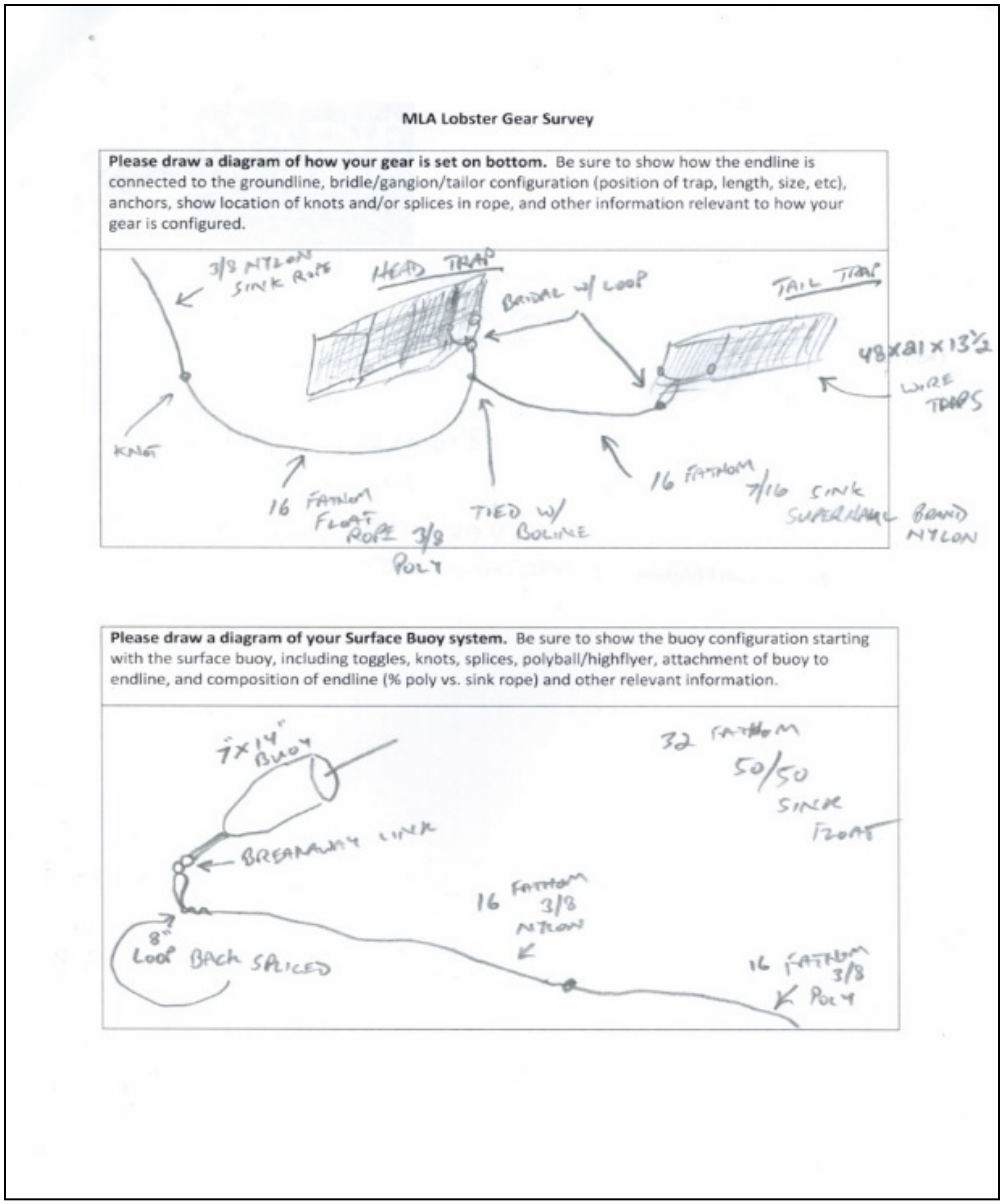
Understand the Lobster Fishery

1. Produced a resource book: *Lobster Pot Gear Configurations in the Gulf of Maine*
   - Worked with lobstermen to describe Maine lobster fishery & gear
2. Developed a risk model
   - Documented how, when and where we fish



