DIRECTOR'S REPORT

MFC Work Plan

ASMFC Meeting Summary

MAFMC Meeting Summary

SAFMC Meeting Summary

Marine Patrol Update Memo

Flounder Symposium Overview Memo

Blue Catfish Update Memo

Protected Resources Memo and ITP Reports

Landings Update - Red Drum and Flounder

Marine Fisheries Commission 2021-2024 WORKPLAN

INCORPORATING ACTIVITY UNDERWAY AND UPCOMING ASSESSMENTS

General Timelines and Abbreviations **(See "General Timelines" worksheet for details, Colored blocks below indicate MFC Action Point)**

Fishery Management Plans	(SA)	SAR	GO	(PD)	AC/Pub	PMO	A
	Stock Assessment In Progress	Stock Assessment Report Presented to MFC	Vote to Approve Goal and Objectives	Initial Plan Development by DMF/FMP AC	Advisory Committee and Public Review	Select Preferred Management Options	Vote on Final Approval
Non-FMP Issue Development	R	IP	PR	RLO	PRL		
	Request Issue Development	Information Paper	Decision to pursue rulemaking	Issue paper with rule language options	Select Preferred Rule Language		
Rulemaking	FA	NOT	NCR/PH/PC	A			
	Fiscal Analysis	Approve Notice of Text	Publish in NC Register/Hold Public Hearing&Comment Period	MFC Review Public Comment & Vote on Approval			
MFC Committee Activity	APR	JUL					
	Meeting confirmed and scheduled	Meeting anticipated					

Quarterly Business Meeting

Topic	DMF Staff Lead(s)	May -22	Aug - 22	Nov -22	Feb -23	May - 23	Aug - 23	Nov - 23	Feb - 24
Active Management Plans									
Southern Flounder FMP Amendment 3	Loeffler/Markwith	A							
Estuarine Striped Bass FMP Amendment 2	Godwin/Mathes/Hancock/Facendola	PMO	A						
Interjurisdictional FMP Amendment 2	Rock	A							
Striped Mullet FMP Amendment 2	Zapf/Paris/Dobbs	SAR	G/O	(PD)		AC/Pub	PMO	A	
Spotted Seatrout FMP Amendment 1	?/Behringer	(SA)	SAR	G/O	(PD)		AC/Pub	PMO	A
Hard Clam/Oyster	Dobbs/Facendola			G/O	(PD)		AC/Pub	PMO	A
Rulemaking									
Periodic Review and Expiration of Existing Rules, per G.S. 150B-21.3A									
Package C - General Regulations: Joint (9 Rules)		NCR/PH/PC	A						
Subchapter 18A - Shellfish Sanitation (about 42 rules)	Blum/Walsh	FA	NOT	NCR/PH/PC	A				
Subchapter 18A - Shellfish Sanitation (about 42 rules)	Blum/Walsh				FA	NOT	NCR/PH/PC	A	
Other MFC Rulemaking									
Mutilated Finfish Rule Amendment	Blum/Paris	FA	NOT	NCR/PH/PC	A				
MFC Committee Activity	**AC Meeting (Meeting month(s) in cell)**								
Northern Regional Advisory	Behringer/Paramore	MAR		OCT	JAN	APR	JUL	OCT	
Southern Regional Advisory	Moore/Stewart	MAR		OCT	JAN	APR	JUL	OCT	
Finfish Standing Advisory	Paramore/Knight	MAR		OCT	JAN	APR	JUL	OCT	
Shellfish/Crustacean Standing Advisory	Moore/Deaton			OCT	JAN	APR	JUL	OCT	
Habitat and Water Quality Standing Advisory	Deaton/Knight			OCT	JAN	APR	JUL	OCT	
Nominating	Batsavage							OCT	

END

Atlantic States Marine Fisheries Commission

2022 Spring Meeting Summary

Sustainable and Cooperative Management of Atlantic Coastal Fisheries

2022 Spring Meeting
May 2-5, 2022

For more information, please contact Toni Kerns, ISFMP, Tina Berger, Communications or the identified individual at 703.842.0740

Meeting Summaries, Press Releases and Motions

TABLE OF CONTENTS

ATLANTIC COASTAL COOPERATIVE STATISTICS PROGRAM COORDINATING COUNCIL (MAY 2, 2022)

Meeting Summary

The ACCSP Coordinating Council met to review and take action on the FY2023 ACCSP Funding Decision Document and Request for Proposals package. The Council was provided an overview of the updated documents to support approximately $1.2 million for Partner and Committee projects. The approved RFP is now open for proposal submissions through June 15, 2022. See https://www.accsp.org/what-we-do/partner-project-funding for more information. All proposals will be evaluated and ranked on merit according to the schedule in the RFP.

The Council received status presentations on three committee documents. A report by the Accountability workgroup was discussed and direction given to follow up on the report recommendations. The Atlantic Regional Recreational Data Collection Implementation plan priorities were discussed and further feedback will be obtained from the Council in the coming weeks. The Council was also provided an ACCSP Program update that included a summary of activities involving information systems and software development, recreational data, the One Stop Reporting project, the Data Warehouse, and current funding and staffing.

For more information, contact Geoff White, ACCSP Director, at geoff.white@accsp.org.

Motions

Move to approve the FY23 Funding Decision Document and RFP as presented to the ACCSP Coordinating Council.

Motion made by Ms. Fegley and seconded by Ms. Zobel. Motion is approved.

Move to charge the accountability workgroup to prioritize and develop an implementation plan based on the recommendations from the accountability report.

Motion made by Ms. Fegley and seconded by Mr. Clark. Motion is approved.

COASTAL PELAGICS MANAGEMENT BOARD (MAY 2, 2022)

Press Release

ASMFC Coastal Pelagics Board Sets Atlantic Cobia Total Harvest Quota for 2023 Fishing Season

Arlington, VA – The Commission's Coastal Pelagics Management Board approved a total harvest quota for the Atlantic migratory group of cobia of 80,112 fish for the 2023 fishing season. This total quota results in a coastwide recreational quota of 76,908 fish and commercial quota of 73,116 pounds.

The total quota level of 80,112 fish was first approved in February 2020 for the 2020-2022 fishing seasons. In 2021, the allocation of that total quota changed through Addendum I, and some states implemented new recreational cobia measures in 2021. Based on a recommendation from the Technical Committee, the Board changed the cobia quota timeframe from 2020-2022 to 2021-2023,

thereby, maintaining the previous year's harvest quota of 80,112 fish for the 2023 fishing season. This change to the quota timeframe aligns with the timing of new measures implemented in 2021.

The Board will meet in 2023 to consider setting new specifications for the 2024-2026 fishing seasons. For more information, please contact Emilie Franke, FMP Coordinator, at efranke@asmfc.org.

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PR22-14

Meeting Summary

The Coastal Pelagics Management Board met to consider changes to the three-year quota block for harvest specifications for cobia (see above press release), to receive updates on the Spanish mackerel stock assessment and federal waters management, and to elect a Vice-Chair.

The Board received two updates on Spanish mackerel. The SEDAR 78 stock assessment report for Spanish mackerel (operational/update assessment) was recently completed and is now available. The South Atlantic Fishery Management Council's (SAFMC) Scientific and Statistical Committee will review the SEDAR 78 results and provide recommendations in summer 2022, which will then be discussed by the SAFMC at their September 2022 meeting. For Spanish mackerel management measures in federal waters, Amendment 34 to the Coastal Migratory Pelagics Fishery Management Plan was recently approved by the SAFMC in March 2022 and by the Gulf of Mexico Fishery Management Council in April 2022. Council staff are currently working on finalizing the amendment to be transmitted to NMFS for rulemaking. Amendment 34 for federal waters would allow cut-off (damaged by natural predation) Atlantic Spanish mackerel caught under the recreational bag limit, which comply with the minimum size limits, to be possessed, and offloaded ashore.

The Board elected Erika Burgess from Florida as Vice-Chair of the Board. For more information, please contact Emilie Franke, Fishery Management Plan Coordinator, at efranke@asmfc.org.

Motions

Move to change the cobia quota block timeframe from 2020-2022 to 2021-2023 for the current annual total harvest quota of 80,112 fish, thereby setting the 2023 cobia harvest quota at 80,112 fish, resulting in a coastwide recreational quota of 76,908 fish and commercial quota of 73,116 pounds. Motion made by Ms. Madsen and seconded by Ms. Fegley. Motion passed by consent.

Move to elect Erika Burgess as the Vice-Chair of the Coastal Pelagics Management Board. Motion made by Mr. Haymans and seconded by Mr. Geer. Motion passed by consent.

SCIAENIDS MANAGEMENT BOARD (MAY 2, 2022)

Meeting Summary

The Sciaenids Management Board met to consider the Red Drum Simulation Assessment and Peer Review Report, receive an update on the Black Drum Benchmark Stock Assessment, and review a nomination for the South Atlantic Advisory Panel.

In 2020, the Board initiated a simulation modeling process so the Red Drum Stock Assessment Subcommittee (SAS) could determine the most appropriate assessment strategy for red drum. A peer review workshop for the Simulation Assessment was conducted this spring. The Board reviewed the Red Drum Simulation Assessment Report's findings and Peer Review Panel's recommendations on the models best suited for the next benchmark stock assessment. The Peer Review Panel recommended the stock synthesis model should be used to assess the northern (from New Jersey – North Carolina) and southern (from South Carolina – Florida) red drum stocks, while the statistical catch-at-age model should not be used. The Panel also recommended using the traffic light approach to monitor changes in landings and stock abundance in between assessments. Next steps for the SAS include completing the simulation assessment by addressing concerns raised by the Peer Review Panel and beginning work on the timeline and Terms of Reference (TORs) for the 2024Red Drum Benchmark Stock Assessment. Staff also provided a short overview of the ongoing Black Drum Benchmark Stock. Work is continuing on schedule, with an Assessment Workshop expected in July 2022 and peer review anticipated for December 2022.

Lastly, the Board approved a South Atlantic Advisory Panel nomination for Mary Ellon Ballance, a commercial pound netter from North Carolina.

For more information, please contact Tracey Bauer, Fishery Management Plan Coordinator, at tbauer@asmfc.org.

Motions
Move to accept the Red Drum Simulation Assessment and Peer Review Report.
Motion by Mr. Woodward, second by Dr. Rhodes. Motion passes by unanimous consent.

Move to approve the nomination to the South Atlantic Advisory Panel of Mary Ellon Ballance from North Carolina.
Motion made by Mr. Mannen and seconded by Mr. Gary. Approved by unanimous consent.

HORSESHOE CRAB MANAGEMENT BOARD (MAY 3, 2022)

Meeting Summary
The Board met to consider two items: a progress update on Draft Addendum VIII and an update on a Board tasking to review biomedical mortality and Best Management Practices for biomedical collections.

Staff presented the Plan Development Team's (PDT) progress and recommendations on the development of management options for Draft Addendum VIII. After accepting the Adaptive Resource Management (ARM) Framework Revision and Peer Review for management use in January 2022, the Board initiated Draft Addendum VIII to consider options for implementation. The Horseshoe Crab PDT recommended the Addendum include a management option to consider adopting the 2021 Revision for setting harvest specifications for Delaware Bay region. This option would incorporate all of the improvements to the ARM Framework recommended in the 2021 Revision, including updated models, software, and state allocations to reflect revised Delaware Bay-origin proportions, as well as the ARM update and revision process. All other aspects of the methodology for determining the allocation of the

Delaware Bay-origin harvest would remain the same. The PDT also recommended including two sub-options for rounding the harvest recommendation to protect confidential data that would be used in the model. The PDT will provide a recommendation regarding what would constitute a no action option. The Board supported the PDT's recommendations, and expects to consider Draft Addendum VIII for public comment in August 2022.

In October 2021, the PDT was tasked with reviewing the threshold for biomedical mortality and developing biologically-based options for the threshold and options for action when the threshold is exceeded. Additionally, the PDT was charged with reviewing Best Management Practices (BMPs) for handling biomedical catch and recommending options for updating and implementing BMPs. To assist the PDT in this task, the Technical Committee (TC) met in April to review Fishery Management Plan history related to the biomedical mortality threshold of 57,500 crabs, recent data, and the BMPs. The TC is not confident that a biologically-based threshold can be established given the lack of population estimates or models outside of the Delaware Bay. However, it will continue to compile information to provide guidance to the PDT. After the Board receives the PDT's recommendations at the next meeting, it will consider whether to initiate a management action to address biomedical mortality and BMPs.

For more information, please contact Caitlin Starks, Senior Fishery Management Plan Coordinator, at cstarks@asmfc.org.

Motions
No motions made.

SHAD & RIVER HERRING MANAGEMENT BOARD (MAY 3, 2022)

Meeting Summary
The Shad and River Herring Management Board met to consider updates to American shad habitat plans and Sustainable Fishery Management Plans (SFMPs), review the Technical Committee (TC) report on fish passage prioritization and the Fishery Management Plan (FMP) Review for the 2020 fishing year, receive an update on the status of the 2023 river herring benchmark stock assessment, and approve a nomination for the Advisory Panel (AP).

The Board considered an update to the American Shad Habitat Plan for the Connecticut River, as well as a new Habitat Plan from Massachusetts covering the Merrimack River. Under Amendment 3 to the FMP, all states and jurisdictions are required to develop habitat plans including information on habitat threats and restoration programs affecting American shad. Most habitat plans were originally approved in 2014 and were intended to be updated every five years but there were significant delays in the development of the Merrimack River plan. The Board approved the presented shad habitat plans.

The Board also considered updates to the New York SFMP for River Herring and the Delaware River Basin Cooperative Shad SFMP. Amendments 2 and 3 to the Shad and River Herring FMP require all states and jurisdictions that have a commercial fishery to submit an SFMP for river herring and

American shad, respectively. Plans are updated and reviewed by the Technical Committee every five years. The Board approved the presented SFMPs.

The TC Vice-Chair reported the results of the TC task from May 2021 to prioritize systems with barriers to passage for shad recovery and develop an inventory of available data that would support the development of fish passage criteria. The TC identified Federal Energy Regulatory Commission (FERC) hydropower projects that are a priority for shad recovery efforts and what data are available that could be used to develop passage performance standards for these systems. The report includes recommendations for states to evaluate projects within their jurisdictions and use the FERC relicensing process to improve fish passage at key facilities.

The Board also reviewed the FMP Review and Report for the 2020 fishing year. In 2020, river herring landings were approximately 2.05 million pounds, which was a 36% decrease from 2019, including a 77% decrease in bycatch landings. However, it was noted that the dramatic decrease in bycatch could be attributable to the elimination of the Massachusetts portside sampling program and potential COVID-19 interruptions in NOAA's Northeast Fishery Observer Program data. Non-confidential American shad landings totaled 407,179 pounds, a 49% increase from 2019, including a 24% decrease in bycatch landings. Hickory shad landings amounted to 92,023 pounds, a 36% decrease from 2019. The Plan Review Team (PRT) noted that a number of states could not complete the required monitoring under Amendments 2 and 3 due to the COVID-19 pandemic, among some other minor issues with the new compliance format. However, the PRT did not feel that the states should be held out of compliance because of interruptions due to the pandemic. Therefore, the Board approved the 2020 FMP Review, state compliance reports, all *de minimis* requests, and the PRT recommendation to slightly alter the format of the compliance reports.

The Board received an update on the 2023 river herring benchmark stock assessment, which outlined the timeline for the assessment and requested nominations for the Stock Assessment Subcommittee by May 20, 2022. The assessment is scheduled to be presented to the Board at the Annual Meeting in October 2023.

The Board considered and approved the nomination of Deborah Wilson of Maine to the Shad and River Herring Advisory Panel.

For more information, please contact James Boyle, Fishery Management Plan Coordinator, at jboyle@asmfc.org.

Motions

Move to approve and accept the American Shad Habitat Plans from CT and MA as presented today.
Motion made by Dr. Rhodes and seconded by Mr. Gilmore. Motion approved by consent.

Move to approve the Shad Sustainable Fishery Management Plan from the Delaware Basin Coop and the River Herring Sustainable Fishery Management Plan from NY as presented today.
Motion made by Mr. Gary and seconded by Mr. Cimino. Motion approved by consent.

Move to approve Fishery Management Plan Review, state compliance reports, and *de minimis* requests for ME, NH, MA, and FL for American shad and NH, GA, and FL for river herring for the 2020 fishing year.
Motion made by Mr. Keliher and seconded by Mr. Haymans. Motion approved by consent.

Move to approve the nomination of Deborah Wilson from ME to the Shad and River Herring Advisory Panel.
Motion made by Mr. Gary and seconded by Mr. Keliher. Motion approved by consent.

ATLANTIC MENHADEN MANAGEMENT BOARD (MAY 3, 2022)

Meeting Summary

The Atlantic Menhaden Management Board met to receive an overview of Atlantic menhaden landings in the 2021 fishing year, consider approval of Draft Addendum I to Amendment 3 for public comment, and review the inclusion of 2020 landings in allocation distributions.

The Board was presented an update on menhaden landings from the 2021 fishing year in anticipation of the annual Fishery Management Plan Review in August. The coastwide total allowable catch (TAC) for the 2021 and 2022 fishing years is 194,400 mt. The total catch in 2021, including directed, incidental/small-scale fishery (IC/SSF), and episodic event set aside (EESA) landings, was approximately 195,092 mt. However, IC/SSF landings amounted to 5,750 mt, which do not count towards the coastwide TAC and is a 9% decrease from 2020. Therefore, non-incidental landings totaled 189,343 mt, which is approximately 97% of the coastwide TAC and a 6% increase from 2020. While bait landings decreased from 2020, reduction landings increased by 10%.

The Board was presented an overview of the management options developed for Draft Addendum I to Amendment 3. Previous to the Board meeting, the Plan Development Team (PDT) further developed the document according to feedback from the January Board meeting and provided recommendations for the Board's consideration. The first consideration for the Board was to review a proposal from the Commonwealth of Virginia to allow for modified 2020 landings to adjust for 59 vessel days lost to the fishing fleet due to the COVID-19 pandemic. The Virginia proposal presented the PDT with evidence that 2020 landings are atypical of the recent time series. Not all states experienced impacts to their fisheries in 2020, and the impacts were disproportional across states. If the Board was going to allow for adjusted data, then all states should have the opportunity to bring forward proposals. Based on this information, the PDT drafted four options to respond to the request: (1) maintain 2020 landings as they are, (2) allow for all states to propose individual landings adjustments, (3) remove 2020 from the time series and use 2019 as the final year, or (4) replace 2020 with 2021 landings data. The Board voted to approve option 4, which replaces 2020 data with 2021. With this result, the PDT will work to create new allocation tables for the various options in the Draft Addendum and the Board will review the document again at the August meeting.

While the decision to replace 2020 data with 2021 would delay approval for public comment, the Board continued to review the Draft Addendum and the recommendations from the PDT. Draft Addendum I proposes changes to three management topics: commercial allocations, EESA, and the IC/SSF provision. The three topics are interconnected. For example, changes to allocation can affect

states' need to participate in the EESA program as well as the volume of annual IC/SSF landings. This dynamic in the management program has created additional complexity for the options outlined in the Draft Addendum. Taking into consideration PDT recommendations, the Board made a number of changes to the Draft Addendum during the meeting to reduce the complexity and possible options in the document for public comment. Below is a summary of changes made to the document and items for the PDT to work on further:

Allocation

- Replace 2020 data with 2021 in all options in Section 3.1.2.
- Remove Section 3.1.1 Option B, which outlined a two-tiered fixed minimum approach with some states starting with 0.01% and others with 0.5%.
- Remove Section 3.1.2 Option 4C, which would exclude IC/SSF and EESA landings from the moving average option.

Incidental Catch and Small-Scale Fisheries (IC/SSF) Provision

- The PDT should review the definition of trammel nets as small-scale directed gear as opposed to gill nets, which are classified as non-directed gear.
- Remove Section 3.3.1 Option 4, which would eliminate the IC/SSF provision and instill a full fishery closure when allocations are met.
- The PDT should review Section 3.3.2 Option 3, which would only allow non-directed gears to apply to the IC/SSF provision and if beach seines can be included as an exception to allow for fisheries that do not permit purse seines to utilize the program.
- The PDT should consider how to incorporate elements of gear restrictions and trip limits from Sections 3.3.2 and 3.3.3 into management responses in Section 3.3.4 Option 2B.
- Remove Section 3.3.4 Option 2A Sub-options 1 and 2, which would establish a 1% catch cap or 1% set aside for IC/SSF landings, respectively, as a management trigger.
- Remove Section 3.3.4 Option 2B Sub-option 2, which would create a pound-for-pound payback system as a management response to IC/SSF triggers.
- Remove Section 3.3.5, which had options to allow for states to access the EESA before reaching 100% of their allocation.

For more information, please contact James Boyle, Fishery Management Plan Coordinator, at jboyle@asmfc.org.

Motions

Move to approve Option 4: Remove 2020 data and add 2021 data into the Draft Addendum.
Motion made by Mr. Clark and seconded by Mr. Abbott. Motion carries (15 in favor, 1 opposed, 1 null).

Move to remove Option B: Two-tiered fixed minimum approach from Section 3.1.1. in Draft Addendum I.
Motion made by Ms. Ware and seconded by Mr. Clark. Motion carries by consent.

Move to remove Option 4c: Limiting landings used in calculation of moving average from Section 3.1.2 Draft Addendum I.
Motion made by Ms. Meserve and seconded by Mr. Train. Motion carries (16 in favor, 1 opposed).

Move to remove Sub-Option 1: Catch Cap equal to 1% of the annual TAC and 10% exceedance management trigger and Sub-Option 2: 1% set aside of the annual TAC exceedance management trigger from Section 2A: IC/SSF Management Triggers.
Motion made by Ms. Ware and seconded by Mr. LaFrance. Motion carries by consent.

Main Motion
Move to remove Sub-Option 2: Pound-for-pound payback from Section 2B: IC/SSF Management Trigger Response.
Motion made by Ms. Meserve and seconded by Ms. Patterson.

Motion to Substitute
Move to substitute to add Sub-Option 3 if the IC/SSF trigger is tripped the Board must take action to reduce IC/SSF landings and the overage will be deducted on a pound per pound basis in the subsequent year (2 years).
Motion made by Dr. Colden and seconded by Mr. LaFrance. Motion fails (2 in favor, 14 opposed, 1 null).

Main Motion
Move to remove Sub-Option 2: Pound-for-pound payback from Section 2B: IC/SSF Management Trigger Response.
Motion made by Ms. Meserve and seconded by Ms. Patterson. Motion carries (10 in favor, 6 opposed, -1 null).

Move to remove option 4 under 3.3.1 Timing of IC/SSF provision: Full closure when allocation met, no IC/SSF provision.
Motion made by Ms. Fegley and seconded by Mr. Cimino. Motion carries by consent.

Move to remove section 3.3.5: Allow access to EESA at <100% state allocation)
Motion made by Mr. Reid and seconded by Mr. Gates. Motion carries by consent.

ANNUAL AWARDS OF EXCELLENCE (MAY 3, 2022)

Press Release

ASMFC Presents Annual Awards of Excellence for 2020 and 2021

Arlington, VA - The Atlantic States Marine Fisheries Commission presented its Annual Awards of Excellence to an esteemed group of fishery managers, scientists, stakeholders and law enforcement officers for their outstanding contributions to fisheries management, science, and law enforcement along the Atlantic coast. Specifically, the award recipients for 2020 and 2021 were Lynn Fegley and Derek Orner for management and policy contributions; Rich Wong, Jimmy and Bobby Ruhle, and a subset of the Atlantic Menhaden/Ecological Reference Points Team for technical and scientific contributions; Greg DiDomenico for outreach and advocacy contributions; and Captain Michael

Eastman, Special Agents Chris McCarron and Steven Niemi, and Enforcement Officer Timothy Wilmarth for law enforcement contributions.

"Every year a great many people contribute to the success of fisheries management along the Atlantic coast. The Commission's Annual Awards of Excellence recognize outstanding efforts by professionals who have made a difference in the way we manage and conserve our fisheries," said ASMFC Chair Spud Woodward of Georgia. "I am humbled by the breadth and extent of accomplishments of the recipients and am grateful for their dedication to Atlantic coast fisheries."

Management and Policy Contributions

Lynn Fegley, Maryland Department of Natural Resources

It is impossible to overstate Lynn Fegley's contributions to the Commission and her leadership in interstate fisheries management and coastwide data collection. Her notable accomplishments include work on the implementation of ecosystem-based reference points in the management of Atlantic menhaden; writing and implementing Maryland's CARES Act Spending Plan; serving as an active member of the South Atlantic State/Federal Fisheries Management Board and subsequently the recently established Sciaenids and Pelagics Management Boards; and leading the discussion to improve accountability in coastwide harvest data standards while Chair of the Atlantic Coastal Cooperative Statistics Program Coordinating Council. Highly knowledgeable about and committed to effective interstate fisheries management and policy, Ms. Fegley consistently shows her dedication to hard work, scientific rigor, and integrity in all that she does.

Derek Orner, NOAA Fisheries

A valued federal partner for many years, Derek Orner has served as NOAA Fisheries' lead on numerous Commission management boards and committees, including those for striped bass, shad and river herring, and Atlantic menhaden, providing sound advice and guidance on the management of these species. Additionally, Mr. Orner has played a critical role to the ongoing success of interstate fisheries management through his efforts to ensure the Commission and states consistently receive their appropriated funding from Congress in a timely manner. He has a keen understanding of the Atlantic Coastal Fisheries Cooperative Management Act and a strong commitment to state/federal partnership, as exemplified by his contributions to the recently signed interagency Memorandum of Understanding between NOAA Fisheries, the U.S. Fish and Wildlife Service and the U.S. Geological Survey.

Scientific and Technical Contributions

Dr. Rich Wong, Delaware Division of Fish and Wildlife

During Rich Wong's 17-year career with Delaware Division of Fish and Wildlife, he has been a mainstay of the technical committees for a number of Mid-Atlantic species, including bluefish, summer flounder, scup, and black sea bass. Dr. Wong has long been recognized for his strong stock assessment skills, spotlighted recently in his development of the catch multiple survey analysis for the horseshoe crab benchmark assessment which was also used in the 2021 Revision of the Adaptive Resource Management Framework for the Delaware Bay.

Jimmy and Bobby Ruhle

Father and son Jimmy and Bobby Ruhle have been tireless advocates for the commercial fishing industry, while concurrently advancing cooperative/collaborative approaches to fisheries science. With decades of fishing expertise and knowledge of local fishing grounds, The Ruhles have served on the

trawl committees and advisory panels for both the Commission and Mid-Atlantic Fishery Management Council, as well as North Carolina. They are both committed to ensuring the trawl gear used on research surveys promote confidence within the industry. When it became evident that a federal research survey would not be able to sample the nearshore regions, it was Jimmy Ruhle who stepped in to work with state and federal partners to fill the gap and establish the NorthEast Area Monitoring and Assessment Program (NEAMAP) in 2007. NEAMAP has been providing valuable fisheries data ever since and is used in multiple stock assessments.

Atlantic Menhaden/Ecological Reference Points Team of Dr. Amy Schueller, Dr. Matt Cieri, Dr. Jason McNamee, Dr. David Chagaris, Dr. Andre Buchheister, Dr. Kristen Anstead, Dr. Katie Drew, Sarah Murray, and Max Appelman

A subset of members from the Atlantic Menhaden/Ecological Reference Points Team were recognized for their successful completion of two concurrently developed Benchmark Stock Assessments for Atlantic Menhaden and Ecological Reference Points (ERP). While these assessments, particularly the ERP assessment, were many years in the making and involved the contributions of dozens of individuals, this group of people have been instrumental in making the ERP assessment a reality. Through their collective work and leadership, this team of state and federal scientists and ASMFC staff helped to significantly advance the understanding of Atlantic menhaden and its role as an important forage fish. Their efforts have provided the Commission with the tools needed to fulfill its promise to stakeholders to manage menhaden in an ecologically sustainable way. Of special note are the efforts of Dr. David Chagaris and Dr. Andre Buchheister, preeminent experts in the field of fisheries resources, predator-prey interactions, and ecosystem-based fisheries management and models, for their work on the development of the ERP model which is currently being used in management.

Outreach and Advocacy Contributions

Greg DiDomenico, Lund's Fisheries

Longtime industry advocate Greg DiDomenico was recognized for his outreach and advocacy contributions to fisheries management along the coast. Previously with Garden State Seafood Association and now with Lund's Fisheries, Mr. DiDomenico has been a tireless voice for New Jersey's commercial fishing industry at the state, interstate, regional and federal levels. He has been an ever present voice at Commission and Mid-Atlantic Fishery Management Council meetings speaking on behalf of the needs of commercial harvesters.

Law Enforcement Contributions

Captain Michael Eastman, New Hampshire Fish and Game Department Law Enforcement Division

Throughout his more than 20 year career, Captain Michael Eastman with New Hampshire Fish and Game Department Law Enforcement Division has proven himself as a very capable leader who cares about the officers he works with and the resources he is charged to protect. He is a longstanding member of the Commission's Law Enforcement Committee, serving as both Vice-chair and Chair to that Committee. He also serves as the law enforcement liaison on several species management boards, including Atlantic herring, northern shrimp, and American eel. His fair and professional approach has earned him the respect of the public he serves. He has led by example and demonstrated for other officers how to become successful through hard work and determination. Captain Eastman's work ethic and level of professionalism have been assets to both New Hampshire Fish and Game and the Commission throughout his career.

Special Agents Chris McCarron and Steven Niemi, NOAA Office of Law Enforcement
The thorough and relentless investigative efforts of NOAA's Special Agents McCarron and Niemi ensured the success of two concurrent prosecutions whose illegal activities undermined the integrity of the Chesapeake Bay blue crab industry. The NOAA Office of Law Enforcement received multiple industry complaints regarding the actions of several companies who were accused of selling imported crab meat as Chesapeake Bay Blue Crab. As the Case Agents from the lead agency, Agents Niemi and McCarron coordinated with multiple State and Federal Law Enforcement entities to create and execute the investigative plan. This comprehensive investigation resulted with the companies admitting responsibility for importing over $8.7 million dollars of foreign crab meat into the U.S. illegally, mislabeled, repacked and marketed the product as Chesapeake Bay Blue Crab. Agents McCarron and Niemi worked tirelessly during their investigations and their work has had a profound and immediate impact on the region's industry.

Enforcement Officer Timothy Wilmarth
Enforcement Officer Timothy Wilmarth is being recognized for his focus and determination in developing a safe and effective enforcement strategy to address the effects of non-compliant offshore, deep set lobster gear on the mortality of the critically endangered North Atlantic right whales and in support of the Commission's American lobster management program. Enforcement Officer Wilmarth took the idea of using remote operated vehicles from concept to reality and has allowed officers to effectively locate and inspect deep set lobster gear without having to physically retrieve the gear, which has historically posed a variety of problems including the safety of officers conducting the inspections. When deployed, the ROV can detect and record any gear or tag violation from the ocean surface down to the ocean floor to include inspecting tags, escape panels, markings, and compliance with trap limits. Through his hard work and technological innovation on the project, law enforcement officers will now have a safer platform to ensure gear compliance and boost efforts to protect endangered species such as the North Atlantic right whale.

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PR22-15

In addition to the Annual Awards of Excellence presentation, Commission Chair Spud Woodward took some time to honor Laura Leach for her 40 years with the Commission. His speech follows:

"Last year, Laura Leach, Director of Finance and Administration, celebrated her 40th anniversary with the Commission. In our 81-year history, no one has ever achieved this milestone! Laura began her career with the Commission as a bookkeeper in 1981 and has held many positions since then including Comptroller, Assistant Director, Council Liaison, and Acting Executive Director over three different periods. You all know her now as our Director of Finance and Administration, a position she has held for at least two decades. Over her career, the Commission budget increased from $130,000 in 1981 to $17.5 million in 2021, while staff size increased from just a handful of people in the 1980s to over 75 in our Arlington office and scattered along the coast in a number of our member states. Laura has

managed our financial growth with skillful efficiency and oversaw staff growth through several arduous office moves.

From left: ASMFC Chair Spud Woodward, Laura Leach and ASMFC Executive Director Bob Beal

Everyone who meets Laura quickly learns how passionate, caring, dedicated, and accomplished she is. Laura's 40 years of contributions to the Commission are characterized by the depth of her caring and commitment to the larger Commission "family." Her unofficial titles include Camp Counselor, Party Planner, Morale Officer, and Activities Director. You've all experienced it in some way. She has dedicated time and effort to Commissioners' spouses, providing unique and fun activities during our annual meetings while Commissioners are hard at work. She will always go the extra mile for you. Need to make it to the airport after an overly long Commission meeting? Laura is there to say, "get in, buckle up, and I will not let you miss your flight." Broke your glasses while at a Commission meeting? Laura is the first to go out to try and get them fixed or replaced. I could go on and on.

I first met Laura in 1989 when I started my participation in the Commission process as member of Red Drum Technical Committee. From then to now, Laura has been a friend, an advisor, and a confidant. I want to take this opportunity to personally thank her for helping a Georgia boy find his way in the complicated world of interstate fisheries management.

When Laura is asked about her retirement plans, her response is always "but how can I leave my family?" Without a doubt, Laura is the heart and soul of the Commission and when she does decide to take a well-earned retirement, the Commission will be forever changed.

It is with great pleasure that I ask Laura to come up and accept a token of our appreciation for her supreme dedication to the Commission and the people who make up the Commission, past and present. Please join me in thanking our friend and colleague, Laura Leach."

EXECUTIVE COMMITTEE (MAY 4, 2022)

Meeting Summary

The Executive Committee met to discuss several issues including: the proposed FY23 Commission budget; potential revisions to the Commission's Appeals Process; use of *de minimis* in Interstate Fishery Management Plans; and receive a brief update on the review of the Commission's conservation equivalency process. The following action items resulted from the Committee's discussions:

- Ms. Leach presented the proposed FY23 Commission budget, which was reviewed and approved by the Executive Committee.

- Mr. Beal presented further revisions to the Draft Appeals Process Policy. The potential revisions have been discussed by the Executive Committee multiple times. The one remaining issue that needed to be resolved was the definition of the range of options that are available to a species management board when an appeal obligates corrective action. The Committee selected Option 3 as the preferred option for corrective action. Specifically, if the Policy Board requires a management board to take specific corrective actions, the scope of potential corrective actions must be consistent with the presentation of management options provided to the public in the Draft Amendment or Addendum. The Policy, as revised and approved by the Committee, was forwarded to the ISFMP Policy Board for final action.

- Ms. Kerns presented an update from the De *Minimis* Work Group. After a thorough discussion, the Chair tasked the Work Group to draft an options paper for review by the Committee in August.

- Ms. Kerns provided a brief update on the activities of the Commissioner and Management and Science Committee (MSC) Work Group relative to the review of the conservation equivalency program. The Work Group will present a draft to the full MSC this summer before presenting a report to the Executive Committee in August.

For more information, please contact Laura Leach, Director of Finance & Administration, at lleach@asmfc.org.

Motions
Move approval of the FY23 Budget.
Motion made by Mr. Abbott and seconded by Mr. Keliher. Motion passed unanimously.

Move acceptance of the proposed changes including option 3 to the Commission's Appeals Process Policy to be forwarded to the Policy Board for action.
Motion made by Mr. Keliher and seconded by Mr. Clark. Motion passed unanimously.

LAW ENFORCEMENT COMMITTEE (MAY 4, 2022)

Meeting Summary
The Law Enforcement Committee met to review its guidance document on the enforceability of management measures and consider whether any updates are needed; discuss enforcement issues related to the use of trackers in the American lobster fishery and Atlantic herring regulatory changes in federal waters; receive an update on tautog commercial tagging program review; receive a presentation on derelict gear and state agency reports; and review and discuss ongoing enforcement activities (via a closed session).

Enforceability Guidelines
The Committee reviewed the latest version of Guidelines for Resource Managers on the Enforceability of Fishery Management Measures and determined that some revisions are needed to better reflect

current practices. A work group was formed to review the document and provide recommendations for changes for consideration by the Committee at its next meeting.

American Lobster Trackers
Staff provided an update to the Committee on the next steps for implementing the Addendum XXIX requirements for electronic trackers for federally-permitted lobster and Jonah crab vessels. A Work Group (WG) will be convened in the next month to develop a Request for Proposals for electronic tracking devices to be considered for use in the fishery. The WG will review all proposals to evaluate and approve devices that meet the criteria required by Addendum XXIX. Several Committee members were interested in participating in WG meetings to provide input on the evaluation of tracking devices. Staff also informed the Committee that a meeting will be held next week with state and federal partners to receive input on the development of an interface that would allow administrators to query, view, and interact with electronic tracking data. Several Committee members will attend this meeting.

Atlantic Herring Regulatory Changes in Federal Waters
The Committee was updated on a ruling through the federal court system, striking down the mid-water trawl prohibition from 0-12 miles in New England Fishery Management Council's Amendment 8. Given this ruling, the provision is no longer being enforced.

Tautog Commercial Tagging Program
Staff updated the Committee on the review of the tautog commercial harvest tagging program, which was fully implemented by all states in 2021. At the January meeting, the Tautog Board received public comments from the commercial Industry relating to issues with the commercial tagging program and fish health. The Tautog Board requested staff to conduct a survey of tautog dealers to evaluate potential effects on the tautog market price. Staff received limited feedback from dealers selling live taugtog. New York State also conducted a survey of tautog dealers, shippers, and harvesters to evaluate the response to the commercial tagging program within their jurisdiction. From harvesters, a minority of harvesters are experiencing issues with the tags, primarily tags not locking or falling out, tags causing excess mortality, and the tags causing excessive damage. For shippers and dealers, a small percentage reported issues with tags not locking/falling out, tags causing excessive damage, and tags causing lesions to appear on the fish. The Committee re-iterated the importance of a tag that cannot be tampered with for this program to be a success.

Derelict Gear
The Committee received a presentation from Julia Kaplan MA DMF communication specialist and agency law clerk. Earlier this year, Julia participated in a grant-funded abandoned gear project that contracted seven lobster vessels for ten sea days to haul derelict gear in closed areas in collaboration with environmental police. During the project they hauled over 2000 traps and 600 buoy lines. Julia is analyzing potential avenues to address legal challenges associated with the disposal of abandoned gear. Current laws require the agency to return gear to its owner, despite frequently being unable to identify the owner. Julia requested information from the Committee on the frameworks used in other states to address derelict gear, successes and difficulties, and state regulations. She will communicate with the Committee after the meeting to collect this information.

In its last order of business, the Committee elected Captain N. Scott Pearce from Maine as its Vice-Chair. For more information, please contact Toni Kerns, Policy Director, at tkerns@asmfc.org.

COASTAL SHARKS MANAGEMENT BOARD (MAY 4, 2022)

Meeting Summary

The Coastal Sharks Management Board met to consider an Atlantic shortfin mako retention ban, receive an update on a proposal to list 54 sharks under the Convention on the International Trade in Endangered Species (CITES) Appendix II, and review and populate advisory panel membership.
The Board approved a zero retention limit in state waters for Atlantic shortfin mako sharks for both recreational and commercial fisheries. These measures are consistent with those proposed by NOAA Fisheries for federal highly migratory species (HMS) permit holders. This action was taken in response to the 2019 Atlantic shortfin mako stock assessment update that indicates the resource is overfished and experiencing overfishing, with a rebuild date of 2070. The zero retention limit also responds to a recent determination by the International Commission on the Conservation Atlantic Tunas that all member countries need to reduce current shortfin mako fishing mortality to accelerate the rate of recovery and to increase the probability of rebuilding success. The states will implement the non-retention policy when NOAA Fisheries posts the final rule, which is expected to occur in June 2022.

