



**NOAA**  
**FISHERIES**

# Draft Action Plan for Atlantic Sturgeon Bycatch

Mid-Atlantic Fishery Management Council

June 8, 2022

Spencer Talmage, Sustainable Fisheries  
Division, GARFO

# Recap – Atlantic Sturgeon Bycatch Working Group & Action Plan

- The May 27, 2021 Biological Opinion on 10 FMPs and the implementation of the New England Fishery Management Council’s Omnibus Essential Fish Habitat Amendment 2 required NOAA Fisheries to convene a working group to:
  - Conduct a review of all available information pertaining to Atlantic sturgeon bycatch in federal large mesh gillnet fisheries;
  - Produce an Action Plan by May 27, 2022 which would reduce this bycatch by 2024; and
  - Include an evaluation of post-release mortality, including identification of needed information and a plan/timeline for acquiring and using this information
- The Atlantic Sturgeon Bycatch Working Group was formed in order to meet these requirements
  - The first full meeting of the group, including state participants, occurred on February 14, 2022.
- The Action Plan was released online on May 26, 2022



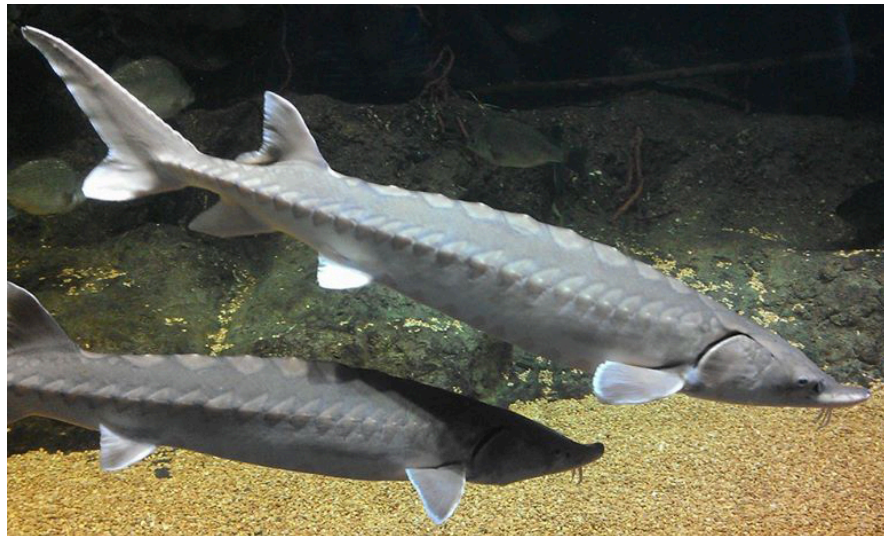
# Recap – Atlantic Sturgeon Bycatch Working Group & Action Plan

- Spencer Talmage, Greater Atlantic Regional Fisheries Office
- Heather Corbett, New Jersey Department of Environmental Protection, Marine Fisheries
- Cynthia Ferrio, Greater Atlantic Regional Fisheries Office
- Ian Park, Delaware Division of Fish and Wildlife
- Lynn Lankshear, Greater Atlantic Regional Fisheries Office
- Rebecca Peters, Maine Department of Marine Resources
- Henry Milliken, Northeast Fisheries Science Center
- Eric Schneider, Rhode Island Department of Environmental Management, Division of Marine Fisheries
- Jason Boucher, Northeast Fisheries Science Center
- Jacque Benway, Connecticut Department of Energy and Environmental Protection, Marine Fisheries Program
- Kim McKown, New York State Department of Environmental Conservation, Bureau of Marine Resources



# Why is the Action Plan a Draft?

- Federal Advisory Committee Act
- Provides an opportunity to incorporate feedback from the Councils, Commission, and general public into the Action Plan
- NOAA Fisheries plans to produce a finalized version in September



# Action Plan - Overview

- The Action Plan:
  1. Communicates the results of the review of all available information regarding Atlantic sturgeon bycatch and highlights information gaps
  2. Describes regulatory measures that the ASBWG recommends New England and Mid-Atlantic Fishery Management Councils consider in order to reduce bycatch by 2024
  3. Establishes a timeframe for development of such measures and further evaluation of post-release mortality
- Table of Contents
  - Description of Fisheries
  - Review of Available Data
  - Actionable Conclusions
  - Actions to Reduce Atlantic Sturgeon Bycatch in Federal Large-Mesh Gillnet Fisheries
  - Timelines



# Action Plan – Description of Fisheries

- The Action Plan is limited to consideration of the FMPs and ISFMPs evaluated in the 2021 Biological Opinion. These are:
  - American Lobster ISFMP
  - Atlantic Bluefish FMP
  - Atlantic Deep-Sea Red Crab FMP
  - Mackerel, Squid, and Butterfish FMP
  - Monkfish FMP
  - Northeast Multispecies FMP
  - Northeast Skate Complex FMP
  - Spiny Dogfish FMP
  - Summer Flounder, Scup, and Black Sea Bass FMP
  - Jonah Crab ISFMP