35 industry meetings

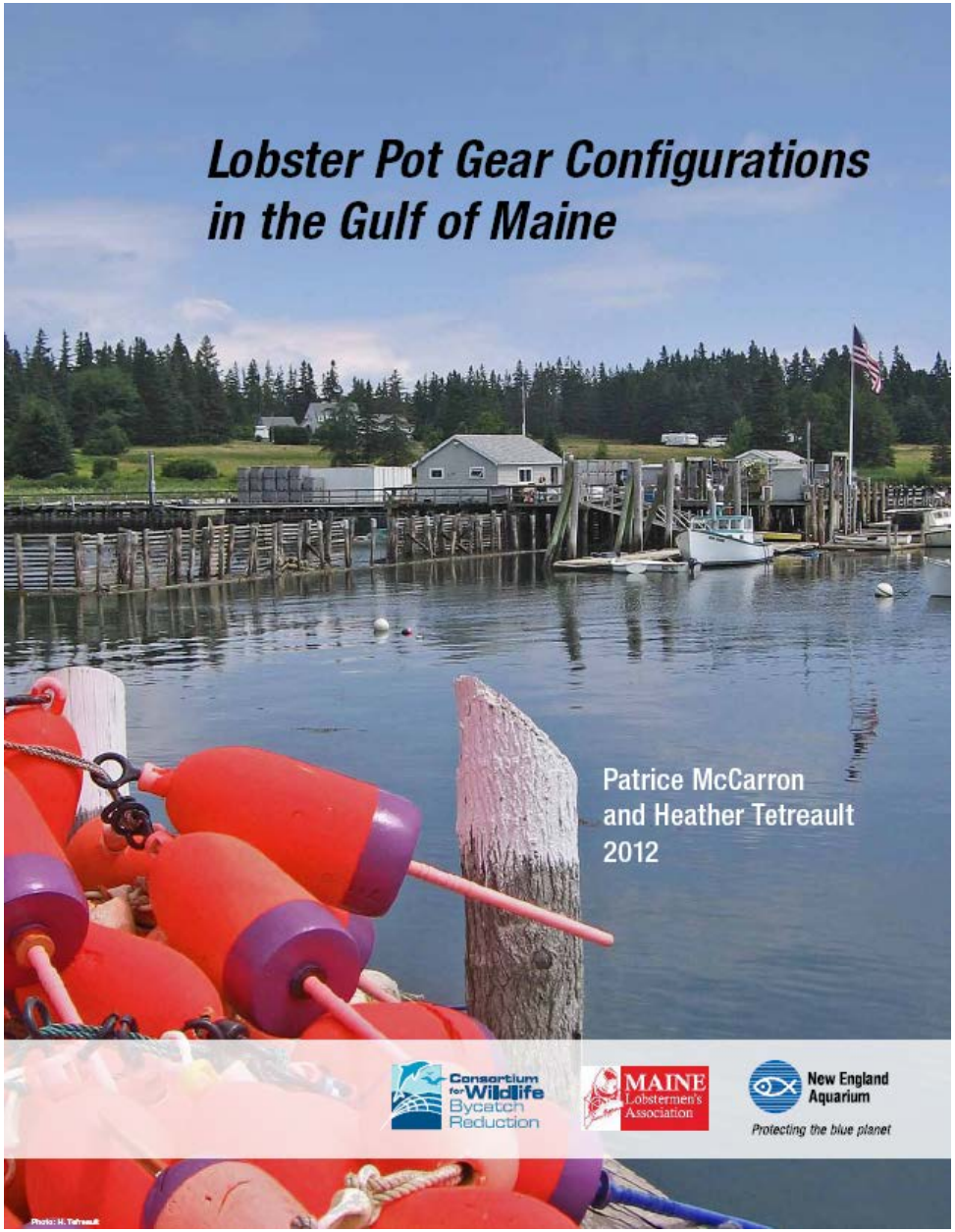
Describe lobster fishery and gear

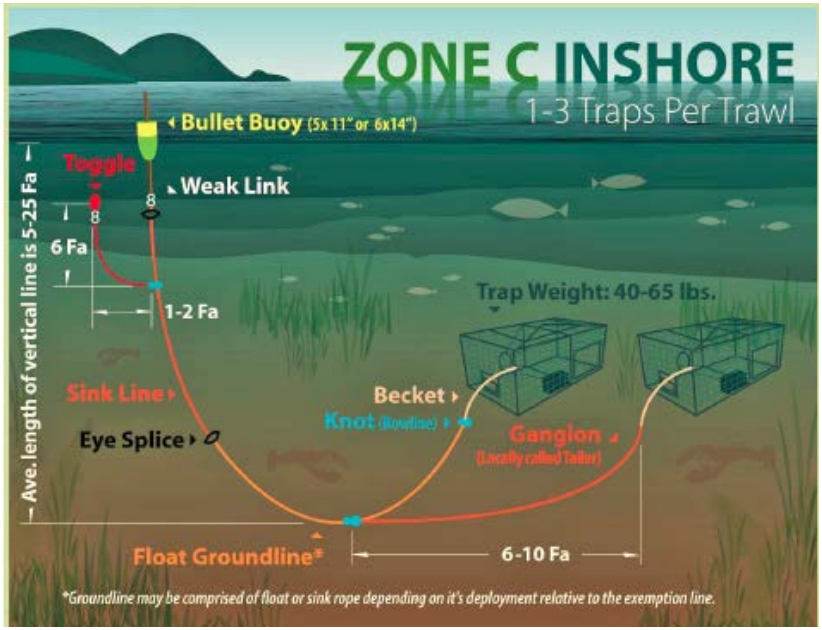


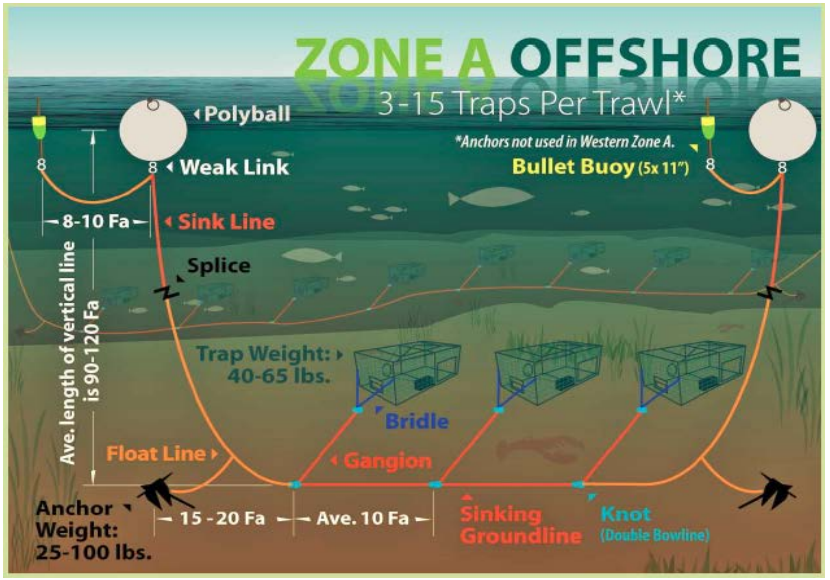
MLA Lobster Gear Survey

Please draw a diagram of how your gear is set on bottom. Be sure to show how the endline is connected to the groundline, bridle/gangion/tailor configuration (position of trap, length, size, etc), anchors, show location of