The Board received a brief presentation on the CITES Appendix II proposed listing for 54 sharks within the Carcharhinidae family. CITES is a global treaty that aims to ensure international trade of plants and animals do not threaten their survival in the wild. Species protected under CITES Appendix II include species that, although not currently threatened with extinction, may become so without trade controls. A species listing under CITES Appendix II would not prohibit international trade of the species, but it would require additional permitting requirements for all exports. Panama, a country party to CITES, has proposed listing four species of sharks including smalltail, ganges, dusky, and grey reef sharks under Appendix II because of their IUCN (International Union for Conservation of Nature) status as endangered globally. The remaining 50 species of sharks are considered lookalike species that the proposal asserts are difficult for customs officials to differentiate from the other four. The Board recommended the Commission write a letter in opposition to proposed CITES Appendix II listing of these sharks. The Board reasoned that the federal and interstate Coastal Sharks Fishery Management Plans already ensure responsible and sustainable harvest of sharks within the United States, and this would represent an undue burden on the commercial industry that regularly underachieves harvestable quota limits.

Lastly, the Board approved the nomination of Thomas Newman to the Coastal Sharks Advisory Panel. Thomas Newman is a commercial fisherman who has targeted a variety of fish for over 25 years, and is already a valued advisory panel member for North Carolina and the South Atlantic Fishery Management Council.

For more information, please contact Dustin Colson Leaning, Fishery Management Plan Coordinator, at dleaning@asmfc.org or 703.842.0740.

Motions

Move to set the retention limit to zero (close the commercial and recreational fisheries) for shortfin mako upon implementation of the NOAA final rule.
Motion made by Mr. Luisi and seconded by Mr. Clark. Motion passes with 1 null vote.

Move to nominate Thomas Newman to the Coastal Sharks Advisory Panel from North Carolina. Motion made by Mr. Batsavage and seconded by Mr. Geer. Motion passes.

ATLANTIC STRIPED BASS MANAGEMENT BOARD (MAY 4, 2022)

Meeting Summary

The Atlantic Striped Bass Management Board met to select management options, implementation dates, and consider approval of Amendment 7; review and provide guidance on the 2022 stock assessment update projection scenarios; consider next steps for Draft Addendum VII to Amendment 6; approve an Advisory Panel nomination; and elect a Vice-Chair.

After reviewing recommendations from its Technical Committee and Advisory Panel, and considering the substantial amount of public comment received via state hearings and written comment, the Board selected the final management measures to be included in Amendment 7. The Board approved the Amendment, as well as recommended its final approval by the full Commission (see press release under Business Session later in this document).

The Board reviewed the projection scenarios for the 2022 striped bass stock assessment update. The assessment update will be conducted during summer 2022 and the results are expected in October 2022. The stock assessment will focus on two rebuilding projection scenarios. The first is the status quo scenario: what is the probability of spawning stock biomass (SSB) in 2029 being at or above the SSB target under current fishing mortality (F) with the low recruitment assumption? The second is the F rebuild scenario: what F level is necessary to have a 50% chance of being at or above the SSB target in 2029 with the low recruitment assumption? The Board confirmed using a 50% probability for the F rebuild scenario is the appropriate probability since that is the basis for determining whether current measures are sufficient for rebuilding, as specified in the options selected for Amendment 7 *Section 4.4 Rebuilding Plan*. Because Amendment 7 allows the Board to consider adjusting management measures immediately following the 2022 assessment, the Technical Committee will calculate which management options would achieve F rebuild, if a reduction is needed. In order to do that, the Technical Committee will need guidance from the Board at the August 2022 Board meeting on what types of management measures to consider, including which sector(s) should take any potential reduction and guidance on measures like size limits or season considerations.

The Board postponed discussion on Draft Addendum VII to Amendment 6 until the next Board meeting in August 2022. Draft Addendum VII was initiated in response to a request from Delaware to consider allowing the voluntary transfer of commercial striped bass quota between jurisdictions that have commercial quota. The Board will consider next steps for Draft Addendum VII at the August 2022 Board meeting.

The Board approved the nomination of Jamie Lane, a commercial gillnetter from North Carolina, to the Atlantic Striped Bass Advisory Panel.

The Board elected Megan Ware from Maine as Vice-Chair of the Board. For more information, please contact Emilie Franke, Fishery Management Plan Coordinator, at efranke@asmfc.org.

Motions

Move to approve Option B in Section 4.4.1, such that for the 2022 stock assessment: F rebuild is calculated to achieve the SSB target by no later than 2029 using the low recruitment regime assumption as identified by the change point analysis and Move to approve Option B in Section 4.4.2, such that: If the 2022 stock assessment results indicate the Amendment 7 measures have less than a 50% probability of rebuilding the stock by 2029 (as calculated using the recruitment assumption specified in Amendment 7) and if the stock assessment indicates at least a 5% reduction in removals is needed to achieve F rebuild, the Board may adjust measures to achieve F rebuild via Board action.
Motion made by Dr. Armstrong and seconded by Mr. McMurray. Motion passes (15 in favor, 1 null).

Main Motion

For Tier 1 Fishing Mortality Triggers in Section 4.1, move to approve options A1, B1, and C1, such that:

- **If an F trigger is tripped, reduce F to a level that is at or below the target within 1 year.**
- **If F exceeds the F threshold, the striped bass management program must be adjusted to reduce F to a level that is at or below the target within the timeframe selected under Option A (1 year).**
- **If F exceeds the F target for two consecutive years and female SSB falls below the SSB target in either of those years, the striped bass management program must be adjusted to reduce F to a level that is at or below the target within the timeframe selected under sub-option A (1 year).**

Motion made by Dr. McNamee and seconded by Ms. Ware.

Motion to Amend

Move to amend to remove the F target trigger.
Motion made by Mr. Clark and seconded by Mr. Fote. Motion fails (3 in favor, 12 opposed).

Main Motion

For Tier 1 Fishing Mortality Triggers in Section 4.1, move to approve options A1, B1, and C1, such that:

- **If an F trigger is tripped, reduce F to a level that is at or below the target within 1 year.**
- **If F exceeds the F threshold, the striped bass management program must be adjusted to reduce F to a level that is at or below the target within the timeframe selected under Option A (1 year).**
- **If F exceeds the F target for two consecutive years and female SSB falls below the SSB target in either of those years, the striped bass management program must be adjusted to reduce F to a level that is at or below the target within the timeframe selected under sub-option A (1 year).**

Motion made by Dr. McNamee and seconded by Ms. Ware. Motion passes (1**5** in favor, 1 opposed).

Move to approve Tier 2 Options A2, B1, and C1 [within Section 4.1], such that the SSB triggers are:

- **The Board must implement a rebuilding plan within two years of the SSB management trigger being tripped.**

- **If female SSB falls below the threshold, the striped bass management program must be adjusted to rebuild the biomass to the target level within an established timeframe (not to exceed 10-years).**
- **If female SSB fall below the target for two consecutive years and F exceeds the target in either year, the striped bass management program must be adjusted to rebuild the biomass to a level that is at or above the target within an established timeframe (not to exceed 10-years).**

Motion made by Ms. Ware and seconded by Ms. Patterson. Motion passes (15 in favor, 1 null).

Move to approve Tier 3 Options A2 and B3 [within Section 4.1], such that the recruitment trigger is: If any of the four JAIs used in the stock assessment model to estimate recruitment (NY, NJ, MD, VA) shows an index value that is below 75% of all values (i.e., below the 25th percentile) in the respective JAI from 1992–2006, which represents a period of high recruitment, for three consecutive years, then an interim F target and interim F threshold calculated using the low recruitment assumption will be implemented, and the F-based management triggers defined in Section 4.1 will be reevaluated using those interim reference points. If an F-based trigger is tripped upon reevaluation, the striped bass management program must be adjusted to reduce F to the interim F target within one year.
Motion made by Dr. Armstrong and seconded by Mr. Abbott. Motion passes unanimously (16 in favor).

Main Motion
Move to approve Tier 4 Option A: Status Quo, no deferred management action. If a trigger trips, the Board must take action.
Motion by Mr. Gilmore, second by Ms. Patterson. Motion substituted.

Motion to Substitute
Move to substitute Option F: Board has already initiated action (e.g., developing addendum) in response to a different trigger.
Motion made by Mr. Clark and seconded by Mr. Cimino. Motion carries (9 in favor, 5 opposed, 2 abstentions).

Main Motion as Substituted
Move to approve Tier 4 Option F: Board has already initiated action (e.g., developing addendum) in response to a different trigger.
Motion passes (15 in favor, 1 abstention).

Main Motion
In section 4.2.2, move to approve option B2-a no harvest, spawning closure required.
Motion made by Ms. Ware and seconded by Dr. Armstrong.

Motion to Substitute
Move to substitute option B1-a, All recreational targeting prohibited for minimum 2 weeks during a wave with at least: 15% of striped bass directed trips (MRIP).
Motion made by Mr. Gilmore and seconded by Mr. Luisi. Motion fails (16 opposed).

Main Motion
In section 4.2.2, move to approve option B2-a no harvest, spawning closure required.
Motion made by Ms. Ware and seconded by Dr. Armstrong. Motion fails (4 in favor, 11 opposed, 1 abstention).

In section 4.2.2, move to approve a modified option C1: It shall be unlawful for any person to gaff or attempt to gaff any striped bass at any time when fishing recreationally.
Motion made by Mr. Clark and seconded by Mr. Abbott. Motion passes (16 in favor).

Move to accept option D2 from section 4.2.2, Recommended Outreach and Education.
Motion made by Mr. Miller and seconded by Mr. Lustig. Motion passes by consent.

Move to approve option C2 from section 4.2.2, Option for Incidental Catch Requirement: Striped bass caught on any unapproved method of take would be returned to the water immediately without unnecessary injury.
Motion made by Mr. Batsavage ad seconded by Mr. Gates. Motion carries (12 in favor, 3 opposed, 1 null).

Main Motion
Move to approve in section 4.6.2 options B1-a and B1-c: CE programs would not be approved when the stock is overfished and CE programs would not be approved when overfishing is occurring. These restrictions apply to non-quota managed recreational fisheries, with the exception of the Hudson River, Delaware River, and Delaware Bay recreational fisheries.
Motion made by Dr. Armstrong and seconded by Mr. McMurray. Motion amended.

Motion to Amend
Move to amend to remove B1-c, "and CE programs would not be approved when overfishing is occurring."
Motion made by Mr. Clark and seconded by Mr. Fote (8 in favor, 7 opposed).

Main Motion as Amended
Move to approve in section 4.6.2 options B1-a : CE programs would not be approved when the stock is overfished. These restrictions apply to non-quota managed recreational fisheries, with the exception of the Hudson River, Delaware River, and Delaware Bay recreational fisheries.
Motion passes (16 in favor).

Move to approve in section 4.6.2 option C2: CE proposals would not be able to use MRIP estimates associated with a PSE exceeding 40 and move to approve in section 4.6.2 option D1: Proposed CE programs for non-quota managed fisheries would be required to include an uncertainty buffer of 10 %, except D2 a buffer of 25% would be required when MRIP estimates PSE exceeds 30%.
Motion made by Dr. Armstrong and seconded by Dr. McNamee. Motion passes (13 in favor, 1 opposed, 2 abstentions).

Move to approve in section 4.6.2, option E2 such that CE proposals for non-quota managed fisheries must demonstrate equivalency to the percent reduction/liberalization projected for the FMP standard at the state-specific level

Motion made by Mr. Armstrong and seconded by Mr. Gilmore. (13 in favor, 1 opposed, 2 abstentions).

Move that all provisions of Amendment 7 be effective immediately except for gear restrictions. States must implement gear restrictions by January 1, 2023.
Motion made by Ms. Ware and seconded by Mr. Clark. Motion passes unanimously.

Move to recommend to the Commission the approval of Amendment 7 to the Striped Bass Interstate Fishery Management Plan as amended today.
Motion made by Ms. Patterson and seconded by Mr. Sikorski. Motion passes unanimously.

Move to approve Jamie Lane representing North Carolina to the Striped Bass Advisory Panel.
Motion made by Mr. Sikorski and seconded by Mr. Batsavage. Motion passes.

Move to elect Megan Ware as Vice-Chair of the Atlantic Striped Bass Management Board.
Motion made by Ms. Patterson and seconded by Mr. Reid. Motion passes.

INTERSTATE FISHERIES MANAGEMENT PROGRAM (ISFMP) POLICY BOARD (MAY 5, 2022)

Meeting Summary
The ISFMP Policy Board met to discuss a number of issues; the details of which are provided below.

Executive Committee Report
The Commission Chair Spud Woodard presented the Executive Committee Report (see Executive Committee meeting summary earlier in this document) to the Policy Board.

ASMFC Appeals Process Policy
The ISFMP Charter includes an opportunity for a state to appeal species management board decisions. A process was implemented in 2003 and revised to clarify appeal criteria. After the 2021 appeal decision regarding black sea bass commercial allocation, it was suggested additional improvements to the process may be appropriate. Staff presented a revised Appeals Process Policy that included changes to address (1) when the current or past Commission Chair or the Vice-Chair is from the appealing state, (2) requirements for the scope of the potential corrective action designated by the Policy Board, and (3) what happens if the management board is unable to make the changes necessary to respond to the findings of the Policy Board. There was a concern the policy did not specify the Policy Board's ability to request additional information when deciding on the appeal, therefore, the policy will be revised and brought to the Policy Board for consideration in August 2022.

De Minimis
The Commission includes *de minimis* provisions in interstate FMPs to reduce the management burden for states that have a negligible effect on the conservation of a species. The *de minimis* provisions in FMPs vary by species and include a range of requirements for management measures, reporting requirements, and *de minimis* qualification periods. The Policy Board tasked a Work Group to provide a recommendation for addressing *de minimis* that addresses the concerns raised by the Board. The Work Group recognized the need for standards across all FMPs but there is the need to allow for exceptions. The Work Group will draft an options paper that provides *de minimis s*tandards across FMPs but still

provides flexibility for the species management boards to develop unique *de minimis* provisions when necessary.

Climate Change Scenario Planning
Over the past year, East Coast fishery management bodies have been collaborating on a climate change scenario planning initiative designed to prepare fishing communities and fishery managers for an era of climate change. The goals of this project are to assess how climate change might affect stock distribution and availability of East Coast marine fisheries over the next 20 years and to identify the implications for fishery management and governance. Staff reviewed progress of the initiative and discussed the upcoming scenario creation workshop. Workshop participants will create a set of scenarios that describe how changing oceanographic, biological, and social/economic conditions could combine to create future challenges and opportunities for East Coast fisheries.

NOAA Report on Sea Turtle Bycatch in Trawl Fisheries
The Policy Board received an update from NOAA Fisheries staff on their recent public outreach efforts related to sea turtle bycatch and gear research in trawl fisheries in the Greater Atlantic Region. NOAA conducted virtual stakeholder webinars and call-in days throughout February and March to gather information from the fishing industry and other stakeholder groups to inform any future bycatch mitigation measures. Public feedback throughout this outreach consisted of questions on the sea turtle bycatch estimates, observer data, and research. Comments were received on the geographical range of the measures, tow duration issues, fishery definitions, and economic impacts. Protected Resources staff indicated that there is more research to be done and they are approximately a year away from the proposed rule stage. The Policy Board will provide comments to NOAA Fisheries on issues raised by Board members.

Law Enforcement Committee Report
The Commission staff presented the Law Enforcement Committee Report from the Committee's meeting earlier in the week (see meeting summary earlier in this document for more details).

Research Set-Aside Program
Staff presented an overview of the Mid-Atlantic Fishery Management Council's (MAFMC) Research Steering Committee's recommendations for the potential redevelopment of the Research Set-Aside (RSA) Program. The RSA Committee prioritized and redefined potential goals for the program as listed below. MAFMC will consider the RSA Committee's recommendations at its June 2022 Council meeting. If MAFMC re-initiates the RSA program, the states and Commission will provide input on their preferred details for the final program.

- Goal 1: Produce quality, appropriately peer-reviewed research that maximizes benefits to the Council, management partners, and the public and enhances the Council's understanding of its managed resources (Research)
- Goal 2: Ensure effective monitoring, accountability, and enforcement of RSA quota (Enforcement and Administration)
- Goal 3: Generate resources to fund research projects that align with the priorities of the Council (Funding)
- Goal 4: Foster collaboration and trust between scientific and fishing communities and the general public

Tautog Commercial Harvest Tagging Program
The tautog commercial harvest tagging program was fully implemented by all states in 2021. At the January meeting, the Tautog Board received public comments from the commercial Industry relating to issues with the commercial tagging program and fish health. The Tautog Board requested staff to conduct a survey of tautog dealers to evaluate potential effects on the tautog market price. Staff received limited feedback from dealers selling live taugtog. New York State also conducted a survey of tautog dealers, shippers and harvesters to evaluate the response to the commercial tagging program within their jurisdiction. From harvesters, a minority of harvesters experienced issues with the tags, primarily tags not locking or falling out, tags causing excess mortality, and the tags causing excessive damage. For shippers and dealers, a small percentage reported issues with tags not locking/falling out, tags causing excessive damage, and tags causing lesions to appear on the fish. The Policy Board discussed there was a learning curve to using the tags, as was seen in other states, and to give the program an additional year before making any changes to the tags. The Tautog Management Board will conduct a review of the program again in 2023.

Sharks CITES Appendix II Listing
The Policy Board agreed to send a letter in opposition to the Panama proposal to list 54 shark spices under CITES Appendix II (see Coastal Sharks Management Board meeting summary earlier in this document for more details). In addition, the Policy Board agreed to send a letter in opposition to proposed CITES Appendix I and II listing for spiny dogfish and an Appendix II listing for American eel.

Recreational Harvest Control Rule Addenda/Framework
The Policy Board and MAFMC met to receive a presentation on the Recreational Harvest Control Rule Addenda/Framework, review a brief summary of verbal comments received at public hearings on the Draft Addenda, and discuss next steps. The goal of the Draft Addenda/Framework is to establish a process for setting recreational bag, size, and season limits for summer flounder, scup, black sea bass, and bluefish such that the measures aim to prevent overfishing, are reflective of stock status, appropriately account for uncertainty in the recreational data, take into consideration angler preferences, and provide an appropriate level of stability and predictability in changes from year to year. The options under consideration include various methods to allow for greater stability in measures and more explicit consideration of stock status when setting the measures compared to the current process. The Policy Board and Council will review all submitted comment and summaries from the public hearings summary, and consider final action of the documents in June 2022.

For more information on the Recreational Harvest Control Rule, please contact Dustin Colson Leaning, Fishery Management Plan Coordinator, at dleaning@asmfc.org, Julia Beaty, Fishery Management Specialist with MAFMC, at jbeaty@mafmc.org, or Tracey Bauer, Fishery Management Plan Coordinator, at tbauer@asmfc.org.

For more information on all other issues described in this section, please contact Toni Kerns, Policy Director, at tkerns@asmfc.org.

Motions
No motions made.

BUSINESS SESSION (MAY 5, 2022)

Press Release

ASMFC Approves Amendment 7 to the Interstate Fishery Management Plan for Atlantic Striped Bass: *Amendment Strengthens Measures to Support Stock Rebuilding*

Arlington, VA – The Atlantic States Marine Fisheries Commission approved Amendment 7 to the Interstate Fishery Management Plan (FMP) for Atlantic Striped Bass. The Amendment establishes new requirements for the following components of the FMP: management triggers, conservation equivalency, measures to address recreational release mortality, and the stock rebuilding plan. The last striped bass stock assessment found the stock was overfished and that overfishing was occurring. This finding required the Board to end overfishing within one year and rebuild the stock by 2029. Amendment 7 strengthens the Commission's ability to reach the rebuilding goal by implementing a more conservative recruitment trigger, providing more formal guidance around uncertainty in the management process, and implementing measures designed to reduce recreational release mortality. This Amendment builds upon the Addendum VI action to address overfishing and initiate rebuilding in response to the assessment findings.

"On behalf of the Board, I would like to thank everyone who contributed to this amendment process over the past few years to address these critically important management issues. This includes ASMFC staff, and the state and federal partners who served on all the various committees involved in the development of Amendment 7, as well as the Advisory Panel. I would especially like to acknowledge former Board Chair David Borden of Rhode Island for his leadership throughout much of the process," stated Board Chair Marty Gary with the Potomac River Fisheries Commission. "Stakeholders clearly voiced their dedication and commitment to the conservation of this species through the thousands of comments we received. The Board is grateful for this tremendous public participation and believe that the actions we took through Amendment 7 are reflective of the majority of stakeholders' priorities. The Board remains focused on rebuilding this iconic species."

Amendment 7 establishes an updated recruitment management trigger, which determines when the Board is required to make management adjustments based on striped bass young-of-the-year data. The updated recruitment trigger is more sensitive to low recruitment than the previous trigger, and it requires a specific management response to low year class strength. The response requires reevaluation of the fishing mortality management triggers to account for low recruitment. If one of those triggers trips after reevaluation, the Board is required to take action to reduce fishing mortality.

Amendment 7 also updates the spawning stock biomass triggers by establishing a deadline for implementing a rebuilding plan. The Board must implement a rebuilding plan within two years of when a spawning stock biomass trigger is tripped.

For conservation equivalency (CE), which provides states the flexibility to tailor management measures, Amendment 7 does not allow CE to be used for most recreational striped bass fisheries when the stock is overfished. Amendment 7 also provides constraints around the use of Marine Recreational Information Program data for CE proposals and defines the overall percent

reduction/liberalization a proposal must achieve, including required uncertainty buffers. These restrictions are intended to minimize the risks due to uncertainty when CE is used for non-quota managed striped bass fisheries.

Since recreational release mortality is a large component of annual fishing mortality, Amendment 7 establishes a new gear restriction which prohibits gaffing striped bass when fishing recreationally. This new restriction, along with the existing circle hook requirement when fishing recreationally with bait, are intended to increase the chance of survival after a striped bass is released alive. Additionally, Amendment 7 requires striped bass caught on any unapproved method of take (e.g., caught on a J-hook with bait) must be returned to the water immediately without unnecessary injury. This provision, which is related to incidental catch, was previously a recommendation in Addendum VI to Amendment 6.

For stock rebuilding, Amendment 7 addresses the upcoming 2022 stock assessment and how it will inform efforts to meet the 2029 stock rebuilding deadline. Given concerns about recent low recruitment and the possibility of continued low recruitment, Amendment 7 requires the 2022 stock assessment's rebuilding projections to use a low recruitment assumption to conservatively account for that future possibility. Amendment 7 also establishes a mechanism for the Board to respond more quickly to the 2022 assessment results if action is needed to achieve stock rebuilding by 2029.

All provisions of Amendment 7 are effective immediately except for gear restrictions. States must implement gear restrictions by January 1, 2023. Amendment 7 will be available on the Commission's website, http://www.asmfc.org/species/atlantic-striped-bass, by the end of May. For more information, please contact Emilie Franke, Fishery Management Plan Coordinator, at efranke@asmfc.org or 703.842.0740.

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PR22-16

Motions

On behalf of the Atlantic Striped Bass Management Board, move the Commission to approve Amendment 7 to the Interstate Fishery Management Plan for Atlantic Striped Bass as amended by the Board.

Motion made by Mr. Gary. Motion is unanimously approved.

April 2022 Council Meeting Summary

The Mid-Atlantic Fishery Management Council met April 5-7, 2022, in Galloway, New Jersey. This was conducted as a hybrid meeting, with virtual and in-person participation options. Presentations, briefing materials, motions, and webinar recordings are available at http://www.mafmc.org/briefing/april-2022.

HIGHLIGHTS

During this meeting, the Council:

- Approved for public comment a final range of alternatives for the Atlantic Mackerel Rebuilding 2.0 Amendment
- Revised the 2022 specifications for *Illex* squid, increasing the Acceptable Biological Catch (ABC) from 33,000 metric tons (MT) to 40,000 MT and increasing the closure threshold from 94% to 96% of the quota
- Reviewed 2023 specifications for golden and blueline tilefish and recommended no changes
- Reviewed the 2021 Mid-Atlantic State of the Ecosystem Report and EAFM Risk Assessment
- Received an update on the East Coast Climate Change Scenario Planning Initiative
- Reviewed the preliminary results of a Council-funded research project on surfclam species diagnostics and population connectivity
- Received an update from NOAA Fisheries on recent public outreach efforts related to sea turtle bycatch and gear research in trawl fisheries
- Received presentations on offshore wind energy from two developers and the Bureau of Ocean Energy Management

Atlantic Mackerel Rebuilding Amendment

The Council reviewed a final range of alternatives for the Atlantic Mackerel Rebuilding 2.0 Amendment. After recommending several revisions, the Council approved the public hearing document for public comment. The Council is developing this amendment in response to a peer-reviewed 2021 Management Track Stock Assessment which concluded that rebuilding was unlikely to occur as originally anticipated. The stock size increased 180% between 2014 and 2019 but was still less than a quarter rebuilt, with overfishing occurring through 2019 (the last year of data in that assessment).

The Council is considering five rebuilding plans that have different probabilities of rebuilding the stock in 10 years (the Council's Scientific and Statistical Committee (SSC) advised a long-term approach). This action will set specifications for only 2023 because a new management track stock assessment should be available in 2023 to inform 2024-2025 specifications. Potential management measures include reduced commercial quotas, a 3-inch trawl mesh requirement, and recreational bag/possession limits of 10 or 15 fish. Seasonal closures are not being further considered for this action. The plan will also clarify whether any possession of Atlantic mackerel (including bait) in federal waters (beyond 3 miles) by all commercial or for-hire vessels triggers federal permitting and electronic vessel trip report (VTR) requirements. The permitting/reporting regulations are currently unclear if any possession beyond 3 miles is prohibited without a federal permit. The action would also set a 2023 river herring and shad cap for the Atlantic mackerel fishery, which has been a standard part of specifications since 2014.

Comments on the amendment may be submitted at any of five public hearings to be held between April 25 and May 2, 2022, or in writing by May 9, 2022. The public hearing document, hearing schedule, written comment instructions, and other details are available on the Atlantic Mackerel Rebuilding Amendment action page.

2022 *Illex* Squid Specifications

The Council reviewed *Illex* squid specifications for the 2022 fishing year and recommended increasing the Acceptable Biological Catch (ABC) from 33,000 metric tons (MT) to 40,000 MT. This recommendation is consistent with recommendations from the Council's SSC. After anticipated discards are deducted, the commercial quota would increase from 31,478 MT to 38,156 MT (84.1 million pounds). Because of the improved reporting, monitoring, and closure executions in recent years, the Council also recommended that the closure of the commercial fishery occur at 96% of the quota rather than the current 94%.

Golden and Blueline Tilefish

2023 Specifications Review

In 2023, golden and blueline tilefish will both be in year 2 of multi-year specifications previously adopted for the 2022-2024 fishing years. After reviewing updated fishery information and considering recommendations from its SSC, Tilefish Monitoring Committee, Advisory Panel, and staff, the Council recommended no changes to the 2023 specifications summarized below.

Summary of Golden Tilefish 2023 Specifications	
Annual Catch Limit (ACL):	1.964 million pounds
Commercial Quota (Individual Fishing Quota fishery)	1.763 million pounds
Incidental Quota	75,410 pounds
Incidental Trip Limit	500 pounds or 50 percent, by weight, of all fish (including the golden tilefish) onboard the vessel, whichever is less
Recreational Trip Limit	Bag Limit – 8-fish per angler per trip.

Summary of 2023 Blueline Tilefish Specifications	
Annual Catch Limit (ACL):	100,520 pounds
Commercial Quota:	27,140 pounds
Commercial Trip Limits	Initially 500 pounds gutted weight, reduced to 300 pounds once 70% of the quota is landed. No retention allowed once 100% of the quota is landed.
Recreational Trip Limits	Private vessels: 3-fish per angler per trip; Uninspected for-hire vessels: 5-fish per angler per trip; Inspected for-hire vessels: 7-fish per angler per trip.

Private Recreational Tilefish Permits

Private recreational vessels intending to target or retain golden or blueline tilefish are required to obtain a federal recreational tilefish permit and report catches. Council members expressed concern that some vessel operators may not be aware of these requirements, which were recently implemented in August 2020, and encouraged Council and NOAA fisheries staff to improve public awareness and compliance. Learn more about recreational tilefish permitting on the Council's Recreational Tilefish Permitting and Reporting page.

2022 Mid-Atlantic State of the Ecosystem and EAFM Risk Assessment Update Report

Dr. Sarah Gaichas (NEFSC) presented the key results and findings of the 2022 Mid-Atlantic State of the Ecosystem report. The report is provided to the Council each April and gives an overview of ecosystem-level indicators that evaluate the status and trends of ecological, environmental, economic, and social components of the Mid-Atlantic ecosystem. The 2022 report retains the new structure developed in 2021 that includes information detailing the linkages between ecosystem indicators and environmental variables, their performance relative to management

objectives, and the potential risks they pose to meeting management goals and objectives. Some of the key findings of the 2022 report include:

- Recreational effort shows a long-term increasing trend, but recreational fleet diversity is decreasing due to a shift away from for-hire to shore-based fishing.
- Ecosystem stability is showing mixed trends, with several climate and oceanography metrics changing.
- Climate change, most notably ocean warming and changes in the Gulf Stream, continues to affect the Mid-Atlantic ecosystem.

In addition, the report includes several new indicators related to catch relative to management targets, environmental justice and social vulnerability, and offshore wind development.

Dr. Gaichas also presented the 2022 EAFM Risk Assessment Update, part of the Council's EAFM structured decision framework to incorporate ecosystem considerations into the management process. Risk assessment helps identify and prioritize ecosystem interactions and risks to help the Council decide where to focus limited resources to address priority ecosystem considerations. The report is an adaptive document and updated annually with new science, analysis, and information, including many of the indicators included in the 2022 State of the Ecosystem report. The 2022 risk assessment indicated the risk ranking for seven elements decreased (i.e., lower risk) and the risk ranking for three risk elements increased (i.e., higher risk) and all other rankings remained unchanged. Additionally, the report now includes risk elements and rankings for chub mackerel. Later in 2022, the Council will initiate a comprehensive review of the risk assessment where new/different risk elements and analyses that could inform the risk criteria will be considered.

Climate Change Scenario Planning

The Council received an update on recent and upcoming activities for the East Coast Climate Change Scenario Planning initiative. The scenario planning core team recently completed the Exploration Phase of the initiative, including the development of background documents and a series of webinars exploring factors that are expected to drive changes in East Coast fisheries over the next 20 years. The next step in the initiative will be a scenario creation workshop to be held in the Washington, DC area June 21-23, 2022. Workshop participants will create a set of scenarios that describe how changing oceanographic, biological, and social/economic conditions could combine to create future challenges and opportunities for East Coast fisheries. In person workshop participation will be limited to approximately 75 individuals, to be selected based on an application open through April 18, 2022 (see the announcement of the workshop application for additional details).

Surfclam Species Diagnostics and Population Connectivity Research Project

Dr. Mathew Hare and Hannah Hartung of Cornell University presented the Council with the preliminary results of their project, "Surfclam species diagnostics and population connectivity estimates to inform management." The project examined genetic samples of the Atlantic surfclam (*S.s. solidissima*) and the Southern surfclam (*S.s. similis*), and the most dramatic new information is a population subdivision within the Atlantic surfclam resulting in 3 different taxa in the region. The final report from the project is anticipated in June 2022, with a presentation on those results to be given to the SSC at their July 2022 meeting.

Sea Turtle Bycatch in MAFMC Trawl Fisheries

The Council received an update from NOAA Fisheries staff on their recent public outreach efforts related to sea turtle bycatch and gear research in trawl fisheries in the Greater Atlantic Region. NOAA conducted virtual stakeholder webinars and call-in days throughout February and March to gather information from the fishing industry and other stakeholder groups to inform any future bycatch mitigation measures. Public feedback throughout this outreach consisted of questions on the sea turtle bycatch estimates, observer data, and research. Comments were received on the geographical range of the measures, tow duration issues, fishery definitions, and

economic impacts. Protected Resources staff indicated that there is more research to be done and they are approximately a year away from the proposed rule stage.

Offshore Wind Energy Updates

The Council received presentations on the Ocean Wind and Atlantic Shores offshore wind energy projects. Amanda Lefton, Director of the Bureau of Ocean Energy Management (BOEM), also provided updates on several developments related to offshore wind energy development.

Research Set-Aside Update

The Research Steering Committee (RSC) Chair provided a brief report on the fourth and final Research Set-Aside (RSA) Workshop held on February 16th. These workshops explored the possible redevelopment of the RSA program, which has been suspended since 2014. Summary reports are all available on the RSA Workshop page. The RSC Committee will meet on April 27 to develop recommendations for consideration at the June 2022 Council Meeting.

Next Meeting

The Council will meet with the Atlantic States Marine Fisheries Commission's Policy Board on May 5, 2022 to receive an update on the Recreational Harvest Control Rule Framework/Addenda. This meeting will be held in Arlington, VA with in-person and virtual participation options. The next full Council meeting will be held **June 7-9, 2022** in Riverhead, NY**.** A complete list of upcoming meetings can be found at https://www.mafmc.org/council-events.

South Atlantic Fishery Management Council
Full Council and Committee Reports
SUMMARY MOTIONS
March 7-11, 2022

This is a summary of the motions approved by the Council. Motions addressing actions and alternatives for FMP amendments are followed by text showing the result of the approved motion. Complete details on motions and other committee recommendations are provided in the Committee Reports available on the SAFMC website.

Full Council Session

MOTION 1: REQUEST THAT THE SSC RECONSIDER THE ABC FOR GOLIATH GROUPER

Dolphin Wahoo Committee

MOTION 2: APPROVE REGULATORY AMENDMENT 2 (MINIMUM SIZE LIMIT AND RECREATIONAL RETENTION LIMITS FOR DOLPHIN) FOR SCOPING.

MOTION 3: ADOPT THE FOLLOWING TIMING AND TASKS:

1) Conduct scoping meetings for Regulatory Amendment 2.
2) Continue developing Regulatory Amendment 2 for review at the June 2022 meeting.

Mackerel Cobia Committee

Coastal Migratory Pelagics Amendment 34 (Atlantic King Mackerel)

MOTION 4: ACCEPT THE PROPOSED DEFINITION OF A CUT-OFF (DAMAGED) FISH. For the purposes of Action 5, damaged fish, refers to king or Spanish mackerel that are damaged only through natural predation

MOTION 5: APPROVE COASTAL MIGRATORY PELAGICS AMENDMENT 34 FOR FORMAL SECRETARIAL REVIEW AND DEEM THE CODIFIED TEXT AS NECESSARY AND APPROPRIATE. GIVE STAFF EDITORIAL LICENSE TO MAKE ANY NECESSARY EDITORIAL CHANGES TO THE DOCUMENT/CODIFIED TEXT AND GIVE THE COUNCIL CHAIR AUTHORITY TO APPROVE THE REVISIONS AND RE-DEEM THE CODIFIED TEXT.

Coastal Migratory Pelagics Amendment 33 (Gulf King Mackerel)

MOTION 6: TO MOVE OPTION 2C AND 2D OF ALTERNATIVE 2 IN ACTION 2 TO CONSIDERED BUT REJECTED.

Action 2: Modify Sector Allocation and Commercial Zone Quotas for Gulf King Mackerel

Alternative 2: Modify the sector allocation for Gulf king mackerel by reallocating to the commercial sector a percentage of the average difference between the total landings from the 2016/2017 through 2019/2020 fishing years using MRIP-FES data and the total

simulated ACL for Model 2 in Appendix B for the predicted total landings by sector and the total projected ACL.

Option 2c: 75% of the average difference

Option 2d: 100% of the average difference

MOTION 7: TO REMOVE ACTION 1 FROM AMENDMENT 33 AND START A NEW FRAMEWORK ACTION.

MOTION 8: ADOPT THE FOLLOWING TIMING AND TASKS:

1) Prepare Coastal Migratory Pelagics Amendment 34 for transmittal to the Secretary of Commerce.
2) Work with Gulf Council staff, as needed, to continue work on Coastal Migratory Pelagics Amendment 33.

Snapper Grouper Committee

Release Mortality Reduction and Red Snapper Catch Levels Framework Amendment (Regulatory Amendment 35)

MOTION 9: DEVELOP THE FRAMEWORK AMENDMENT BASED ON TIME, AREA, AND DEPTH RESTRICTIONS.

MOTION 10: INITIATE A REGULATORY AMENDMENT TO INCORPORATE CATCH LEVELS FOR RED SNAPPER BASED ON SEDAR 73.

Note: the "framework amendment" of Motion 9 and the "regulatory amendment" of Motion 10 are the same amendment. Regulatory amendment 35 will consider both time, area, or depth restrictions and red snapper catch levels based on the most recent SSC recommendation.

Greater Amberjack (Amendment 49)

MOTION 11: CHANGE THE PREFERRED ALTERNATIVE UNDER ACTION 3 TO ALTERNATIVE 1 (NO ACTION) OF 28 INCHES FORK LENGTH.

Action 3. Increase the recreational minimum size limit for greater amberjack

Alternative 1 (No Action). The recreational minimum size limit is 28 inches fork length.

MOTION 12: DE-SELECT ALTERNATIVE 3 UNDER ACTION 4 AS THE PREFERRED ALTERNATIVE.

Action 4. Reduce the commercial minimum size limit for greater amberjack

Alternative 3. Reduce the commercial minimum size limit to 30 inches fork length.

MOTION 13: CHANGE PREFERRED IN ACTION 2 (SECTOR ALLOCATIONS) FROM ALTERNATIVE 1 (NO ACTION) TO ALTERNATIVE 3 (65% RECREATIONAL/35% COMMERCIAL)

MOTION 14: ADD ALTERNATIVES TO ACTION 2 (SECTOR ALLOCATIONS) FOR A 50-50 ALLOCATION AND A 55% RECREATIONAL AND 45% COMMERCIAL ALLOCATION.

MOTION 15: APPROVE AMENDMENT 49 FOR PUBLIC HEARINGS.

Red Porgy (SG Amendment 50)
MOTION 16: APPROVE AMENDMENT 50 TO THE FISHERY MANAGEMENT PLAN FOR THE SNAPPER GROUPER FISHERY OF THE SOUTH ATLANTIC REGION FOR FORMAL SECRETARIAL REVIEW AND DEEM THE CODIFIED TEXT AS NECESSARY AND APPROPRIATE. GIVE STAFF EDITORIAL LICENSE TO MAKE ANY NECESSARY EDITORIAL CHANGES TO THE DOCUMENT/CODIFIED TEXT AND GIVE THE COUNCIL CHAIR AUTHORITY TO APPROVE THE REVISIONS AND RE-DEEM THE CODIFIED TEXT.

Gag Grouper (Amendment 53)
MOTION 17: SELECT OPTION 3 AS THE PREFERRED OPTION FOR ACTION 1.
Action 1. Establish a rebuilding plan for gag.

> **Option 3.** Establish a rebuilding plan with a rebuilding timeframe to equal Tmax. This would equal 10 years with the rebuilding period ending in 2032. 2023 would be Year 1.

MOTION 18: SELECT OPTION 2 AS THE PREFERRED OPTION FOR ACTION 2.
Action 2. Revise the total acceptable biological catch, annual catch limit, and annual optimum yield for gag grouper.

> **Option 2.** Revise the acceptable biological catch and set it equal to the most recent recommendation from the Scientific and Statistical Committee. Revise the total annual catch limit and annual optimum yield for gag grouper and set them equal to the recommended acceptable biological catch. The recommended acceptable biological catch is inclusive of recreational estimates from the Marine Recreational Information Program's Fishing Effort Survey.

MOTION 19: REMOVE ACTION 6.
Action 6. Restrict spearfishing gear (including powerheads) during the gag grouper rebuilding plan.

Snowy Grouper (Amendment 51)
MOTION 20: SELECT OPTION 2 AS THE PREFERRED OPTION FOR ACTION 1.
Action 1. Revise the acceptable biological catch, total annual catch limit, and annual optimum yield for snowy grouper.

> **Option 2:** Revise the acceptable biological catch and set it equal to the most recent recommendation from the Scientific and Statistical Committee. Revise the total annual catch limit and annual optimum yield for snowy grouper and set them equal to the recommended acceptable biological catch. The recommended acceptable biological

catch is inclusive of recreational estimates from the Marine Recreational Information Program's Fishing Effort Survey.