# Action Plan – Information Review

- Information reviewed included:
  - peer-reviewed scientific papers,
  - available data from the Northeast Fisheries Observer Program database,
  - grant program reports,
  - workshop reports,
  - Northeast Fisheries Science Center model-derived estimates of Atlantic sturgeon bycatch, and
  - the 2017 Atlantic States Marine Fisheries Commission stock assessment.
- Topics explored by these sources included distribution and occurrence of Atlantic sturgeon, analysis of bycatch information, and bycatch mitigation
- These sources represent the known information available to the ASBWG



# Actionable Conclusions from Information Review

- The ASBWG made the following conclusions based on its review:
  - Federal gillnet fisheries targeting monkfish, spiny dogfish, and Northeast multispecies with sink gillnet gear ranging from 5.5 to 10 inches in minimum mesh size requirements are primary contributors to Atlantic sturgeon bycatch.
  - Low-profile gillnet designs with reduced net height, shorter tie-down length, and shorter tie-down spacing reduce Atlantic sturgeon bycatch, potentially without reduction in catch of target species.
    - In particular, a gillnet configuration tested by Fox et al. (2019) with 13 inch mesh size, height of 8 meshes, and 24 inch tie-downs spaced every 12 feet was shown to reduce Atlantic sturgeon bycatch in New Jersey without significant reductions in monkfish catch.
  - Soak time is a likely driver of Atlantic sturgeon bycatch rates and mortality, based on available research and the simple concept that time spent by fishing gear in the water strongly correlates with the chances that the gear interacts with sturgeon.





# Actionable Conclusions from Information Review Contd.

- Available research indicates that temperature and depth are primary drivers of Atlantic sturgeon movement and abundance.
  - In particular, sturgeon tend to occur in waters shallower than 50 m in depth and shallower than 25 m during seasonal coastal movements from marine waters to river estuaries in the spring and from river estuaries to marine waters in the fall.
  - Migratory pathways along the coast used by many sturgeon represent key areas of high abundance.
- Post-release mortality for Atlantic sturgeon is not well understood; only a small amount of information on the topic is currently available, and research that does exist is hampered by small sample sizes.



# Recommended Actions

- The ASBWG recommends that fisheries managers consider three primary approaches to achieve bycatch reductions by 2024. These are:
  1. Modifications to gear,
  2. Modifications to fishing practices, and
  3. Consideration of areas of focus in regions where Atlantic sturgeon bycatch is most common

These approaches, and the more specific measures recommended within them, are not mutually exclusive. Some combination of approaches could be implemented to balance desired bycatch reduction with the needs of affected fisheries.



# Modifications to Gear

- The ASBWG recommends that the Councils consider requiring the use of low-profile gillnet gear by federally permitted vessels while:
  - Fishing under a monkfish DAS,
  - Participating in a large mesh exemption area w/ min mesh size of 10 inches, or
  - Fishing under a Northeast multispecies DAS in the Large Mesh DAS program
- The ASBWG considers a low-profile gillnet design to have:
  - Mesh size ranging from 12 to 13 inches,
  - Net height ranging from 6 to 8 meshes tall,
  - Tie-down length of 24 inches,
  - Tie-down spacing of 12 feet, and
  - Primary hanging ratio of 0.50.



# Modifications to Gear Contd.

- The ASBWG considers the net which showed the greatest success in bycatch mitigation without reduction of target species catch was one used by Fox et al. 2019 with:
  - 13 inch mesh size
  - Net height of 8 meshes
  - 24 inch tie-down length
  - 12 inch tie-down spacing, and
  - Was 12 panels at 1,200ft long
- No significant reduction of monkfish catch by NJ based vessel, but significant reduction in monkfish catch by NY vessel
- Continued experimentation must be balanced with the need to implement meaningful bycatch reductions as soon as possible to meet conservation goals for Atlantic sturgeon.



