US Army Corps of Engineers

2020 South Atlantic Regional Biological Opinion Annual Programmatic Review and Report

Fiscal Year 2023
October 1, 2022 – September 30, 2023

Image: Wrightsville Beach taken January 18, 2024, by Wilmington District Drone Team

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ACRONYMS

Acronym	Description
AIWW	Atlantic Intracoastal Waterway
BOEM	Bureau of Ocean Energy Management
CSRM	Coastal Storm Risk Management
CW	Civil Works
DMMA	Dredge Material Management Area
DPS	Distinct Population Segment
ERDC	U.S. Army Engineer Research and Development Center
ESA	Endangered Species Act
ETOF	Equilibrium Toe of Fill
FWC	Florida Fish and Wildlife Conservation Commission
GIS	Geographic Information System
NARW	North Atlantic right whale
NMFS	National Marine Fisheries Services
O&M	Operations and Maintenance
ODESS	Operations and Dredging Endangered Species System
ODMDS	Ocean Dredged Material Disposal Site
PBF	Physical and Biological Features
PDC	Project Design Criteria
PSO	Protected Species Observer
REG	Regulatory
RHDC	Regional Harbor Dredge Contract
SAC	South Atlantic Division, Charleston District
SAD	South Atlantic Division
SAJ	South Atlantic Division, Jacksonville District
SARBO	South Atlantic Regional Biological Opinion for Dredging and Material Placement Activities in the Southeast United States
SAS	South Atlantic Division, Savannah District
SAW	South Atlantic Division, Wilmington District
SMA	Seasonal Management Area
USACE	United States Army Corps of Engineers

SECTION 1 - INTRODUCTION

This Fiscal Year 2023 (FY23) annual programmatic report meets the reporting requirements of the Annual Programmatic Review outlined in Section 2.9.4 of the National Marine Fisheries Service's (NMFS) 2020 South Atlantic Regional Biological Opinion for Dredging and Material Placement Activities in the Southeast United States[1] (2020 SARBO or Opinion).

The 2020 SARBO lists the requirements for the Programmatic Annual Review and Report in Section 2.9.4 of the 2020 SARBO. While U.S. Army Corps of Engineers (USACE) and Bureau of Ocean Energy Management (BOEM) jointly implement the 2020 SARBO, USACE is the lead agency overseeing 2020 SARBO implementation, routine reporting, and annual reporting. USACE coordinates its activities with BOEM. In addition, the SARBO Team, consisting of members from USACE, BOEM, and NMFS coordinate regularly to meet all SARBO requirements.

The remainder of this document will follow the Annual Review and Report requirements listed in Section 2.9.4, which are summarized below.

- Annual 2020 SARBO Programmatic Meeting. In Section 2.9.4.1 of the 2020 SARBO, NMFS recommended the SARBO Team (USACE, BOEM, and NMFS) meet to discuss the annual programmatic review completed for the prior year to address any questions or concerns. The annual programmatic meeting to discuss the FY20-FY22 SARBO Annual Report occurred on March 18, 2024, and the results of that meeting are incorporated in this review, as appropriate, and summarized in Section 2 of this report.

- Data Required for the Programmatic Annual Review Report. Data required for the Programmatic Annual Review, as specified in 2020 SARBO Section 2.9.4.2, is provided in Section 3 and Appendix A of this report. The completed project list in Appendix A includes compiled project data and project specific data as listed in 2020 SARBO Section 2.9.3.5. Lethal and non-lethal take spreadsheets are provided to NMFS routinely, including annual tallies. Summary reports for species specific information, such as North Atlantic Right Whale (NARW) Survey results and Atlantic sturgeon genetic testing results, have been and will continue to be shared annually.

- Lessons Learned. Both the lessons learned while completing projects covered under the 2020 SARBO and topics requiring further discussion with NMFS are provided in Section 4 of this report, as outlined in 2020 SARBO Section 2.9.4.3. Lessons learned are also documented in the 2020 SARBO project tracking spreadsheet that is routinely provided to NMFS and in formal pre-construction risk assessments developed for each Regional Harbor Dredging Contract that covers maintenance

[1] National Marine Fisheries Services signed the 2020 SARBO on March 27, 2020, with revisions on July 30, 2020, to revise Project Design Criteria GG.4 to clarify the use of single beam sonar.

dredging of multiple projects. Lessons learned will be documented for all projects proposed in the FY23 and FY24 regional risk assessment.