knots and/or splices in rope, and other information relevant to how your gear is configured.

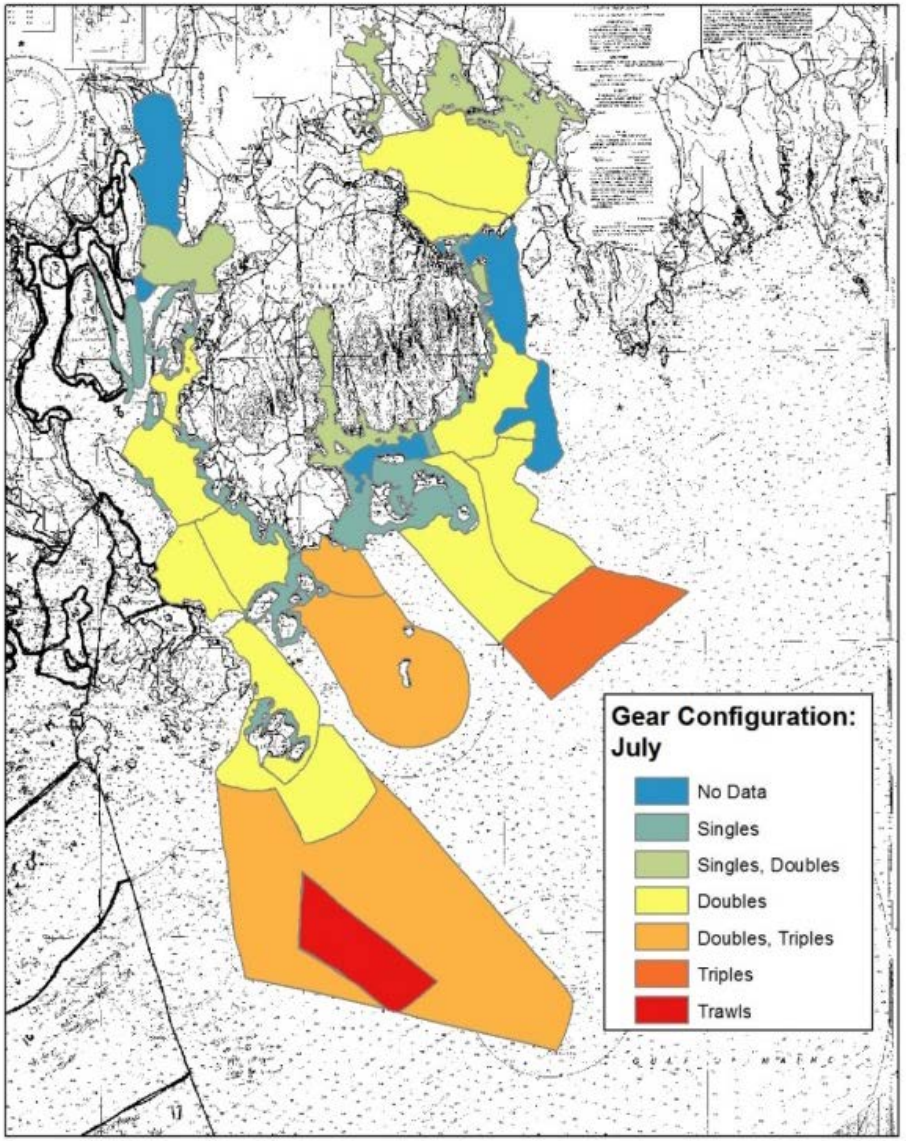
Please draw a diagram of your Surface Buoy system. Be sure to show the buoy configuration starting with the surface buoy, including toggles, knots, splices, polyball/highflyer, attachment of buoy to endline, and composition of endline (% poly vs. sink rope) and other relevant information.