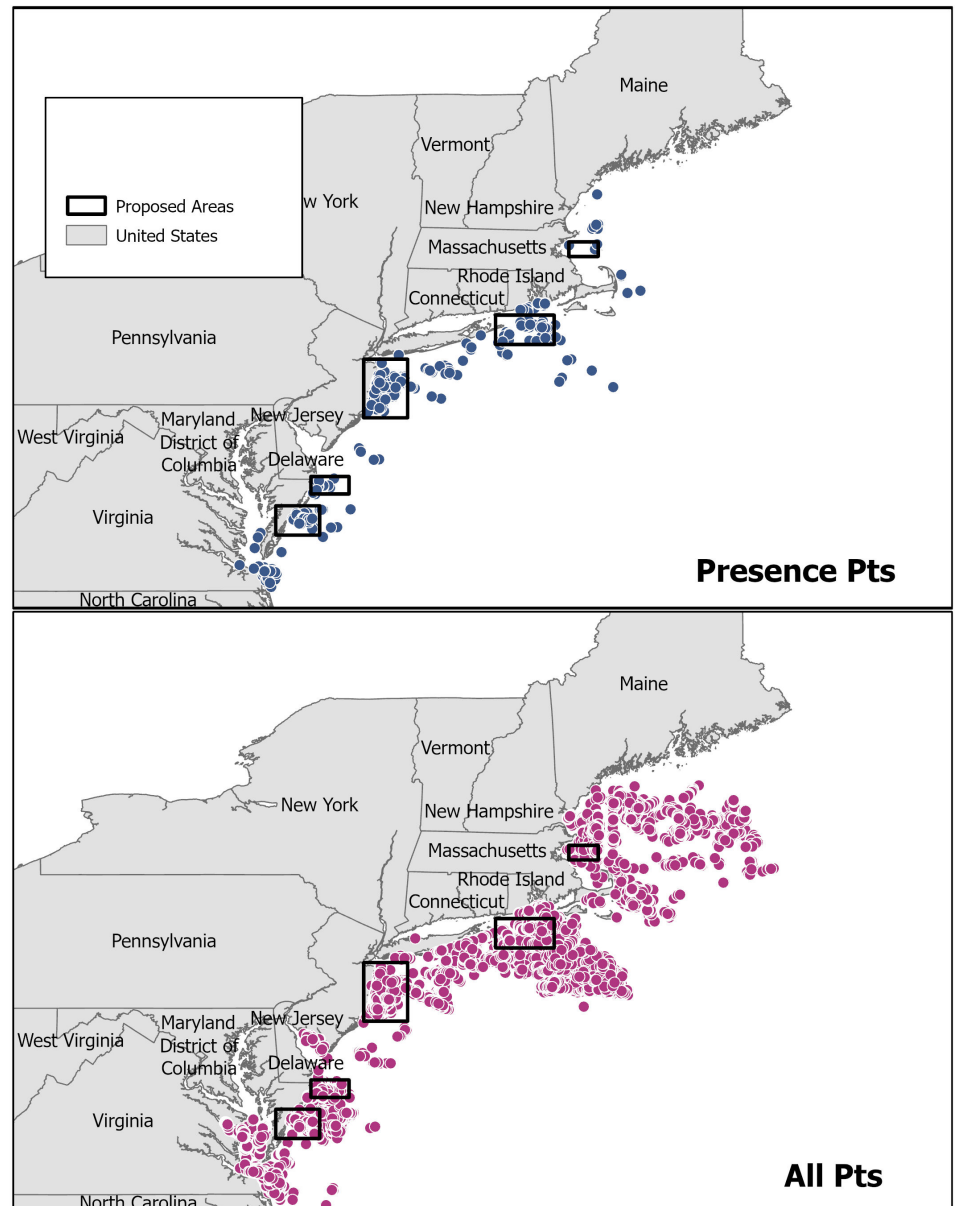
# Modifications to Fishing Practices

- The ASBWG recommends that the Councils consider measures to reduce the soak time of gillnets deployed by federally permitted fishing vessels
  - Fishing under a monkfish DAS,
  - Participating in a large mesh exemption area, or
  - Fishing under a Northeast multispecies DAS in the Large Mesh DAS program
- Soak time in the federal large mesh gillnet fisheries vary greatly across relevant fisheries due to regional differences in fishing practices and conditions
- Measures to reduce soak times may be particularly challenging
  - NMFS has explored the development of data loggers
  - Regulatory changes which do not require the use of loggers may also be possible.



# Areas of Focus

- Available observer data suggests high incidence of Atlantic sturgeon bycatch in gillnet fisheries in several distinct regions along the Atlantic coast, which roughly correspond to available examples from the literature review.