SECTION 2 - FY20-22 ANNUAL PROGRAMMATIC REVIEW RESULTS

In Section 2.9.4.1 of the 2020 SARBO, NMFS recommended the Annual Programmatic review each year be followed by the SARBO Team (USACE, BOEM, and NMFS) meeting to discuss the Annual Programmatic review and address any questions or concerns. This meeting occurred on March 18, 2024. No significant issues were raised.

Per Section 2.9.4.1 of the 2020 SARBO, the meeting also was used to address potential changes to the PDCs. These included edits that the SARBO Team deemed as only a minor modification or correction that did not change the intent of the SARBO. The FY20-FY23 SARBO Annual Review provided these requested modifications and the SARBO Team agreed to certain changes. Key changes are summarized below that will be incorporated into the next revision of the 2020 SARBO in the near future along with other editorial revisions. The FY23 annual programmatic review will incorporate the changes listed below.

2.1 Removing Unnecessary Data Reporting Requirements

There are a number of very minor revisions that the Team agreed upon to streamline the reporting, clarify reporting, or remove unnecessary details. For example, identifying the specific staff at USACE or other agencies involved with a requirement in Section 2.9.3.5.1 of the 2020 SARBO under the “Who is in Charge of the Project” section. This reporting was deemed unnecessary by the SARBO Team since the team oversees all data transferred between agencies. Therefore, this negates the need to identify specific individuals that USACE coordinates with internally and externally.

2.2 Critical Habitat Reporting

The SARBO Team discussed the reporting requirements for designated critical habitat listed in Section 2.9.3.5.1 of the 2020 SARBO under the “Where is in Project Occurring” section to determine what information was valuable to protection of Endandgered Species Act (ESA)-listed species. Item #5 stated:

> “*Total area of the project that occurs within the geographic area of one or more critical habitat units, if applicable. For example, 1,000 ft² of dredging occurred within North Atlantic right whale critical habitat.”*

The FY20-FY23 SARBO Annual Review questioned which critical habitat units required this level of reporting if the 2020 SARBO determined that no modification to critical habitat was allowed. Therefore, the SARBO Team recommended the revision below that removed the requirement to report the geographic overlap of projects in North Atlantic right whale critical habitat and Acropora critical habitat since no adverse effects to critical habitat are allowed. In addition, projects occurring within the range of ESA-listed corals require additional review to assure the effects determinations in the 2020 SARBO are met.

> *“Total area (square feet) of the project that occurs within the geographic area of Atlantic sturgeon and loggerhead sea turtle critical habitat for the dredge area, pipeline corridor for submerged pipe, and material placement area only for areas where the substrate essential features are present. If it is unknown if the features*

are present, the total area will be reported. No adverse effects to Acropora critical habitat are covered under the SARBO."

2.3 Johnson's Seagrass

Johnson's seagrass was delisted and the corresponding designated critical habitat was removed in the final rule published on April 14, 2022, with the removal effective on May 16, 2022 (87 FR 22137). Therefore, removal of the 2020 SARBO Johnson's Seagrass PDCs and all other references to Johnson's seagrass was deemed necessary.

2.4 ESA-Listed Corals.

Revisions were requested to Appendix C of the 2020 SARBO to clarify the intent of the PDCs. The PDCs stated specific survey guidance when surveying for beach nourishment projects and also referenced existing survey guidance that provided conflicting survey protocols. In general, the SARBO PDCs referenced completing a comprehensive survey of the area identified and the NMFS *ESA-Listed Coral Colony and Acropora Critical Habitat Survey Protocol*, updated July 2019, referenced a transect survey methodology. Removing reference to the NMFS survey protocol and adjusting some of the Coral Project Design Criteria (PDC) language removes this confusion. Information from the NMFS survey protocol that was deemed relevant was added into the Coral PDCs including the qualifications necessary to complete the surveys (Added to Coral PDC Section 7.4).