Lobster Pot Gear Configurations
in the Gulf of Maine
Patrice McCarron
and Heather Tetreault
2012
Consortium for Wildlife Bycatch Reduction
MAINE Lobstermen's Association
New England Aquarium
Protecting the blue planet

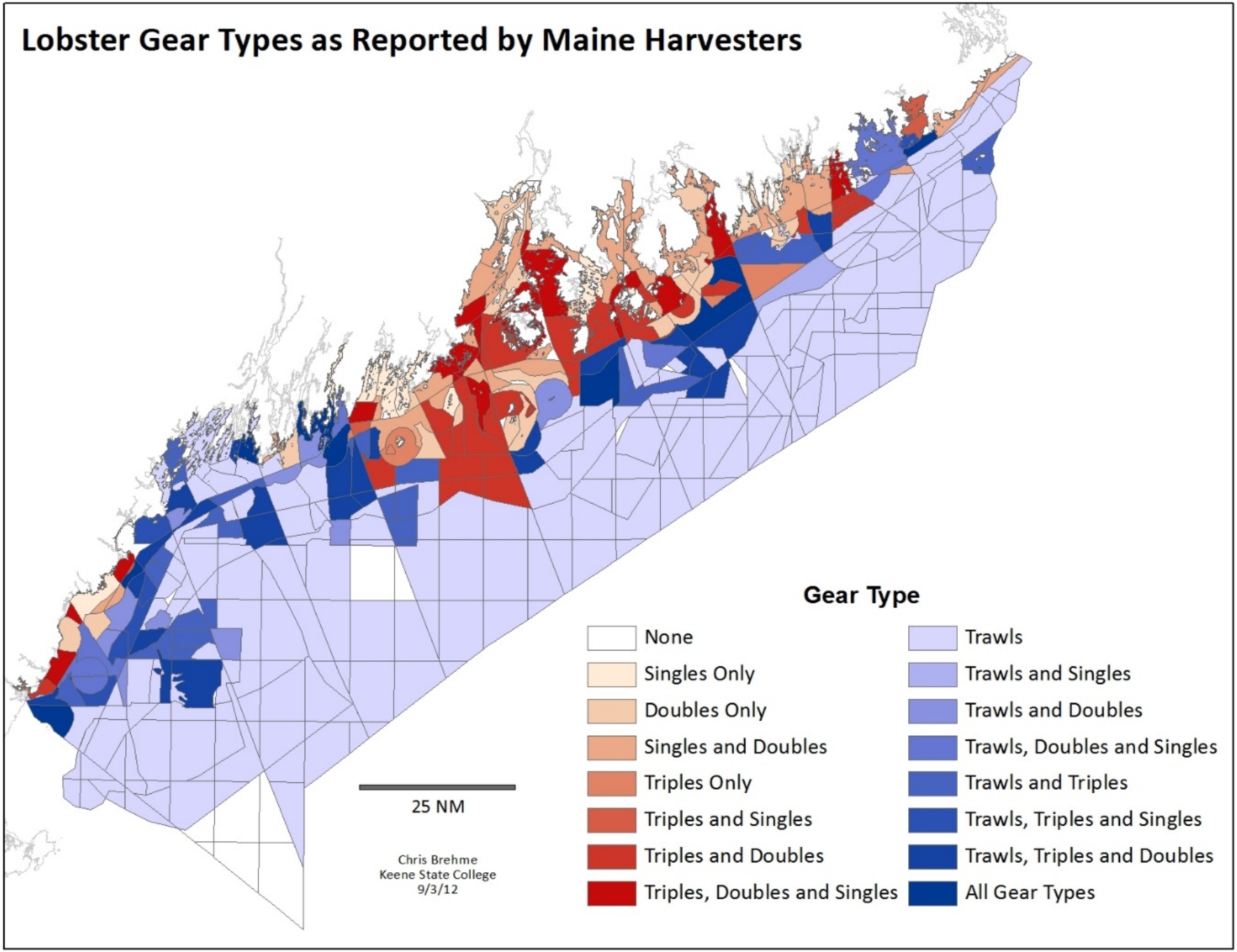

ZONE C INSHORE
1-3 Traps Per Trawl
Bullet Buoy (5x 11" or 6x14")
Toggle
Weak Link
6 Fa
1-2 Fa
Ave. length of vertical line is 5-25 Fa
Trap Weight: 40-65 lbs.
Sink Line
Becket
Knot (Bowline)
Eye Splice
Ganglion
(Locally called Tailer)
Float Groundline*
6-10 Fa