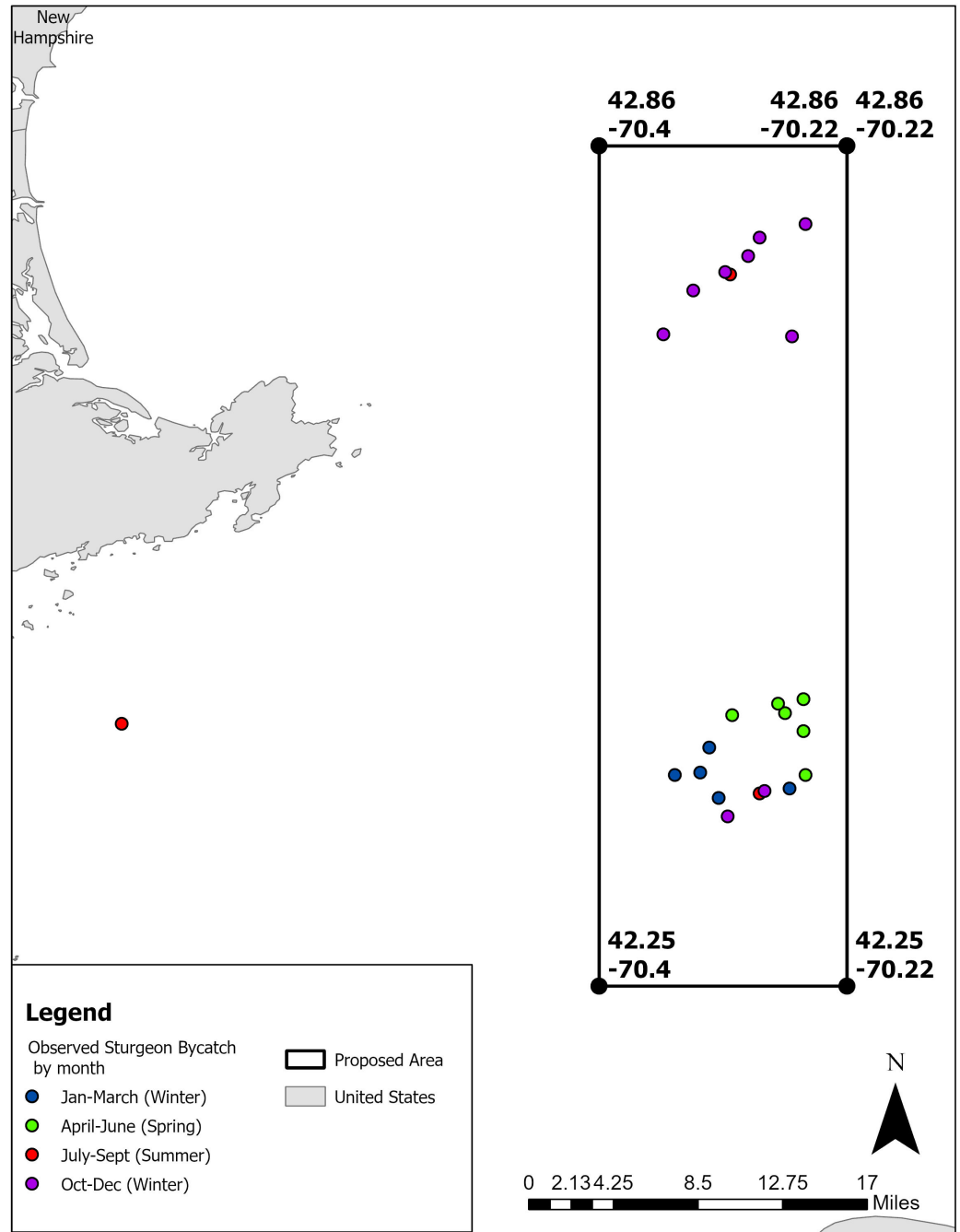


# Areas of Focus

- The ASBWG recommends that the Councils consider small, focused, and potentially seasonal measures within the Areas of Focus identified as containing a high incidence of Atlantic Sturgeon Bycatch.
- It was noted that observer based Atlantic sturgeon bycatch data is strongly related to fishing effort; The ASBWG considered but ultimately discarded broad area based measures, based on the presumption of high negative impact to the fisheries involved.
- Further work is needed to evaluate trade-offs and potential impacts.