MOTION 21: SELECT OPTION 2 AS THE PREFERRED OPTION FOR ACTION 2.

Action 2. Revise sector allocations and sector annual catch limits for snowy grouper.

Option 2. Allocate 12.45% of the revised total annual catch limit for snowy grouper to the recreational sector and 87.55% of the revised total annual catch limit for snowy grouper to the commercial sector.

MOTION 22: SELECT OPTION 1 AS THE PREFERRED OPTION FOR ACTION 3.

Action 3. Reduce the snowy grouper commercial trip limit.

Option 1 (no change). The commercial trip limit for snowy grouper is 200 pounds gutted weight.

Golden Tilefish and Blueline Tilefish (Amendment 52)

MOTION 23: SELECT ACTION 1 OPTION 2 AS PREFERRED.

Action 1: Revise the golden tilefish acceptable biological catch, total annual catch limit, and annual optimum yield (OY)

Option 2: Revise the acceptable biological catch and set it equal to the most recent recommendation from the of the Scientific and Statistical Committee. Revise the total annual catch limit and annual optimum yield for golden tilefish and set them equal to the recommended acceptable biological catch. The 2026 acceptable biological catch, total annual catch limit, and annual optimum yield would remain in place after 2026 until modified. The recommended acceptable biological catch is inclusive of recreational estimates from the Marine Recreational Information Program's Fishing Effort Survey.

MOTION 24: SELECT ACTION 2 OPTION 2 AS PREFERRED.

Action 2. Revise sector allocations and sector annual catch limits for golden tilefish

Option 2: Allocate 96.70% of the revised total annual catch limit for golden tilefish to the commercial sector and 3.30% of the revised total annual catch limit for golden tilefish to the recreational sector.

MOTION 25: ADD AN ACTION TO MODIFY THE COMMERCIAL FISHING YEAR FOR GOLDEN TILEFISH.

MOTION 26: DIRECT STAFF TO DO THE FOLLOWING:

- Develop analyses that could inform future actions for Regulatory Amendment 35 (Snapper Grouper Release Mortality Reduction).
- Work with technical experts and state agencies to develop an ad hoc advisory panel for private recreational permitting and reporting. Initial membership will be reviewed during AP selection at the June 2022 Council meeting.
- Convene a meeting of the wreckfish shareholders this spring.

- Prepare a public hearing draft of Amendment 48 (Wreckfish) for approval at the September 2022 Council meeting.
- Conduct public comment for Amendment 49 (Greater Amberjack), including a public hearing during the public comment session at the June 2022 Council meeting.
- Convene a meeting of the golden tilefish longline endorsement holders to discuss alternative ways to manage that fishery.
- Convene a meeting of the Snapper Grouper Advisory Panel in April and consider convening another meeting of the AP prior to the September Council meeting.

South Atlantic Fishery Management Council

News Release

FOR IMMEDIATE RELEASE
March 14, 2022

CONTACT: Kim Iverson
Public Information Officer
Toll Free: 866/SAFMC-10 or 843/571-4366
kim.iverson@safmc.net

Council Approves Measures for King and Spanish Mackerel, End Overfishing for Red Porgy

Work continues to address reductions of released snapper grouper species, other measures

Members of the South Atlantic Fishery Management Council wrapped up a busy meeting week in Jekyll Island, Georgia addressing federal fishery management issues and approving two amendments for review by the Secretary of Commerce. Amendment 34 to the Coastal Migratory Pelagics Fishery Management Plan in the Gulf of Mexico and Atlantic Region would increase annual catch limits for Atlantic migratory King Mackerel following the most recent stock assessment, with a total annual catch limit of 31,160,000 pounds beginning with the 2022-23 fishing year. Sector allocations would remain at 62.9% commercial and 37.1% recreational. The amendment would increase the recreational bag limit King Mackerel in federal waters off the east coast of Florida from 2 fish to 3 fish per person per day.

"The King Mackerel fishery along the Atlantic coast continues to be a success story," said Mel Bell, Council Chair. "The bag limit increase was requested by fishermen and the Council's Mackerel Cobia Advisory panel for consistency with federal regulations in the rest of the Gulf, South Atlantic, and Mid-Atlantic regions. In addition, recreational fishermen have not been meeting their annual catch limits and it is anticipated a higher bag limit may increase harvest," explained Bell. Amendment 34 would also allow the retention of cut-off (damaged) Atlantic King Mackerel and Spanish Mackerel by recreational fishermen. The fish would still need to meet minimum size limits and must be damaged by natural predation. Current regulations require bag limit fish be landed with heads and fins intact. Fishermen have reported increasing interactions with sharks and barracuda and similar provisions for cut-off fish currently exist for the commercial mackerel fishery.

King and Spanish Mackerel are managed jointly by the Gulf of Mexico and South Atlantic Fishery Management Councils with a jurisdictional boundary established at the Dade/Monroe County line. The Gulf Council is expected to approve Amendment 34 for Secretarial Review during its April 2022 meeting.

Red Porgy

The Red Porgy stock has been experiencing low recruitment for many years and management efforts to rebuild the stock have had limited success. The stock continues to be overfished and overfishing is occurring. The Council must end overfishing and implement a new rebuilding plan. Red Porgy are harvested incidentally with other snapper grouper species such as Vermilion Snapper and Gray Triggerfish by commercial fishermen and are not generally targeted recreationally.

(Continued)

***Council Approves Measures* (Continued)**

Amendment 50 to the Snapper Grouper Fishery Management Plan will establish a new rebuilding plan for Red Porgy and catch levels based on recommendations from the Council's Scientific and Statistical Committee. The amendment would reduce the commercial trip limit from 60 fish to 15 fish and the recreational bag limit from 3 fish to 1 fish per person per day, or 1 fish per person per trip, whichever is more restrictive. A recreational season would be established for Red Porgy, with harvest allowed May through June. The amendment also addresses allocations and recreational accountability measures. Amendment 50 was approved by the Council during its meeting this past week. If approved by the Secretary of Commerce, management measures are anticipated to go into place in later this year.

Other Business

Council members received an update from NOAA Fisheries on Red Snapper landings and were advised that NOAA Fisheries will make an announcement regarding the 2022 Red Snapper season in the South Atlantic at the end of May. Annually, if a season is allowed, the recreational season would open the second Friday in July and the commercial season the second Monday in July. The Council is developing Framework Amendment 35 to the Snapper Grouper Fishery Management Plan to reduce the number dead releases in the snapper grouper fishery and address Red Snapper catch levels based on the most recent recommendations by the Scientific and Statistical Committee.

After receiving recommendations from the Recreational Reporting Workgroup, the Council is considering options for private recreational Snapper Grouper permitting and reporting requirements. The Council will develop an Advisory Panel focused on this topic to assist with guidance during the development of the Private Recreational Permitting and Reporting Amendment (Snapper Grouper Amendment 46).

The Council continued to work on amendments affecting Gag, Snowy Grouper, golden Tilefish and Blueline Tilefish. An action to restrict spearfishing gear in the snapper grouper fishery relative to the rebuilding plan for Gag was removed from Amendment 53 after reviewing public comment and considering available data. The Council will get additional input from its Snapper Grouper Advisory Panel during its April 2022 meeting on management measures proposed in Snapper Grouper Amendments 51 (Snowy Grouper), 52 (golden Tilefish and Blueline Tilefish) and Amendment 53 addressing Gag.

The Council continued discussion of future management measures to consider for Dolphin through Regulatory Amendment 2 to the Dolphin Wahoo Fishery Management Plan for the Atlantic Region. The amendment includes options to extend the recreational 20" minimum size limit for Dolphin currently in place for federal waters (greater than 3 nautical miles) off the east coast of Florida, Georgia, and South Carolina northward, reduce the recreational daily bag limit of 10 fish per person, modify recreational vessel limits, and modify retention limits by captain and crew onboard charter vessels. The measures will be discussed again during the Council's June meeting and public scoping will be scheduled at a later date.

The next meeting of the South Atlantic Fishery Management Council is scheduled for June 13-17, 2022, at the Marriott Beachside in Key West, Florida. Additional information on this week's Council meeting, including committee reports, is available from the Council's website at: https://safmc.net/safmc-meetings/council-meetings/.

ROY COOPER
Governor

ELIZABETH S. BISER
Secretary

KATHY B. RAWLS
Director

May 25, 2022

MEMORANDUM

TO: N.C. Marine Fisheries Commission
FROM: Col. Carter Witten
SUBJECT: Law Enforcement Report

Issue
Law Enforcement report update.

Action Needed
For informational purposes only, **no action is needed at this time.**

Overview
The Shellfish Relay program began April 1st with officer's coordinating relays from locations in the central and southern districts. The Relay Program provides the opportunity to relay clams and oysters out of specific polluted areas to leases. Marine Patrol oversight of the relay activity is mandated by the National Shellfish Sanitation Program. The program successfully concluded on May 15th with officers overseeing 34 relays in the central region and 19 in the southern region.

Marine Patrol has a new Swiftwater Rescue Team that will be available to the North Carolina Division of Emergency Management as needed. Seven officers attended a weeklong Swiftwater Boat Operator's Course in Morganton, NC consisting of classroom and in-water training on Lake James and the Catawba River. The Marine Patrol Swiftwater Rescue Team is an asset to the region during future flooding and hurricane events.

From February to April officers conducted over 21,000 checks and issued 87 citations. Presently the Marine Patrol has nine vacant officer positions and one vacant Sergeant position.

ROY COOPER
Governor

ELIZABETH S. BISER
Secretary

KATHY B. RAWLS
Director

April 29, 2022

MEMORANDUM

TO: N.C. Marine Fisheries Commission

FROM: Michael S. Loeffler, Anne L. Markwith, Laura Lee, and Shelby White

SUBJECT: Floundering Around – Evaluating a Declining Species in the SE United States Symposium

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Issue
Update to the N.C. Marine Fisheries Commission on a Flounder Symposium hosted by the Gulf States Marine Fisheries Commission and Louisiana State University and attended by staff from the North Carolina Division of Marine Fisheries.

Action Needed
No action needed at this time

Overview
On March 29-30, 2022, the Gulf States Marine Fisheries Commission and Louisiana State University hosted a symposium entitled Floundering Around – Evaluating a Declining Species in the SE United States. The purpose of this symposium was to bring researchers and managers together to discuss declining flounder populations from North Carolina through Texas. The symposium was divided into several sections that are outlined below.

Life History and Population Dynamics

The Life History and Population Dynamics Session featured 14 presentations from topics ranging from the Stock Assessment of Southern Flounder in the South Atlantic given by NC stock assessment biologist Laura Lee to potential impacts on declining populations due to changing environmental conditions.

Aquaculture and Genetics

The Aquaculture and Genetics Session featured three presentations on stock enhancement efforts in Texas, South Carolina, and Alabama with a fourth and final presentation on Environmental Sex Determination in Southern Flounder: Implications for aquaculture and stock enhancement.

Movement and Migration

The Movement and Migration Session featured eight presentations outlining research in Texas, Mississippi, Alabama, and North Carolina waters. Three presentations were from NC researchers including Dr. Fred Scharf, Caitlin McGarigal, and Shelby White. These three presentations included

current and past research funded by the Coastal Recreational Fishing License Fund and the Commercial Fishing Resource Fund.

Synthesis Session

The symposium finished with a Synthesis Session that was comprised of four small groups, including a management and research group for both the Gulf and Atlantic states. Each group debated a series of questions and provided a summary to the larger body to facilitate discussion and highlight the many research and management questions that are common among the various states.

Key Points from Symposium:

1) increase future collaboration between South Atlantic and Gulf States researchers and agencies;
2) a changing environment, including increasing water temperatures, will likely impact southern flounder and managers should be prepared to adapt for this; and
3) management of southern flounder is complex and encompasses a broad range of knowledge, including biology, ecology, environmental science, and human dimensions. Common questions across the species range questions include: spawning locations and post-spawning movements, information on the dynamics of male southern flounder, latitudinal variation in histology, and environmental influences of temperature on sex ratios.

The agenda, abstracts for each presentation and the audio for the four sessions can be found on the GSMFC web site at: https://www.gsmfc.org/. Video of the sessions is available on the GSMFC YouTube channel.

ROY COOPER
Governor

ELIZABETH S. BISER
Secretary

KATHY B. RAWLS
Director

May 25, 2022

MEMORANDUM

TO: N.C. Marine Fisheries Commission

FROM: Janelle Johnson and Shelby White, Biologists
Division of Marine Fisheries

SUBJECT: Blue Catfish

Issue
A summary of blue catfish *(Ictalurus furcatus)* information is presented below, including life history traits, trends in abundance in the division's Albemarle Sound Independent Gill Net Survey and commercial landings, and research and management out of the Chesapeake Bay, particularly Virginia.

This information is presented at the request of the Marine Fisheries Commission.

Action Needed
For informational purposes only, **no action is needed at this time**.

Life History
Life history of blue catfish can vary by region and is dependent on environmental and ecological conditions. Blue catfish are generally believed to live around nine to 10 years. However, in Virginia waters of the Chesapeake Bay and in Lake Norman NC, blue catfish have been aged up to 25 years (Dorsey et al. 2011; Orth et al. 2017). Blue catfish are the largest catfish species in North America reaching weights in excess of 125 pounds. Females mature between ages four and seven and produce 2,000 to 4,000 eggs per pound of bodyweight. Spawning typically occurs between May and June in low salinity water with little turbulence. Blue catfish are cavity nesters, with the males guarding the nest and fry. Blue catfish are tolerant of poor water quality with high levels of nutrients, varying salinity levels, and prolonged periods of limited prey availability. These characteristics have made them successful at expanding into waterbodies outside of their native range.

Blue Catfish in North Carolina
Native to the Mississippi, Ohio, and Missouri river basins, blue catfish were introduced to many areas outside of their natural range to enhance subsistence and sport fisheries. In North Carolina blue catfish are believed to have been introduced to Lake Norman and the Pee Dee River system in the

1960s. Blue catfish were released throughout Virginia's Chesapeake Bay tributaries in the 1960s and 1970s. Blue catfish populations in North Carolina and the Chesapeake Bay have spread through range expansions and waterbody transfers by anglers.

Although blue catfish have been collected in North Carolina's coastal rivers for many years, their numbers have increased dramatically since 2013, especially in the Albemarle Sound area. This trend is documented through data collected in the division's fishery-independent gill net survey in the Albemarle Sound (Figure 1). Commercial catfish landings (aggregate of all species) in North Carolina have also increased in recent years, driven primarily by commercial landings in the Albemarle Sound and its tributaries (Figure 2). Commercial catfish landings in the rest of the state are minimal compared to the Albemarle Sound and its tributaries. Based on the division's fish house sampling, the increase in commercial catfish landings in recent years is likely due to increased blue catfish commercial landings.

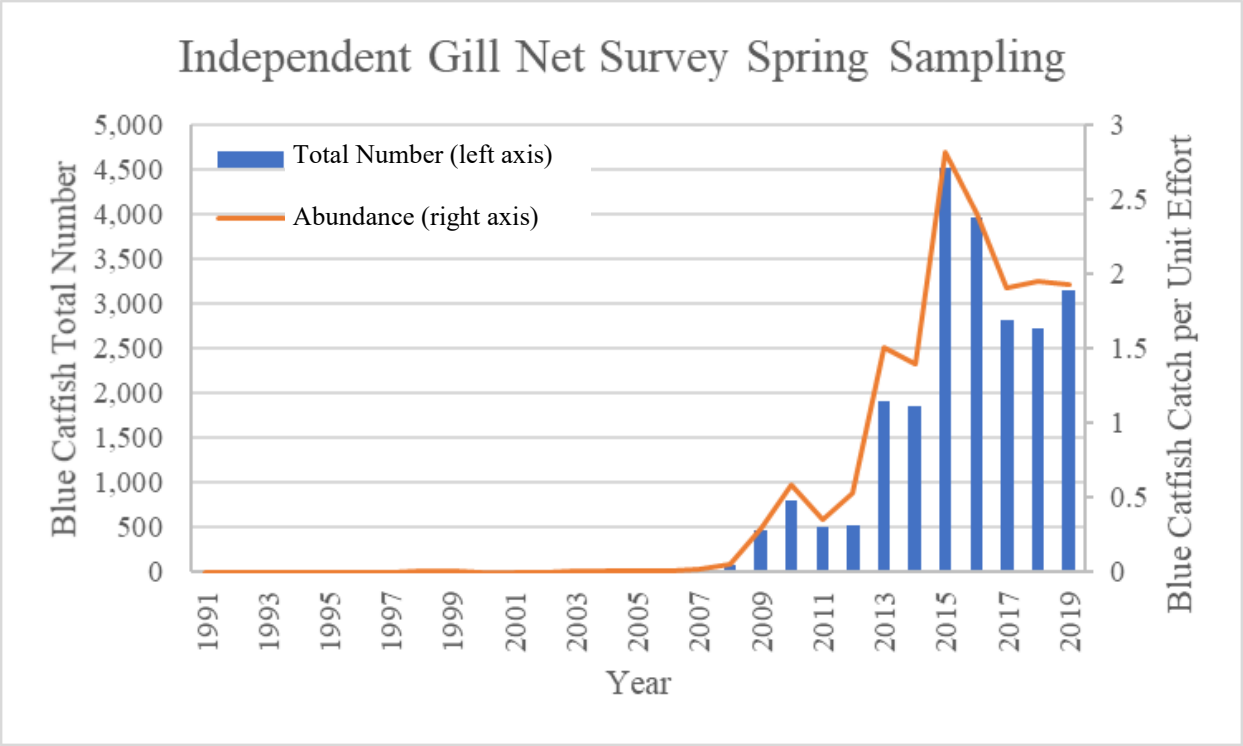

Figure 1. Total number caught and abundance of blue catfish from the Albemarle Sound Independent Gill Net Survey, 1991–2019.

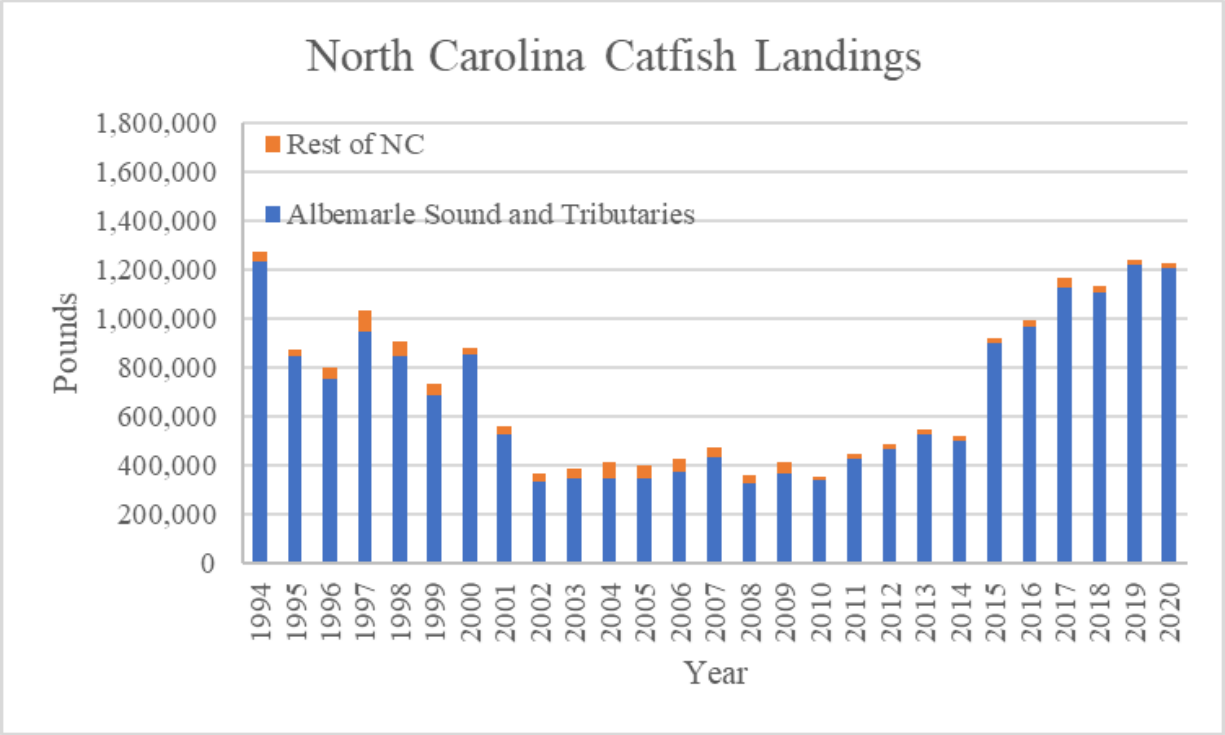

Figure 2: Commercial catfish landings for the Albemarle Sound and its tributaries (ASMA) compared with rest of the state, 1994–2020.

Blue Catfish Research

Increasing populations of blue catfish in Chesapeake Bay have led to increased research efforts from that area in recent years, particularly in Virginia. One area of research is blue catfish diet. Blue catfish were found to consume an average of 2-5% of their body weight per day (Orth et al. 2017). The top prey source from most studies was invasive Asian clams. Blue catfish also consumed some invasive plant species. Important prey items common in diet studies include white perch, gizzard shad, blue crab, American eel, and threadfin shad. American shad and river herring were encountered to a lesser degree, but this could be due to low abundance levels. Two additional species of interest documented as prey for blue catfish was Atlantic sturgeon and striped bass (Evans et al. 2021). The division has begun sampling stomach content of blue catfish captured in the Albemarle Sound Independent Gill Net Survey. Prey items have been mostly clams followed by white perch. Other prey items identified included Atlantic menhaden, gizzard shad, and flounder.

Other research from Chesapeake Bay has focused on salinity tolerance. Blue catfish have been collected in salinities up to 22 parts per thousand (Nepal and Fabrizio 2019). Although blue catfish cannot reproduce in higher salinities, the ability to tolerate such conditions has allowed blue catfish to spread throughout Chesapeake Bay tributaries. In North Carolina, the range of blue catfish has expanded to higher salinity areas as well, and they are now commonly caught in the Croatan Sound area.

In many areas within the Chesapeake Bay blue catfish have large populations, particularly in the James River. The James River sub-estuary was estimated to have 1.6 million blue catfish in a 7.5-mile study area (Fabrizio et al. 2018). Additionally, in the tidal James and Rappahannock

rivers blue catfish are estimated to comprise up to 75% of total fish biomass (Schloesser et al. 2011).

In the Chesapeake Bay, there have been impacts to native species due to increasing blue catfish populations. For instance, white catfish populations have declined with the increase of blue catfish. Additionally, one study found that in estuarine areas, consumption of blue crabs by blue catfish was enough to warrant concern (Orth et al. 2017), and although American shad and river herring are not present in blue catfish diets in high quantities, it is believed that blue catfish could impact recovery of those species in some areas due to large populations and high feeding rates of blue catfish.

Blue Catfish Management

There are conflicting opinions on how to manage blue catfish in the Chesapeake Bay which has led to inconsistent management efforts among agencies. Recreational fishers desiring trophy catfish do not want to see an increase in commercial harvest. Commercial fishers in the Chesapeake Bay typically harvest medium sized blue catfish (300-600 mm fork length), which potentially limits the number of fish available to grow to trophy sizes. Concerns over commercial fishers harvesting trophy fish led to a maximum size limit in Virginia's Chesapeake Bay waters. Promoting trophy fisheries by imposing maximum size limits on invasive species hinders conservation organizations' outreach and education efforts to the public on the need to control invasive species. There is also concern over the ability to maintain a commercial fishery should commercial fishers shift their efforts to blue catfish. In Virginia, although availability of blue catfish has created new opportunities for commercial fishers, a maximum size limit is in place for Chesapeake Bay waterways and other areas. In Maryland, there are no restrictions on blue catfish harvest. Additionally, Maryland opened tidal waters to the use of jug lines and created a $15 permit to allow commercial trotlines in tidal waters.

A workgroup was convened by the Chesapeake Bay Program to combat the invasive catfish species in the Chesapeake Bay (blue and flathead catfishes). The Invasive Catfishes Work Group released management recommendations and put together a management plan for the Chesapeake Bay. Consistency in regulations, angler and public education, and encouraging retaining or killing blue catfish that are caught were a few of the suggestions. Additionally, continuing research and monitoring of blue catfish populations, targeting areas with new occurrences for removals of blue catfish, increasing the commercial harvest, and developing new fisheries were also suggested.

In Virginia, a new commercial fishery was recently opened to target blue catfish. Four years of research on low frequency electrofishing (LFE) as a commercial fishing gear was conducted by a commercial fisherman in partnership with Dr. Matthew Balazik at Virginia Commonwealth University prior to opening the fishery. During the four-year research project over one million invasive catfish were removed from Virginia waters. Low-frequency electrofishing does not affect fish species that have scales, is very efficient at stunning catfish, and during the four-year study the initial costs of the equipment were recovered quickly. The gear has been modified since the original study and is now estimated to cost between $15,000-20,000 for the electrofishing unit and a generator. There are limitations to using LFE, however. It is only effective in a narrow temperature range (73-86°F) and narrow conductivity range (100-2000 uS/cm, roughly 0.05-1.0 ppt). Additionally, the high volume of catfish that get stunned is difficult to recover. Using one chase boat only 1–20% of stunned fish were captured. With more

chase boats, efficiency should increase. Finally, there is a five-day recovery period for a given area after it has been shocked. This is because catfish become desensitized to shocking for a short time, and larger fish require longer recovery periods. Due to this limitation, only three licenses for the Virginia LFE commercial fishery have been issued: one for each river system. There were over one hundred eligible catfish fishers, of which 25 applied for the fishery.

Increasing commercial harvest of blue catfish requires increasing market demand for blue catfish. In Maryland, supply chains were created by seafood processors in grocery stores, such as Whole Foods, and state-owned institutions including schools and universities, correctional facilities, and hospitals. Additionally, to increase consumer awareness, blue catfish were featured in outreach events and seafood festivals by Maryland's Department of Natural Resources and the Virginia Marine Products Board. Chesapeake Bay blue catfish were also listed as "Best Choice" in Monterey Bay's Seafood Watch Report in 2015.

As part of her PhD project at the Virginia Institute of Marine Science, Shelby White (NCDMF) will be conducting research on the sustainable development of the blue catfish fishery in Virginia. The primary goal of the project is to assess the economic viability and growth potential of the blue catfish fishery in Virginia through outreach efforts and collaboration with commercial fishers, processors, dealers, and distributors. The results from this project can help guide North Carolina as our blue catfish fishery expands.

Conclusion

Blue catfish are an invasive species that can have detrimental effects to coastal North Carolina ecosystems. While it is highly unlikely that increasing commercial harvest will eradicate blue catfish from coastal North Carolina, increasing harvest can help to control blue catfish populations and potentially prevent further range expansions. As is the case with the Chesapeake Bay, outreach and public education will be vital to increasing commercial harvest and consumer demand.

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ROY COOPER
Governor

ELIZABETH S. BISER
Secretary

KATHY B. RAWLS
Director

April 29, 2022

MEMORANDUM

TO: N.C. Marine Fisheries Commission

FROM: Barbie Byrd, Biologist Supervisor
Protected Resources Program, Fisheries Management Section

SUBJECT: Protected Resources Program Update

Issues
Summary information is provided from the division's Protected Resources Program for the most recent annual reports for Atlantic Sturgeon and Sea Turtle Incidental Take Permits (ITPs). The reports were submitted in February to the National Marine Fisheries Service (NMFS) as required for the 2021 ITP Year (September 1, 2020 - August 31, 2021).

Additionally, the Protected Resources Program continues to coordinate with NMFS to prepare an application for a Section 10 ITP to be in place when the current Sea Turtle ITP expires in August 2023. The anticipated timeline for submission of the full application is during the 4th quarter of 2022.

The Protected Resources Program is also in the process of developing an Observer Trip Scheduling System (OTSS). The anticipated timeline for the pilot system to begin is during the 4th quarter of 2022.

In early April, the NCDMF received a letter from NMFS withdrawing the observer coverage waiver effective May 5, 2022. The waiver was originally provided from NMFS in March 2020 in response to the COVID-19 pandemic. During this time, observers and Marine Patrol officers continued to conduct alternative platform observations in an attempt to meet observer coverage levels while limiting potential COVID-19 exposure between fishers and observers. In response to the withdrawn waiver and improved COVID-19 indicators, however, onboard observations will resume in May.

Action Needed
For informational purposes only; **no action is needed at this time**.

Overview of the ITP annual reports

During the 2021 ITP year, take levels of Atlantic Sturgeon and sea turtles in anchored estuarine gill nets did not reach or exceed allowable thresholds for any combination of species and management unit. There were 379 observations of large-mesh (≥5-inch stretched mesh) gill net trips and 165 observations of small-mesh (<5-inch stretched mesh) gill net trips.

Observers documented 16 Atlantic Sturgeon in large-mesh gill nets and one Atlantic Sturgeon in small-mesh gill nets. Additionally, two live sturgeon that could not be identified to species were observed in Management Unit A. Sixteen of the 17 Atlantic Sturgeon were alive. Of the 17 observed Atlantic Sturgeon, most occurred in Management Unit A (n=15) with one each in Management Unit B and Management Unit C.

Observers documented 17 sea turtles (Green=15, Kemp's Ridley=1, Loggerhead=1) in large-mesh gill nets and zero sea turtles in small-mesh gill nets. All 17 observed sea turtle interactions occurred during fall and consisted of 14 live and three (all green sea turtles) dead. Of the 17 observed sea turtles, 13 occurred in Management Unit B and four occurred in Management Unit E.

The Observer Program continues to have difficulty scheduling observed trips with fishers. Out of 1,396 phone calls and in-person contacts across all seasons, observers spoke with a fisher 35% of the time, but were only successful in scheduling a trip 1% of the time (n=14 trips). This means that of the 544 observations (379 large mesh, 165 small mesh), 530 of them occurred because observers or Marine Patrol officers searched for and found effort on the water using the alternative platform approach. Observers and Marine Patrol officers made an additional 1,092 (145 and 947, respectively) unsuccessful attempts to find and observe a trip using alternative platform across all seasons. As such, searching for effort on the water provided a success rate of only 33%.

Annual Atlantic Sturgeon Interaction Monitoring of Anchored Gill-Net Fisheries in North Carolina for Incidental Take Permit Year 2021 (1 September 2020–31 August 2021)

Annual Completion Report for Activities under Endangered Species Act Section 10 Incidental Take Permit No. 18102

Barbie L. Byrd and Lucas G. Pensinger

North Carolina Department of Environmental Quality
North Carolina Division of Marine Fisheries
Protected Resources Program
3441 Arendell Street
Morehead City, NC 28557

28 February 2022

Table of Contents

List of Tables

List of Figures

1 INTRODUCTION

The North Carolina Division of Marine Fisheries (NCDMF) applied to National Marine Fisheries Service (NMFS) for an Incidental Take Permit (ITP) under Section 10(a)(1)(B) of the Endangered Species Act (ESA) of 1973 (Public Law 93-205, ESA) on 5 April 2012 for Atlantic Sturgeon (*Acipenser oxyrinchus*) interactions with anchored gill-net fisheries in North Carolina's estuarine waters. Anchored gill nets are a passive gear deployed with an anchor, stake, or boat at one or both ends of the net string or operation; they do not include run-around, strike, drop, or drift gill nets. The application for the ITP was prompted by notification from NMFS in February 2012 indicating the intent to list the Carolina Distinct Population Segment (DPS) of Atlantic Sturgeon as endangered under the ESA. The application proposed a Conservation Plan that ensured only an authorized level of Atlantic Sturgeon incidental takes would occur, while allowing North Carolina's estuarine anchored gill-net fisheries to operate. The ITP authorizes such takes that are incidental to otherwise lawful fishing activity. For this report, the term "gill net" refers to anchored gill nets and mesh sizes are provided as stretched mesh unless stated otherwise.

The NCDMF received the Atlantic Sturgeon ITP (No. 18102) on 22 July 2014 after a series of revisions based on comments by the NMFS and a final application submitted on 2 January 2014 (Daniel 2014; NMFS 2014; McConnaughey et al. 2019a). The ITP had similarities with the Section 10 ITP (No. 16230) that NCDMF already had for incidental takes of sea turtles in estuarine anchored gill nets. For example, the Atlantic Sturgeon ITP defined an ITP Year as 1 September through 31 August of the following year, established annual authorized levels of incidental takes across geographic regions (Tables 1 and 2), and included a Conservation Plan to monitor, minimize, and mitigate incidental takes (i.e., of Gulf of Maine, New York Bight, Chesapeake, Carolina, and South Atlantic DPSs) in otherwise lawful gill-net fisheries operating in North Carolina estuarine waters. The Conservation Plan in both ITPs included a state-wide estuarine gill-net observer program to monitor interactions that can be counted and extrapolated when applicable across the fishery within a given season and area. In contrast to the sea turtle ITP, the Atlantic Sturgeon ITP defined large-mesh gill nets as ≥5 inch and small-mesh gill nets as <5 inch stretched mesh, included four not three seasons (fall, winter, spring, and summer), and defined five not six geographic regions (Management Units A, B, C, D, E; Figure 1). Similar to the sea turtle ITP, the Atlantic Sturgeon ITP set required observer coverage thresholds as a minimum of 7% with a goal of 10% for large-mesh gill nets and a minimum of 1% with a goal of 2% for small-mesh gill nets. In contrast, however, the observer coverage requirements were set across management units for a given season, not within each management unit in a season. For both ITPs, if observer data indicated that takes were approaching or exceeding authorized thresholds, the NCDMF could use an adaptive management approach to mitigate incidental takes by implementing temporary management options when needed using the NCDMF director's Proclamation authority (General Statute 143B-289.52).

To maintain incidental takes below authorized levels, the Conservation Plan consisted of a variety of measures for gill nets operating in estuarine waters across the state. These measures primarily included the continuation of restrictions put in place by the NCDMF sea turtle ITP (16230) (NMFS 2013). Specifically, the restrictions prohibited large-mesh (as defined by the sea turtle ITP as ≥4 inch) gill nets in the deep waters of Pamlico Sound, limited soak times to an hour before sunset to an hour after sunrise in portions of the state, limited days of fishing depending on location, restricted net height to no more than 15 meshes, restricted total net yardage to a maximum of 2,000 yards per vessel in portions of the state; and required for some areas that net configurations for a

string of nets (each net is called a 'shot') be constructed of shots no longer than 100 yards with a 25-yard break between shots. Gill nets (≥4 inch stretched mesh) set in the southern portion of the state were restricted to a maximum of 1,000 yards per fishing operation (M-31-2014) (http://portal.ncdenr.org/web/mf/proclamation-m-31-2014).

On 13 July 2017, the NCDMF requested a minor modification to the Atlantic Sturgeon ITP allocation of authorized takes in Management Units A and C to be listed as annual rather than seasonal takes. The NCDMF explained that annual take thresholds would provide greater flexibility in managing the fishery while minimizing the frequency of full seasonal closures. Further, the NCDMF emphasized that they would actively monitor fisheries and take levels daily to limit takes, particularly dead takes. On 19 July 2017, the NMFS sent a letter to the NCDMF agreeing with the request for the minor modification but encouraged staff to incorporate any further anticipated minor modifications into the application process for an updated ITP (McConnaughey et al. 2019a).

Significant regulatory changes were enacted during fall 2019 (the 2020 ITP Year) for the Southern Flounder (*Paralichthys lethostigma*) fisheries. These regulations were included in Amendment 2 of the Southern Flounder Fishery Management Plan (FMP) adopted by the North Carolina Marine Fisheries Commission on 23 August 2019 (NCDMF 2019). This action was taken because the most recent Southern Flounder stock assessment indicated that the stock is overfished, and overfishing is occurring. North Carolina state law requires management actions be taken to end overfishing within two years and to recover the stock from an overfished condition within 10 years. To meet these legal requirements, the NCDMF determined that a 62% reduction in overall harvest was necessary for 2019 and a 72% reduction would be needed beginning in 2020. To meet this reduction, regulations were implemented that, among other measures, severely limited where and when large-mesh gill nets were allowed. For the commercial gill-net fishery, these regulations included drastic reductions in the number of days the fishery would open, 25% reductions in allowed yardage of large-mesh gill nets and soak-time limits of large-mesh gill nets to overnight soaks state-wide where before this was not required for nets in Management Units A and C.

Another significant event that occurred during the 2020 ITP Year and continued during the 2021 ITP Year was the COVID-19 pandemic. On 20 March 2020, the NMFS waived the requirement for boats fishing in federally managed fisheries to carry observers or at sea monitors due to concerns about the transmission of COVID-19. The NMFS extended this waiver to the NCDMF Observer Program on 23 March 2020; the waiver was in place throughout the rest of the 2020 ITP Year and all of the 2021 ITP Year.

This annual report outlines observer activity, fishing activity, and total or estimated takes of Atlantic Sturgeon for the 2021 ITP year, 1 September 2020–31 August 2021. The original deadline for annual reports was 31 January per the ITP; however, in January 2017 the deadline was extended to the last day in February following a request by the NCDMF (McConnaughey et al. 2019a). Data for fishing activity, measured in number of trips, are finalized only for 2020 (fall and part of winter). After the preliminary data for 2021 are finalized in May 2022, observer coverage and authorized estimated Atlantic Sturgeon takes will be recalculated and finalized estimates will be provided to the NMFS in the form of an addendum.

2 METHODS

2.1 Observer Activity

A sea-day schedule of projected observer trips for each season by month and management unit during the 2021 ITP Year was developed during the prior season, recognizing that the COVID-19 pandemic would likely impact planned observer activity. The number of projected observer trips by month and management unit was based on the maximum goal for coverage outlined in the Conservation Plan: 10% coverage of the total large-mesh gill-net fishing trips and 2% coverage of the total small-mesh gill-net fishing trips. Data on commercial fishing effort come from the NCDMF Trip Ticket Program (TTP), whereby fish dealers complete a trip ticket every time a commercial fisher sells finfish and shellfish. Trip tickets record information such as gear type, area fished, species harvested, and total weight by species. For anchored gill nets, the TTP defines large-mesh and small-mesh gill nets the same as the Atlantic Sturgeon ITP. As such, projected observer trips were stratified across each month within four seasons and six management units proportional to the NCDMF TTP data of reported fishing trips. The seasons crossed calendar years and were defined as follows: fall (September–November 2020), winter (December 2020–February 2021), spring (March–May 2021), and summer (June–August 2021). Although the Conservation Plan outlined in the Atlantic Sturgeon ITP identified five management units (A, B, C, D, and E), projected observer trips were allocated according to the Conservation Plan in the sea turtle ITP, which splits Management Unit D into D1 and D2 (Figure 1). Within Management Unit B, large-mesh gill nets operating in Pamlico Sound were confined to specific subunits (Shallow Water Gill-Net Restricted Areas 1-4, and Mainland Gill-Net Restricted Area), effectively closing the fishery in the deep waters of Pamlico Sound and in corridors near Ocracoke, Hatteras, and Oregon inlets (Daniel 2013; Figure 1).

Projecting observer trips for the sea-day schedule typically has been calculated based on the average of reported small-mesh and large-mesh gill-net trips by month and management unit from the previous five years. However, this approach was not a viable prediction of all large-mesh fishing effort during the 2021 ITP Year due to restrictions on anchored large-mesh gill-net fisheries. Similar to fall 2019, Southern Flounder commercial fisheries (e.g., gill nets and pound nets) were constrained by setting specific dates when fishing was allowed across three flounder management areas, Northern, Central, and Southern (Figure 1). These flounder management areas generally aligned with the ITP management units except for the Core Sound portion of Management Unit B, which was split into a different flounder management area (Southern) than the rest of Management Unit B (Central; Figure 1). During the fall of 2020, the Northern area was open 15 September–6 October, the Central area was open 1–19 October, and the Southern area was open 1 October–2 November (Table 3). Flounder management areas were still subject to conditions put forth in ITPs for sea turtle and sturgeon incidental takes and could be closed by proclamation should authorized take thresholds be approached or exceeded. After November 2, limited allowances for anchored large-mesh gill nets were made during winter and spring for American Shad (*Alosa sapidissima*) fisheries. Portions of Management Unit C were re-opened to anchored large-mesh gill nets from February 15–April 15 (Table 3). Portions of Management Unit A were re-opened to anchored large-mesh gill nets from March 2–18 (Table 3). These dates for Management Unit A differed from the 2020 ITP Year when limited allowances for large-mesh gill nets were made during late fall and winter for the harvesting of Blue Catfish (*Ictalurus furcatus*) (Byrd et al. 2021).