*Groundline may be comprised of float or sink rope depending on it's deployment relative to the exemption line.


ZONE A OFFSHORE
3-15 Traps Per Trawl*
*Anchors not used in Western Zone A.
Polyball
Weak Link
Bullet Buoy (5x 11")
8-10 Fa
Sink Line
Splice
Ave. length of vertical line is 90-120 Fa
Trap Weight: 40-65 lbs.
Bridle
Float Line
Gangion
Anchor Weight: 25-100 lbs.
15 -20 Fa
Ave. 10 Fa
Sinking Groundline
Knot
(Double Bowline)

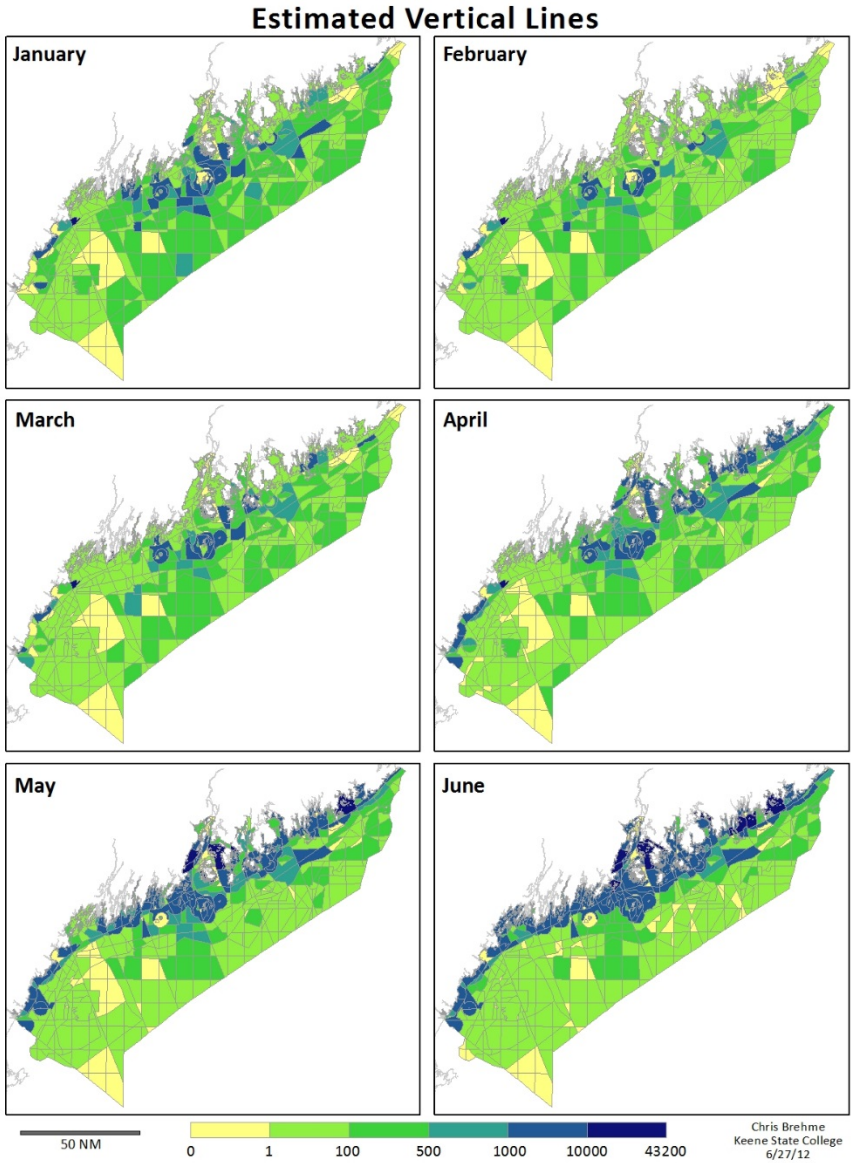
Risk Model
Document how, when and where we fish