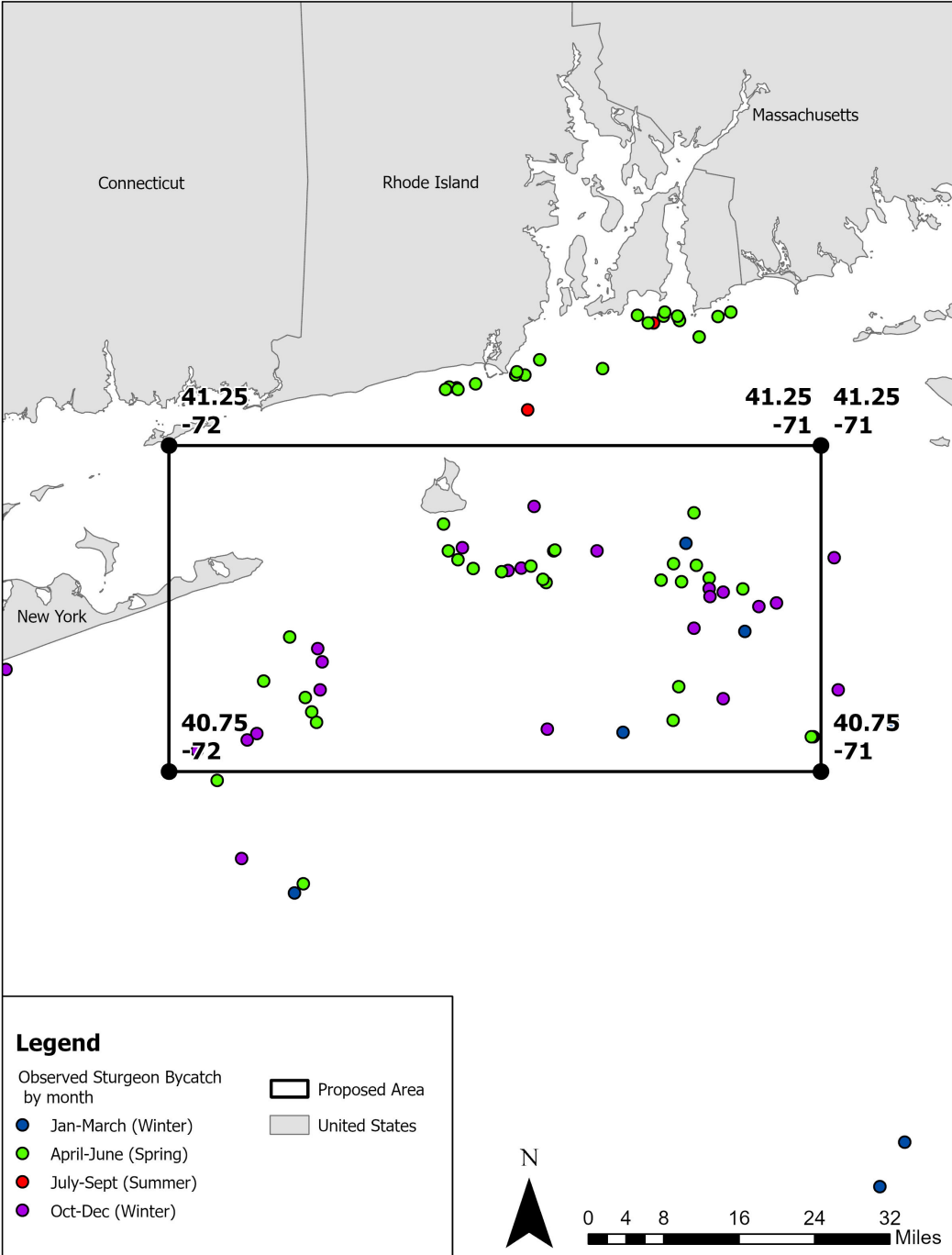


# Gulf Of Maine



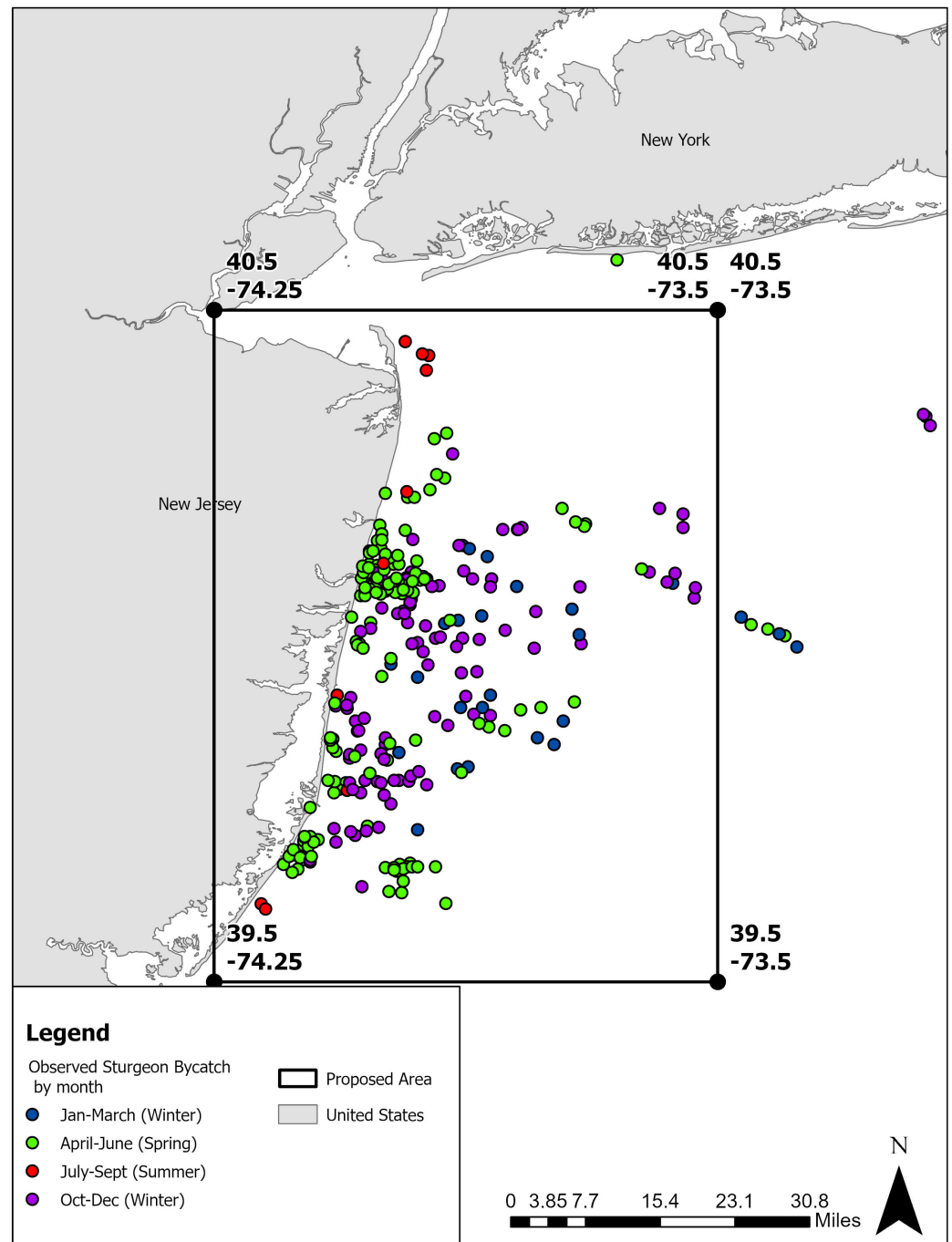


# Southern New England/ Rhode Island/ Cox's Ledge



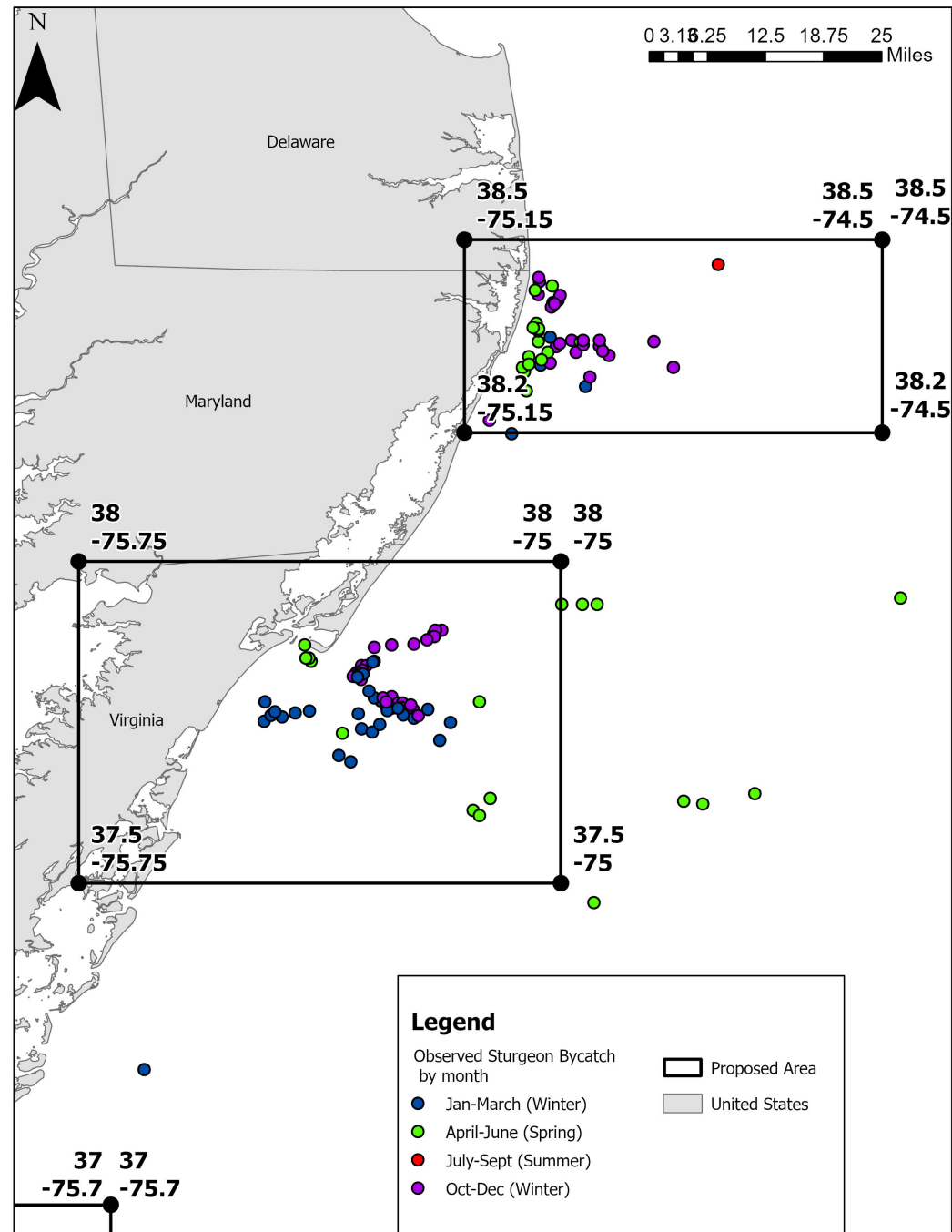
# New Jersey Bight

- Seasonal patterns are readily apparent – bycatch occurs closer to the shore in the spring months, and is more diffuse/offshore in the fall and winter
- Dunton et al (2010) proposes a small area off of Sandy hook to protect habitat and juvenile sturgeon
- Migratory patterns explored by Erickson et al 2011 imply that migratory pathways occur in this area.
- Note that bycatch of Atlantic sturgeon does occur frequently south of Long Island – this however occurs in the trawl fishery.