To estimate the number of fishing trips during the fall flounder fishery, the number of reported fishing trips per month and management unit was divided by the number of days the fishery was open during each of the previous five years. Then, the average number of fishing trips per day was calculated across the five years and expanded to the number of days the fishery would be open during fall 2020. The projected number of observer trips for each month and management unit was based on that expanded number. For the short winter and spring shad seasons, the five-year average was calculated for the number of reported fishing trips during the months the fishery would be open during the 2021 ITP year. However, outside of the fall flounder and winter/spring shad seasons in Management Units A and C, projected large-mesh observer trips were set to zero in Management Units B, D, and E during winter and spring, and all management units during summer. Accommodations also had to be made to estimate fishing effort in Management Unit D because the D1 portion has been closed to large-mesh gill nets since November 9, 2017, when estimated green sea turtle takes exceeded the authorized threshold (McConnaughey et al. 2019b, Byrd et al. 2020). Additionally, Management Unit D1 has been closed small-mesh gill nets since April 2020 (Byrd et al. 2021).

The COVID-19 pandemic impacted the approach to planned, and realized, observer activity during the 2021 ITP Year. Using the sea-day schedule as a guide, observers were distributed as much as possible across management units depending on the season and projected fishing effort. Most staff at NCDMF teleworked during the 2021 ITP Year through June 2021 due to COVID-19, so hiring temporary observers to help cover the busiest months was not pursued. All observed trips used an alternative platform approach whereby observers used a state-owned vessel to observe at a distance. This method requires two observers, so that the person that serves as the observer/data recorder does not have to also serve as the boat driver. Because this approach halves observer capacity, the Observer Program was aided by other NCDMF programs that provided staff to serve as boat drivers on observer teams during the fall flounder fishery. Their participation increased the capacity for completing alternative platform trips during the short flounder season. Additionally, the sea-day schedule was shared with Marine Patrol officers as in past years, who attempted to obtain alternative platform trips as part of their regular duties year around. During fall, observers began overnight travel to cover the fall flounder fishery. By winter, however, the NCDMF temporarily suspended overnight travel for observers due to increased infection rates in the state and related concerns for staff exposure to COVID-19. Observers, all based out of Morehead City, still were able to obtain trips in Management Unit C and portions of B, C, and E. Observer Program staff coordinated with NCDMF staff in the Elizabeth City office to help obtain observer trips in Management Unit A, albeit at reduced levels. The Elizabeth City staff were trained on data collection methods for the observer program and some of them had been observers in the past.

Obtaining observer trips was facilitated by the requirement for fishers participating in estuarine anchored gill-net fisheries to obtain an Estuarine Gill-Net Permit (EGNP; M-24-2014; http://portal.ncdenr.org/web/mf/proclamation-m-24-2014). As part of this permit, fishers provide their contact information so that observers can call and schedule an observed trip. However, the permit is free and many fishers get an EGNP but do not report trips using estuarine gill nets (Byrd et al. 2021). To streamline the contact attempts by observers, the License and Statistics Section of NCDMF provided data on EGNP holders that had reported anchored estuarine fishing trips during the last three years. The dataset included number of reported trips by mesh size category (large and small) and management unit along with the name and contact information for the permit holder. This dataset was used to create a priority call list that was divided among observers. Other outreach efforts, such as visiting fish houses, were limited during the 2021 ITP Year. The Observer

Program website (http://portal.ncdenr.org/web/mf/observers-program) was available, but fishers were not necessarily reminded to access it during the 2021 ITP Year.

Observers were trained by experienced NCDMF staff to identify, measure, evaluate condition of, and tag (with Passive Integrated Transponders, or PIT) Atlantic Sturgeon. Date, time, tag numbers, location (latitude and longitude, when possible), condition (e.g., no apparent harm, injury including a description of the nature of the injury, or mortality), total length (TL mm), and fork length (FL mm) were recorded for each Atlantic Sturgeon observed. Photographs, fin clips (for genetic analyses), and data on environmental parameters (e.g., salinity, water temperature) were also collected when feasible. Observers were instructed to retain any dead Atlantic Sturgeon when possible.

Observers also collected data on location and gear parameters. Because all trips were alternative platform, additional data on fish catch and bycatch were not collected. Limited data such as date and waterbodies surveyed were also collected for unsuccessful alternative platform attempts (hereafter termed "No Contact" trips) by observers and Marine Patrol. All data were coded onto NCDMF data sheets and uploaded to the NCDMF Biological Database for analysis. Observers were debriefed within 24 hours of each trip to obtain data on catch, set locations, gear parameters, and Atlantic Sturgeon interactions to provide total counts and estimates of bycatch in near real time.

Ongoing estimates of observer coverage were calculated by comparing the number of observed trips to the predicted number of fishing trips by mesh-size category and month. The numbers of 'No Contact' trips were not included in calculations of observer coverage. At the end of the ITP year, the TTP provided actual numbers of reported trips to calculate actual observer coverage. The TTP data for 2020 (September–December) were finalized, but the data for 2021 (January–August) were preliminary. As a result, observer coverage calculated for winter, spring, and summer were considered estimates. However, the TTP data for fall were conspicuously missing reported large-mesh gill-net trips in Core Sound. The Core Sound portion of Management Unit B is typically a common location used by fishers targeting Southern Flounder with large-mesh gill nets. Staff with the TTP were alerted to this situation so they could investigate the issue. In the meantime, the predicted number of trips for Management Unit B during the fall was used to calculate observer coverage and estimate sturgeon bycatch (see Section 2.3).

2.2 Incidental Takes

The ITP outlines authorized levels of incidental takes expressed as either estimated total takes based on observer data (Management Unit A) or counts of observed takes (Management Unit B, C, D, E) (Tables 1 and 2). Both types (estimated and counted) were necessary because there were insufficient data available for modeling predicted estimated takes in the ITP application for some combinations of management unit and gear type (Daniel 2014). To compare numbers of incidental takes of Atlantic Sturgeon during the 2021 ITP year to authorized levels, actual observed takes were counted for Management Units B, C, D, E and estimated for Management Unit A. The DPS of the Atlantic Sturgeon could not be determined because genetic results were not available. Incidental take estimates for Management Unit A were calculated using the stratified ratio method where the bycatch rate (Atlantic Sturgeon caught per observed trip) calculated from observer data was multiplied by the total reported fishing trips.

$$\text{Estimated Interactions} = \left(\frac{\text{\# of Atlantic Sturgeon interactions observed}}{\text{\# of gill-net trips observed}}\right) * \text{\# of total gill-net trips}$$

Throughout each month, this calculation was employed for each incidental take to determine the estimated number of interactions in Management Unit A by date of capture and disposition. For the real-time estimates, the projected number of fishing trips was used. Estimated numbers of interactions for Management Unit A and running totals of observed interactions in Management Units B, C, D, E were additive across interaction dates to determine if interactions were approaching authorized take thresholds. The ongoing comparisons allowed for the implementation of management measures, if needed, to prevent interactions from exceeding authorized levels. The estimated and/or total observed interactions were provided in weekly (when required) and monthly reports.

At the end of the ITP year, the estimated number of interactions for Management Unit A was recalculated using actual numbers of trips, albeit preliminary for 2021, reported in the TTP rather than the projected numbers of fishing trips. Nonparametric confidence intervals (95%) were calculated using standard bootstrapping techniques (Efron and Tibshirani 1993) using the 'boot' package in R (Canty and Ripley 2015; Davison and Hinkley 1997; R Core Team 2019). Bootstrap replicates were generated by sampling observer trips with replacement 5,000 times within strata (mesh/management unit).

2.3 Compliance

The Observer Program used various methods to contact fishers to schedule trips. The most common method was by phone, due to fishers leaving from private launches and overall efficiency. For each contact made to obtain a trip (phone call or in-person), observers logged the contact in a database, assigning a category of the response and noting any additional information (e.g., fisher stated they did not fish until October). Contact response categories included the following: 1) Left message with someone else; 2) Not fishing general; 3) Fishing other gear; 4) Not fishing because of weather; 5) Not fishing because of boat issues; 6) Not fishing because of medical issues; 7) Booked trip; 8) Hung up, got angry, trip refused; 9) Call back later time/date; 10) Saw in person; 11) Disconnected; 12) Wrong number; 13) No answer; 14) No answer, left voicemail; 15) Not fishing because of natural disaster (e.g., hurricane). Observers also documented calls returned from fishers, including the response category and notes. Data in the contact log were summarized by season and response category to determine what percentage of phone calls resulted in observer trips.

As part of their regular duties, Marine Patrol officers checked gill nets for compliance. Citations and/or Notice of Violations (NOVs) were issued to fishers when gear or fishing practices were out of compliance. A citation is an enforcement action taken by a Marine Patrol officer for person(s) found to be in violation of General Statues, Rules, or Proclamations under the authority of the Marine Fisheries Commission and is considered a proceeding for District Court. An NOV is the NCDMF administrative process to suspend a permit (e.g., EGNP) and is initiated by an officer or NCDMF employee when a permit holder is found to be in violation of general or specific permit conditions. A citation and NOV may both be initiated by the same violation; however, they are two separate actions. For this report, NOVs or citations under the codes "EGNP" and "NETG" were compiled, as they are applicable to the EGNP and gill-net violations.

3 RESULTS

3.1 Observer Activity

Overall state-wide observer coverage during the 2021 ITP Year was 12.1% of the reported large-mesh gill-net fishery and 2.1% of the small-mesh gill-net fishery (Tables 4 and 5, Figure 2). This level of coverage was based on 379 observed large-mesh gill-net trips and 165 observed small-mesh gill-net trips. Additionally, there were 1,092 No Contact trips (Table 6). Observer activity during winter and spring was hindered by the ongoing COVID-19 pandemic. In addition to the aforementioned limitations that NCDMF imposed on overnight travel, there were instances when observers had to quarantine due to exposure to COVID-19, further limiting opportunities to obtain trips even in areas within distances that did not necessitate overnight travel.

During the 544 total observed trips, observers documented 16 Atlantic Sturgeon in large-mesh and one in small-mesh gill nets (Table 7, Figure 2). Two sturgeon that could not be identified to species were also observed. No self-reported interactions were received by the Observer Program.

A series of proclamations was issued throughout the ITP year for management needs unrelated to protected species interactions (Table 3).

3.1.1 Fall 2020

During fall 2020 (September–November), the Observer Program achieved 15.3% state-wide coverage of large-mesh gill-net trips, exceeding 7% coverage in all management units (Table 4; Figure 3). For small-mesh gill nets, the Observer Program achieved 2.9% state-wide coverage, exceeding 1% observer coverage in all management units (Table 5; Figure 3). There were 225 No Contact trips (Table 6).

Thirteen of the 17 (76%) observed Atlantic Sturgeon interactions during the 2021 ITP Year occurred during fall (Table 7; Figure 3). All fall interactions were released alive from large-mesh gill nets (12 in Management Unit A and one in Management Unit C).

3.1.2 Winter 2020-2021

During winter 2020–2021 (December 2020–February 2021), the Observer Program achieved an estimated 3.1% state-wide coverage of large-mesh gill-net trips in the only open management unit, C (3.1%; Table 4; Figure 4). This level did not meet the minimum coverage; the shortage represents two trips that were not obtained. For small-mesh gill nets, the Observer Program achieved an estimated 1.8% state-wide coverage during winter 2020–2021, exceeding 1.0% in all management units except D (Table 5; Figure 4). There were 231 No Contact trips (Table 6).

There were no observed Atlantic Sturgeon interactions in gill nets during winter 2020–2021 (Table 7).

3.1.3 Spring 2021

During spring 2021 (March–May), the Observer Program achieved an estimated 5.4% state-wide coverage of large-mesh gill-net trips, not meeting the minimum 7% coverage overall (Table 4; Figure 5). Only Management Units A and C were open to large-mesh gill nets. The Observer Program would have had to observe 14 additional trips in Management Unit A and two trips in Management Unit C to meet the 7% coverage. For small-mesh gill-net trips, the Observer Program achieved an estimated 1.9% state-wide coverage with most reported and observed trips occurring

in Management Unit B (Table 5; Figure 5). Observer coverage exceeded 1% in Management Units A and B, but not in C, D, or E. There were 267 No Contact trips (Table 6).

Four of the 17 (32%) observed Atlantic Sturgeon interactions during the 2021 ITP Year occurred during spring (Table 7). Three of the four were released alive (2 in large-mesh gill nets and 1 in small-mesh gill net). The remaining Atlantic Sturgeon was recovered dead from a large-mesh gill net. In addition to sturgeon positively identified as Atlantic Sturgeon, two additional sturgeon were observed, but they fell out of the large-mesh gill net and swam away before observers could identify the species (Figure 5).

3.1.4 Summer 2021

During summer 2021 (June–August), the Observer Program did not observe any large-mesh gill-net trips as the gear was prohibited state-wide (Table 4; Figure 6). For small-mesh gill-net trips, the Observer Program achieved an estimated 1.9% state-wide coverage, exceeding 1.0% in all management units (Table 5; Figure 6). There was a single observed trip of small-mesh gear in D, but no small-mesh fishing trips were reported there. There were 369 No Contact trips (Table 6).

There were no observed Atlantic Sturgeon interactions in gill nets during summer 2021 (Table 7).

3.2 Incidental Takes

Of the 19 sturgeon takes during the 2021 ITP Year, 18 were released alive. Interactions occurred primarily in Management Unit A (>89%; 17 of 19) and during fall (>68%; 13 of 19). A single Atlantic Sturgeon was observed in a small-mesh gill net; otherwise, all interactions occurred in large-mesh gill nets (Table 7; Figures 2–6). The size range of Atlantic Sturgeon measured by observers was 665–1,195 mm TL (n=15, mean=861.4, SD=238.5) and 610–1,075 mm FL (n=15, mean=750.5, SD=138.9; Table 7; Figure 7). There were no self-reported Atlantic Sturgeon interactions.

Observed take levels during the 2021 ITP year did not reach the thresholds of allowed takes for any management unit (Tables 1 and 2). The 17 observed Atlantic Sturgeon interactions resulted in an estimated 85.0 total live interactions and 11.9 total dead interactions in large-mesh gill nets and 1.0 live interaction in small-mesh gill nets. The total live interactions in large-mesh gill nets represents 3.9% of the 2,203 allowable sturgeon takes; the total dead interactions in large-mesh gill nets represents 11.8% of the 101 allowable sturgeon takes. The single take observed alive in small-mesh gill nets represents <1% of the 724 allowable sturgeon takes for that mesh-size category.

3.3 Compliance

During the 2021 ITP Year, there were 2,572 fishers with an ENGP; 88% (n=2,276) of the permit holders were commercial fishers (i.e., had a Standard Commercial Fishing License [SCFL] or Retired Standard Commercial Fishing License [RSCFL]) and 12% (n=296) were recreational fishers (i.e., had a Recreational Commercial Gear License [RCGL]). Of the commercial fishing permit holders, only 527 (23%) reported trips using anchored estuarine gill-net gear.

Using the priority call list of EGNP holders, 1,396 phone calls or in-person contacts were made with 35% (n=489) representing occasions where observers and fishers spoke to each other. Of the 489 conversations, 54 of them (11%) were a result of fishers returning observer phone calls. Nevertheless, only 1.0% (n=14) of the 1,396 contacts resulting in a booked trip (Figure 8). The greatest number of calls occurred during fall, and the least number of calls occurred in winter.

During the 2021 ITP Year, Marine Patrol officers issued 74 citations: summer=42, Winter=9, Spring=11, Summer=12 (Table 8). No NOVs were issued. The NCDMF was in the process of updating NOV procedures to better follow rule and statutes as well as afford permittees their rights set out in those rules and statutes, and to streamline and automate the internal permit suspension and revocation process. Updated NOV procedures were finalized 1 August 2021.

3.4 Marine Mammals

There was no observed marine mammal take during the 2021 ITP year.

4 DISCUSSION

Incidental takes of Atlantic Sturgeon during the 2021 ITP Year were below authorized levels. All but one of the interactions were alive, thereby limiting negative effects of these interactions on the DPS. Interactions continue to be more common in large-mesh than small-mesh gill nets. No new proclamations had to be imposed during the 2021 ITP Year to maintain take levels below thresholds. However, regulations from Amendment 2 imposed on the state-wide Southern Flounder fishery greatly reduced large-mesh gill-net effort during fall and prevented the previous low levels of effort in this fishery during spring and summer. Limited allowance for anchored large-mesh gill nets occurred only during winter and spring for portions of Management Unit A and C.

During the 2021 ITP Year, the COVID-19 pandemic presented challenges for the Observer Program. The Observer Program worked with other NCDMF programs and Marine Patrol to leverage assistance in obtaining coverage. Their assistance allowed for observer coverage in fall to exceed the minimum threshold for both mesh-size categories in each management unit and overall. In spring, however, limitations on observer travel contributed to not meeting minimum thresholds for large-mesh gill nets in overall and in open Management Units (A and C) and not meeting minimum thresholds for small-mesh gill nets in three of the five open Management Units. Observers cannot reach all of Management Units B, C, and E without overnight travel. Additionally, few large-mesh gill-net trips were reported in Management Unit C during winter and spring, and finding this effort was difficult. While looking for large-mesh gill nets, observers did find and observe 14 runaround (all small mesh) gill-net trips during winter and seven runaround (all small mesh) gill net trips during spring. Although observer coverage of large-mesh gill-net trips during spring in Management Unit A did not meet the 7% minimum threshold, using the estimated number of fishing trips observer coverage was estimated to be close to the threshold (6.8%).

Even without the effects that COVID-19 had on observer coverage, scheduling observed trips continues to be a challenge for the NC Observer Program, not unlike other observer programs (e.g., Lyssikatos and Garrison 2018). The EGNP is a useful tool to improve compliance by including specific permit conditions requiring fishers to allow observers aboard their vessels to monitor catches and by providing contact information for permit holders. Phone calls made to EGNP holders contributed some to observers scheduling trips, but the success rate of observers even talking to a fisher is low (~35%). The success rate did not improve much over last year even with the use of a priority call list for EGNP holders that reported fishing trips during the last several years. The NCDMF is in the beginning stages of developing a call-in system whereby fishers

would be required to contact the Observer Program prior to fishing to determine if they were selected to take an observer for a given period of time (e.g., week).

Although onboard observations are the preferred method, alternative platform observations played a critical role to the continuation of observing gill nets during the COVID-19 pandemic. Alternative platform observations have several other advantages. Primarily, they do not rely on previous contact with fishers to obtain an observable trip. Alternative platform observations also allow Marine Patrol to conduct observations as part of their daily patrols; their observed trips contribute a substantial portion of the total alternative platform observations. Even for fishers who would willingly take an observer, many vessels used by gillnetters in estuarine waters are too small to easily accommodate an observer, making alternative platform observations ideal for capturing trips with this size class of vessel (Kolkmeyer et al. 2007). Nevertheless, the alternative platform method has several drawbacks. First, it requires two observers, halving observer effort and program efficiency. The Observer Program leveraged assistance from other NCDMF staff to help build teams to increase the capacity of the program during the 2021 ITP Year. Obtaining alternative platform observations also can be a challenge as some fishers avoid being observed by retrieving their gear before sunrise or changing fishing locations if observers have been seen in an area. Although refusal of an observed trip by a fisher can result in a suspension of their EGNP, non-compliance typically does not include such a direct refusal. As such, non-compliance continues to be a hurdle for ensuring the observer coverage requirements for both ITPs are met. Because few observer trips were scheduled in advance, a significant amount of time was spent searching for fishing activity, especially when fishing activity was less concentrated. However, this effort by observers and Marine Patrol officers was sometimes unsuccessful at finding trips to observe. Outreach activities are an ongoing necessity to improve fisher compliance even when a call-in system is implemented. Outreach will resume when risks associated with COVID-19 are abated.

The NCDMF observer program uses a combination of real-time monitoring of Atlantic Sturgeon takes and an adaptive management approach to successfully control the number of interactions in estuarine anchored gill-net fisheries. Specific actions to limit sturgeon take were not necessary during the 2021 ITP Year. Other restrictions were already in place, however. Management Unit D1 was kept closed to large-mesh gill nets based on historical sea turtle densities and take levels. The new management measures for Southern Flounder significantly reduced large-mesh gill-net effort throughout the year, especially during fall 2020 when effort was historically high. These management measures, along with challenges faced from the COVID-19 pandemic and associated field restrictions, presented additional and unique challenges in predicting fishing effort and obtaining coverage during the 2021 ITP Year. The Observer Program will continue to assess when adjustments are needed for the approach of projecting fishing effort. It is more difficult to determine how COVID-19 will affect future observer effort as infection rates tend to rise and fall. At the time of writing this report, the observer program continues to operate only alternative platform trips to limit close contact between observers and fishers. This approach will be reevaluated on an ongoing basis to determine when onboard observations could resume. The NCDMF is committed to incorporating new approaches to project observer coverage and overcome the challenges of COVID-19.

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6 TABLES

Table 1. For large-mesh (≥5 inch) gill nets, a comparison of actual (n=16) annual incidental takes of Atlantic Sturgeon by management unit during the 2021 ITP Year to authorized thresholds expressed as either estimated total takes based on observed takes (Management Unit A) or counts of actual observed takes (Management Units B–E). Authorized takes in Management Units D and E were for the Carolina Distinct Population Segment (DPS) only and listed as not applicable (n/a) for Other DPS. 95% confidence intervals are provided in brackets. Genetic results were not available to determine DPS of observed interactions.

		Authorized				Actual	
		Carolina DPS		Other DPS		All DPS	
Management Unit	Season	Alive	Dead	Alive	Dead	Alive	Dead
A	Annual	1,604	65	535	21	84.0 [32.61, 199.43]	11.9 [0, 35.71]
B	Annual	24	6	9	0	0	0
C	Annual	11	5	4	0	1	0
D	Annual	8	2	n/a	n/a	0	0
E	Annual	8	2	n/a	n/a	0	0
Total	Annual	1,655	80	548	21	85.0	11.9

Table 2. For small-mesh (<5 inch) gill nets, a comparison of actual (n=1) annual incidental takes of Atlantic Sturgeon by management unit during the 2021 ITP Year to authorized thresholds expressed as counts (not estimates) of actual observed takes. Authorized takes in Management Units C, D, and E were for the Carolina Distinct Population Segment (DPS) only and listed as not applicable (n/a) for Other DPS. Genetic results were not available to determine DPS of observed interactions.

		Authorized				Actual	
		Carolina DPS		Other DPS		All DPS	
Management Unit	Season	Alive	Dead	Alive	Dead	Alive	Dead
A	Annual	569	45	114	10	0	0
B	Annual	14	5	3	0	1	0
C	Annual	8	4	n/a	n/a	0	0
D	Annual	8	2	n/a	n/a	0	0
E	Annual	8	2	n/a	n/a	0	0
Total	Annual	607	58	117	10	1	0

Table 3. Regulations for Management Units by effective date and regulation change for anchored gill nets during the 2021 ITP Year.

Year	Date(s)	Proclamation Number	Regulation change
2020	15-Sep	FF-25-2020	This proclamation supersedes Proclamation FF-34-2019, dated September 12, 2019. It establishes commercial flounder season dates for Internal Coastal Waters by Flounder Management Area. It maintains a 15-inch total length minimum size limit. It also maintains the regulation making it unlawful to possess flounder taken from anchored large mesh gill nets with a stretched mesh length less than 6 inches. It makes it unlawful for a commercial fishing operation to possess flounder from the Atlantic Ocean Waters taken by any method other than trawls. This action is being taken to comply with the requirements of Amendment 2 to the N.C. Southern Flounder Fishery Management Plan.
2020	Sep-20	M-13-2020	This proclamation supersedes proclamation M-10-2020 dated April 28, 2020. In Management Unit A, it maintains small mesh gill net attendance requirements. It expands the portion of Management Unit A to include the Chowan River that allows the use of run around, strike, drop, and trammel gill nets with a stretched mesh length of 5 ½ inches through 6 ½ inches to harvest blue catfish.
2020	Sep-20	M-14-2020	This proclamation supersedes proclamation M-13-2020 dated September 2, 2020. It opens the previously closed Management Unit A to the use of gill nets for the purpose of harvesting flounder in accordance with Amendment 2 to the N.C. Southern Flounder Fishery Management Plan and the Sea Turtle ITP. It maintains the exempted areas in MUA open to the use of run-around, strike, drop, and trammel gill nets to harvest blue catfish. It also maintains small mesh gill net attendance requirements in the entirety of Management Unit A.
2020	Sep-20	M-15-2020	This proclamation supersedes proclamation M-6-2020 dated April 8, 2020. This proclamation opens Management Units B (subunits only), C, D2 and E to the use of gill nets with a stretched mesh length of 4 inches through 6 ½ inches (except as described in Section III.) in accordance with Amendment 2 to the N.C. Southern Flounder Fishery Management Plan.
2020	Oct-20	M-16-2020	This proclamation supersedes proclamation M-14-2020 dated September 10, 2020. It closes Management Unit A to the use of large mesh gill nets with overnight soaks for the purpose of harvesting flounder. It maintains the exempted portion of Management Unit A that allows the use of run-around, strike, drop, and trammel gill nets with a stretched mesh length of 5 ½ inches through 6 ½ inches to harvest blue catfish. It maintains small mesh gill net attendance requirements in the entirety of Management Unit A.
2020	Oct-20	M-19-2020	This proclamation supersedes proclamation M-15-2020 dated September 25, 2020. This proclamation closes Management Unit B (subunits SGNRA 1-4, MGNRA and portions of CGNRA) and Management Unit C to the use of gill nets with a stretched mesh length of 4 inches through 6 ½ inches (except as described in Section III.) in accordance with Amendment 2 to the N.C. Southern Flounder Fishery Management Plan.

Table 3. (*continued*) Regulations for Management Units by effective date and regulation change for anchored gill nets during the 2021 ITP Year.

Year	Date(s)	Proclamation Number	Regulation change
2020	Nov-20	M-20-2020	This proclamation supersedes proclamation M-19-2020 dated October 16, 2020. This proclamation closes all management units south of Management Unit A to the use of gill nets with a stretched mesh length of 4 inches through 6 ½ inches (except as described in Section III.) in accordance with Amendment 2 to the N.C. Southern Flounder Fishery Management Plan.
2020	Dec-20	M-21-2020	This proclamation supersedes proclamation M-16-2020 dated October 1, 2020. In Management Unit A, it removes attendance requirements and imposes vertical height restrictions for anchored gill nets with a stretched mesh length of 3 inches through 3 ¾ inches. It maintains the exempted portion of Management Unit A that allows the use of run-around, strike, drop, and trammel gill nets with a stretched mesh length of 5 ½ inches through 6 ½ inches to harvest blue catfish.
2020	Jan-21	M-3-2021	This proclamation supersedes proclamation M-21-2020 dated November 20, 2020. In Management Unit A, it is unlawful to use fixed or stationary gill nets with a stretched mesh length other than 3 ¼ inches. It maintains the exempted portion of Management Unit A that allows the use of run-around, strike, drop, and trammel gill nets with a stretched mesh length of 5 ½ inches through 6 ½ inches to harvest blue catfish.
2021	Feb-21	M-5-2021	This proclamation supersedes proclamation M-3-2021 dated November 20, 2020. It opens an additional portion of Management Unit A that allows the use of run-around, strike, drop, and trammel gill nets with a stretched mesh length of 5 ½ inches through 6 ½ inches. It maintains that it is unlawful to use fixed or stationary gill nets with a stretched mesh length other than 3 ¼ inches.
2021	Feb-21	M-6-2021	This proclamation supersedes proclamation M-20-2020 dated October 30, 2020. This proclamation opens Management Unit C to the use of gill nets with a stretched mesh length of 4 inches through 6 ½ inches and implements gear exemptions for the shad fishery in accordance with Amendment 2 to the N.C. Southern Flounder Fishery Management Plan.
2021	Mar-21	M-7-2021	This proclamation supersedes proclamation M-5-2021 dated January 29, 2021. It opens a portion of Management Unit A to the use of floating gill nets configured for harvesting American shad by removing vertical height and setting restrictions for all gill nets with stretched mesh lengths of 5 ¼ through 6 ½ inches. FF-2-2021 makes it unlawful to possess American shad for commercial purposes prior to 12:01 A.M. Wednesday, March 3, 2021 and after midnight Wednesday, March 24, 2021.
2021	Mar-21	M-8-2021	This proclamation supersedes proclamation M-12-2020 dated July 20, 2020. It increases the yardage limits for gillnets with a stretched mesh length less than 4 inches in Management Unit B and maintains yardage limits for Management Units C, D1, D2 and E. It also maintains attendance requirements for gillnets with a stretched mesh length less than 5 inches.

Table 3. (*continued*) Regulations for Management Units by effective date and regulation change for anchored gill nets during the 2021 ITP Year.

Year	Date(s)	Proclamation Number	Regulation change
2021	Mar-21	M-9-2021	This proclamation supersedes proclamation M-7-2021 dated February 25, 2021. It closes a portion of Management Unit A to the use of all gill nets and reduces the maximum amount of yards allowed for gill nets configured for harvesting American shad
2021	Mar-21	M-10-2021	This proclamation supersedes proclamation M-9-2021 dated March 9, 2021. In Management Unit A, it removes gill nets configured for harvesting American shad. It maintains that it is unlawful to use fixed or stationary gill nets with a stretched mesh length other than 3 ¼ inches, and opens a portion of Management Unit A to the use of run-around, strike, drop, and trammel gill nets with a stretched mesh length of 5 ½ inches through 6 ½ inches for harvesting blue catfish.
2021	Apr-21	M-11-2021	This proclamation supersedes proclamation M-6-2021 dated January 29, 2021. This proclamation closes Management Unit C and maintains closures in all other management units south of Management Unit A to the use of gill nets with a stretched mesh length of 4 inches through 6 ½ inches (except as described in Section II.: coincides with the commercial shad fishery closure) in accordance with Amendment 2 to the N.C. Southern Flounder Fishery Management Plan
2021	Apr-21	M-12-2021	This proclamation supersedes proclamation M-10-2021 dated March 17, 2021. In Management Unit A, it implements small mesh gill net attendance requirements. It maintains that it is unlawful to use fixed or stationary gill nets with a stretched mesh length other than 3 inches through 3 ¾ inches and keeps open a portion of Management Unit A to the use of run-around, strike, drop, and trammel gill nets with a stretched mesh length of 5 ½ inches through 6 ½ inches for harvesting blue catfish.
2021	May-21	M-13-2021	This proclamation revises proclamation M-13-2021 and changes the issue date only. This proclamation supersedes proclamation M-8-2021 dated March 4, 2021. It increases the yardage limits for the commercial Spanish mackerel drift gill net fishery in Management Unit B. It also reduces the yardage limit for anchored gill nets in Management Unit B.
2021	Jun-21	M-14-2021	This proclamation supersedes proclamation M-13-2021 (REVISED) dated May 4, 2021. It reduces the yardage limit for gill nets with a stretched mess length less than 4 inches in Management Unit B
2021	Sep-21	FF-40-2021	This proclamation supersedes Proclamation FF-25-2020, dated June 15, 2020. It establishes commercial flounder season dates for Internal Coastal Waters by Flounder Management Area. It maintains a 15-inch total length minimum size limit. It also maintains the regulation making it unlawful to possess flounder taken from anchored large mesh gill nets with a stretched mesh length less than 6 inches. It makes it unlawful for a commercial fishing operation to possess flounder from the Atlantic Ocean Waters taken by any method other than trawls. This action is being taken to comply with the requirements of Amendment 2 to the N.C. Southern Flounder Fishery Management Plan

Table 4. For large-mesh (≥5 inch) gill nets, observer coverage (observed trips/fishing trips) calculated by season and management unit for the 2021 ITP Year. Observer coverage was calculated using estimated fishing trips based on the Trip Ticket Program data and actual reported trips from the program for the 2021 ITP Year with the exception of Management Unit B during fall when estimated fishing trips were used, denoted by an asterisk (*). Estimated trips="*closed*" when and where anchored large-mesh gill nets were prohibited. Trip Ticket Program data are considered finalized for 2020 and preliminary for 2021.

		Large Mesh				
Season	Management Unit	Estimated Fishing Trips	Reported Fishing Trips	Observed Trips	Coverage - Estimated Fishing Trips	Coverage - Reported Fishing Trips
Fall 2020	A	555	1,050	113	20.4	10.8
	B	370	370*	73	19.7	19.7
	C	190	122	40	21.1	32.8
	D	182	74	37	20.3	50.0
	E	349	521	63	18.1	12.1
	Overall	1,646	2,137	326	19.8	15.3
Winter 2020-2021	A	*closed*	*closed*	*closed*	*closed*	*closed*
	B	*closed*	*closed*	*closed*	*closed*	*closed*
	C	29	32	1	3.4	3.1
	D	*closed*	*closed*	*closed*	*closed*	*closed*
	E	*closed*	*closed*	*closed*	*closed*	*closed*
	Overall	29	32	1	3.4	3.1
Spring 2021	A	762	949	52	6.8	5.5
	B	*closed*	*closed*	*closed*	*closed*	*closed*
	C	376	16	0	0.0	0.0
	D	*closed*	*closed*	*closed*	*closed*	*closed*
	E	*closed*	*closed*	*closed*	*closed*	*closed*
	Overall	1,138	965	52	4.6	5.4
Summer 2021	A	*closed*	*closed*	*closed*	*closed*	*closed*
	B	*closed*	*closed*	*closed*	*closed*	*closed*
	C	*closed*	*closed*	*closed*	*closed*	*closed*
	D	*closed*	*closed*	*closed*	*closed*	*closed*
	E	*closed*	*closed*	*closed*	*closed*	*closed*
	Overall	*closed*	*closed*	*closed*	*closed*	*closed*
Annual		2,813	3,131	379	13.5	12.1

Table 5. For small-mesh (<5 inch) gill nets, (observed trips/fishing trips) calculated by season and management unit for the 2021 ITP Year. Observer coverage was calculated using estimated fishing trips based on the Trip Ticket Program data and actual reported trips from the program for the 2021 ITP Year. Trip Ticket Program data are considered finalized for 2020 and preliminary for 2021.

		Small Mesh				
Season	Management Unit	Estimated Fishing Trips	Reported Fishing Trips	Observed Trips	Coverage - Estimated Fishing Trips	Coverage - Reported Fishing Trips
Fall 2020	A	263	496	8	3.0	1.6
	B	812	1,375	26	3.2	1.9
	C	137	161	4	2.9	2.5
	D	244	69	10	4.1	14.5
	E	430	402	24	5.6	6.0
	Overall	1,886	2,503	72	3.8	2.9
Winter 2020-2021	A	800	600	6	0.8	1.0
	B	556	693	11	2.0	1.6
	C	255	173	2	0.8	1.2
	D	41	46	0	0.0	0.0
	E	106	139	10	9.4	7.2
	Overall	1,758	1,651	29	1.6	1.8
Spring 2021	A	656	550	11	1.7	2.0
	B	1,363	1,245	27	2.0	2.2
	C	212	121	1	0.5	0.8
	D	59	8	0	0.0	0.0
	E	111	101	0	0.0	0.0
	Overall	2,401	2,025	39	1.6	1.9
Summer 2021	A	172	159	5	2.9	3.1
	B	848	1,200	13	1.7	1.2
	C	92	54	1	2.2	3.7
	D	31	0	1	3.2	--
	E	193	134	5	3.1	4.5
	Overall	1,336	1,547	25	2.2	1.9
Annual		7,381	7,726	165	2.2	2.1

Table 6. Number of "No Contact" trips (n=1,092) by season and management unit completed by Marine Patrol and observers during the 2021 ITP Year. No Contact refers to unsuccessful attempts to find and observe anchored gill-net effort.

Season	Management Unit	Marine Patrol No Contact Trips	Observer No Contact Trips	Total No Contact Trips
Fall 2020	A	37	9	46
	B	17	12	29
	C	15	4	19
	D	24	8	32
	E	97	2	99
	Overall	190	35	225
Winter 2020-2021	A	42	0	42
	B	15	8	23
	C	12	12	24
	D	7	2	9
	E	132	1	133
	Overall	208	23	231
Spring 2021	A	36	2	38
	B	15	12	27
	C	10	15	25
	D	29	5	34
	E	139	4	143
	Overall	229	38	267
Summer 2020	A	60	1	61
	B	41	29	70
	C	35	13	48
	D	22	4	26
	E	162	2	164
	Overall	320	49	369
Annual		947	145	1,092

Table 7. Summary of observed Atlantic sturgeon (AS: n=17) and unidentified sturgeon (UND: n=2) interactions in large-mesh (≥5 inch) and small-mesh (<5 inch) gill nets during the 2021 ITP Year. PIT=Passive Integrated Transponders. n/a=not applied. n/r=not recorded. TL=Total Length. FL=Fork Length.

Date	Season	Management Unit	Species	Mesh Size Category	Latitude (N)	Longitude (W)	Disposition	PIT Number	TL (mm)	FL (mm)
9/16/2020	Fall	A	AS	Large	36.27690	-76.12250	Alive	982000410638484	790	650
9/17/2020	Fall	A	AS	Large	36.12183	-76.17841	Alive	982000410638420	732	647
9/17/2020	Fall	A	AS	Large	36.12183	-76.16440	Alive	982000410638353	665	610
9/23/2020	Fall	A	AS	Large	36.12717	-76.14754	Alive	n/a	n/r	n/r
9/23/2020	Fall	A	AS	Large	36.12488	-76.15739	Alive	3D60018795D78	746	650
9/23/2020	Fall	A	AS	Large	36.12441	-76.16273	Alive	3D6001879A148	875	750
9/23/2020	Fall	A	AS	Large	36.11036	-76.16401	Alive	3D60018797B00	750	664
9/23/2020	Fall	A	AS	Large	36.11056	-76.16509	Alive	3D60018793CF8	1195	1075
9/23/2020	Fall	A	AS	Large	36.10997	-76.16294	Alive	3D6001879D503	850	722
9/29/2020	Fall	A	AS	Large	36.10206	-76.18642	Alive	982000410637883	732	644
9/29/2020	Fall	A	AS	Large	36.10064	-76.18560	Alive	982000410637868	712	636
9/30/2020	Fall	A	AS	Large	36.43410	-75.9533	Alive	982000410599101	955	830
10/16/2020	Fall	C	AS	Large	35.36068	-76.64999	Alive	n/a	1143	1016
3/4/2021	Spring	A	UNK	Large	36.09653	-76.18230	Alive	n/a	n/r	n/r
3/4/2021	Spring	A	UNK	Large	35.94553	-75.79685	Alive	n/a	n/r	n/r
3/15/2021	Spring	A	AS	Large	36.07975	-76.29626	Alive	989001032053690	905	770
3/15/2021	Spring	A	AS	Large	36.07692	-76.29626	Dead	n/a	n/r	n/r
3/15/2021	Spring	A	AS	Large	36.07855	-76.29517	Alive	989001030160036	921	790
4/14/2021	Spring	B	AS	Small	35.52191	-75.49059	Alive	n/a	950	803

Table 8. All EGNP and NETG citations written by Marine Patrol for anchored gill nets by season and violation code during the 2021 ITP Year.