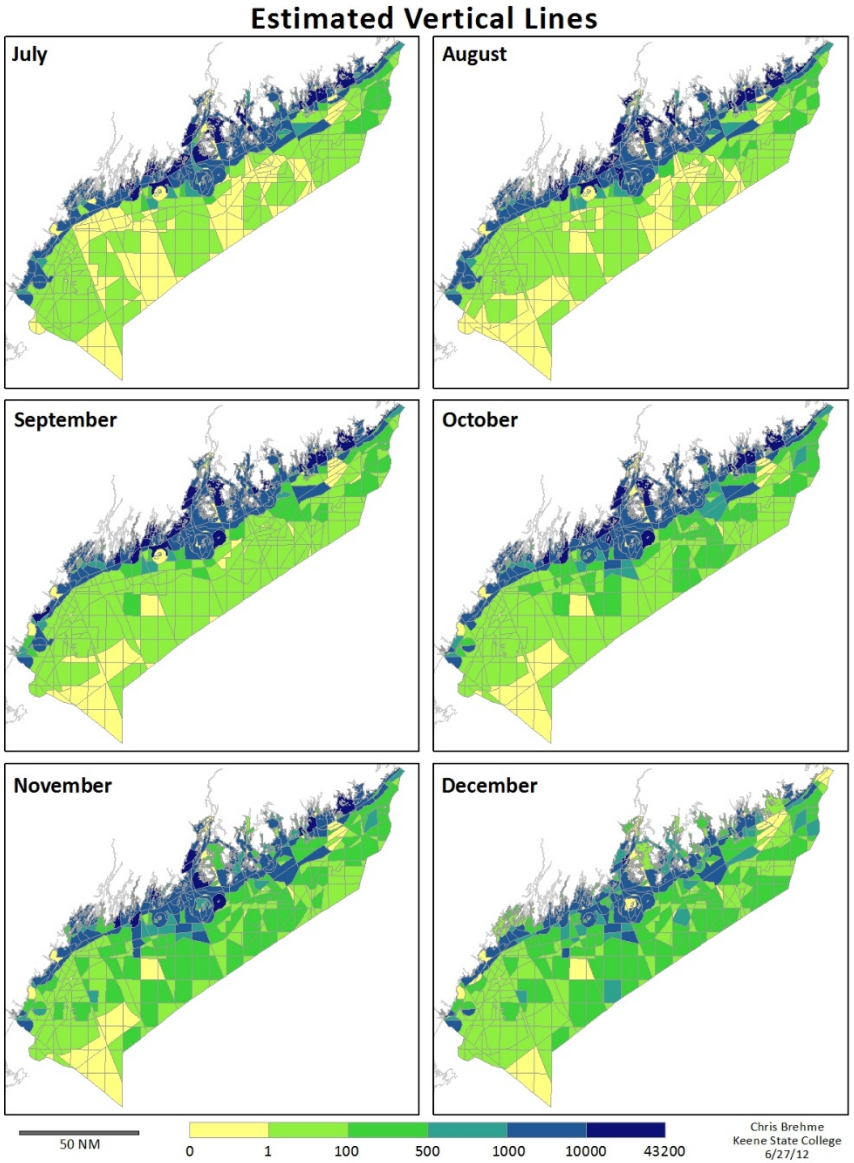


Lobster Gear Types as Reported by Maine Harvesters

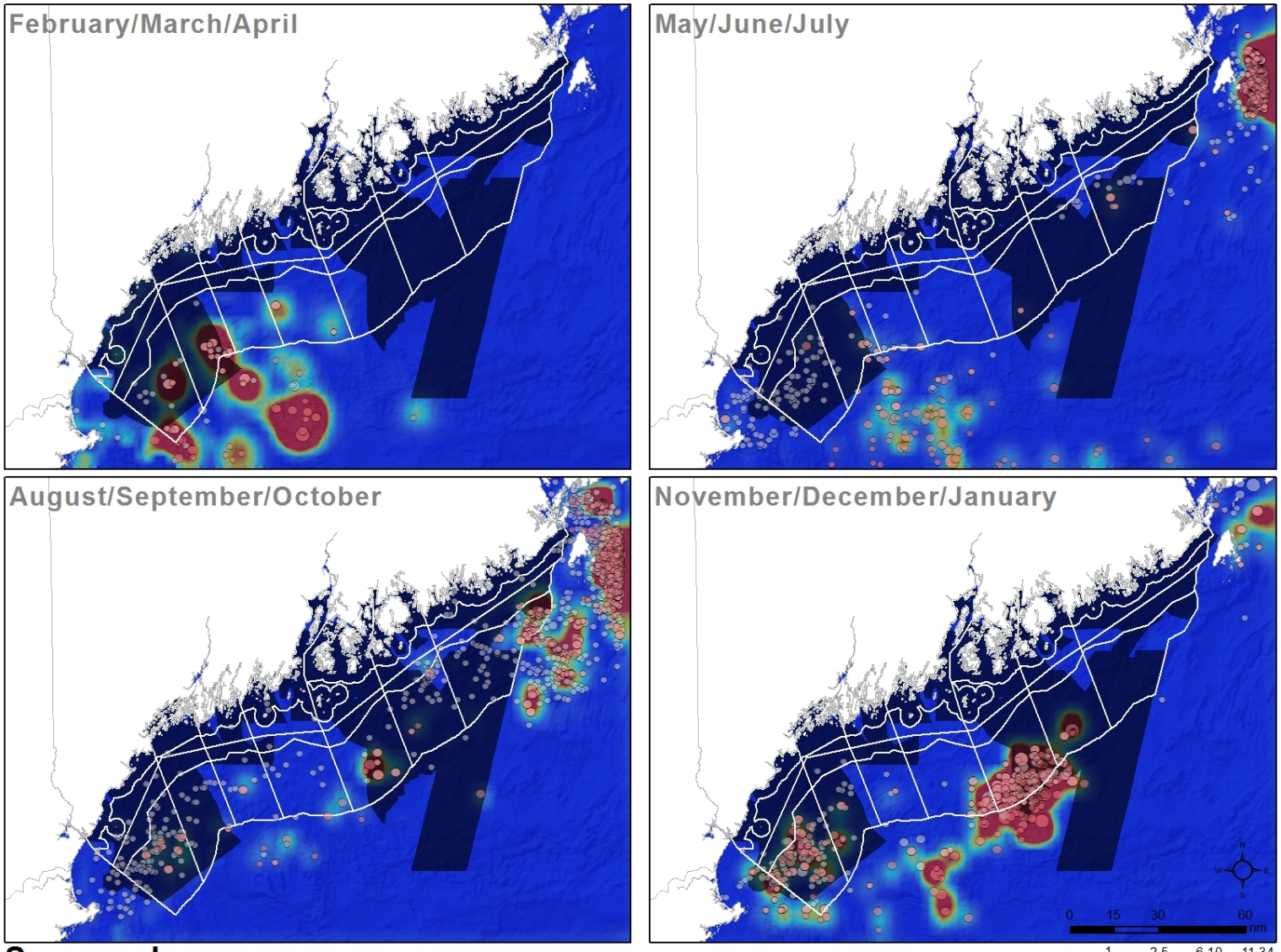


Gear Density by Month



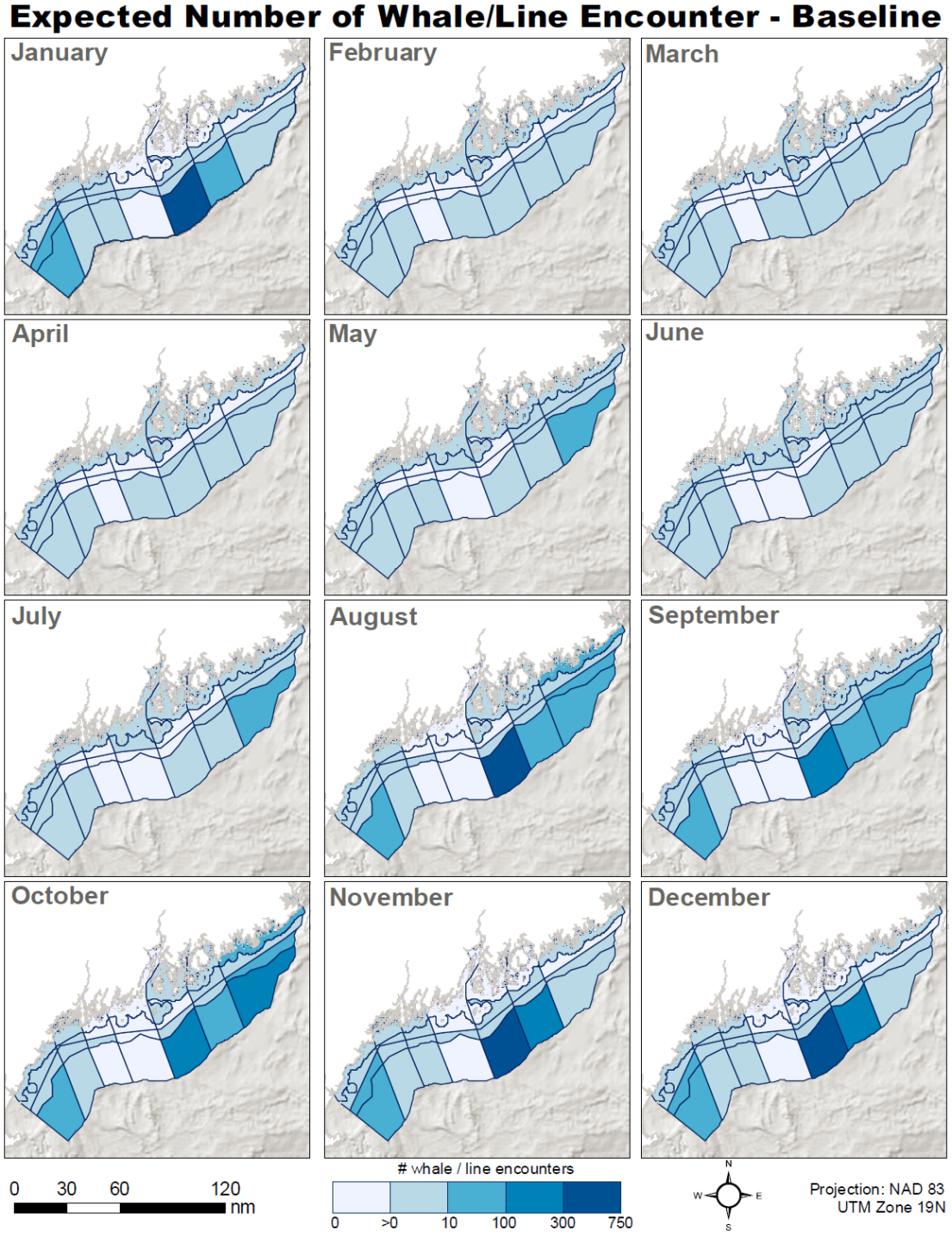


Whale Activity by Season



Baseline: Expected Encounters per Year

VL	3,679
GL	97
total	**3,776**



Looking for Whale Safe Ropes

Groundlines

- Chafe resistant
  - (barium sulfate sink, braided metallocene sink)
- Profile of rope in water column
  - Develop low profile ropes
  - DST pressure sensors

Vertical Lines

- Avoidance
  - glow rope
  - Colored rope
- Low entanglement risk
  - stiff rope
  - weak rope
  - time tension line cutter

Look for Chafe resistant Groundlines

- Barium sulfate line (‘05-’08)

- Metallocene polyethelene (‘06-’07)

Vertical Line Testing

Glow rope (‘05)