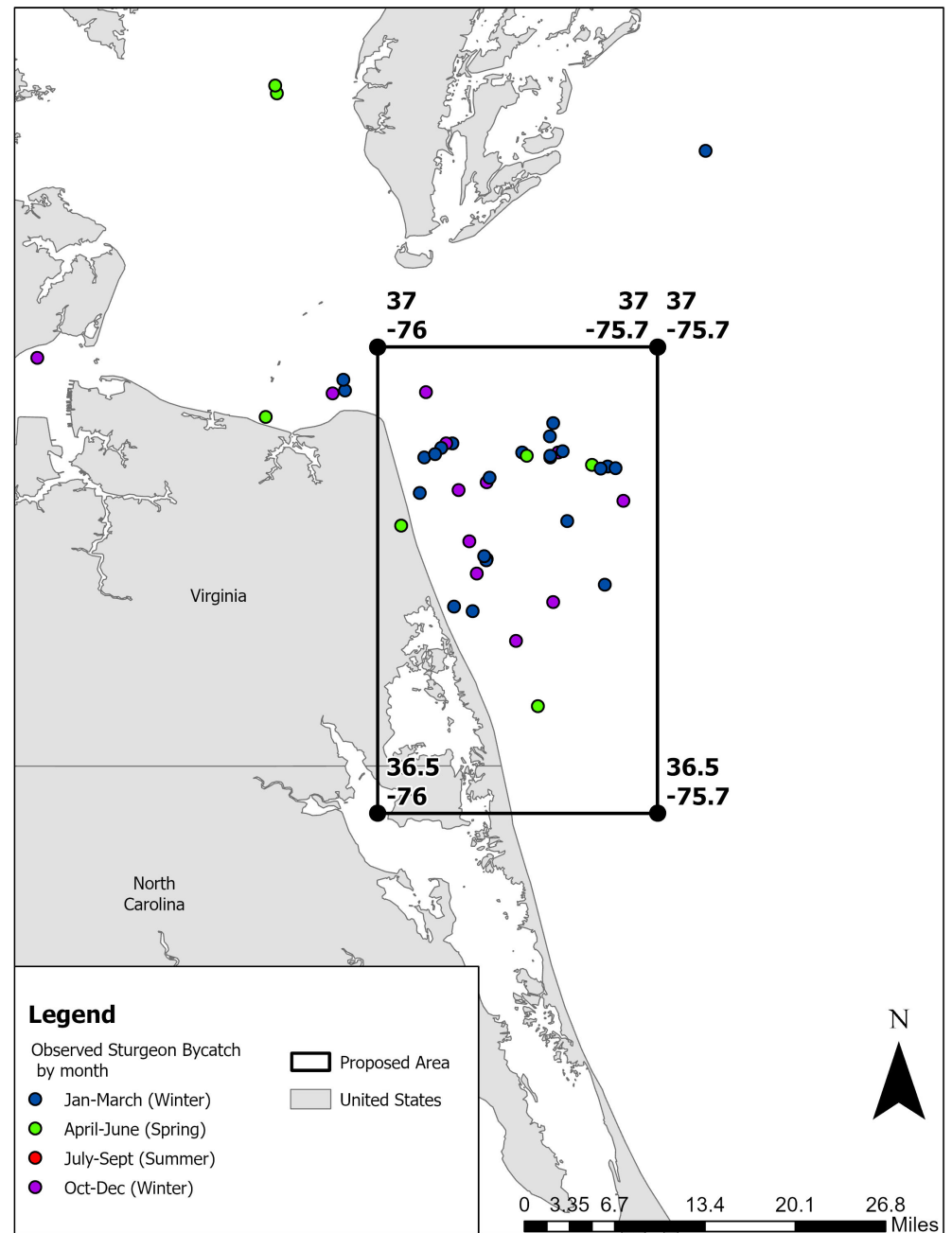
# Maryland and Virginia

- Three general areas of interaction with Sturgeon along Delmarva and south of the Chesapeake
- Evidence from Breece et al. 2016 and Erickson et al. 2011 support measures from the mouth of Delaware bay to the mouth of Chesapeake Bay.
- The northernmost of these areas displays a distinct seasonal pattern
- The area southeast of Chincoteague is less clear seasonally



# Maryland and Virginia

- Three general areas of interaction with Sturgeon along Delmarva and south of the Chesapeake
- The southernmost area shows little seasonal pattern, though most interaction occurred in fall and winter months.