Season	Violation Date	Violation Code	Violation Description
Fall	2020-09-01	NETG09	Gill net set too close to bridge
Fall	2020-09-04	NETG23	Use gill/seine net within 1/4 mi of state/national park
Fall	2020-09-13	NETG02	Using gill net without buoys or identification
Fall	2020-09-13	NETG10	Gill net with illegal mesh size
Fall	2020-09-29	NETG03	Using gill net with improper buoys or identification
Fall	2020-09-29	NETG45	Set or retrieve large mesh gill nets no sooner than one hour before sunset on Mon through Thurs Proclamation M-8-2010
Fall	2020-10-01	NETG04	Leave gill net in waters when could not be legally fished
Fall	2020-10-02	NETG01	Leave gill net in coastal waters unattended
Fall	2020-10-02	NETG01	Leave gill net in coastal waters unattended
Fall	2020-10-02	NETG01	Leave gill net in coastal waters unattended
Fall	2020-10-02	NETG01	Leave gill net in coastal waters unattended
Fall	2020-10-02	NETG01	Leave gill net in coastal waters unattended
Fall	2020-10-02	NETG04	Leave gill net in waters when could not be legally fished
Fall	2020-10-02	NETG04	Leave gill net in waters when could not be legally fished
Fall	2020-10-03	NETG04	Leave gill net in waters when could not be legally fished
Fall	2020-10-05	NETG46	Set or retrieve large mesh gill nets later than one hour after sunrise on Tuesday through Friday Proclamation M-8-2010
Fall	2020-10-06	NETG37	Leave small mesh gill nets unattended 3J.0103
Fall	2020-10-07	EGNP30	Failure to comply with gill net configurations outlined in proclamation
Fall	2020-10-07	NETG04	Leave gill net in waters when could not be legally fished
Fall	2020-10-08	EGNP30	Failure to comply with gill net configurations outlined in proclamation
Fall	2020-10-08	NETG55	Violate the provisions of Proclamation M-30-2011 to wit set gill nets before one hour before sunset Proclamation M-30-11
Fall	2020-10-08	NETG55	Violate the provisions of Proclamation M-30-2011 to wit set gill nets before one hour before sunset Proclamation M-30-11
Fall	2020-10-12	EGNP01	Fishing gill net without a valid Estuarine Gill Net Permit
Fall	2020-10-12	EGNP01	Fishing gill net without a valid Estuarine Gill Net Permit
Fall	2020-10-12	EGNP01	Fishing gill net without a valid Estuarine Gill Net Permit
Fall	2020-10-14	EGNP11	Failure to attend nets
Fall	2020-10-14	NETG46	Set or retrieve large mesh gill nets later than one hour after sunrise on Tues through Fri Proclamation M-8-2010
Fall	2020-10-14	NETG46	Set or retrieve large mesh gill nets later than one hour after sunrise on Tues through Fri Proclamation M-8-2010
Fall	2020-10-15	NETG01	Leave gill net in coastal waters unattended
Fall	2020-10-15	NETG01	Leave gill net in coastal waters unattended

Table 8. (*continued*) All EGNP and NETG citations written by Marine Patrol for anchored gill nets by season and violation code during the 2021 ITP Year.

Season	Violation Date	Violation Code	Violation Description
Fall	2020-10-15	NETG37	Leave small mesh gill nets unattended 3J.0103
Fall	2020-10-15	NETG37	Leave small mesh gill nets unattended 3J.0103
Fall	2020-10-16	NETG01	Leave gill net in coastal waters unattended
Fall	2020-10-23	NETG37	Leave small mesh gill nets unattended 3J.0103
Fall	2020-10-27	NETG01	Leave gill net in coastal waters unattended
Fall	2020-10-27	NETG03	Using gill net with improper buoys or identification
Fall	2020-10-28	EGNP01	Fishing gill net without a valid Estuarine Gill Net Permit
Fall	2020-10-28	EGNP01	Fishing gill net without a valid Estuarine Gill Net Permit
Fall	2020-10-28	NETG01	Leave gill net in coastal waters unattended
Fall	2020-11-05	NETG02	Using gill net without buoys or identification
Fall	2020-11-10	NETG01	Leave gill net in coastal waters unattended
Fall	2020-11-19	NETG01	Leave gill net in coastal waters unattended
Winter	2020-12-03	NETG04	Leave gill net in waters when could not be legally fished
Winter	2020-12-17	NETG03	Using gill net with improper buoys or identification
Winter	2020-12-17	NETG10	Gill net with illegal mesh size
Winter	2021-01-02	EGNP01	Fishing gill net without a valid Estuarine Gill Net Permit
Winter	2021-01-02	NETG02	Using gill net without buoys or identification
Winter	2021-01-02	NETG10	Gill net with illegal mesh size
Winter	2021-02-17	NETG16	Use an unattended gill net in a restricted area
Winter	2021-02-27	EGNP01	Fishing gill net without a valid Estuarine Gill Net Permit
Winter	2021-02-27	NETG29	RCGL gear without proper buoys 3J.0103©
Spring	2021-03-06	EGNP01	Fishing gill net without a valid Estuarine Gill Net Permit
Spring	2021-03-10	NETG03	Using gill net with improper buoys or identification
Spring	2021-03-14	EGNP10	Set more than the legal length of gill net
Spring	2021-04-05	EGNP01	Fishing gill net without a valid Estuarine Gill Net Permit
Spring	2021-04-06	NETG03	Using gill net with improper buoys or identification
Spring	2021-04-06	NETG12	Net in middle third of marked navigational channel
Spring	2021-04-08	EGNP01	Fishing gill net without a valid Estuarine Gill Net Permit
Spring	2021-04-08	NETG04	Leave gill net in waters when could not be legally fished
Spring	2021-04-23	NETG10	Gill net with illegal mesh size
Spring	2021-04-27	EGNP26	Observer harassment

Table 8. (*continued*) All EGNP and NETG citations written by Marine Patrol for anchored gill nets by season and violation code during the 2021 ITP Year.

Season	Violation Date	Violation Code	Violation Description
Spring	2021-05-19	NETG22	Improperly set gill net
Summer	2021-06-17	NETG27	Gill Net set within 50 yards from shore 3H.0103 M-9-2008
Summer	2021-07-26	EGNP01	Fishing gill net without a valid Estuarine Gill Net Permit
Summer	2021-07-26	NETG03	Using gill net with improper buoys or identification
Summer	2021-07-26	NETG10	Gill net with illegal mesh size
Summer	2021-08-16	NETG04	Leave gill net in waters when could not be legally fished
Summer	2021-08-20	NETG02	Using gill net without buoys or identification
Summer	2021-08-25	EGNP01	Fishing gill net without a valid Estuarine Gill Net Permit
Summer	2021-08-25	NETG10	Gill net with illegal mesh size
Summer	2021-08-26	NETG01	Leave gill net in coastal waters unattended
Summer	2021-08-26	NETG04	Leave gill net in waters when could not be legally fished
Summer	2021-08-31	EGNP01	Fishing gill net without a valid Estuarine Gill Net Permit
Summer	2021-08-31	NETG10	Gill net with illegal mesh size

7 FIGURES

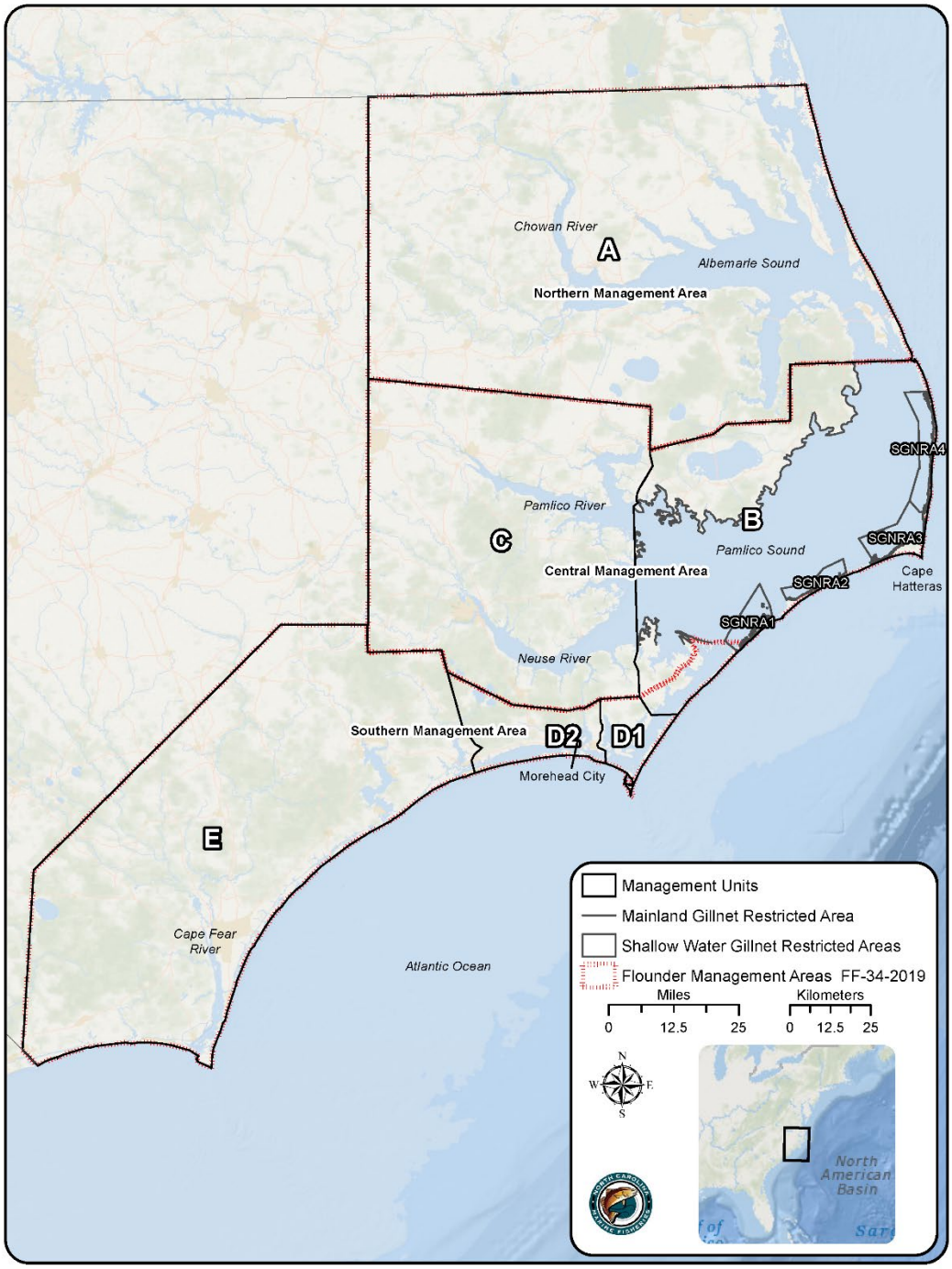

Figure 1. Management Units (A, B, C, D [D1 and D2], and E) as outlined in the Incidental Take Permit (ITP) Conservation Plan and used by the Observer Program during the 2021 ITP Year. In the Pamlico Sound portion of B, gill nets with a mesh size of ≥4 inches were confined to Shallow Water Gill-Net Restricted Areas (SGNRA) 1–4 and the Mainland Gill-net Restricted Area (200 yards from shore). The three Southern Flounder Management Areas are shown with red hatched lines: northern, central, and southern.

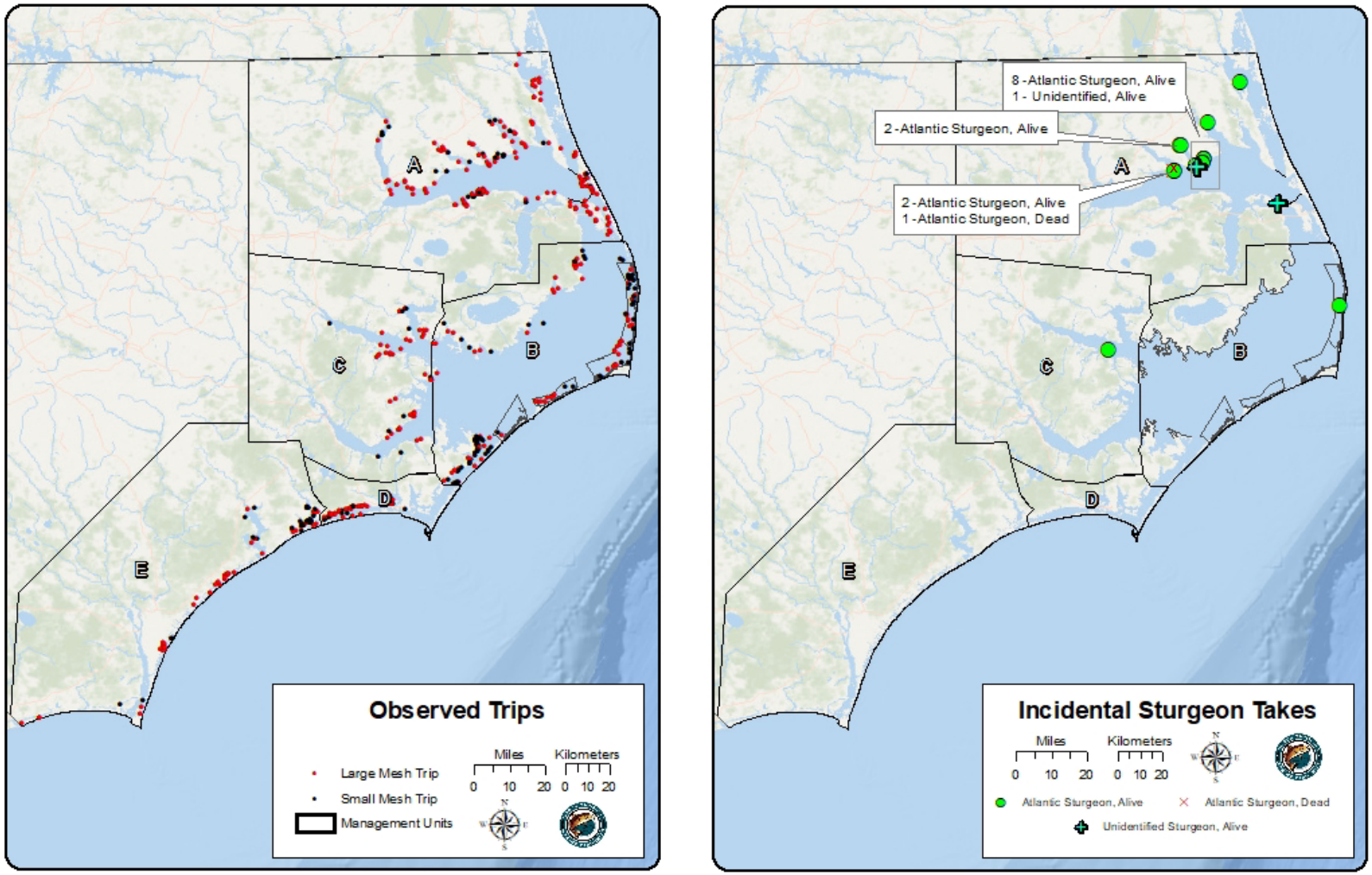

Figure 2. For the entire 2021 ITP Year, observed gill-net trips (left) by mesh-size category (379 large-mesh=≥5 inch; 165 small-mesh=<5 inch) and sturgeon interactions (right) by species and disposition (Atlantic Sturgeon: 16 alive, 1 dead; unidentified sturgeon: 2 alive, 0 dead) across management units.

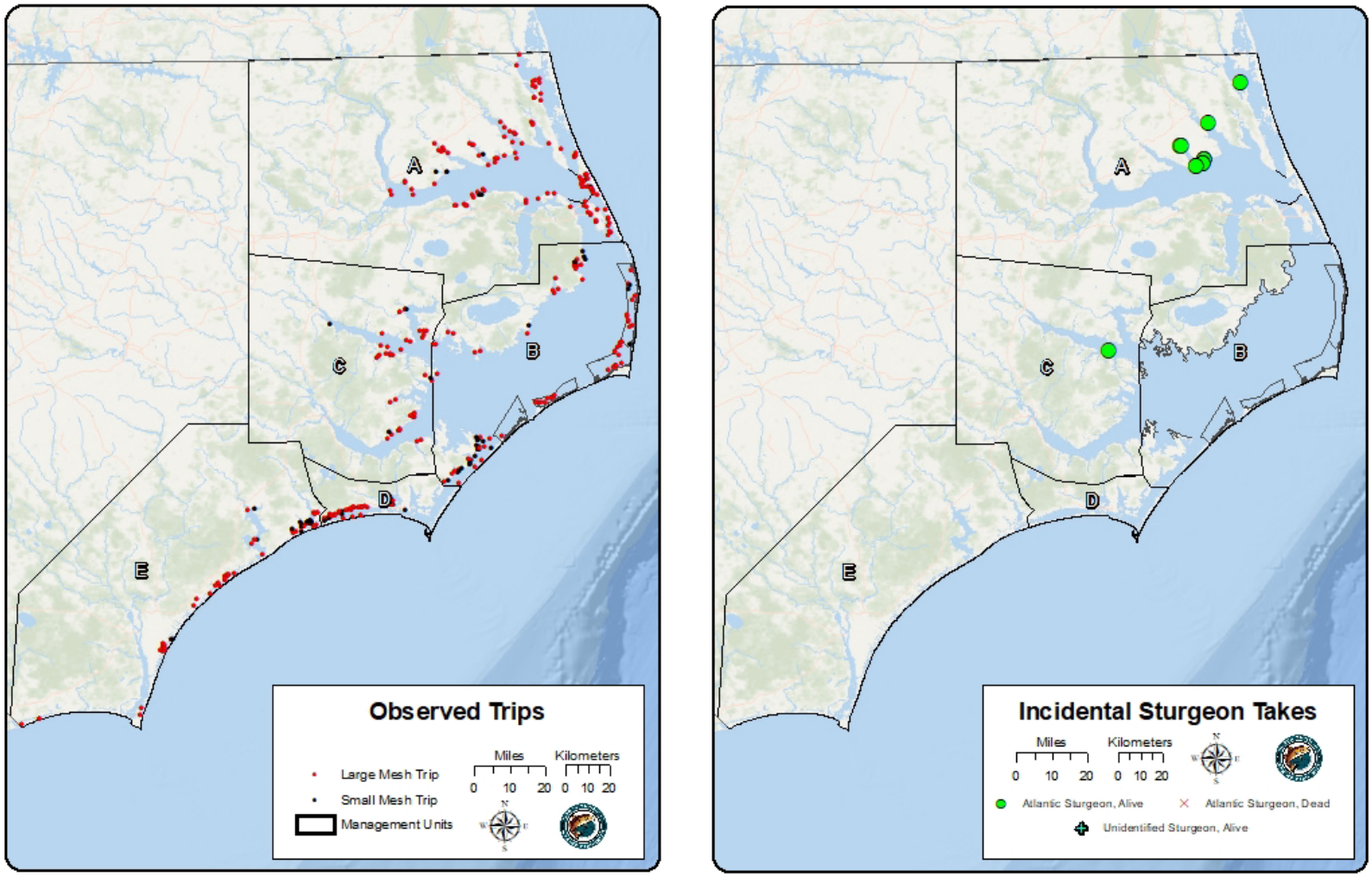

Figure 3. For fall 2020, observed gill-net trips (left) by mesh-size category (326 large-mesh=≥5 inch; 72 small-mesh=<5 inch) and Atlantic Sturgeon interactions (right) by disposition (13 alive, 0 dead) across management units.

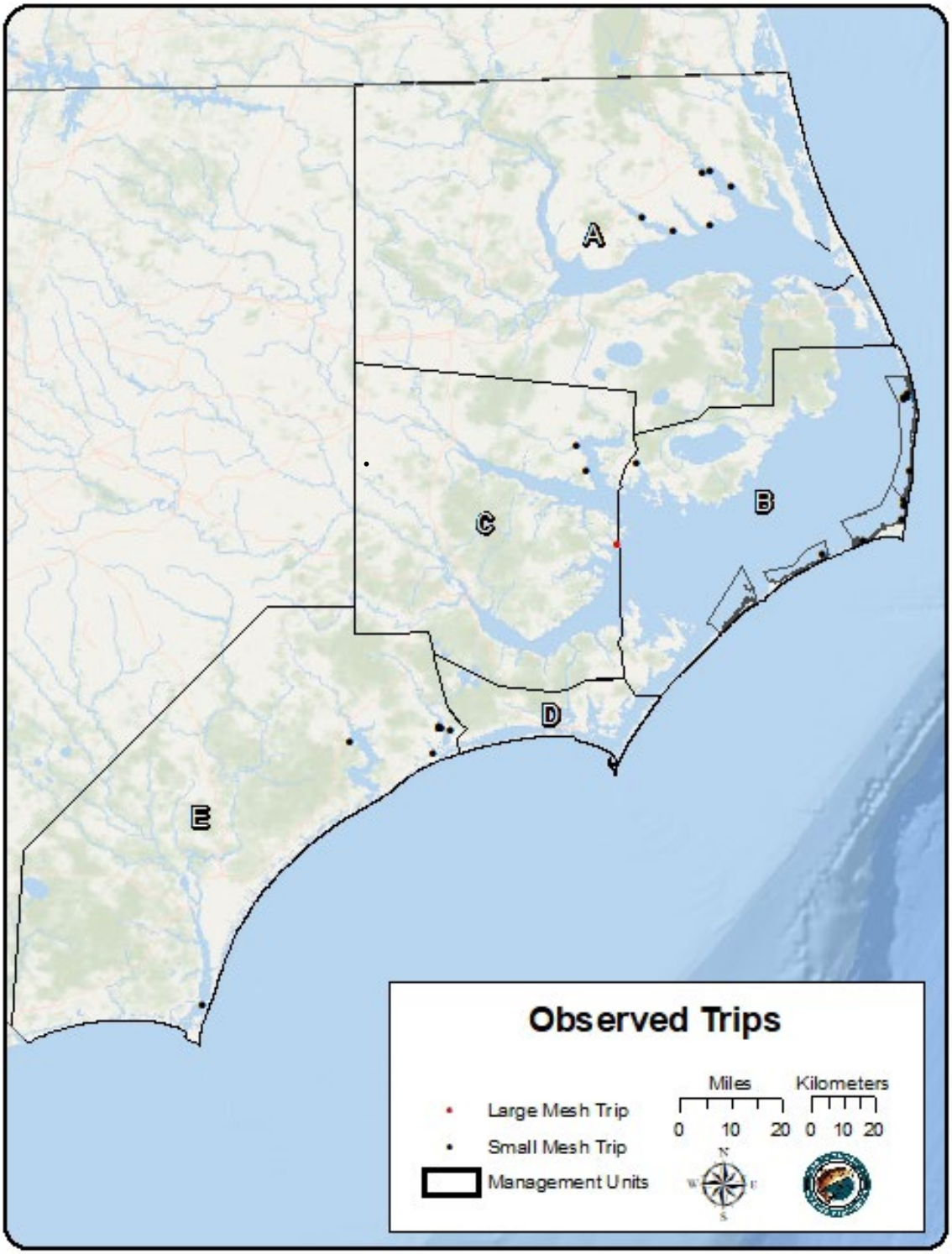

Figure 4. For winter 2020–2021, observed gill-net trips by mesh-size category (1 large-mesh=≥5 inch; 29 small-mesh=<5 inch). No sturgeon interactions were observed during winter.

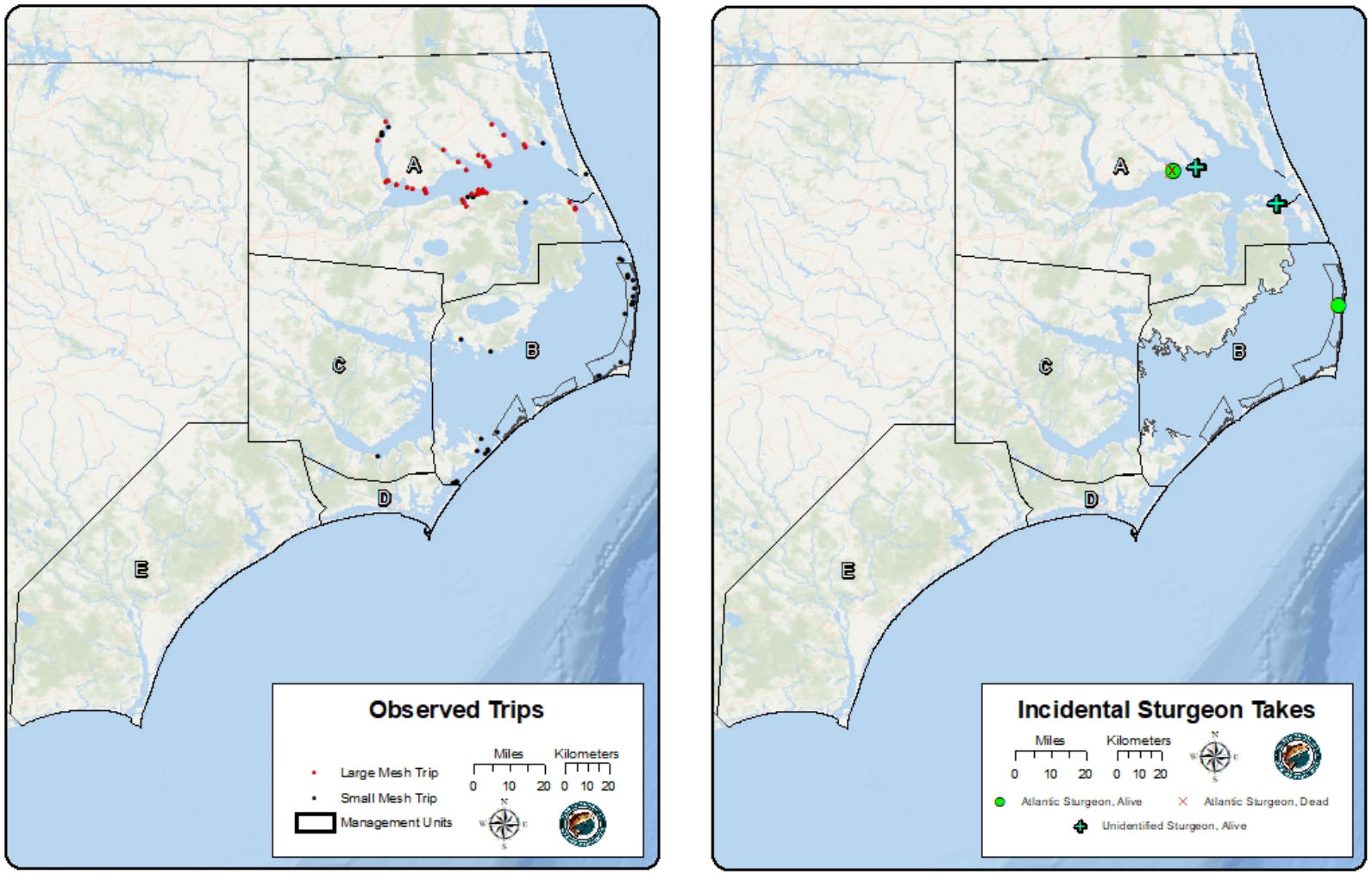

Figure 5. For spring 2021, observed gill-net trips (left) by mesh size-category (52 large-mesh=≥5 inch; 39 small-mesh=<5 inch) and sturgeon interactions (right) by species and disposition (Atlantic Sturgeon: 3 alive, 1 dead; unidentified sturgeon: 2 alive, 0 dead) across management units.

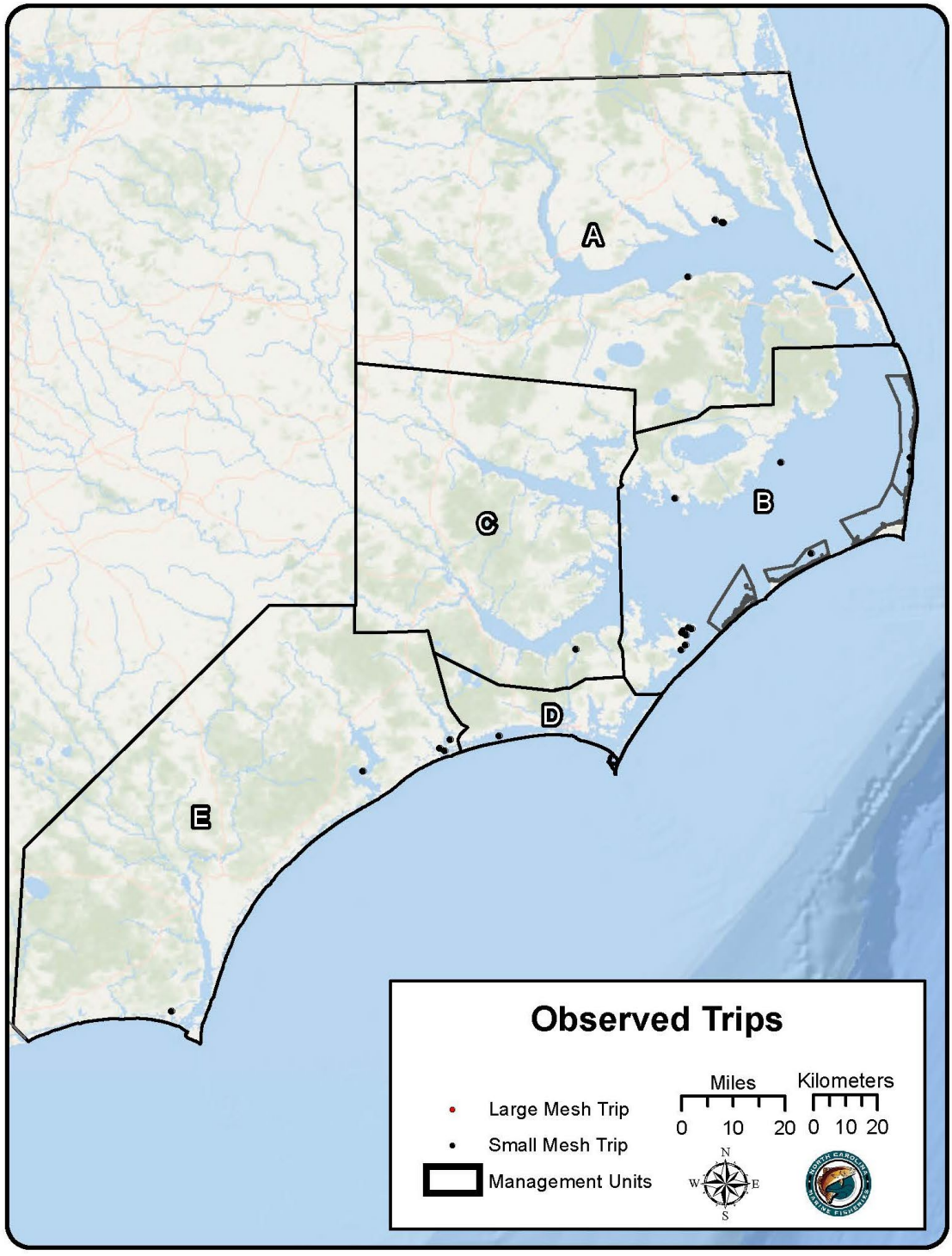

Figure 6. For summer 2021 observed gill-net trips by mesh-size category (0 large-mesh=≥5 inch; 25 small-mesh=<5 inch). No sturgeon interactions were observed during summer.

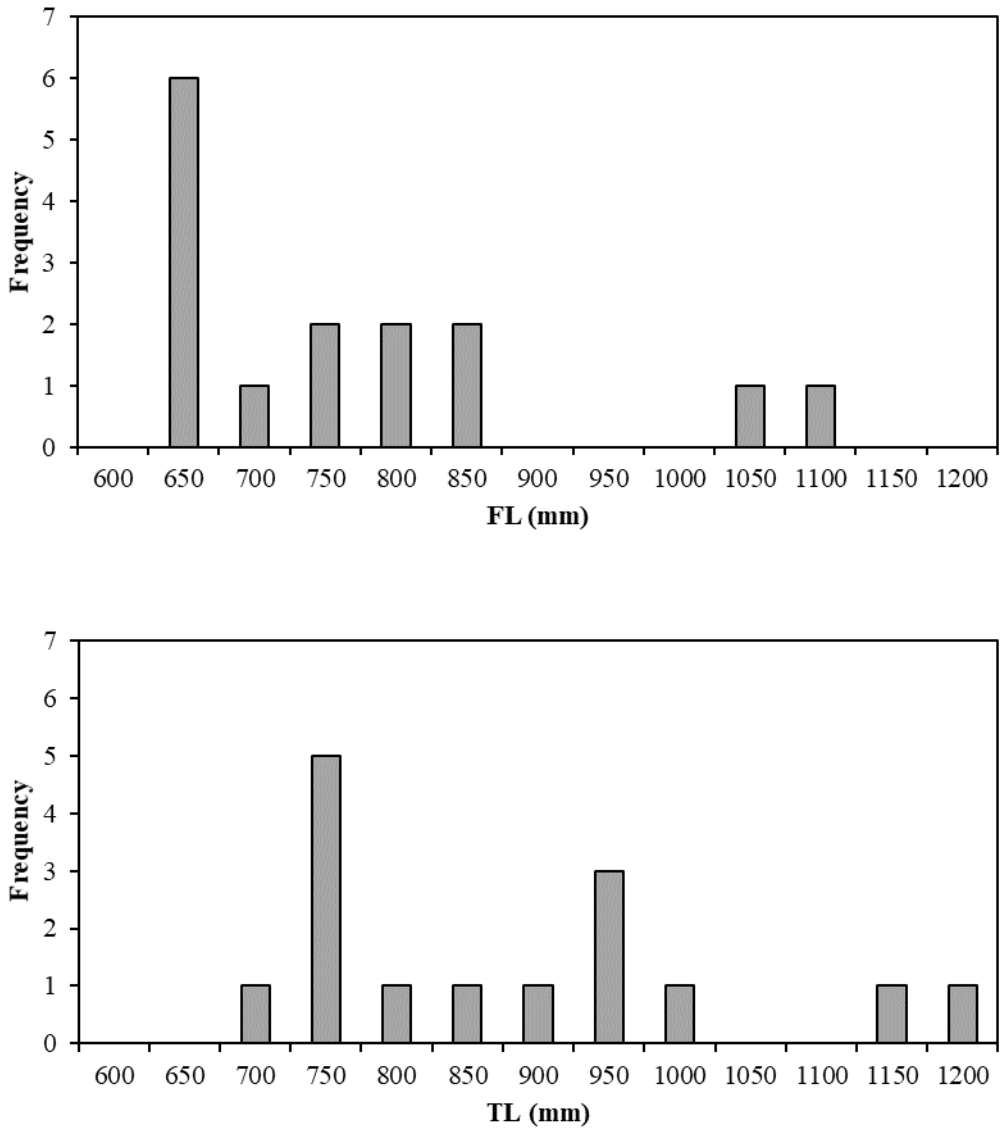

Figure 7. For observed and measured incidental takes of Atlantic Sturgeon during the 2021 ITP Year, length-frequency of (top) fork length (FL, mm; n=15 of 17 observed) and (bottom) total length (TL, mm; n=15 of 17 observed).

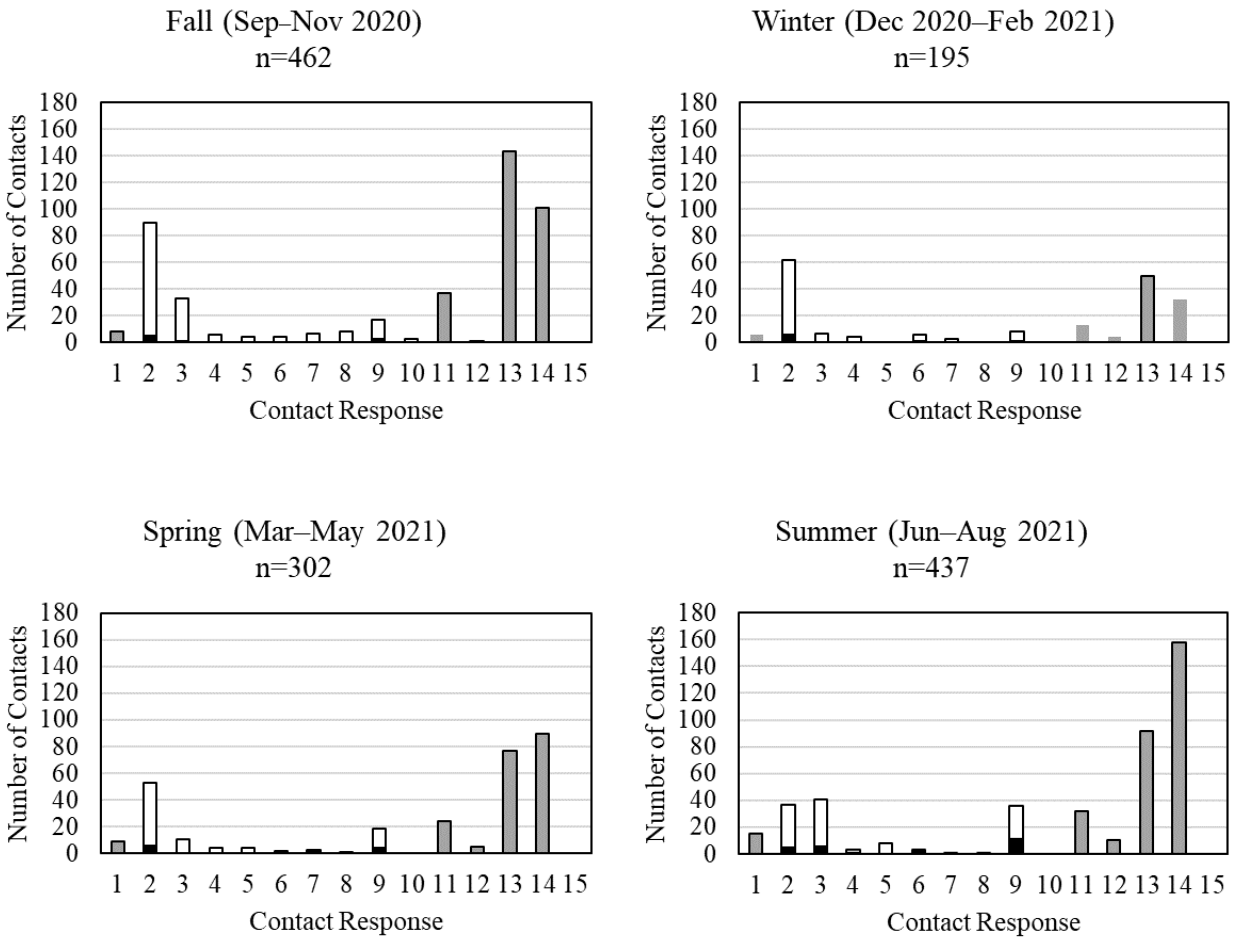

Figure 8. For the 2021 ITP Year, contacts attempted (n=1,396) by observers to schedule trips categorized by contact type (0-15) and presented as a percentage of the total for fall, winter, spring, and summer. Contact type categories include the following: 1) Left message with someone else; 2) Not fishing general; 3) Fishing other gear; 4) Not fishing because of weather; 5) Not fishing because of boat issues; 6) Not fishing because of medical issues; 7) Booked trip; 8) Hung up, got angry, trip refused; 9) Call back later time/date; 10) Saw in person; 11) Disconnected; 12) Wrong number; 13) No answer; 14) No answer, left voicemail; 15) Not fishing because of natural disaster (e.g., hurricane). Contact types are shown as those when the observer talked to a fisher (white bars), when the observer did not (gray bars), and when the fisher returned an observer's call (black bars).