Additional language was also added to clarify the intent of identifying corals using these surveys. The SARBO Team recommended modifying language in the SARBO Coral PDCs Section 5.4 to state:

"If ESA-listed corals are identified in the beach hardbottom survey area, the USACE will coordinate with NMFS to conduct a project-specific review to determine if coral relocation is necessary to protect corals from potential turbidity and sedimentation resulting from the beach nourishment. Conditions that may be considered when evaluating if corals need to be relocated include the specific location and details about each ESA-listed coral within 500 ft of the Estimated Toe of Fill (ETOF). This includes the species, size, health status, and any other relevant details about each coral with a clearly understandable way to reference each coral to a location provided on a map using current aerial imagery as the base map showing the proposed placement area, ETOF, and hardbottom edge. USACE will continue to work with NMFS to understand the risk to corals identified based on the project details, hydrology, proximity to coral, and past experience with similar projects in the area. While the current area required to be surveyed is within 500 ft of the ETOF, that does not imply that all corals within that area are intended to be relocated. Corals should not be unnecessarily moved if affects to them are not anticipated or the stress from relocation is deemed appropriate."

2.5 Geophysical Surveys

The SARBO Team discussed the reporting requirements for reporting the use of geophysical surveys conducted under the 2020 SARBO as listed in Section 2.9.3.5.1 of

the 2020 SARBO under the “What is the Project Covering.” USACE clarified that Hydroacoustic surveys are publicly available on the USACE website eHydro at https://www.sam.usace.army.mil/Missions/Spatial-Data-Branch/eHydro/. These surveys generate a significant amount of data and the SARBO Team agreed that reporting that data for the annual review was unnecessary and duplicative since it is publicly available. In addition, the SARBO PDCs limit the acoustics generated during surveys to levels that are not likely to have adverse effects to ESA-listed species as analyzed in the 2020 SARBO Section 3.18.

SECTION 3 - FY23 ANNUAL PROGRAMMATIC REVIEW

In Section 2.9.4.2 of the 2020 SARBO, NMFS recommended the USACE to check specific items before submitting the Annual Programmatic Report. Table 1 lists the specific items recommended by NMFS and details how the USACE verified those items.

Table 1. NMFS Recommended Actions Pre-Annual Programmatic Review Submission

NMFS Recommendations (Section 2.9.4 Bullets)	USACE Verification
Randomly select and review projects covered under this Opinion by staff other than those on the SARBO Team to confirm compliance with the requirements of this Opinion including all applicable PDCs.	Project data is reviewed as part of the annual review process to confirm that the details are complete and accurate.
Map all project locations to determine how many occurred in critical habitat.	The maps in provided in Appendix B showing projects completed in FY23 within the range of ESA-listed coral, North Atlantic right whale, and Atlantic sturgeon critical habitat. No projects occurred in green sea turtle or hawksbill sea turtle critical habitat. Maps for loggerhead critical habitat are not provided due to the high number of projects occurring in that area. However, Table 7 in Appendix A lists all projects that occurred in loggerhead critical habitat.
Map all project locations to determine how many occurred in areas that required additional PDCs such as those within the range of ESA-listed corals and ensure the additional protective measures were followed.	
Review the compiled spreadsheet to ensure that all information is reported. Certain details may be provided as an estimate during the pre-construction notification and then will need to be updated once work is complete such as the total dredge volume or start and end date.	The project spreadsheet located in Appendix A has been reviewed to ensure all information listed in 2020 SARBO Section 2.9.3.5.1 has been reported.

3.1 Data Required For The Programmatic Annual Review Report

2020 SARBO Section 2.9.4.2 outlines programmatic annual report requirements, listed below in Table 2. How these requirements were met are documented in the same table below. Johnson's seagrass requirements are no longer required since the species was delisted.