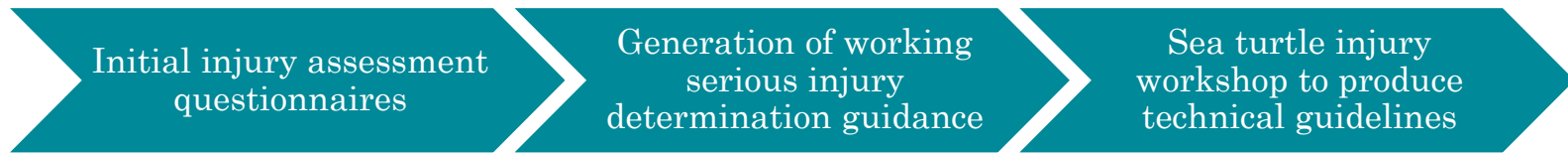


# Post Release Mortality

- Understanding of post-release mortality of Atlantic sturgeon captured in gillnet gear is poor, and the only available information is a tagging study hampered by small sample size.
- The ASBWG recommends that the Councils, Atlantic States Marine Fisheries Commission, and NOAA Fisheries prioritize focus research in two subordinate categories:
  - Quantitative estimates of post-release mortality rates
  - Injury assessment for entangled sturgeon
- ASBWG studied the workshop-style approach used to develop technical guidelines for assessing injury of sea turtles which began in 2003.



# Post Release Mortality – Sea Turtle process



- This process is a good example of work used to evaluate and develop an understanding of post-release mortality of ESA-listed species entangled in fishing gear
- Unlikely, however, to be directly applicable to sturgeon
  - Lack of an equivalent network of veterinary and rescue/rehabilitation experts

# Post Release Mortality Contd.

- The ASBWG recommends a two phased approach with three objectives:
  1. Develop protocols and criteria for the rapid visual assessment of live Atlantic sturgeon captured in gillnet and estimation of post release mortality;
  2. Facilitate information gathering of new data that quantifies post release mortality of sturgeon caught in gillnet gear; and
  3. Explore options for a citizen science program for gillnet fishermen to facilitate long term assessments of post-release mortality
- The first phase of this approach, led by NOAA Fisheries, should be to identify steps needed to acquire additional information to inform post-release mortality
- The second phase is for NOAA Fisheries, in collaboration with partners at the Councils and ASMFC to work collaboratively to carry out steps which were identified in the previous phase, and to produce technical guidelines for observers



Timeline for Action Plan and Development of Measures to Reduce Atlantic Sturgeon Bycatch in Gillnet Gear			
May 26, 2022	Draft Action Plan is released online		
June 7 – 9, 2022	Presentation at MAFMC Meeting		
June 28 – 30, 2022	Presentation at NEFMC		
August 1 – 4, 2022	Presentation at ASMFC Summer Meeting		
September 2022	Finalized Action Plan is published online		
September 27 – 29, 2022	NEFMC 2023 Priorities Setting Process Begins		
October 4 – 6, 2022	Initial MAFMC Discussion of 2023 Implementation Plan		
December 6 – 8, 2022	NEFMC 2023 Priorities Set		
December 12 – 15, 2022	MAFMC 2023 Implementation Plan Finalized		
If Councils develop action under MSA		If NMFS develops action under ESA	
January – April 2023	Council Action Development - Background Work	January – November 2023	NMFS Develops Proposed Rule
April – September 2023	Council Action Development and Final Action	November 2023	Proposed Rule Published; 30-day public comment period
December 2024	Council Submission of Action	January – May 2024	NMFS Develops Final Rule
January – February 2024	NMFS Review and Publication of Proposed Rule	May 2024	NMFS publishes Final Rule and Implementation
March – May 2024	NMFS publishes Final Rule and Implementation		



## Actions to Address Post Release Mortality from Gillnet Gear

<p>December 31, 2023</p>	<p>NMFS-led identification of the specific steps needed to acquire additional information to inform post-release mortality.</p> <p>Identify the steps and the participants needed to achieve each objective as well as the organization lead for each step (e.g., NMFS, NEFMC, MAFMC, ASMFC).</p>
<p>January 1, 2024 – December 31, 2025</p>	<p>Councils, ASMFC, and NMFS carry out steps to meet the three objectives using all opportunities within their authorities with regard to funding, permitting, and information gathering. NMFS will produce technical guidelines for NEFOP observers to make and record visual assessments of each Atlantic sturgeon captured in gillnet gear and released alive, and which will provide NMFS approach for assigning the likelihood of post-release mortality to each sturgeon based on the NEFOP observers visual assessment.</p> <p>Other: NMFS will provide an update on the progress made for each objective to the public as appropriate via normally scheduled meetings of the Councils and the ASMFC and other available means.</p>
<p>December 31, 2026</p>	<p>Other steps deemed necessary to meet Objective 2 and Objective 3 are completed by this time even if the research conducted for Objective 2 to better inform post-release mortality is on-going and/or the final results have not yet been published.</p>



# Questions?