Annual Sea Turtle Interaction Monitoring of the Anchored Gill-Net Fisheries in North Carolina for Incidental Take Permit Year 2021 (1 September 2020–31 August 2021)

Annual Completion Report for Activities under Endangered Species Act Section 10 Incidental Take Permit No. 16230

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Protected Resources Program
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28 February 2022

Table of Contents

List of Tables

i

List of Figures

1 INTRODUCTION

The North Carolina Division of Marine Fisheries (NCDMF) has actively addressed the incidental take of sea turtles in commercial estuarine gill nets since 2000. Between 2000 and 2011, the NCDMF had a series of Incidental Take Permits (ITPs) from the National Marine Fisheries Service (NMFS) under Section 10(a)(1)(B) of the Endangered Species Act (ESA) of 1973 (Public Law 93-205) to "minimize, monitor, and mitigate" sea turtle interactions in anchored gill nets primarily in Pamlico Sound (Boyd 2012; Gearhart 2001, 2002, 2003; Murphey 2011; Price 2004, 2005, 2006, 2007, 2008, 2009, 2010). Five species of sea turtles can occur in North Carolina: the green sea turtle (*Chelonia mydas*), Kemp's ridley sea turtle (*Lepidochelys kempii*), loggerhead sea turtle (*Caretta caretta*), hawksbill sea turtle (*Eretmochelys imbricata*), and leatherback sea turtle (*Dermochelys coriacea)*. Anchored gill nets are passive sets deployed with an anchor, stake, or boat at one or both ends of the net string; they do not include run-around, strike, drop, or drift gill nets. For this report, the term "gill net" refers to anchored gill net and mesh sizes are provided as stretched mesh unless stated otherwise.

Evidence of incidental takes of sea turtles outside of Pamlico Sound was documented in June 2009 by NMFS observations of gill-net fisheries operating in Core Sound and nearby waterbodies (Byrd et al. 2016). These takes resulted in a series of temporary measures to address sea turtle interactions until the NCDMF obtained an ITP from NMFS for gill-net fisheries state-wide (see McConnaughey et al. 2019). On 11 September 2013, the NCDMF received the Sea Turtle ITP (No. 16230), which expires on 31 August 2023 (McConnaughey et al. 2019; NMFS 2013). The ITP defined an ITP Year as 1 September through 31 August of the following year, defined mesh size categories as large-mesh (≥4 inch) and small-mesh (<4 inch), and included only three seasons (fall, spring, and summer). The permit also established annual authorized levels of incidental takes for the two mesh size categories and six geographic regions (Management Units A, B, C, D1, D2, and E; Figure 1; Tables 1–5). The ITP included a Conservation Plan to monitor, minimize, and mitigate incidental takes of sea turtles in otherwise lawful gill-net fisheries operating in North Carolina estuarine waters. Part of the plan outlined a state-wide estuarine gill-net observer program to monitor interactions that can be counted and, when applicable, extrapolated across the fishery within a given season and management unit. Required observer coverage thresholds were set for each management unit within each season as a minimum of 7% with a goal of 10% for large-mesh gill nets and a minimum of 1% with a goal of 2% for small-mesh gill nets. If observer data indicated that takes were approaching or exceeding authorized thresholds, the NCDMF could use an adaptive management approach to mitigate incidental takes by implementing temporary management options when needed using the NCDMF director's Proclamation authority (General Statute 143B-289.52).

To maintain incidental takes below authorized levels, the Conservation Plan included a continuation of restrictions implemented previously as temporary measures for large-mesh (≥4 inch) gill nets. Specifically, the restrictions prohibited these gill nets in the deep waters of Pamlico Sound; limited soak times to an hour before sunset to an hour after sunrise in portions of the state; limited days of fishing depending on location; restricted net height to no more than 15 meshes; restricted total net yardage to a maximum of 2,000 yards per vessel in portions of the state; and required for some areas that net configuration for a string of nets (each net is called a 'shot') be constructed of shots ≤ 100 yards with a 25-yard break between shots. Large-mesh gill nets set in the southern portion of the state were restricted to a maximum of 1,000 yards per fishing operation (M-31-2014; http://portal.ncdenr.org/web/mf/proclamation-m-31-2014).

In May 2020, the NCDMF contacted the NMFS to request clarification of tagging protocols for sea turtles. Although the ITP requires that incidental sea turtles be tagged, staff at the NMFS Southeast Fisheries Science Center (SEFSC, Beaufort, NC) communicated to the NCDMF that there had been recent changes to their tagging protocols. These changes affected the type of training that SEFSC provided, which meant that observers did not have the training necessary to fulfill the tagging requirement per the ITP. On 1 September 2020, the NMFS provided a notification letter to the NCDMF modifying ITP permit 16230 to remove the requirement for observers to apply flipper and Passive Integrated Transponders (PIT) tags to incidentally captured sea turtles (Byrd et al. 2021). This modification applies to the remainder of the current permit.

In July 2014, the NCDMF also received an ITP (No. 18102) to address incidental takes of Atlantic Sturgeon (*Acipenser oxyrinchus*) in gill-net fisheries operating in estuarine waters across the state (NMFS 2014). Although the Atlantic Sturgeon and sea turtle ITPs and their Conservation Plans addressed different taxa, the fisheries included therein were the same. Both ITPs were reliant on observer coverage to document incidental takes and to estimate total incidental take where possible. Data from observed trips are used for both ITPs. Notably, however, the ITPs defined large mesh differently; the sea turtle ITP defined large-mesh gill nets as ≥4 inch stretched mesh and the Atlantic Sturgeon ITP defined them as ≥5 inch stretched mesh. The Atlantic Sturgeon ITP also included required observer coverage and authorized take levels during winter.

Significant regulatory changes were enacted during fall 2019 (2020 ITP Year) for Southern Flounder (*Paralichthys lethostigma*) fisheries. These regulations were included in Amendment 2 of the Southern Flounder Fishery Management Plan (FMP) adopted by the North Carolina Marine Fisheries Commission on 23 August 2019 (NCDMF 2019). This action was taken because the most recent Southern Flounder stock assessment indicated that the stock is overfished, and overfishing was occurring. North Carolina state law requires management actions be taken to end overfishing within two years and to recover the stock from an overfished condition within 10 years. To meet these legal requirements, the NCDMF determined that a 62% reduction in overall harvest was necessary for 2019 and a 72% reduction would be needed beginning in 2020. To meet this reduction, regulations were implemented that, among other measures, severely limited where and when large-mesh gill nets were allowed. For the commercial gill-net fishery, these regulations included drastic reductions in the number of days the fishery would open, 25% reductions in allowed yardage of large-mesh gill nets and soak-time limits of large-mesh gill nets to overnight soaks state-wide where before this was not required for nets in Management Units A and C.

Another significant event that occurred during the 2020 ITP Year and continued during the 2021 ITP Year was the COVID-19 pandemic. On 20 March 2020, the NMFS waived the requirement for boats fishing in federally managed fisheries to carry observers or at sea monitors due to concerns about the transmission of COVID-19. The NMFS extended this waiver to the NCDMF Observer Program on 23 March 2020; the waiver was in place throughout the rest of the 2020 ITP Year and all of the 2021 ITP Year.

Per the ITP requirements, the Observer Program provides weekly, seasonal, and annual reports to the NMFS for a given ITP year. As required, weekly progress reports were provided for any week in which a sea turtle interaction occurred. Seasonal reports for the 2021 ITP Year also were provided for fall (September–November 2020; McConnaughey 2021), spring (March–May 2021; Byrd and Gahm 2021), and summer (June–August 2021; Byrd 2021). In contrast to the Atlantic Sturgeon ITP, the sea turtle ITP does not require observer coverage or seasonal reports for winter because sea turtles are less likely to be present in North Carolina during this time. This annual

report outlines observer activity, fishing activity, and total or estimated takes of sea turtles for three seasons during the 2021 ITP Year, 1 September 2020–31 August 2021. Data for fishing activity, measured in number of trips, are finalized for fall 2020. After the preliminary data for spring and summer 2021 are finalized in May 2022, observer coverage and authorized estimated sea turtle takes will be recalculated and finalized estimates will be provided to the NMFS in the form of an addendum.

2 METHODS

2.1 Observer Activity

A sea-day schedule of projected observer trips for each season by month and management unit during the 2021 ITP Year was developed during the prior season, recognizing that the COVID-19 pandemic would likely impact planned observer activity. The number of projected observer trips by month and management unit was based on the maximum goal for coverage outlined in the Conservation Plan: 10% coverage of the total large-mesh gill-net fishing trips and 2% coverage of the total small-mesh gill-net fishing trips. Data on commercial fishing effort come from the NCDMF Trip Ticket Program (TTP), whereby fish dealers complete a trip ticket every time a commercial fisher sells finfish and shellfish. Trip tickets record information such as gear type, area fished, species harvested, and total weight by species. For anchored gill nets, the TTP defines large-mesh as $\geq$5 inch and small-mesh as <5. It is uncommon, however, for gill nets to have a mesh size between these two sizes; therefore, we assumed effort by mesh categories in the TTP dataset would not be greatly affected by the difference in definitions of mesh size. As such, projected observer trips were stratified across each month within three seasons and six management units proportional to TTP data of reported fishing trips. The seasons crossed calendar years and were defined as follows: fall (September–November 2020), spring (March–May 2021), and summer (June–August 2021). Within Management Unit B, large-mesh gill nets operating in Pamlico Sound were confined to specific subunits (Shallow Water Gill-Net Restricted Areas 1–4, and Mainland Gill-Net Restricted Area), effectively closing the fishery in the deep waters of Pamlico Sound and in corridors near Ocracoke, Hatteras, and Oregon inlets (Daniel 2013; Figure 1).

Projecting observer trips for the sea-day schedule typically has been calculated based on the average of reported small-mesh and large-mesh gill-net trips by month and management unit from the previous five years. However, this approach was not a viable prediction of all large-mesh fishing effort during the 2021 ITP Year due to restrictions on anchored large-mesh gill-net fisheries. Similar to fall 2019, Southern Flounder commercial fisheries (e.g., gill nets and pound nets) were constrained by setting specific dates when fishing was allowed across three flounder management areas, Northern, Central, and Southern (Figure 1). These flounder management areas generally aligned with the ITP management units except for the Core Sound portion of Management Unit B, which was split into a different flounder management area (Southern) than the rest of Management Unit B (Central; Figure 1). During the fall of 2020, the Northern area was open 15 September–6 October, the Central area was open 1–19 October, and the Southern area was open 1 October–2 November (Table 6). Flounder management areas were still subject to conditions put forth in ITPs for sea turtle and sturgeon incidental takes and could be closed by proclamation should authorized take thresholds be approached or exceeded. After November 2, limited allowances for anchored large-mesh gill nets were made during winter and spring for American Shad (*Alosa sapidissima*) fisheries. Portions of Management Unit C were re-opened to

anchored large-mesh gill nets from February 15–April 15 (Table 6). Portions of Management Unit A were re-opened to anchored large-mesh gill nets from March 2–18 (Table 6). These dates for Management Unit A differed from the 2020 ITP Year when limited allowances for large-mesh gill nets were made during late fall and winter for the harvesting of Blue Catfish (*Ictalurus furcatus*) (Byrd et al. 2021).

To estimate the number of fishing trips during the fall flounder fishery, the number of reported fishing trips per month and management unit was divided by the number of days the fishery was open during each of the previous five years. Then, the average number of fishing trips per day was calculated across the five years and expanded to the number of days the fishery would be open during fall 2020. The projected number of observer trips for each month and management unit was based on that expanded number. For the short spring shad season, the five-year average was calculated for the number of reported fishing trips during the months the fishery would be open during the 2021 ITP year. However, outside of the fall flounder and spring shad seasons in Management Units A and C, projected large-mesh observer trips were set to zero in Management Unit D1 year around, Management Units B, D2, and E during spring, and all management units during summer. Management Unit D1 portion has been closed to large-mesh gill nets since November 9, 2017, when estimated green sea turtle takes exceeded the authorized threshold (McConnaughey et al. 2019, Byrd et al. 2020). Lastly, projected small-mesh gill-net trips in Management Unit D1 was also set to zero because the management unit has been closed to anchored small-mesh gill nets since April 2020 (Byrd et al. 2021).

The COVID-19 pandemic impacted the approach to planned, and realized, observer activity during the 2021 ITP Year. Using the sea-day schedule as a guide, observers were distributed as much as possible across management units depending on the season and projected fishing effort. Most staff at NCDMF teleworked during the 2021 ITP Year through June 2021 due to COVID-19, so hiring temporary observers to help cover the busiest months was not pursued. All observed trips used an alternative platform approach whereby observers used a state-owned vessel to observe at a distance. This method requires two observers, so that the person that serves as the observer/data recorder does not have to also serve as the boat driver. Because this approach halves observer capacity, the Observer Program was aided by other NCDMF programs that provided staff to serve as boat drivers on observer teams during the fall flounder fishery. Their participation increased the capacity for completing alternative platform trips during the short flounder season. Additionally, the sea-day schedule was shared with Marine Patrol officers as in past years, who attempted to obtain alternative platform trips as part of their regular duties year around. During fall, observers began overnight travel to cover the fall flounder fishery. By spring, however, the NCDMF temporarily suspended overnight travel for observers due to increased infection rates in the state and related concerns for staff exposure to COVID-19. Observers, all based out of Morehead City, still were able to obtain trips in Management Units D1 and D2, and portions of B, C, and E. Observer Program staff coordinated with NCDMF staff in the Elizabeth City office to help obtain observer trips in Management Unit A, albeit at reduced levels. The Elizabeth City staff were trained on data collection methods for the observer program and some of them had been observers in the past.

Obtaining observer trips was facilitated by the requirement for fishers participating in estuarine anchored gill-net fisheries to obtain an Estuarine Gill-Net Permit (EGNP; M-24-2014; http://portal.ncdenr.org/web/mf/proclamation-m-24-2014). As part of this permit, fishers provide their contact information so that observers can call and schedule an observed trip. However, the

permit is free, and many fishers get an EGNP but do not report trips using estuarine gill nets (Byrd et al. 2021). To streamline the contact attempts by observers, the License and Statistics Section of NCDMF provided data on EGNP holders that had reported estuarine anchored fishing trips during the last three years. The dataset included number of reported trips by mesh size category (large and small) and management unit along with the name and contact information for the permit holder. This dataset was used to create a priority call list that was divided among observers. Other outreach efforts, such as visiting fish houses, were limited during the 2021 ITP Year. The Observer Program website (http://portal.ncdenr.org/web/mf/observers-program) was available, but fishers were not necessarily reminded to access it during the 2021 ITP Year.

Observers were trained to identify, measure, evaluate condition of, and resuscitate sea turtles by experienced NCDMF staff. Data collected on observed sea turtles included: date, time, location (latitude and longitude, when possible), condition (e.g., no apparent harm, injury including a description of the nature of the injury, or mortality), species, sex (if determinable), curved carapace length (CCL, mm), and curved carapace width (CCW, mm). Photographs of the turtles and environmental parameters (e.g., salinity, water temperature) were also collected when feasible. Dead and live, debilitated sea turtles were retained by the observer when possible and delivered to the North Carolina Wildlife Resource Commission (NCWRC) sea turtle biologist for necropsy or examination and treatment.

Observers also collected data on location and gear parameters. Because all trips were alternative platform, additional data on fish catch and bycatch were not collected. Limited data such as date and waterbodies surveyed were also collected for unsuccessful alternative platform attempts (hereafter termed "No Contact" trips) by observers and Marine Patrol. All data were coded onto NCDMF data sheets and uploaded to the NCDMF Biological Database for analysis. Observers were debriefed within 24 hours of each trip to obtain data on catch, set locations, gear parameters, and sea turtle interactions to provide running totals and estimates of sea turtle bycatch in near real time.

Ongoing estimates of observer coverage were calculated by comparing the number of observed trips to the predicted number of fishing trips by mesh-size category, month, and management unit. The numbers of 'No Contact' trips were not included in calculations of observer coverage. At the end of the ITP year, the TTP provided actual numbers of reported trips to calculate actual observer coverage by season and management unit. The TTP data for 2020 (September–December) were finalized, but the data for 2021 (March–August) were preliminary. As a result, observer coverage calculated for spring and summer were considered estimates. However, the TTP data for fall were conspicuously missing reported large-mesh gill-net trips in Core Sound. The Core Sound portion of Management Unit B is typically a common location used by fishers to target Southern Flounder with large-mesh gill nets. Staff with the TTP were alerted to this situation so the issue could be investigated. In the meantime, the predicted number of trips for Management Unit B during fall was used to calculate observer coverage and estimate sturgeon bycatch (see Section 2.3).

2.2 Incidental Takes

The ITP outlines authorized levels of incidental takes expressed as either estimated total takes based on observer data or counts of observed takes (Tables 1–5). Both types (estimated and counted) were necessary because there were insufficient data available for modeling predicted estimated takes in the ITP application for some combinations of species, management unit, and mesh-size category (Daniel 2013). As a result, authorized levels of annual estimated interactions were only available for green and Kemp's ridley sea turtles in Management Units B, D1, and E in

the large-mesh gill-net fishery, and for Kemp's ridley sea turtles in D2 in the large-mesh gill-net fishery. Authorized levels for all other combinations were based on counts of actual observed (i.e., not estimated) takes. Therefore, comparisons of interactions during the 2021 ITP Year to authorized interactions were based either on annual counts of observed sea turtle takes or annual estimates of sea turtle takes. Also, during summer 2015 a minor modification to the ITP was enacted through the NMFS combining authorized takes for Management Units A (n=4) and C (n=4) for a total authorized take limit of eight sea turtles from large-mesh or small-mesh gill nets and any species or disposition (Boyd 2016). Estimates of incidental take as outlined above were calculated using the stratified ratio method where the bycatch rate calculated from observer data (sea turtles caught per observed trip) was multiplied by the total reported fishing trips.

$$\text{Estimated interactions} = \left(\frac{\text{\# of sea turtle interactions observed}}{\text{\# of gill-net trips observed}}\right) * \text{\# of gill-net trips reported}$$

Throughout each month, this calculation was employed for each incidental take to determine the estimated number of interactions by date of capture, management unit, species, and disposition. For the real-time estimates, the predicted number of fishing trips was used. Estimated numbers of interactions and running totals of observed interactions were additive across interaction dates to determine if interactions were approaching authorized take thresholds. The ongoing comparisons allowed for the implementation of management measures to prevent interactions from exceeding authorized levels. The estimated and/or total observed interactions were provided in weekly (when required), monthly, and seasonal reports.

At the end of the ITP year, the estimated number of interactions was recalculated using actual number of trips, albeit preliminary for 2021, reported in the TTP rather than from estimated trips. As mentioned above, an exception was made for Management Unit B where the estimated number of trips was used due to the lack of reported trips in Core Sound. Nonparametric confidence intervals (95%) were calculated using standard bootstrapping techniques (Efron and Tibshirani 1993) using the 'boot' package in R (Canty and Ripley 2015; Davison and Hinkley 1997; R Core Team 2019). Bootstrap replicates were generated by sampling observer trips with replacement 5,000 times within strata (mesh/season/management unit).

2.3 Compliance

The Observer Program used various methods to contact fishers to schedule trips. The most common method was by phone, due to fishers leaving from private launches and overall efficiency. For each contact made to obtain a trip (phone call or in-person), observers logged the contact in a database, assigning a category of the response and noting any additional information (e.g., fisher stated they did not fish until October). Contact response categories included the following: 1) Left message with someone else; 2) Not fishing general; 3) Fishing other gear; 4) Not fishing because of weather; 5) Not fishing because of boat issues; 6) Not fishing because of medical issues; 7) Booked trip; 8) Hung up, got angry, trip refused; 9) Call back later time/date; 10) Saw in person; 11) Disconnected; 12) Wrong number; 13) No answer; 14) No answer, left voicemail; 15) Not fishing because of natural disaster (e.g., hurricane). Observers also documented calls returned from fishers, including the response category and notes. Data in the contact log were summarized by season and response category to determine what percentage of phone calls resulted in observer trips.

As part of their regular duties, Marine Patrol officers checked gill nets for compliance. Citations and/or Notice of Violations (NOVs) were issued to fishers when gear or fishing practices were out

of compliance. A citation is an enforcement action taken by a Marine Patrol officer for person(s) found to be in violation of General Statues, Rules, or Proclamations under the authority of the Marine Fisheries Commission and is considered a proceeding for District Court. An NOV is the NCDMF administrative process to suspend a permit (e.g., EGNP) and is initiated by an officer or NCDMF employee when a permit holder is found to be in violation of general or specific permit conditions. A citation and NOV may both be initiated by the same violation; however, they are two separate actions. For this report, NOVs or citations under the codes "EGNP" and "NETG" were compiled, as they are applicable to the EGNP and gill-net violations.

3 RESULTS

3.1 Observer Activity

Overall observer coverage during the three seasons covered for 2021 ITP Year was 12.3% of the large-mesh gill-net fishery and 2.2% of the small-mesh gill-net fishery (Tables 7 and 8; Figure 2). This level of coverage was based on 381 observed large-mesh gill-net trips and 133 observed small-mesh gill-net trips during fall, spring, and summer. Only three out of 514 (<0.6%) observed trips recorded a mesh size ≥4 and <5 inch; the mesh size was exactly 4 inches. Additionally, there were 861 No Contact trips (Table 9). Observer activity during winter and spring was hindered by the ongoing COVID-19 pandemic. In addition to the aforementioned limitations that NCDMF imposed on overnight travel, there were instances when observers had to quarantine due to do exposure to COVID-19, further limiting opportunities to obtain trips even in areas within distances that did not necessitate overnight travel.

During the 514 observed trips, observers documented 17 sea turtles (15 green turtles, one Kemp's ridley turtle, and one loggerhead turtle), all in large-mesh gill nets (Table 10; Figures 2–11). No self-reported interactions were received by the Observer Program.

A series of proclamations was issued throughout the ITP year for management needs unrelated to protected species interactions (Table 6).

3.1.1 Fall 2020

During fall 2020 (September–November), the Observer Program achieved 15.4% state-wide coverage of large-mesh gill-net trips, exceeding 7% in all management units (Table 7; Figures 3–6). For small-mesh gill nets, the Observer Program achieved 2.8% state-wide coverage, exceeding 1% coverage in all management units (Table 8; Figures 3–6). There were 225 No Contact trips during fall (Table 9).

All 17 observed sea turtle interactions occurred during fall in large-mesh gill nets (Table 10; Figures 3–6). The interactions comprised 15 green (n=12 alive; n=3 dead), one live Kemp's ridley, and one live loggerhead. The majority of interactions occurred in Management Unit B (13 out of 17) with four other interactions in Management Unit E.

3.1.2 Spring 2021

During spring 2021 (March–May), the Observer Program achieved an estimated 5.4% state-wide coverage of large-mesh gill-net trips, not meeting the minimum 7% coverage overall (Table 7; Figures 7–9). Only Management Units A and C were open to large-mesh gill nets. The Observer Program would have had to observed 14 additional trips in Management Unit A and one trip in

Management Unit C to meet 7% coverage. For small-mesh gill-net trips, the Observer Program achieved an estimated 1.9% state-wide coverage with the majority of reported and observed trips occurring in Management Unit B (Table 8; Figures 7–9). Observer coverage exceeded 1% in Management Units A and B, but not in C, D2, or E. There were 267 No Contact trips (Table 9).

No sea turtle interactions were observed during spring (Table 10; Figures 7–9).

3.1.3 Summer 2021

During summer 2021 (June–August), the Observer Program did not observe any large-mesh gill-net trips as the gear was prohibited state-wide (Table 7; Figures 10–12). For small-mesh gill-net trips, the Observer Program achieved an estimated 1.6% state-wide coverage, exceeding 1.0% in all open management units (Table 8). There was a single observed trip of small-mesh gear in D2, but no small-mesh fishing trips were reported there. During spring, there were 369 No Contact trips (Table 9).

No sea turtle interactions were observed during summer (Table 10; Figures 10–12).

3.2 Incidental Takes

Across the seasons covered by the sea turtle ITP, there were 17 observed sea turtle interactions, all during fall and all in large-mesh gill nets (Table 10; Figures 2–12). The interactions comprised 15 green (n=12 alive; n=3 dead), one live Kemp's ridley, and one live loggerhead. The majority of interactions occurred in Management Unit B (13 out of 17) with four other interactions in Management Unit E (Figures 4, 6). Additionally, most observed sea turtles were alive (14 of 17). Measured green sea turtles (n=13 of 15) ranged from 279 to 359 mm CCL (mean=323.5, SD=24.7) and 241 to 330 mm CCW (mean=275.6, SD=27.4; Figure 13). Measurements of the single loggerhead turtle were 422 mm CCL and 412 mm CCW.

Observed take levels during the 2021 ITP Year did not reach the thresholds of allowed takes for any species or management unit (Tables 1–5). The single observed loggerhead interaction accounted for only 4% of the threshold for that species (Table 5). Of the separate thresholds expressed as estimated totals of observed takes, green sea turtle takes reached 11% of the live threshold and 6% of the dead threshold, and Kemp's ridley sea turtle takes reached 7% of the live threshold.

3.3 Compliance

During the 2021 ITP Year, there were 2,572 fishers with an ENGP; 88% (n=2,276) of the permit holders were commercial fishers (i.e., had a Standard Commercial Fishing License [SCFL] or Retired Standard Commercial Fishing License [RSCFL]) and 12% (n=296) were recreational fishers (i.e., had a Recreational Commercial Gear License [RCGL]). Of the commercial fishing permit holders, only 527 (23%) reported trips using anchored estuarine gill-net gear.

Using the priority call list of EGNP holders, 1,201 phone calls or in-person contacts were made with 33% (n=399) representing occasions where observers and fishers spoke to each other. Of the 399 conversations, 46 of them (12%) were a result of fishers returning observer phone calls. Nevertheless, only 0.9% (n=11) of the 1,201 contacts resulted in a booked trip (Figure 14). The greatest number of calls occurred during fall, and the least number of calls occurred in spring.

During the 2021 ITP Year, Marine Patrol officers issued 65 citations: summer=42, spring=11, summer=12 (Table 11). No NOVs were issued. The NCDMF was in the process of updating NOV

procedures to better follow rule and statutes as well as afford permittees their rights set out in those rules and statutes, and to streamline and automate the internal permit suspension and revocation process. Updated NOV procedures were finalized 1 August 2021.

3.4 Marine Mammals

There was no observed marine mammal interaction during the 2021 ITP Year.

4 DISCUSSION

Incidental takes of sea turtles during the 2021 ITP Year were below authorized levels. Observed incidental takes continue to be primarily alive and in large-mesh gill nets. No new proclamations had to be imposed during the 2021 ITP Year to maintain take levels below thresholds. However, regulations from Amendment 2 imposed on the state-wide Southern Flounder fishery greatly reduced large-mesh gill-net effort during fall and prevented the previous low levels of effort in this fishery during spring and summer. Limited allowance for anchored large-mesh gill nets occurred only during winter and spring for portions of Management Unit A and C.

During the 2021 ITP Year, the COVID-19 pandemic presented challenges for the Observer Program. The Observer Program worked with other NCDMF programs and Marine Patrol to leverage assistance in obtaining coverage. Their assistance allowed for observer coverage in fall to exceed the minimum threshold for both mesh-size categories in each management unit and overall. In spring, however, limitations on observer travel contributed to not meeting minimum thresholds for large-mesh gill nets in open Management Units (A and C) and not meeting minimum thresholds for small-mesh gill nets in three of the five open Management Units. Observers cannot reach all of Management Units B, C, and E without overnight travel. Additionally, few large-mesh gill-net trips were reported in Management Unit C, and finding this effort was difficult. While looking for large-mesh gill nets, observers did find and observe seven runaround (all small mesh) gill-net trips during spring. Although observer coverage of large-mesh gill-net trips during spring in Management Unit A did not meet the 7% minimum threshold, using the estimated number of fishing trips observer coverage was estimated to be close to the threshold (6.8%).

Even without the effects that COVID-19 had on observer coverage, scheduling observed trips continues to be a challenge for the NC Observer Program, not unlike other observer programs (e.g., Lyssikatos and Garrison 2018). The EGNP is a useful tool to improve compliance by including specific permit conditions requiring fishers to allow observers aboard their vessels to monitor catches and by providing contact information for permit holders. Phone calls made to EGNP holders contributed some to observers scheduling trips, but the success rate of observers even talking to a fisher is low (~33%). The success rate did not improve much over last year even with the use of a priority call list for EGNP holders that reported fishing trips during the last several years. The NCDMF is in the beginning stages of developing a call-in system whereby fishers would be required to contact the Observer Program prior to fishing to determine if they were selected to take an observer for a given period of time (e.g., week).

Although onboard observations are the preferred method, alternative platform observations played a critical role to the continuation of observing gill nets during the COVID-19 pandemic. Alternative platform observations have several other advantages. Primarily, they do not rely on previous contact with fishers to obtain an observable trip. Alternative platform observations also allow Marine Patrol to conduct observations as part of their daily patrols; their observed trips

contribute a substantial portion of the total alternative platform observations. Even for fishers who would willingly take an observer, many vessels used by gillnetters in estuarine waters are too small to easily accommodate an observer, making alternative platform observations ideal for capturing trips with this size class of vessel (Kolkmeyer et al. 2007). Nevertheless, the alternative platform method has several drawbacks. First, it requires two observers, halving observer effort and program efficiency. The Observer Program leveraged assistance from other NCDMF staff to help build teams to increase the capacity of the program during the 2021 ITP Year. Obtaining alternative platform observations also can be a challenge as some fishers avoid being observed by retrieving their gear before sunrise or changing fishing locations if observers have been seen in an area. Although refusal of an observed trip by a fisher can result in a suspension of their EGNP, non-compliance typically does not include such a direct refusal. As such, non-compliance continues to be a hurdle for ensuring the observer coverage requirements for both ITPs are met. Because few observer trips were scheduled in advance, a significant amount of time was spent searching for fishing activity, especially when fishing activity was less concentrated. However, this effort by observers and Marine Patrol officers was sometimes unsuccessful at finding trips to observe. Outreach activities are an ongoing necessity to improve compliance even when a call-in system is implemented. Outreach will resume when risks associated with COVID-19 are abated

The NCDMF observer program uses a combination of real-time monitoring of sea turtle takes and an adaptive management approach to successfully control the number of interactions in the estuarine anchored gill-net fisheries. Specific actions to limit sea turtle takes were not necessary during the 2021 ITP Year. Other restrictions were already in place, however. Management Unit D1 was kept closed to large-mesh gill nets based on historical sea turtle densities and take levels. The new management measures for Southern Flounder significantly reduced large-mesh gill-net effort throughout the year, especially during fall when effort was historically high. These management measures, along with challenges faced from the COVID-19 pandemic and associated field restrictions, presented additional and unique challenges in predicting fishing effort and obtaining coverage during the 2021 ITP Year. The Observer Program will continue to assess when adjustments are needed for the approach of projecting fishing effort. It is more difficult to determine how COVID-19 will affect future observer effort as infection rates tend to rise and fall. At the time of writing this report, the observer program continues to operate only alternative platform trips to limit close contact between observers and fishers. This approach will be reevaluated on an ongoing basis to determine when onboard observations could resume. The NCDMF is committed to incorporating new approaches to project observer coverage and overcome the challenges of COVID-19.

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6 TABLES

Table 1. For large-mesh (≥4 inch) gill nets, annual estimated authorized and actual takes of sea turtles by species and Management Unit (B, D1, D2, and E) for the 2021 ITP Year. Estimated actual takes were calculated from observer data; 95% confidence intervals are provided in parentheses. Takes of green sea turtles in Management Unit D2 are denoted as not applicable (n/a) because authorized takes in the ITP are expressed as counts not estimated takes (see Table 2).

	B				D1				D2			
	Estimated Takes				Estimated Takes				Estimated Takes			
	Authorized		Actual		Authorized		Actual		Authorized		Actual	
Species	Alive	Dead	Alive	Dead	Alive	Dead	Alive	Dead	Alive	Dead	Alive	Dead
Green	225	112	21.47 (9.42, 42.68)	9.27 (2.45, 25.21)	9	5	0	0	n/a	n/a	n/a	n/a
Kemp's ridley	53	26	0	0	15	7	0	0	6	3	0	0
Total	278	138	21.47	9.27	24	12	0	0	6	3	0	0

	E				Total			
	Estimated Takes				Estimated Takes			
	Authorized		Actual		Authorized		Actual	
Species	Alive	Dead	Alive	Dead	Alive	Dead	Alive	Dead
Green	96	48	15.39 (2.51, 44.49)	0	330	165	36.86	9.27
Kemp’s ridley	24	13	6.56 (0.00, 19.67)	0	98	49	6.56	0.00
Total	120	61	21.95	0	428	214	43.42	9.27

Table 2. For large-mesh (≥4 inch) gill nets, annual authorized and actual counts of observed (not estimated) takes of sea turtles by species and Management Unit (B, D1, D2, and E) for the 2021 ITP Year. Takes of Kemp's ridley sea turtles in Management Units B, D1, D2, and E and green sea turtles in Management Units B, D1, and E are denoted as not applicable (n/a) because authorized takes in the ITP are expressed as estimated takes for the fishery not counts of observed takes (see Table 1).

	B		D1		D2		E		Total	
	Observed (live/dead)		Observed (live/dead)		Observed (live/dead)		Observed (live/dead)		Observed (live/dead)	
Species	Authorized	Actual	Authorized	Actual	Authorized	Actual	Authorized	Actual	Authorized	Actual
Green	n/a	n/a	n/a	n/a	6	0	n/a	n/a	6	0
Kemp's ridley	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a
Hawksbill	1	0	1	0	1	0	1	0	4	0
Leatherback	1	0	1	0	1	0	1	0	4	0
Loggerhead	3	1	3	0	3	0	3	0	12	1
Total	5	1	5	0	11	0	5	0	26	1

Table 3. For large-mesh (≥4 inch) and small-mesh (<4 inch) gill nets combined, annual authorized and actual counts of observed (not estimated) takes of sea turtles by Management Unit (A and C) for the 2021 ITP Year. Authorized levels per management unit are four sea turtles of any species.

	A		C		Total	
Species	Authorized (live/dead)	Actual (live/dead)	Authorized (live/dead)	Actual (live/dead)	Authorized (live/dead)	Actual (live/dead)
Green		0		0		0
Kemp's ridley		0		0		0
Hawksbill	4 (any species)	0	4 (any species)	0	8 (any species)	0
Leatherback		0		0		0
Loggerhead		0		0		0

Table 4. For small-mesh (<4 inch) gill nets, annual authorized and actual counts of observed (not estimated) takes of sea turtles by species and Management Unit (B, D1, D2, and E) for the 2021 ITP Year.

	B		D1		D2		E		Total	
	Observed (live/dead)		Observed (live/dead)		Observed (live/dead)		Observed (live/dead)		Observed (live/dead)	
Species	Authorized	Actual	Authorized	Actual	Authorized	Actual	Authorized	Actual	Authorized	Actual
Green	3	0	3	0	3	0	3	0	12	0
Hawksbill	1	0	1	0	1	0	1	0	4	0
Kemp's ridley	3	0	3	0	3	0	3	0	12	0
Leatherback	1	0	1	0	1	0	1	0	4	0
Loggerhead	3	0	3	0	3	0	3	0	12	0
Total	11	0	11	0	11	0	11	0	44	0

Table 5. Total annual authorized and actual takes (either counts of observed or estimated) of sea turtles by species and, for estimated takes, by condition for the 2021 ITP Year. Takes expressed as estimated numbers are denoted as not applicable (n/a) for species whose authorized takes in the ITP are expressed only as counts.

	Observed (live/dead)		Estimated			
	Authorized	Actual	Authorized		Actual	
Species	Live/Dead	Live/Dead	Alive	Dead	Alive	Dead
Green	18	0	330	165	36.9	9.3
Hawksbill	8	0	n/a	n/a	n/a	n/a
Kemp's ridley	12	0	98	49	6.6	0
Leatherback	8	0	n/a	n/a	n/a	n/a
Loggerhead	24	1	n/a	n/a	n/a	n/a
Any Species	8	0	n/a	n/a	n/a	n/a
Total	78	0	428	214	43.4	9.3

Table 6. Regulations for management units by effective date for large-mesh (≥4 inch) and small-mesh (<4 inch) gill nets during the 2021 ITP Year. Proclamations during winter months affected fishing effort in subsequent months.

Year	Date	Proclamation Number	Regulation
2020	15-Sep	FF-25-2020	This proclamation supersedes Proclamation FF-34-2019, dated September 12, 2019. It establishes commercial flounder season dates for Internal Coastal Waters by Flounder Management Area. It maintains a 15-inch total length minimum size limit. It also maintains the regulation making it unlawful to possess flounder taken from anchored large mesh gill nets with a stretched mesh length less than 6 inches. It makes it unlawful for a commercial fishing operation to possess flounder from the Atlantic Ocean Waters taken by any method other than trawls. This action is being taken to comply with the requirements of Amendment 2 to the N.C. Southern Flounder Fishery Management Plan.
2020	Sep-20	M-13-2020	This proclamation supersedes proclamation M-10-2020 dated April 28, 2020. In Management Unit A, it maintains small mesh gill net attendance requirements. It expands the portion of Management Unit A to include the Chowan River that allows the use of run around, strike, drop, and trammel gill nets with a stretched mesh length of 5 ½ inches through 6 ½ inches to harvest blue catfish.
2020	Sep-20	M-14-2020	This proclamation supersedes proclamation M-13-2020 dated September 2, 2020. It opens the previously closed Management Unit A to the use of gill nets for the purpose of harvesting flounder in accordance with Amendment 2 to the N.C. Southern Flounder Fishery Management Plan and the Sea Turtle ITP. It maintains the exempted areas in MUA open to the use of run-around, strike, drop, and trammel gill nets to harvest blue catfish. It also maintains small mesh gill net attendance requirements in the entirety of Management Unit A.
2020	Sep-20	M-15-2020	This proclamation supersedes proclamation M-6-2020 dated April 8, 2020. This proclamation opens Management Units B (subunits only), C, D2 and E to the use of gill nets with a stretched mesh length of 4 inches through 6 ½ inches (except as described in Section III.) in accordance with Amendment 2 to the N.C. Southern Flounder Fishery Management Plan.
2020	Oct-20	M-16-2020	This proclamation supersedes proclamation M-14-2020 dated September 10, 2020. It closes Management Unit A to the use of large mesh gill nets with overnight soaks for the purpose of harvesting flounder. It maintains the exempted portion of Management Unit A that allows the use of run-around, strike, drop, and trammel gill nets with a stretched mesh length of 5 ½ inches through 6 ½ inches to harvest blue catfish. It maintains small mesh gill net attendance requirements in the entirety of Management Unit A.
2020	Oct-20	M-19-2020	This proclamation supersedes proclamation M-15-2020 dated September 25, 2020. This proclamation closes Management Unit B (subunits SGNRA 1-4, MGNRA and portions of CGNRA) and Management Unit C to the use of gill nets with a stretched mesh length of 4 inches through 6 ½ inches (except as described in Section III.) in accordance with Amendment 2 to the N.C. Southern Flounder Fishery Management Plan.

Table 6. (*continued*) Regulations for management units by effective date for large-mesh (≥4 inch) and small-mesh (<4 inch) gill nets during the 2021 ITP Year. Proclamations during winter months affected fishing effort in subsequent months.