Weak rope (‘05)

Stiff rope (‘06)

Time Tension Line Cutter (‘07)

Red rope (‘14)

Develop Best Practices

- Maximize traps/endline
- Groundline
  - Use sink rope
  - Deploy with taut line
- Surface system
  - Limit scope
  - Limit rope between buoys
  - Weaker rope on top 1/3
  - Least # of flotation devices
- Reduce knots and coils in VL
  - Splice instead of knot
  - Lengthen rather than coil/shank
- Reduce gear density through trap reductions
- Keep lines as taut as possible
- Reduce ghost gear
  - Improve deployment of groundlines

Maine Derelict Gear Removal

The Gulf of Maine Lobster Foundation has removed 170 tons of debris and 2.3 million pounds of rope from the Gulf of Maine

At-sea Cleanups

- 2010-2013, & 2015
- 239 boat days
- 5,365 traps recovered
- 74 tons of debris collected

Lobstermen cleanup day

- Provide dumpster for fishermen to dispose of gear
- 3,258 traps collected
- 63 tons of debris collected

Community clean ups

- 43 tons of debris collected

GULF OF MAINE
LOBSTER FOUNDATION

Sinking Groundline

Federally funded rope buyback

- trade in floating line, get voucher towards purchase of sink line
- sink rope wears out much faster
- increase cost of business

GULF OF MAINE
LOBSTER FOUNDATION

Looking Ahead

- 2017 -- test more "whale safe" ropes with Bycatch Consortium
- Continue with TRT process and NMFS monitoring plan
- Educate the industry

<u>Pressing Needs</u>

- Canada needs to develop and implement a whale plan
- Research to understand what is driving right whale decline (climate change, forage,etc)
- How are whales getting entangled?

Thank you!