Year	Date	Proclamation Number	Regulation
2020	Nov-20	M-20-2020	This proclamation supersedes proclamation M-19-2020 dated October 16, 2020. This proclamation closes all management units south of Management Unit A to the use of gill nets with a stretched mesh length of 4 inches through 6 ½ inches (except as described in Section III.) in accordance with Amendment 2 to the N.C. Southern Flounder Fishery Management Plan.
2020	Dec-20	M-21-2020	This proclamation supersedes proclamation M-16-2020 dated October 1, 2020. In Management Unit A, it removes attendance requirements and imposes vertical height restrictions for anchored gill nets with a stretched mesh length of 3 inches through 3 ¾ inches. It maintains the exempted portion of Management Unit A that allows the use of run-around, strike, drop, and trammel gill nets with a stretched mesh length of 5 ½ inches through 6 ½ inches to harvest blue catfish.
2020	Jan-21	M-3-2021	This proclamation supersedes proclamation M-21-2020 dated November 20, 2020. In Management Unit A, it is unlawful to use fixed or stationary gill nets with a stretched mesh length other than 3 ¼ inches. It maintains the exempted portion of Management Unit A that allows the use of run-around, strike, drop, and trammel gill nets with a stretched mesh length of 5 ½ inches through 6 ½ inches to harvest blue catfish.
2021	Feb-21	M-5-2021	This proclamation supersedes proclamation M-3-2021 dated November 20, 2020. It opens an additional portion of Management Unit A that allows the use of run-around, strike, drop, and trammel gill nets with a stretched mesh length of 5 ½ inches through 6 ½ inches. It maintains that it is unlawful to use fixed or stationary gill nets with a stretched mesh length other than 3 ¼ inches.
2021	Feb-21	M-6-2021	This proclamation supersedes proclamation M-20-2020 dated October 30, 2020. This proclamation opens Management Unit C to the use of gill nets with a stretched mesh length of 4 inches through 6 ½ inches and implements gear exemptions for the shad fishery in accordance with Amendment 2 to the N.C. Southern Flounder Fishery Management Plan.
2021	Mar-21	M-7-2021	This proclamation supersedes proclamation M-5-2021 dated January 29, 2021. It opens a portion of Management Unit A to the use of floating gill nets configured for harvesting American shad by removing vertical height and setting restrictions for all gill nets with stretched mesh lengths of 5 ¼ through 6 ½ inches. FF-2-2021 makes it unlawful to possess American shad for commercial purposes prior to 12:01 A.M. Wednesday, March 3, 2021 and after midnight Wednesday, March 24, 2021.
2021	Mar-21	M-8-2021	This proclamation supersedes proclamation M-12-2020 dated July 20, 2020. It increases the yardage limits for gillnets with a stretched mesh length less than 4 inches in Management Unit B and maintains yardage limits for Management Units C, D1, D2 and E. It also maintains attendance requirements for gillnets with a stretched mesh length less than 5 inches.

Table 6. (*continued*) Regulations for management units by effective date for large-mesh (≥4 inch) and small-mesh (<4 inch) gill nets for the 2021 ITP Year. Proclamations during winter months affected fishing effort in subsequent months.

Year	Date	Proclamation Number	Regulation
2021	Mar-21	M-9-2021	This proclamation supersedes proclamation M-7-2021 dated February 25, 2021. It closes a portion of Management Unit A to the use of all gill nets and reduces the maximum amount of yards allowed for gill nets configured for harvesting American shad
2021	Mar-21	M-10-2021	This proclamation supersedes proclamation M-9-2021 dated March 9, 2021. In Management Unit A, it removes gill nets configured for harvesting American shad. It maintains that it is unlawful to use fixed or stationary gill nets with a stretched mesh length other than 3 ¼ inches, and opens a portion of Management Unit A to the use of run-around, strike, drop, and trammel gill nets with a stretched mesh length of 5 ½ inches through 6 ½ inches for harvesting blue catfish.
2021	Apr-21	M-11-2021	This proclamation supersedes proclamation M-6-2021 dated January 29, 2021. This proclamation closes Management Unit C and maintains closures in all other management units south of Management Unit A to the use of gill nets with a stretched mesh length of 4 inches through 6 ½ inches (except as described in Section II.: coincides with the commercial shad fishery closure) in accordance with Amendment 2 to the N.C. Southern Flounder Fishery Management Plan
2021	Apr-21	M-12-2021	This proclamation supersedes proclamation M-10-2021 dated March 17, 2021. In Management Unit A, it implements small mesh gill net attendance requirements. It maintains that it is unlawful to use fixed or stationary gill nets with a stretched mesh length other than 3 inches through 3 ¾ inches and keeps open a portion of Management Unit A to the use of run-around, strike, drop, and trammel gill nets with a stretched mesh length of 5 ½ inches through 6 ½ inches for harvesting blue catfish.
2021	May-21	M-13-2021	This proclamation revises proclamation M-13-2021 and changes the issue date only. This proclamation supersedes proclamation M-8-2021 dated March 4, 2021. It increases the yardage limits for the commercial Spanish mackerel drift gill net fishery in Management Unit B. It also reduces the yardage limit for anchored gill nets in Management Unit B.
2021	Jun-21	M-14-2021	This proclamation supersedes proclamation M-13-2021 (REVISED) dated May 4, 2021. It reduces the yardage limit for gill nets with a stretched mess length less than 4 inches in Management Unit B

Table 7. For large-mesh gill nets, observer coverage (observed trips/fishing trips) calculated from observer data (≥4 inch) and reported trips from the Trip Ticket Program (≥5 inch) by season and management unit for the 2021 ITP Year. Observer coverage was calculated using estimated fishing trips based on Trip Ticket Program data and actual reported trips from the program for the 2021 ITP Year with the exception of Management Unit B during fall when estimated fishing trips were used, denoted by an asterisk (*). Estimated trips="*closed*" when and where anchored large-mesh gill nets were prohibited. Trip Ticket Program data are considered finalized for 2020 and preliminary for 2021.

		Large Mesh				
Season	Management Unit	Estimated Fishing Trips	Reported Fishing Trips	Observed Trips	Coverage - Estimated Fishing Trips	Coverage - Reported Fishing Trips
Fall 2020	A	555	1,050	113	20.4	10.8
	B	370	370*	74	20.0	20.0
	C	190	122	41	21.6	33.6
	D1	*closed*	*closed*	*closed*	*closed*	*closed*
	D2	182	74	38	20.9	51.4
	E	349	521	63	18.1	12.1
	Overall	1,646	2,137	329	20.0	15.4
Spring 2021	A	762	949	52	6.8	5.5
	B	*closed*	*closed*	*closed*	*closed*	*closed*
	C	376	13	0	0.0	0.0
	D1	*closed*	*closed*	*closed*	*closed*	*closed*
	D2	*closed*	*closed*	*closed*	*closed*	*closed*
	E	*closed*	*closed*	*closed*	*closed*	*closed*
	Overall	1,138	962	52	4.6	5.4
Summer 2021	A	*closed*	*closed*	*closed*	*closed*	*closed*
	B	*closed*	*closed*	*closed*	*closed*	*closed*
	C	*closed*	*closed*	*closed*	*closed*	*closed*
	D1	*closed*	*closed*	*closed*	*closed*	*closed*
	D2	*closed*	*closed*	*closed*	*closed*	*closed*
	E	*closed*	*closed*	*closed*	*closed*	*closed*
	Overall	*closed*	*closed*	*closed*	*closed*	*closed*
Annual		2,784	3,099	381	13.7	12.3

Table 8. For small-mesh gill nets, observer coverage (observed trips/fishing trips) calculated from observer trips (<4 inch) and reported trips from the Trip Ticket Program (<5 inch) by season and management unit for the 2021 ITP Year. Observer coverage was calculated using estimated fishing trips based on the Trip Ticket Program data and actual reported trips from the program for the 2021 ITP Year. Estimated trips="*closed*" when and where anchored small-mesh gill nets were prohibited. Trip Ticket Program data are considered finalized for 2020 and preliminary for 2021.

		Small Mesh				
Season	Management Unit	Estimated Fishing Trips	Reported Fishing Trips	Observed Trips	Coverage - Estimated Fishing Trips	Coverage - Reported Fishing Trips
Fall	A	263	496	8	3.0	1.6
2020	B	812	1,375	25	3.1	1.8
	C	137	161	3	2.2	1.9
	D1	*closed*	*closed*	*closed*	*closed*	*closed*
	D2	244	69	9	3.7	13.0
	E	430	402	24	5.6	6.0
	Overall	1,886	2,503	69	3.7	2.8
Spring	A	656	550	11	1.7	2.0
2021	B	1,363	1,245	27	2.0	2.2
	C	212	121	1	0.5	0.8
	D1	*closed*	*closed*	*closed*	*closed*	*closed*
	D2	59	8	0	0.0	0.0
	E	111	101	0	0.0	0.0
	Overall	2,401	2,025	39	1.6	1.9
Summer	A	172	159	5	2.9	3.1
2021	B	848	1,200	13	1.5	1.1
	C	92	54	1	1.1	1.9
	D1	*closed*	*closed*	*closed*	*closed*	*closed*
	D2	31	0	1	3.2	--
	E	193	134	5	2.6	3.7
	Overall	1,336	1,547	25	1.9	1.6
Annual		5,623	6,075	133	2.4	2.2

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Table 9. Number of "No Contact" trips by season and management unit completed by Marine Patrol and observers during the 2021 ITP Year. No Contact refers to unsuccessful attempts to find and observe anchored gill-net effort. Management Unit D1 was *closed* to anchored small- and large-mesh gill nets.

Season	Management Unit	Marine Patrol No Contact Trips	Observer No Contact Trips	Total No Contact Trips
Fall	A	37	9	46
2020	B	17	12	35
	C	15	4	19
	D1	*closed*	*closed*	*closed*
	D2	24	8	32
	E	97	2	99
	Overall	190	35	225
Spring	A	36	2	38
2021	B	15	12	27
	C	10	15	25
	D1	*closed*	*closed*	*closed*
	D2	29	5	34
	E	139	4	143
	Overall	229	38	267
Summer	A	60	1	61
2021	B	41	29	70
	C	35	13	48
	D1	*closed*	*closed*	*closed*
	D2	22	4	26
	E	162	2	164
	Overall	320	49	369
Annual		739	122	861

Table 10. Summary of observed sea turtle interactions (n=17) in large-mesh (≥4 inch) gill nets during the 2021 ITP Year. No interactions were observed in small-mesh (<4 inch) gill nets. Tags were not applied. CCL= Curved Carapace Length. CCW= Curved Carapace Width.

Date	Season	Management Unit	Mesh Size Category	Latitude (N)	Longitude (W)	Species	Disposition	CCL (mm)	CCW (mm)
10/1/2020	Fall	B	Large	35.03789	-76.11697	Green	Alive	343	259
10/1/2020	Fall	B	Large	35.03621	-76.11968	Green	Alive	279	241
10/1/2020	Fall	B	Large	35.00119	-76.16446	Green	Alive	332	281
10/2/2020	Fall	B	Large	35.35749	-75.56485	Green	Alive	n/r	n/r
10/2/2020	Fall	E	Large	34.17388	-77.84450	Green	Alive	342	330
10/6/2020	Fall	B	Large	35.35602	-75.56176	Green	Dead	330	273
10/6/2020	Fall	B	Large	35.35785	-75.55959	Green	Alive	317	279
10/6/2020	Fall	B	Large	35.35520	-75.56087	Green	Alive	304	266
10/6/2020	Fall	B	Large	35.45318	-75.51341	Green	Alive	304	254
10/7/2020	Fall	B	Large	35.45039	-75.51256	Green	Alive	330	279
10/7/2020	Fall	B	Large	35.33092	-75.59394	Green	Alive	357	306
10/7/2020	Fall	B	Large	35.33328	-75.58375	Green	Dead	284	245
10/8/2020	Fall	B	Large	34.81448	-76.37898	Loggerhead	Alive	422	412
10/9/2020	Fall	E	Large	34.44384	-77.54328	Green	Alive	n/r	n/r
10/13/2020	Fall	E	Large	34.70069	-77.09571	Kemp's Ridley	Alive	n/r	n/r
10/15/2020	Fall	B	Large	34.89843	-76.31883	Green	Dead	354	316
10/22/2020	Fall	E	Large	34.42334	-77.57556	Green	Alive	330	254

Table 11. All EGNP and NETG Citations written by Marine Patrol for anchored gill nets by season and violation code during the 2021 ITP Year.

Season	Violation Date	Violation Code	Violation Description
Fall	2020-09-01	NETG09	Gill net set too close to bridge
Fall	2020-09-04	NETG23	Use gill/seine net within 1/4 mi of state/national park
Fall	2020-09-13	NETG02	Using gill net without buoys or identification
Fall	2020-09-13	NETG10	Gill net with illegal mesh size
Fall	2020-09-29	NETG03	Using gill net with improper buoys or identification
Fall	2020-09-29	NETG45	Set or retrieve large mesh gill nets no sooner than one hour before sunset on Mon through Thurs Proclamation M-8-2010
Fall	2020-10-01	NETG04	Leave gill net in waters when could not be legally fished
Fall	2020-10-02	NETG01	Leave gill net in coastal waters unattended
Fall	2020-10-02	NETG01	Leave gill net in coastal waters unattended
Fall	2020-10-02	NETG01	Leave gill net in coastal waters unattended
Fall	2020-10-02	NETG01	Leave gill net in coastal waters unattended
Fall	2020-10-02	NETG01	Leave gill net in coastal waters unattended
Fall	2020-10-02	NETG04	Leave gill net in waters when could not be legally fished
Fall	2020-10-02	NETG04	Leave gill net in waters when could not be legally fished
Fall	2020-10-03	NETG04	Leave gill net in waters when could not be legally fished
Fall	2020-10-05	NETG46	Set or retrieve large mesh gill nets later than one hour after sunrise on Tuesday through Friday Proclamation M-8-2010
Fall	2020-10-06	NETG37	Leave small mesh gill nets unattended 3J.0103
Fall	2020-10-07	EGNP30	Failure to comply with gill net configurations outlined in proclamation
Fall	2020-10-07	NETG04	Leave gill net in waters when could not be legally fished
Fall	2020-10-08	EGNP30	Failure to comply with gill net configurations outlined in proclamation
Fall	2020-10-08	NETG55	Violate the provisions of Proclamation M-30-2011 to wit set gill nets before one hour before sunset Proclamation M-30-11
Fall	2020-10-08	NETG55	Violate the provisions of Proclamation M-30-2011 to wit set gill nets before one hour before sunset Proclamation M-30-11
Fall	2020-10-12	EGNP01	Fishing gill net without a valid Estuarine Gill Net Permit
Fall	2020-10-12	EGNP01	Fishing gill net without a valid Estuarine Gill Net Permit
Fall	2020-10-12	EGNP01	Fishing gill net without a valid Estuarine Gill Net Permit
Fall	2020-10-14	EGNP11	Failure to attend nets
Fall	2020-10-14	NETG46	Set or retrieve large mesh gill nets later than one hour after sunrise on Tues through Fri Proclamation M-8-2010
Fall	2020-10-14	NETG46	Set or retrieve large mesh gill nets later than one hour after sunrise on Tues through Fri Proclamation M-8-2010
Fall	2020-10-15	NETG01	Leave gill net in coastal waters unattended
Fall	2020-10-15	NETG01	Leave gill net in coastal waters unattended

Table 11 (*continued*). All EGNP and NETG citations written by Marine Patrol for anchored gill nets by season and violation code during the 2021 ITP Year.

Season	Violation Date	Violation Code	Violation Description
Fall	2020-10-15	NETG37	Leave small mesh gill nets unattended 3J.0103
Fall	2020-10-15	NETG37	Leave small mesh gill nets unattended 3J.0103
Fall	2020-10-16	NETG01	Leave gill net in coastal waters unattended
Fall	2020-10-23	NETG37	Leave small mesh gill nets unattended 3J.0103
Fall	2020-10-27	NETG01	Leave gill net in coastal waters unattended
Fall	2020-10-27	NETG03	Using gill net with improper buoys or identification
Fall	2020-10-28	EGNP01	Fishing gill net without a valid Estuarine Gill Net Permit
Fall	2020-10-28	EGNP01	Fishing gill net without a valid Estuarine Gill Net Permit
Fall	2020-10-28	NETG01	Leave gill net in coastal waters unattended
Fall	2020-11-05	NETG02	Using gill net without buoys or identification
Fall	2020-11-10	NETG01	Leave gill net in coastal waters unattended
Fall	2020-11-19	NETG01	Leave gill net in coastal waters unattended
Spring	2021-03-06	EGNP01	Fishing gill net without a valid Estuarine Gill Net Permit
Spring	2021-03-10	NETG03	Using gill net with improper buoys or identification
Spring	2021-03-14	EGNP10	Set more than the legal length of gill net
Spring	2021-04-05	EGNP01	Fishing gill net without a valid Estuarine Gill Net Permit
Spring	2021-04-06	NETG03	Using gill net with improper buoys or identification
Spring	2021-04-06	NETG12	Net in middle third of marked navigational channel
Spring	2021-04-08	EGNP01	Fishing gill net without a valid Estuarine Gill Net Permit
Spring	2021-04-08	NETG04	Leave gill net in waters when could not be legally fished
Spring	2021-04-23	NETG10	Gill net with illegal mesh size
Spring	2021-04-27	EGNP26	Observer harassment
Spring	2021-05-19	NETG22	Improperly set gill net
Summer	2021-06-17	NETG27	Gill Net set within 50 yards from shore 3H.0103 M-9-2008
Summer	2021-07-26	EGNP01	Fishing gill net without a valid Estuarine Gill Net Permit
Summer	2021-07-26	NETG03	Using gill net with improper buoys or identification
Summer	2021-07-26	NETG10	Gill net with illegal mesh size
Summer	2021-08-16	NETG04	Leave gill net in waters when could not be legally fished

Table 11 (*continued*). All EGNP and NETG citations written by Marine Patrol for anchored gill nets by season and violation code during the 2021 ITP Year.

Season	Violation Date	Violation Code	Violation Description
Summer	2021-08-20	NETG02	Using gill net without buoys or identification
Summer	2021-08-25	EGNP01	Fishing gill net without a valid Estuarine Gill Net Permit
Summer	2021-08-25	NETG10	Gill net with illegal mesh size
Summer	2021-08-26	NETG01	Leave gill net in coastal waters unattended
Summer	2021-08-26	NETG04	Leave gill net in waters when could not be legally fished
Summer	2021-08-31	EGNP01	Fishing gill net without a valid Estuarine Gill Net Permit
Summer	2021-08-31	NETG10	Gill net with illegal mesh size

7 FIGURES

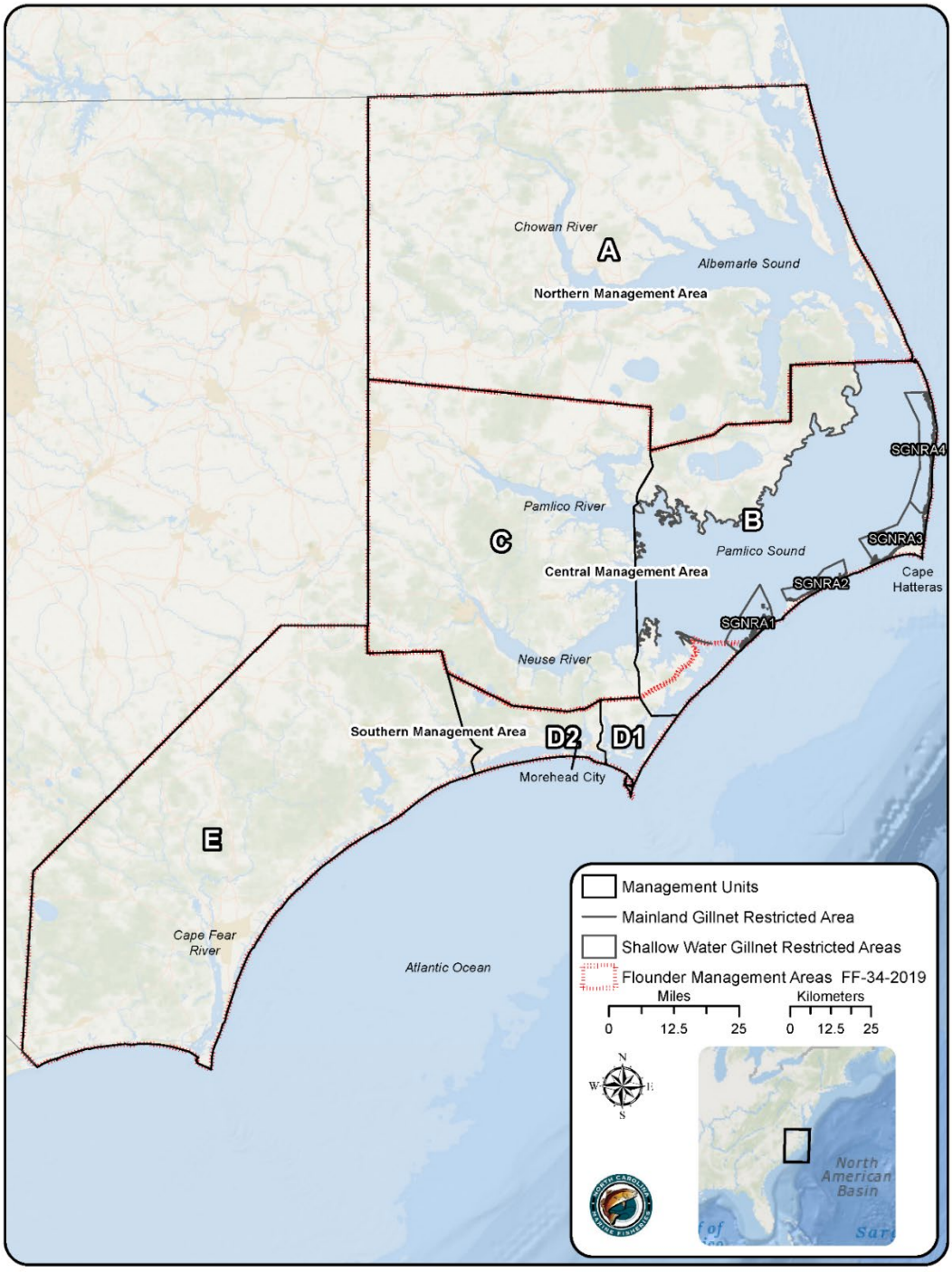

Figure 1. Management Units (A, B, C, D1, D2, and E) as outlined in the Incidental Take Permit (ITP) Conservation Plan and used by the Observer Program for the 2021 ITP Year. In the Pamlico Sound portion of B, large-mesh (≥4 inch) gill nets were confined to Shallow Water Gillnet Restricted Areas (SGNRA) 1-4 and the Mainland Gillnet Restricted Area (200 yards from shore). The three Southern Flounder Management Areas are shown with red hatched lines: northern, central, and southern.

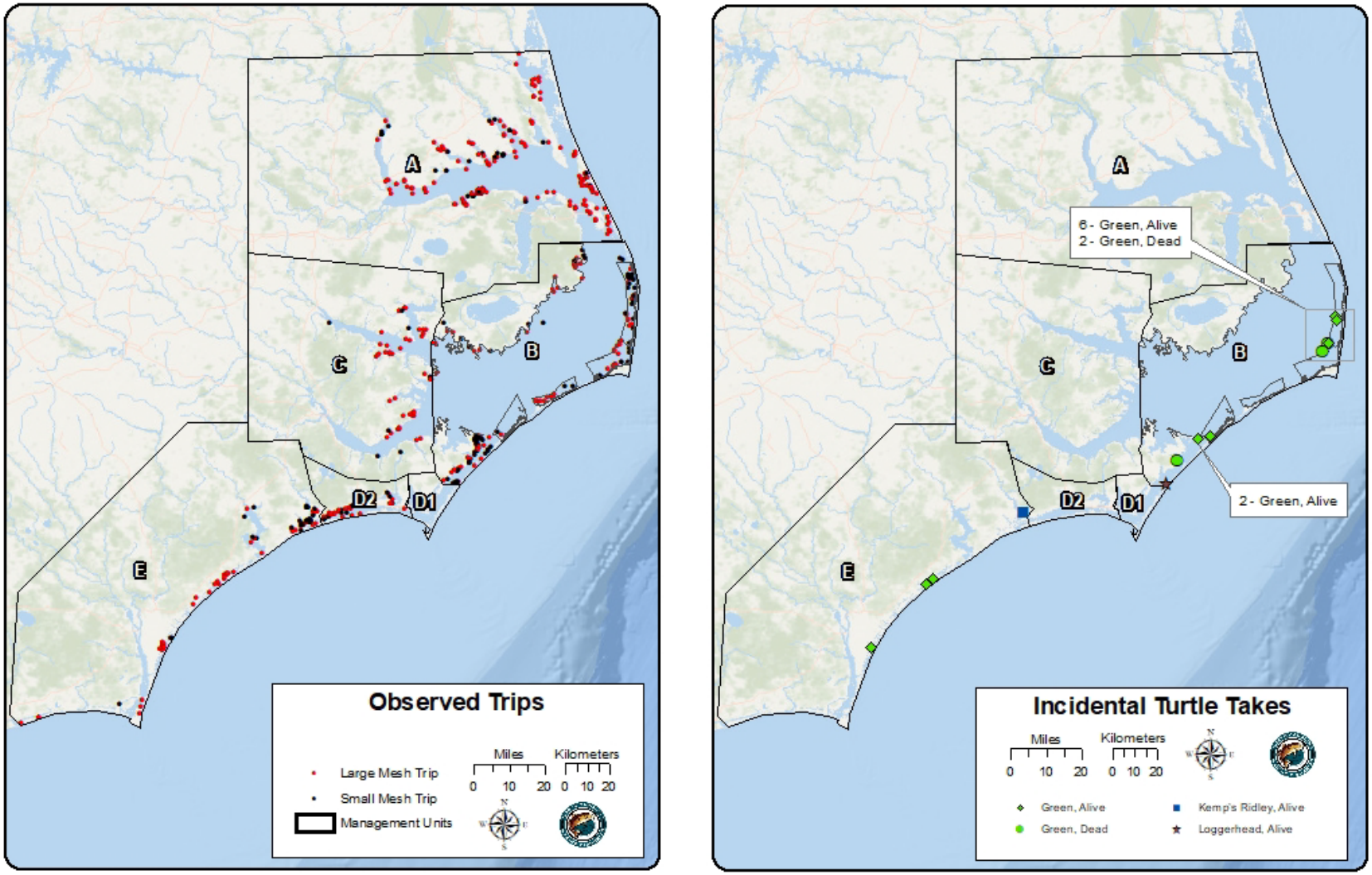

Figure 2. For the entire 2021 ITP Year, observed gill-net trips (left) by mesh-size category (381 large mesh=≥4 inch; 133 small mesh=<4 inch) and sea turtle interactions (right) by species and disposition (alive, n=14; dead, n=3) across management units.

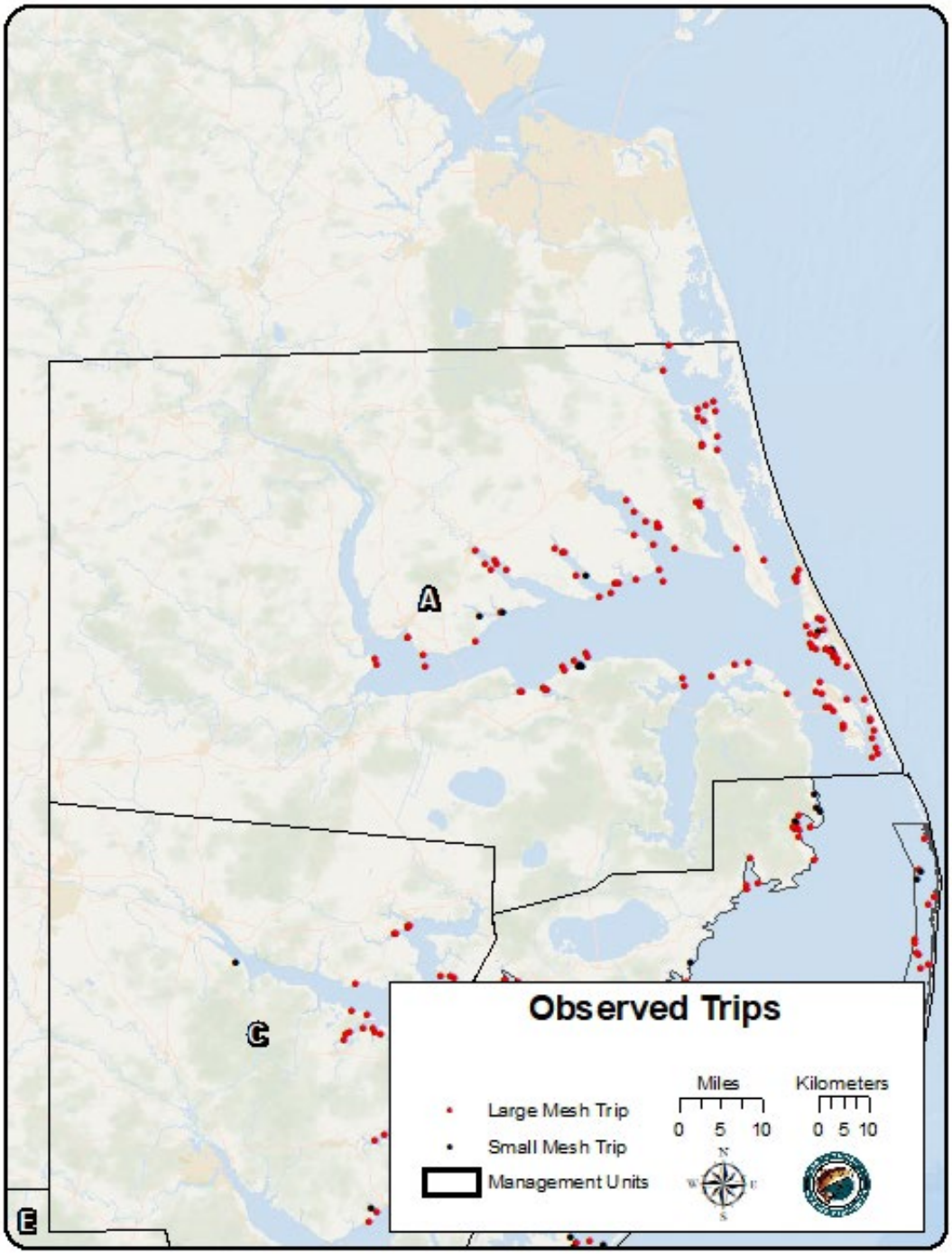

Figure 3. For fall 2020, observed gill-net trips by mesh-size category for Management Unit A (113 large mesh=≥4 inch; 8 small mesh=<4 inch). No sea turtle interactions were observed in Management Unit A.

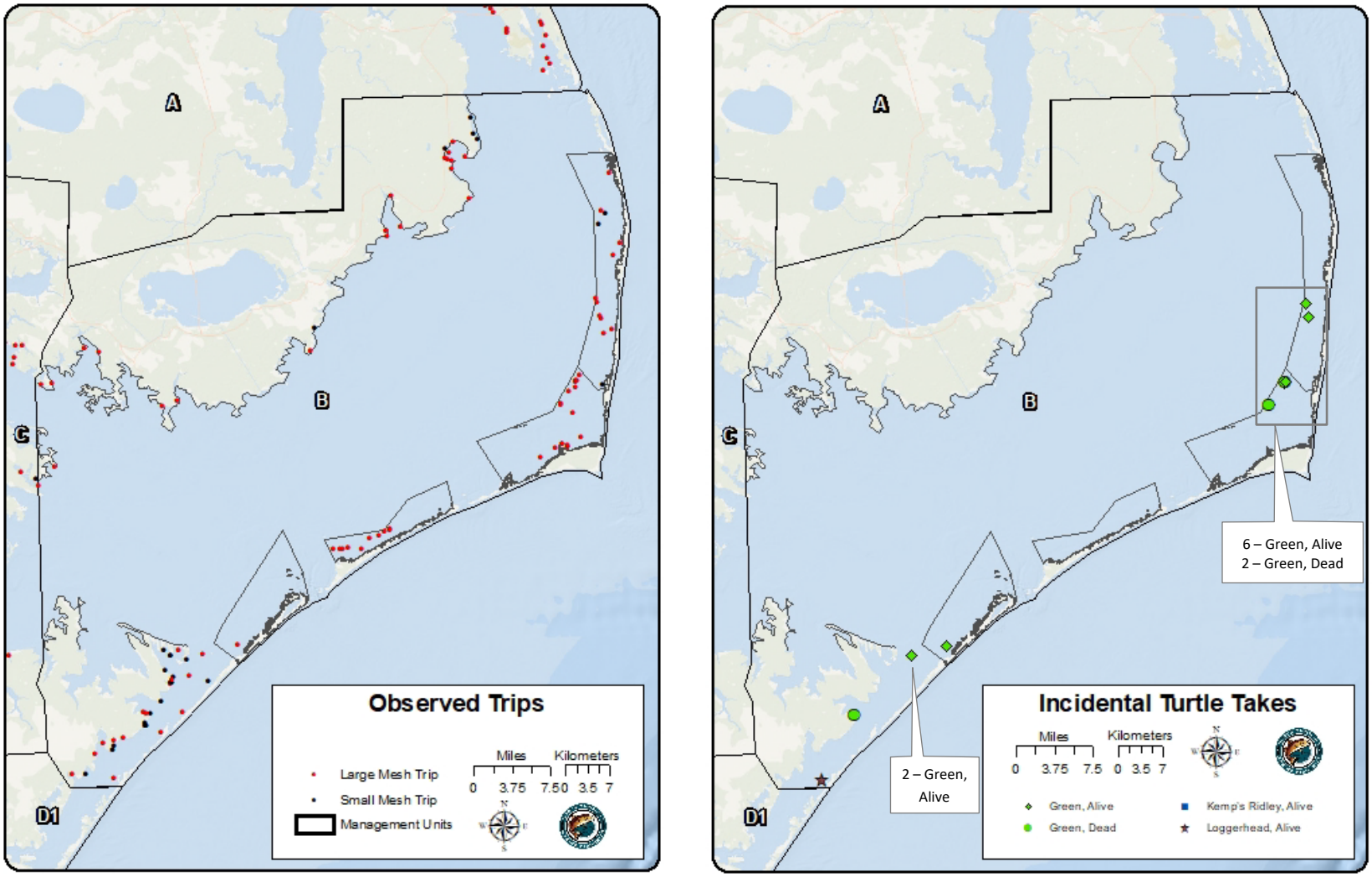

Figure 4. For fall 2020, observed gill-net trips (left) by mesh-size category (74 large mesh=≥4 inch; 25 small mesh=<4 inch) and sea turtle interactions (right) by species and disposition (alive, n=10; dead, n=3) for Management Unit B.

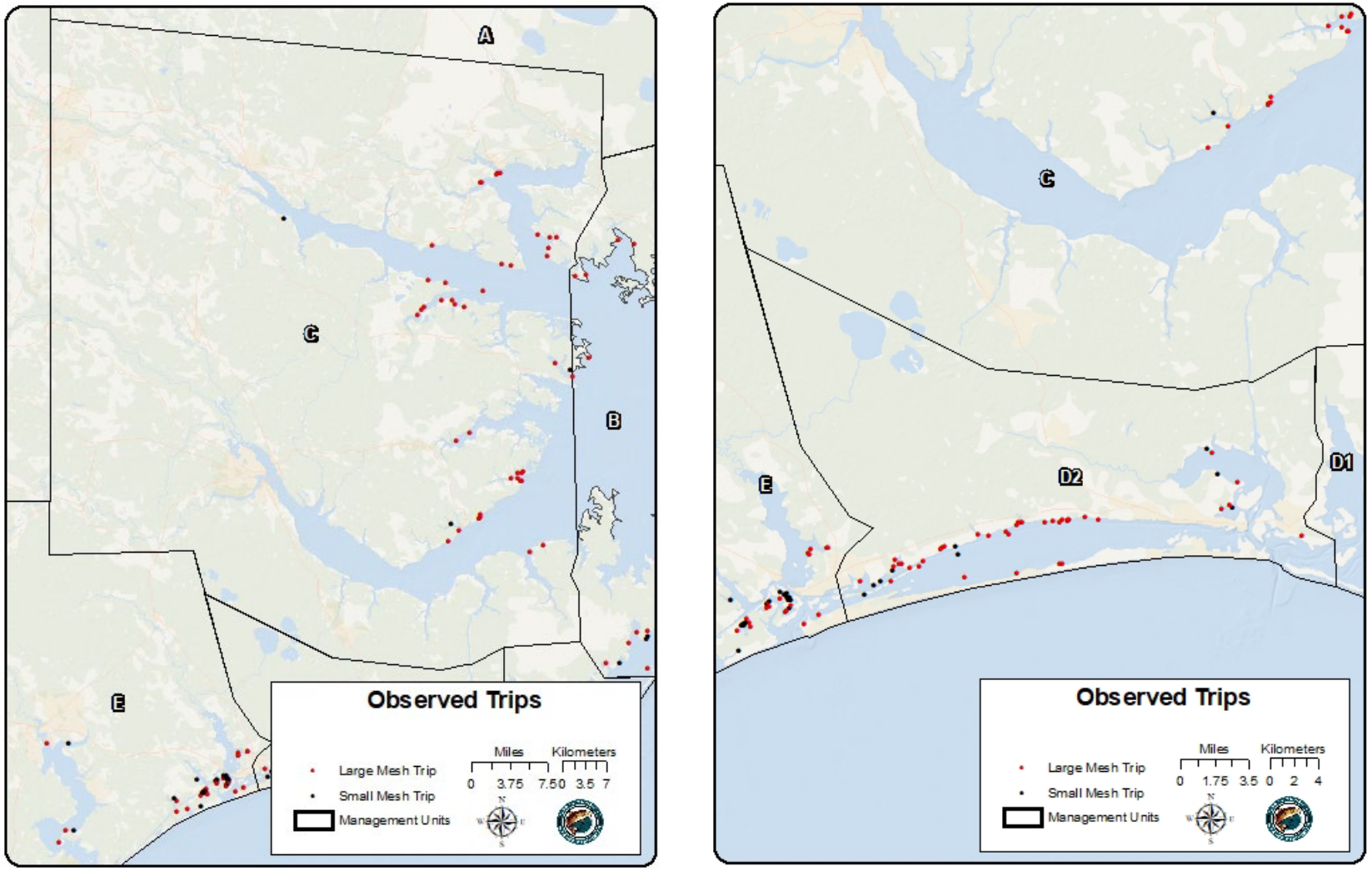

Figure 5. For fall 2020, observed gill-net trips by mesh-size category (large mesh=≥4 inch; small mesh=<4 inch) for Management Unit C (41 large mesh; 3 small mesh) and Management Unit D2 (38 large mesh=≥4 inch; 9 small mesh=<4 inch). No sea turtle interactions were observed in either management unit.

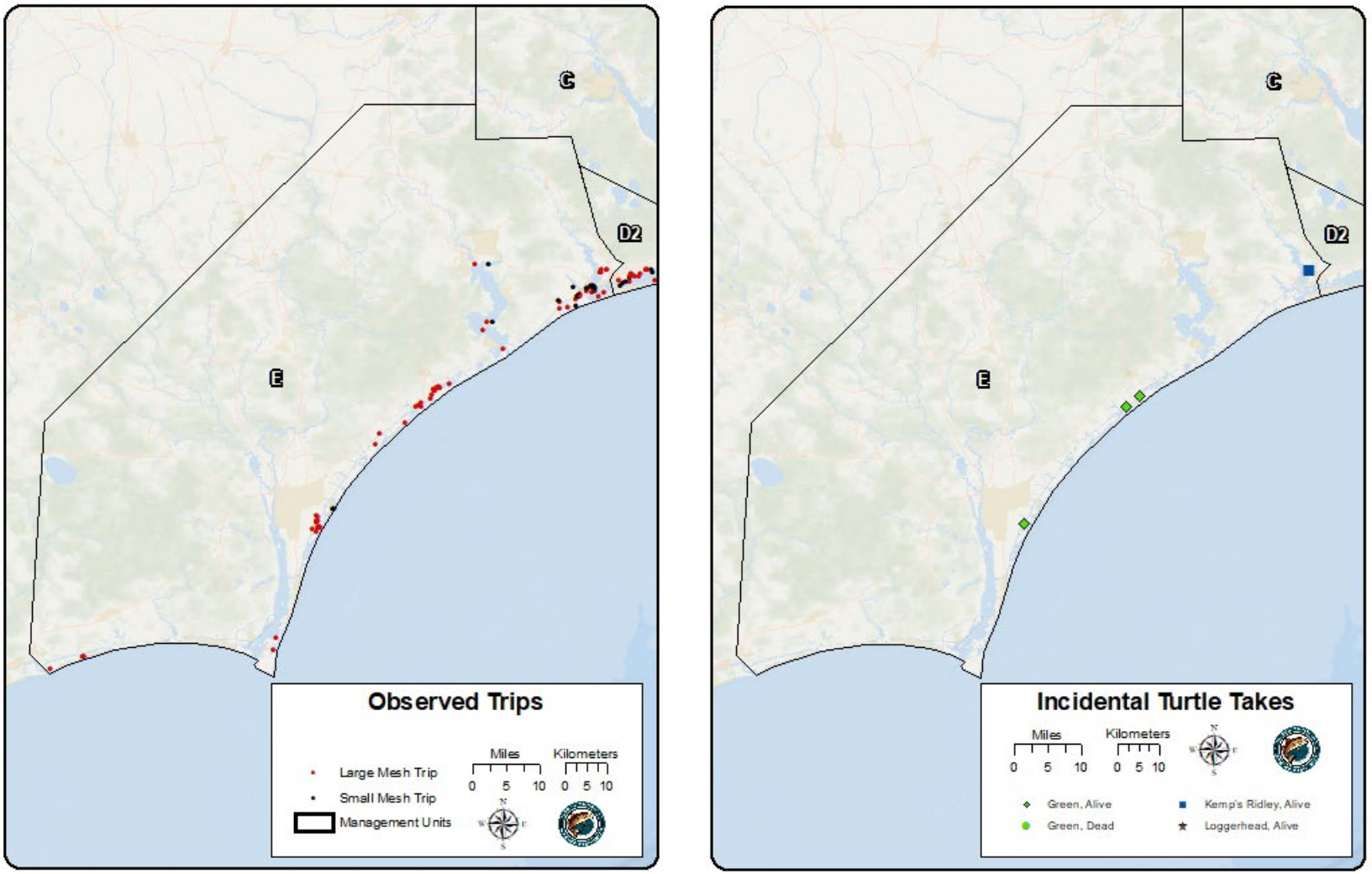

Figure 6. For fall 2020, observed gill-net trips (left) by mesh-size category (63 large mesh=≥4 inch; 24 small mesh=<4 inch) and sea turtle interactions (right) by species and disposition (alive, n=4; dead, n=0) for Management Unit E.

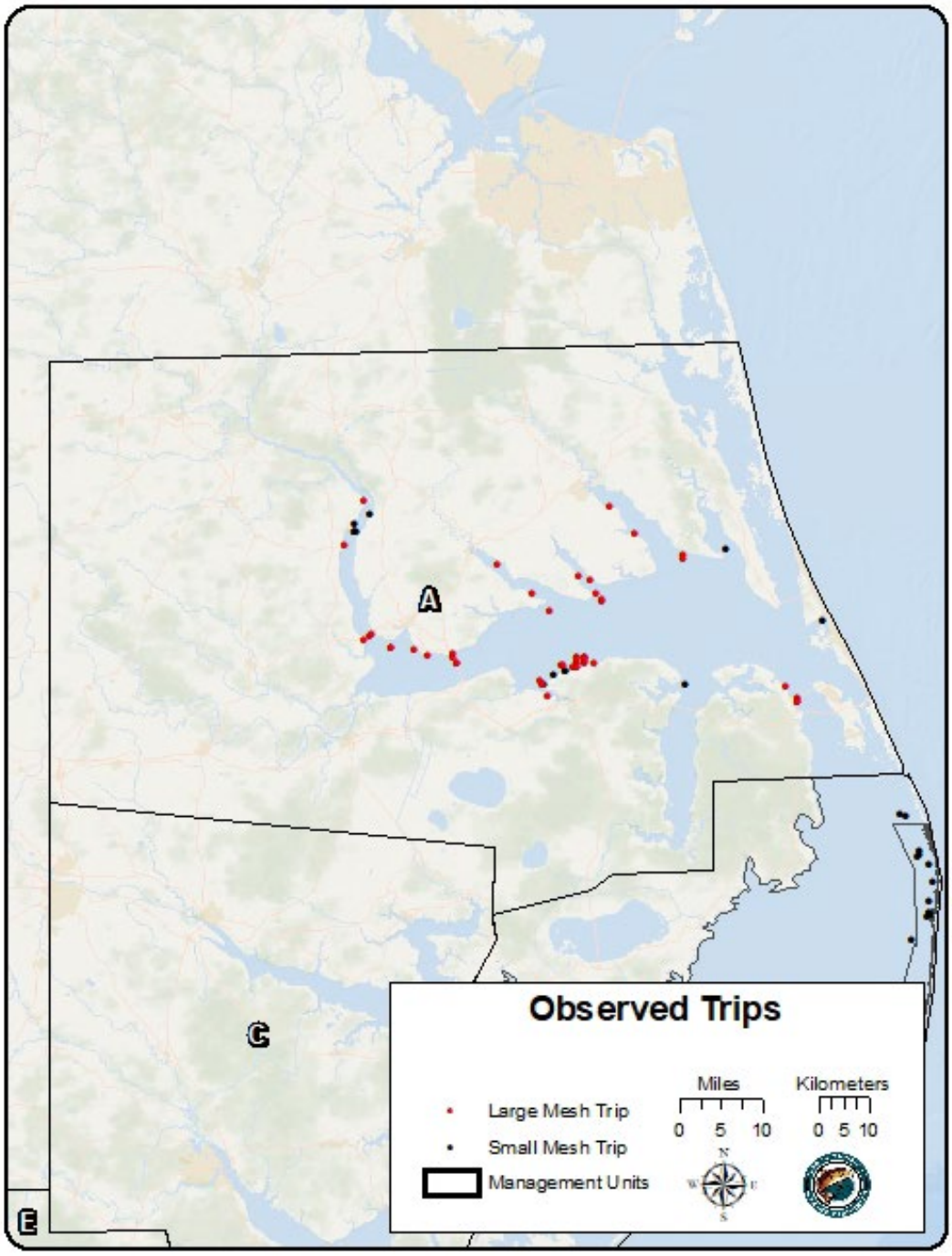

Figure 7. For spring 2021, observed gill-net trips by mesh-size category (large mesh=≥4 inch; small mesh=<4 inch) for Management Unit A (52 large mesh; 11 small mesh) Management Unit A was open to large-mesh gill nets during spring between March 2–March 18 only. No sea turtle interactions were observed in Management Unit A.

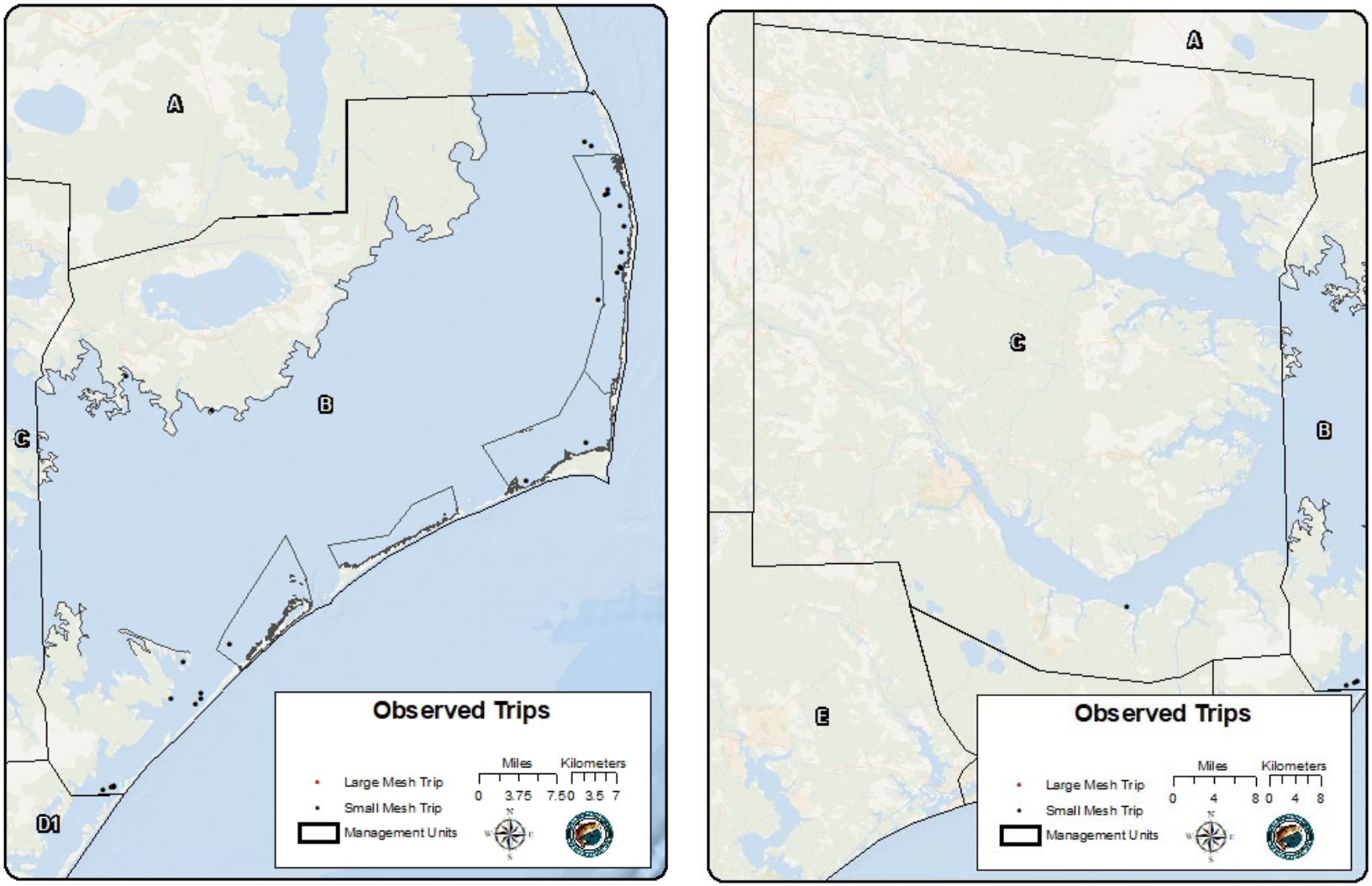

Figure 8. For spring 2021, observed gill-net trips by mesh-size category (large mesh=≥4 inch; small mesh=<4 inch) for Management Unit B (left: 0 large mesh; 27 small mesh) and Management Unit C (right: 0 large mesh; 1 small mesh). Management Unit B was closed to large-mesh gill nets during spring; Management Unit C was open to large-mesh gill nets during spring between March 1–April 15 only. No sea turtle interactions were observed in either management unit.

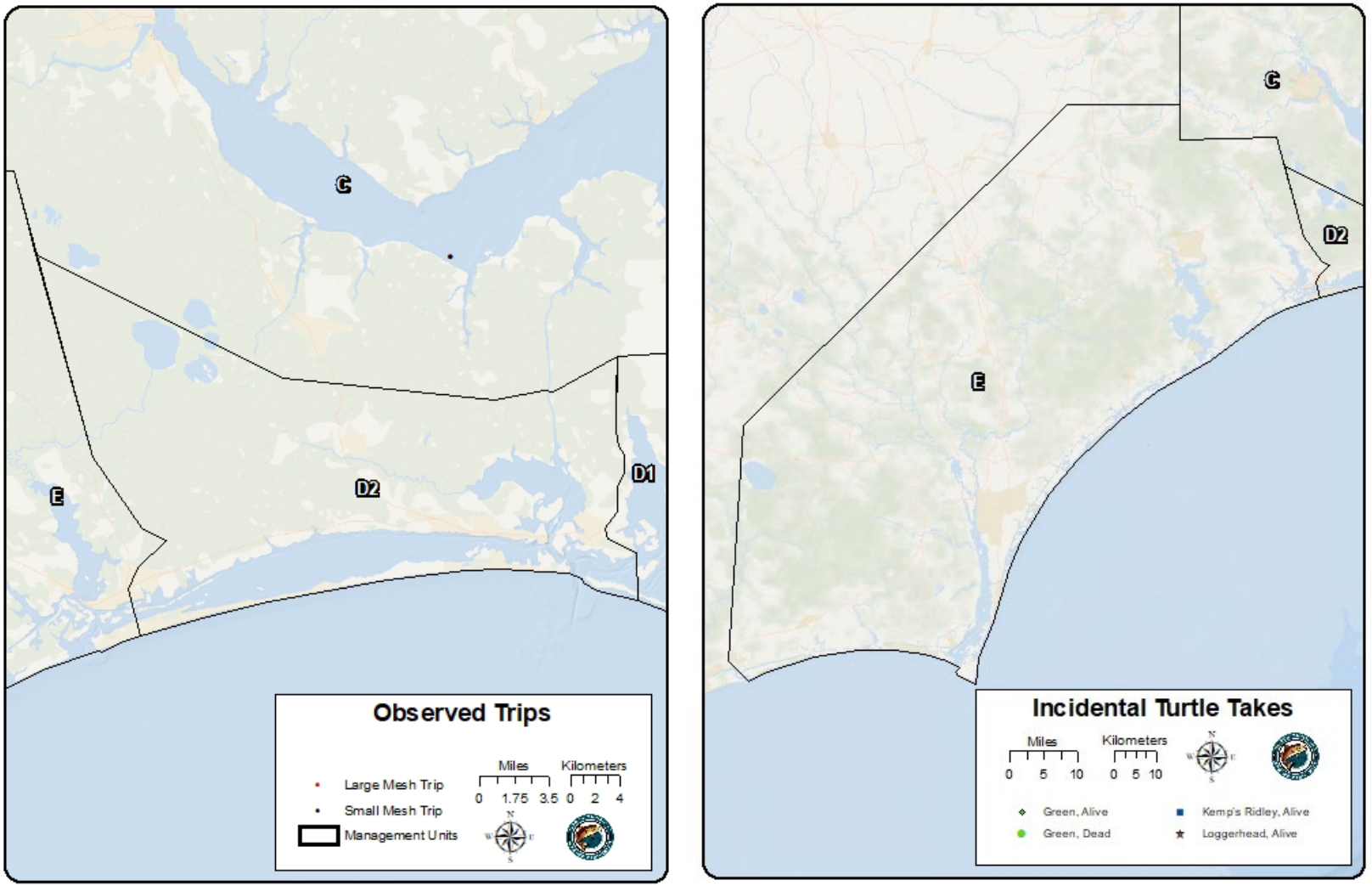

Figure 9. For spring 2021, there were no observed large-mesh (≥4 inch) or small-mesh (<4 inch) gill-net trips for Management Unit D2 or Management Unit E. Both management units were closed to large-mesh gill nets during spring.

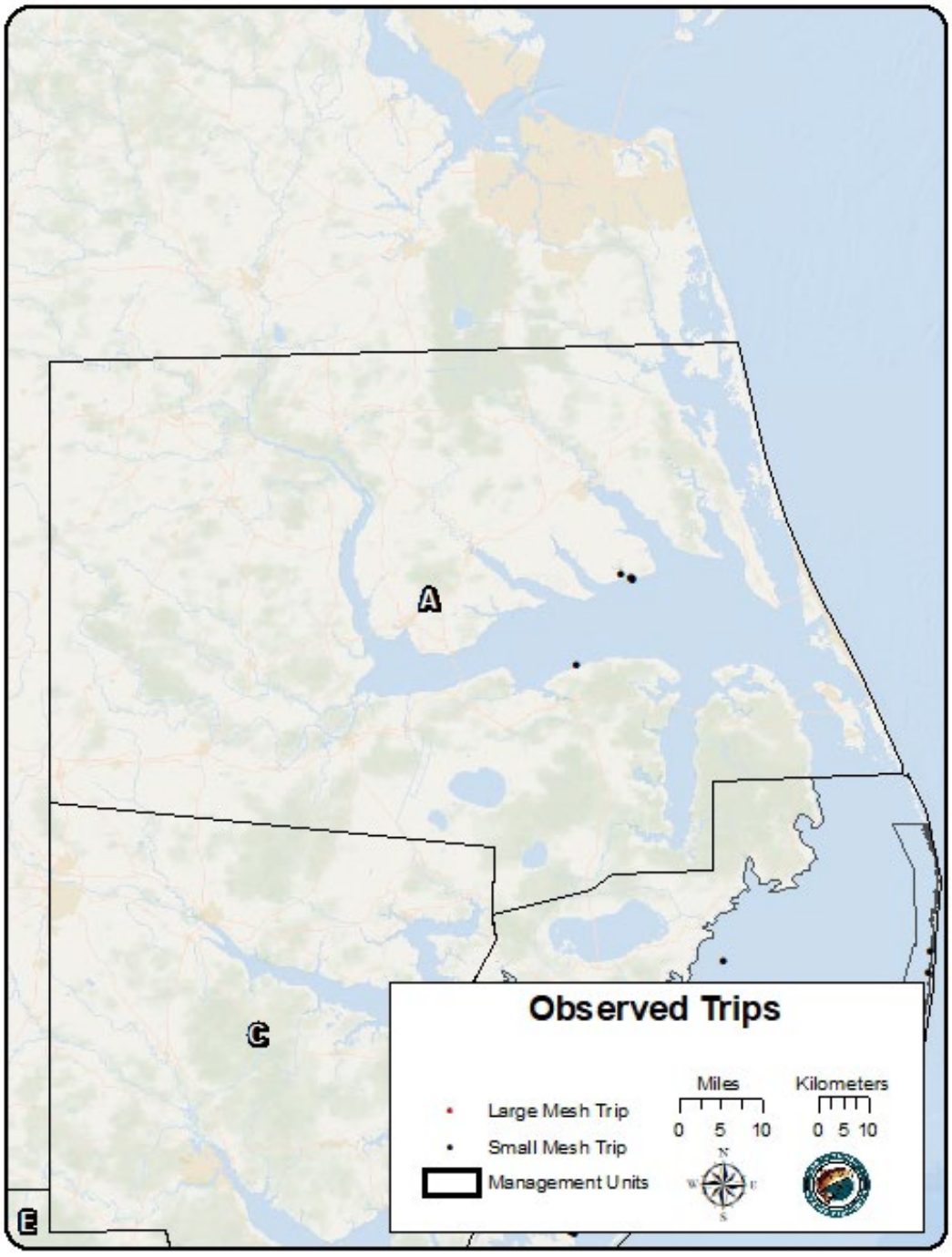

Figure 10. For summer 2021, observed gill-net trips by mesh-size category (large mesh=≥4 inch; small mesh=<4 inch) for Management Unit A (0 large mesh; 5 small mesh). Management Unit A was closed to large-mesh gill nets during summer. No sea turtle interactions were observed in Management Unit A.

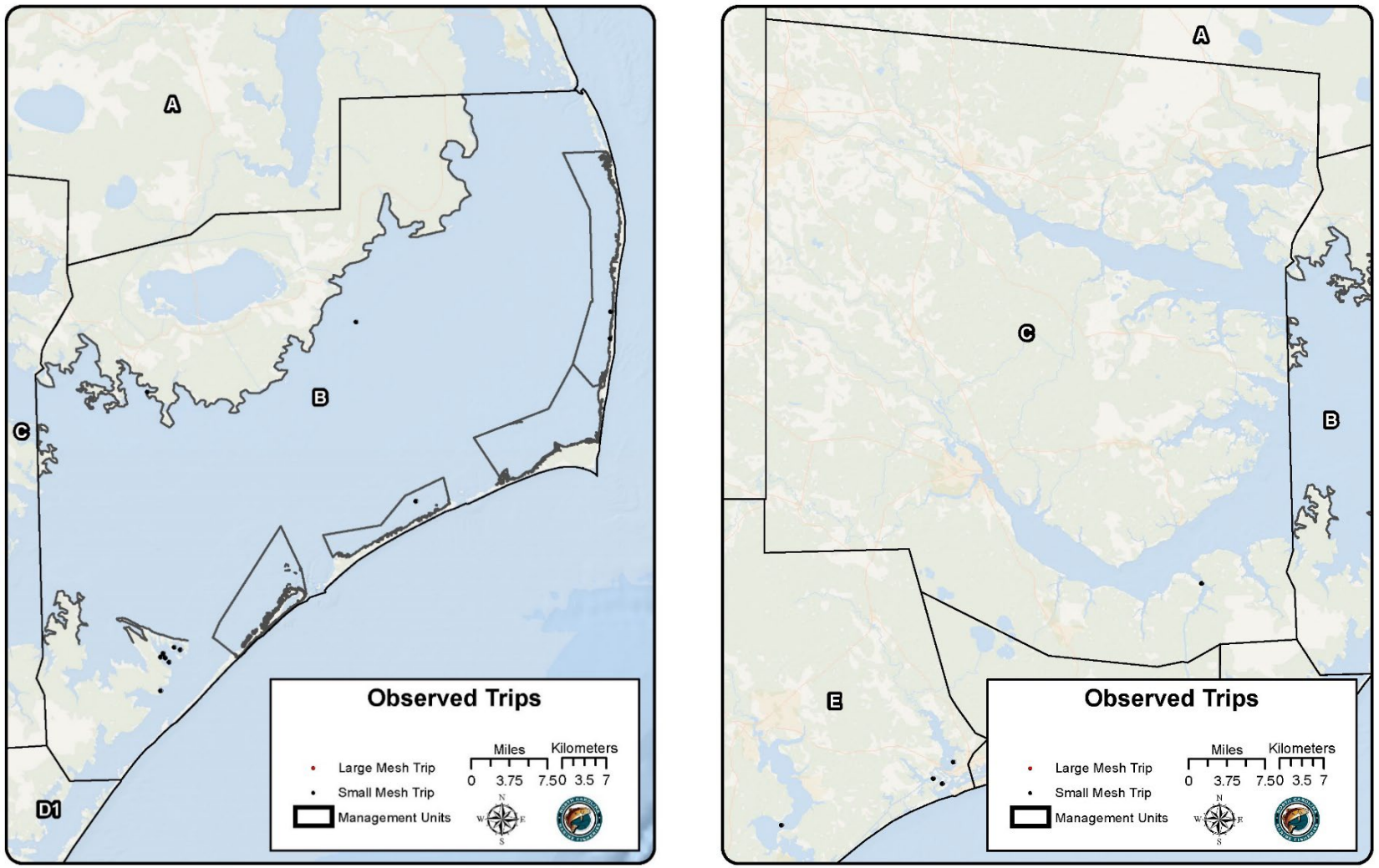

Figure 11. For summer 2021, observed gill-net trips by mesh-size category (large mesh=≥4 inch; small mesh=<4 inch) for Management Unit B (left: 0 large mesh; 13 small mesh) and Management Unit C (right: 0 large mesh; 1 small mesh). Management Units B and C were closed to large-mesh gill nets during summer. No sea turtle interactions were observed in either management unit.

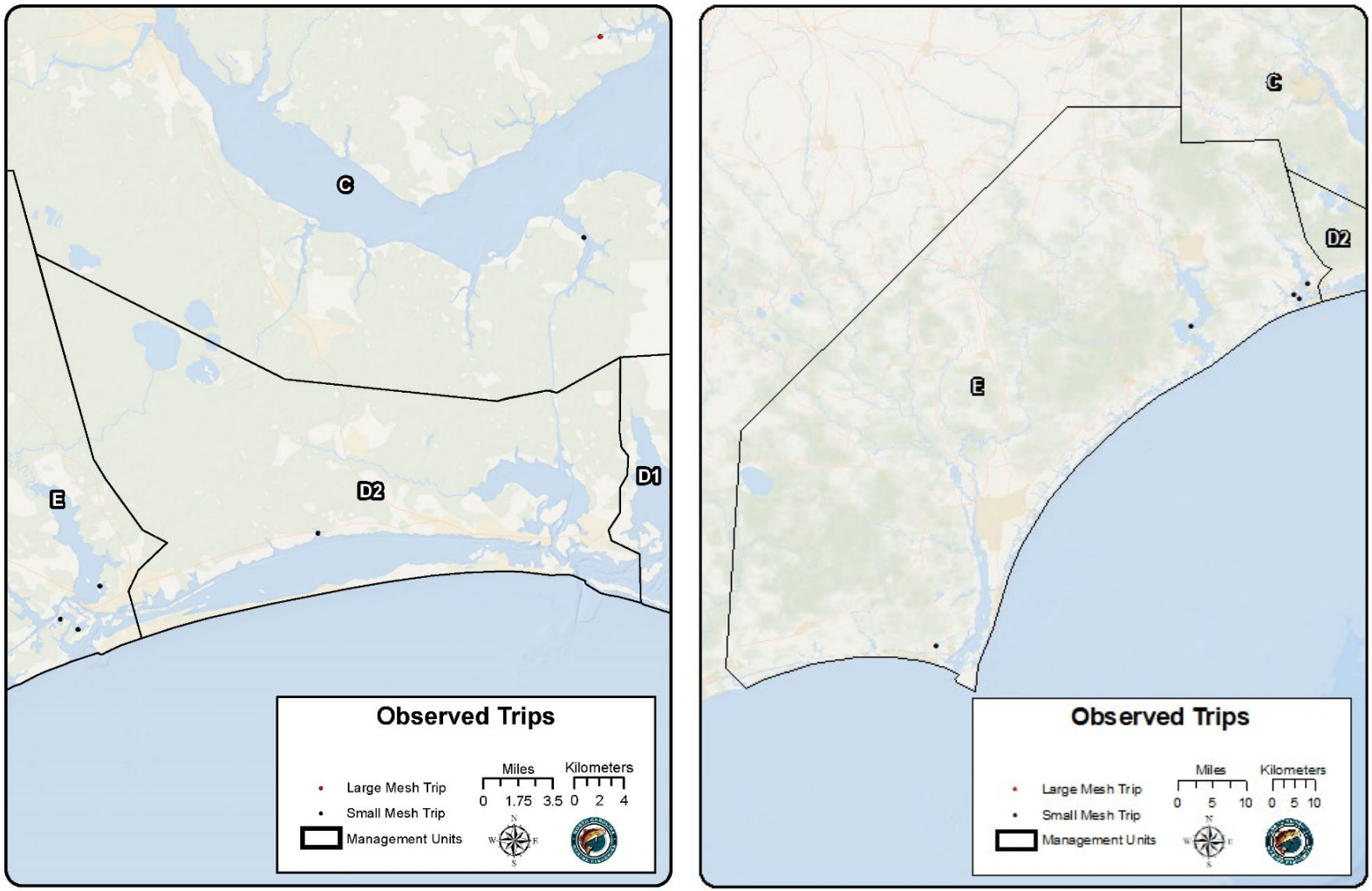

Figure 12. For summer 2021, observed gill-net trips by mesh-size category (large mesh=≥4 inch; small mesh=<4 inch) for Management Unit D2 (left: 0 large mesh, 1 small mesh) and Management Unit E (right: 0 large mesh; 5 small mesh). Management Units D2 and E were closed to large-mesh gill nets during summer. No sea turtle interactions were observed in either management unit.

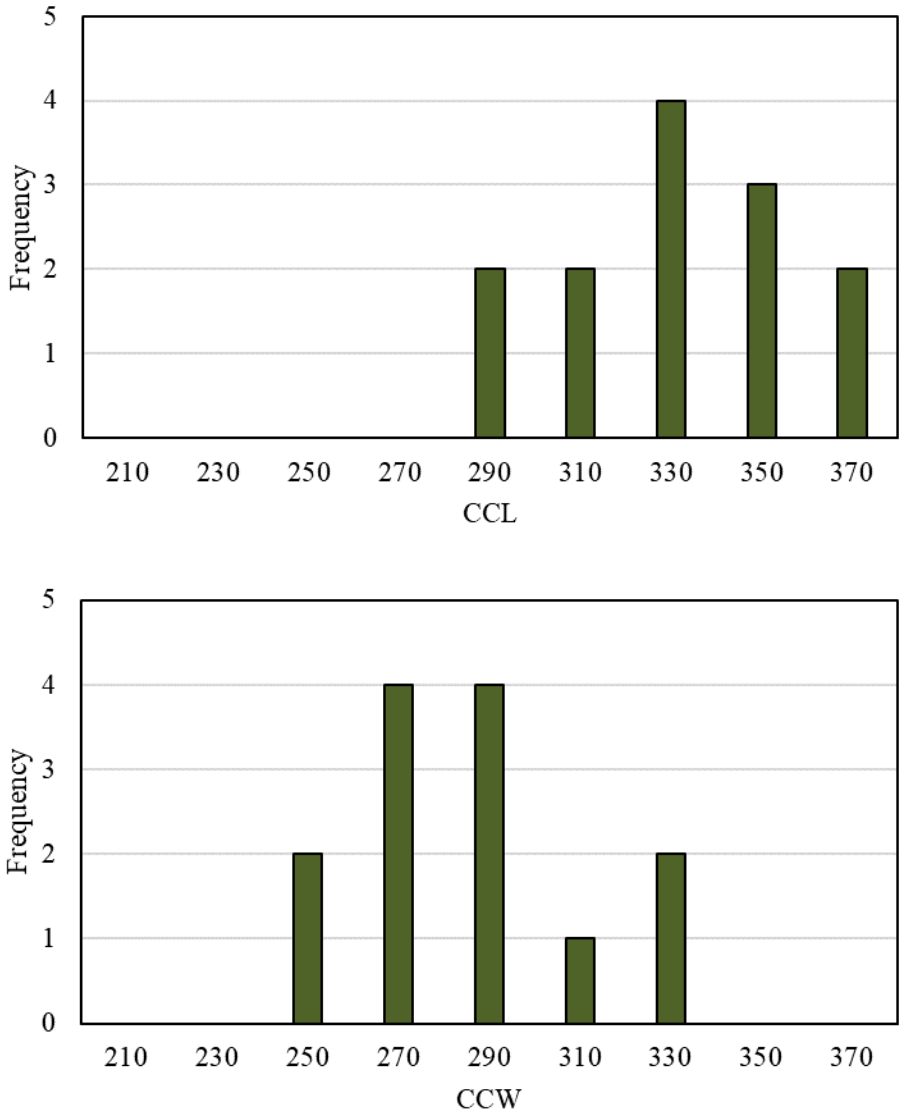

Figure 13. For observed and measured incidental takes of green sea turtles during the 2021 ITP Year (n=13 of 15), length-frequency of (top) curved carapace length (CCL, mm) and (bottom) curved carapace width (CCW, mm).

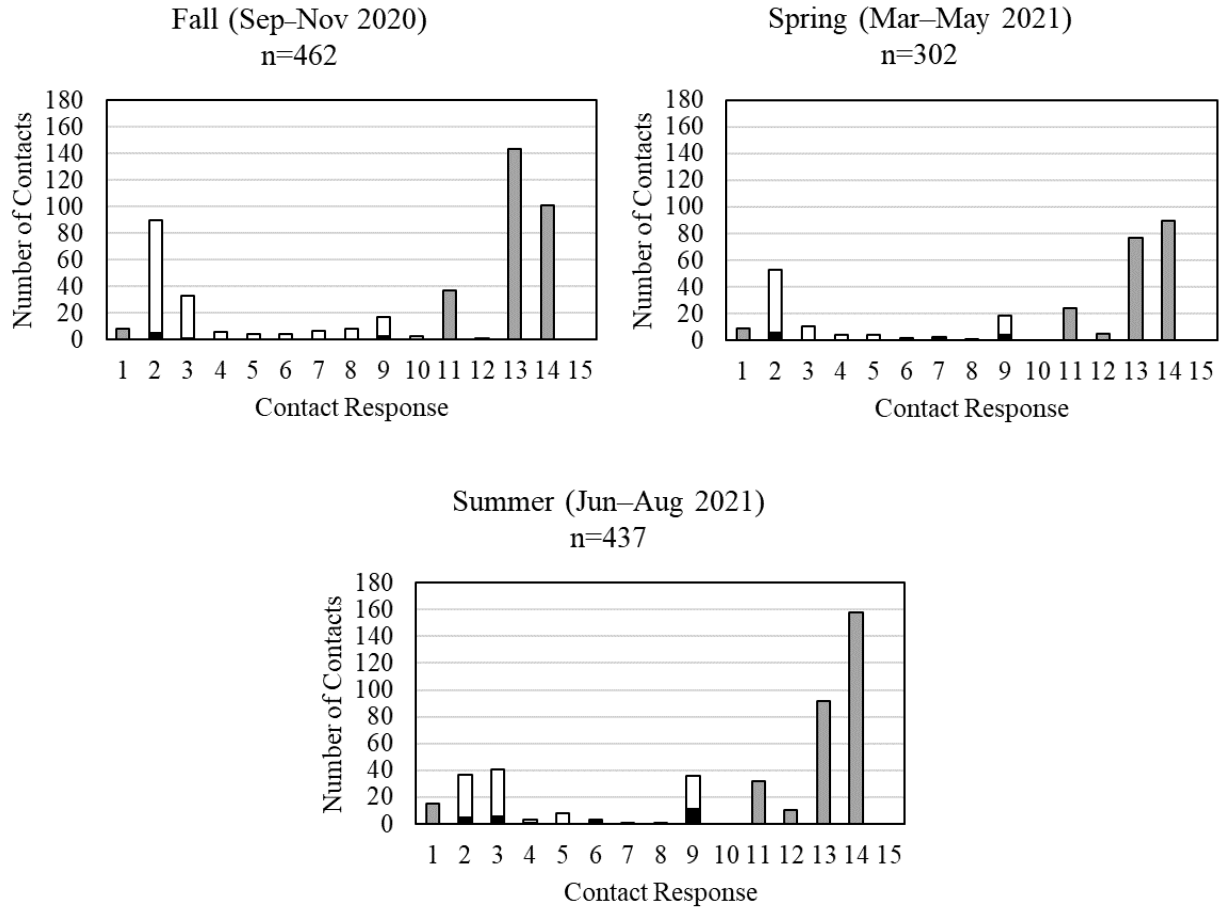

Figure 14. For the 2021 ITP Year, contacts attempted (n=1,201) by observers to schedule trips categorized by contact type (0-15) for fall, spring, and summer. Contact type categories include the following: 1) Left message with someone else; 2) Not fishing general; 3) Fishing other gear; 4) Not fishing because of weather; 5) Not fishing because of boat issues; 6) Not fishing because of medical issues; 7) Booked trip; 8) Hung up, got angry, trip refused; 9) Call back later time/date; 10) Saw in person; 11) Disconnected; 12) Wrong number; 13) No answer; 14) No answer, left voicemail; 15) Not fishing because of natural disaster (e.g., hurricane). Contact types are shown as those when the observer talked to a fisher (white bars), when the observer did not (gray bars), and when the fisher returned an observer's call (black bars).

YEAR	SPECIES	GEAR	POUNDS	DEALERS	TRIPS	CONF
2018	SOUTHERN	GIGS	92,302	88	2,089	
2018	SOUTHERN	GILLNETS	364,949	122	9,127	
2018	SOUTHERN	OTHER	6,432	79	562	
2018	SOUTHERN	POUND NET	440,129	37	1,546	
2019	SOUTHERN	GIGS	91,330	81	1,836	
2019	SOUTHERN	GILLNETS	324,822	119	6,834	
2019	SOUTHERN	OTHER	4,727	65	354	
2019	SOUTHERN	POUND NET	379,201	34	1,017	
2020	SOUTHERN	GIGS	33,192	49	369	
2020	SOUTHERN	GILLNETS	187,412	105	2,475	
2020	SOUTHERN	OTHER	1,292	21	85	
2020	SOUTHERN	POUND NET	258,089	27	559	
2021	SOUTHERN	GIGS	32,219	46	360	
2021	SOUTHERN	GILLNETS	249,006	100	2,412	
2021	SOUTHERN	OTHER	1,021	26	76	
2021	SOUTHERN	POUND NET	195,956	23	292	

NOTE: 2021 and 2022 data are preliminary. 2018-2020 data are complete.
*****Data are confidential**

Red Drum Landings 2020-2022

Landings are complete through January 25, 2022.
2020 landings are final. 2021 and 2022 landings are preliminary.

Year	Month	Species	Pounds	2009-2011 Average	2013-2015 Average
2020	9	Red Drum	32,039	28,991	35,003
2020	10	Red Drum	57,388	43,644	63,659
2020	11	Red Drum	26,704	14,318	27,646
2020	12	Red Drum	12,067	3,428	2,197
2021	1	Red Drum	11,372	5,885	1,700
2021	2	Red Drum	16,674	3,448	3,996
2021	3	Red Drum	2,552	5,699	3,971
2021	4	Red Drum	***	***	***
2021	5	Red Drum	11,651	13,730	9,661
2021	6	Red Drum	14,409	12,681	6,985
2021	7	Red Drum	10,351	13,777	15,618
2021	8	Red Drum	12,340	21,252	15,846

FY20 Fishing Year (Sept 1, 2020 - Aug 31, 2021) Landings	**207,547**

Year	Month	Species	Pounds	2009-2011 Average	2013-2015 Average
2021	9	Red Drum	27,936	28,991	35,003
2021	10	Red Drum	52,385	43,644	63,659
2021	11	Red Drum	20,818	14,318	27,646
2021	12	Red Drum	19,514	3,428	2,197
2022	1	Red Drum	12,502	5,885	1,700
2022	2	Red Drum	23,268	3,448	3,996
2022	3	Red Drum	9,852	5,699	3,971
2022	4	Red Drum		7,848	6,528
2022	5	Red Drum		13,730	9,661
2022	6	Red Drum		12,681	6,985
2022	7	Red Drum		13,777	15,618
2022	8	Red Drum		21,252	15,846

FY21 Fishing Year (Sept 1, 2021 - Aug 31, 2022) Landings	**166,275**

*partial trip ticket landings only
***landings are confidential

YEAR	MONTH	SPECIES	POUNDS	DEALERS	TRIPS	AVERAGE (2007-2009)	CONF
2018	1	SOUTHERN FLOUNDER	610	14	43	7,713	
2018	2	SOUTHERN FLOUNDER	1,833	34	154	4,617	
2018	3	SOUTHERN FLOUNDER	2,815	43	387	23,512	
2018	4	SOUTHERN FLOUNDER	8,142	74	769	68,389	
2018	5	SOUTHERN FLOUNDER	18,342	90	951	122,514	
2018	6	SOUTHERN FLOUNDER	42,501	105	1,407	154,090	
2018	7	SOUTHERN FLOUNDER	57,283	117	1,496	170,387	
2018	8	SOUTHERN FLOUNDER	72,496	121	1,917	201,862	
2018	9	SOUTHERN FLOUNDER	109,125	114	1,776	396,301	
2018	10	SOUTHERN FLOUNDER	363,339	109	3,062	781,717	
2018	11	SOUTHERN FLOUNDER	226,856	89	1,355	392,150	
2018	12	SOUTHERN FLOUNDER	471	5	5	37,303	
2019	1	SOUTHERN FLOUNDER	524	25	74	7,713	
2019	2	SOUTHERN FLOUNDER	558	23	69	4,617	
2019	3	SOUTHERN FLOUNDER	1,412	44	216	23,512	
2019	4	SOUTHERN FLOUNDER	5,966	66	448	68,389	
2019	5	SOUTHERN FLOUNDER	36,666	92	1,038	122,514	
2019	6	SOUTHERN FLOUNDER	61,199	109	1,438	154,090	
2019	7	SOUTHERN FLOUNDER	59,404	109	1,554	170,387	
2019	8	SOUTHERN FLOUNDER	95,629	109	1,779	201,862	
2019	9	SOUTHERN FLOUNDER	51,734	59	551	396,301	
2019	10	SOUTHERN FLOUNDER	327,394	120	2,337	781,717	
2019	11	SOUTHERN FLOUNDER	159,595	58	537	392,150	
2020	3	SOUTHERN FLOUNDER				***	
2020	4	SOUTHERN FLOUNDER				***	
2020	8	SOUTHERN FLOUNDER				***	
2020	9	SOUTHERN FLOUNDER	86,553	30	790	396,301	
2020	10	SOUTHERN FLOUNDER	340,711	138	2,623	781,717	
2020	11	SOUTHERN FLOUNDER	52,602	25	68	392,150	
2021	3	SOUTHERN FLOUNDER				***	
2021	4	SOUTHERN FLOUNDER				***	
2021	5	SOUTHERN FLOUNDER				***	
2021	6	SOUTHERN FLOUNDER				***	
2021	7	SOUTHERN FLOUNDER				***	
2021	8	SOUTHERN FLOUNDER	31	3	4	201,862	
2021	9	SOUTHERN FLOUNDER	63,841	30	737	396,301	
2021	10	SOUTHERN FLOUNDER	414,213	129	2,376	781,717	
2021	11	SOUTHERN FLOUNDER				***	

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