Table 2. 2020 SARBO Section 2.9.4.2 Programmatic Annual Report Requirements

2020 SARBO Section 2.9.4.2 Requirement	Response
Master spreadsheet of required information from 2020 SARBO Section 2.9.3.5. The master spreadsheet must provide:	The SARBO Project Tracking Workbook and SARBO Take Workbook are provided to NMFS as appropriate, for the NMFS and BOEM monthly meetings, and used to summarize project information for the Programmatic Annual Review (Appendix A).
• Tally of at least the number of nonlethal and lethal take by species/Distinct Population Segment (DPS)	The SARBO Take Workbook is provided after each lethal take and summarized in Appendix A. Hopper dredging take is also available publicly available on ODESS for lethal take.
• Tally of any loss of critical habitat features by critical habitat unit and quantifying any loss of each feature by the area of loss (acres or square feet),	Revisions to this requirement are provided in Section 2.2 above. The SARBO Project Tracking Workbook quantifies the area of overlap between projects and the remaining required critical habitats. Additional information is provided in Section 3.2 below.
• Total volume dredged during the year	The SARBO Project Tracking Workbook quantifies the actual dredge and placement volumes by project and is summarized in and discussed in Section 3.3 below.
Identify and tally all projects within sturgeon rivers (2020 SARBO Sturgeon PDCs, Appendix E)	FY23 projects that occurred in sturgeon rivers are documented in the master SARBO project tracking workbook, shown in Figure 5 -Figure 8 in Appendix B, and additional sturgeon specific information is documented in Section 3.5 below.
Identify and tally all projects within the range of ESA-listed corals (Coral PDCs, 2020 SARBO Appendix C)	FY23 projects that occurred in the range of ESA-listed corals are documented in the master SARBO project tracking workbook, shown in Figure 3 in Appendix B, and additional sturgeon specific information is documented in Section 3.4 below.
Identify and tally all projects within the range and during the time when North Atlantic right whales may be present (2020 SARBO Appendix F)	FY23 projects that occurred within the range and during the time when North Atlantic right whales may be present are documented in the master SARBO project tracking workbook, shown in Figure 4 and Figure 5 in Appendix B, and additional sturgeon specific information is documented in Section 3.6 below.
Using an equipment type that required additional reporting, such as: geophysical surveys	No new equipment used in FY23

2020 SARBO Section 2.9.4.2 Requirement	Response
Hopper dredging with modified or removed inflow screening.	Documented in Section 3.7 below.
Project activities located within the range of ESA-listed corals that required a survey. Survey reports are submitted according to the Coral PDCs (2020 SARBO Appendix C).	FY23 projects that occurred within the range of ESA-listed corals are documented in the master SARBO project tracking workbook, shown in Figure 3 in Appendix B, and additional sturgeon specific information is documented in Section 3.4 below.

3.2 Projects Occurring Within Critical Habitat.

Projects completed in accordance with the 2020 SARBO were determined by NMFS to have no effect to green sea turtles, hawksbill sea turtles, or NARW critical habitat. However, projects completed in accordance with the 2020 SARBO may have insignificant effects on some of the Physical and Biological Features (PBFs) of leatherback sea turtle, loggerhead sea turtle, Atlantic sturgeon, and *Acropora*, critical habitat as described in the effects analysis in Section 3 of the 2020 SARBO. Because the effects to PBFs are insignificant, USACE concludes no critical habitat features were adversely affected and that this reporting requirement is not applicable for this report. The intent of tracking effects from projects covered under the Opinion is met without quantifying the spatial extent of projects that had no effects to insignificant effects. Dredging and placement projects covered under 2020 SARBO are not reported in square feet, and it is an unnecessary burden to have project managers focus on this reporting requirement.

USACE recommends removing this requirement as noted in Section 2.2 showing requested revisions to the 2020 SARBO. The Project Tracking Workbook routinely provided to NMFS indicates the critical habitat and unit but omits the area of the project located in critical habitat. A condensed version of the Project Tracking Workbook is provided in Appendix A.

3.3 Total Volume Dredged During the Year.

The SARBO Project Reporting Workbook, which is provided routinely to NMFS, includes the total volume dredged. A condensed version is provided in Appendix A and summarizing in Table 3 below.

Table 3. SARBO Project Dredge Volume Totals (cubic yards) for FY23

USACE[2]	Hopper	Cutterhead	Mechanical	Modified Hopper	Truck Haul	Total
SAC CW	1,041,000	542,239	2,640,000			4,223,239
SAC REG		1,923,159				1,923,159
SAJ CW	3,860,207	445,811		60,67	1,178,372	5,545,066
SAJ REG	3,536,974	758,268	2,208,003			6,503,245
SAS CW	2,620,752	5,892,890				8,513,642
SAW CW	709,650	2,990,528	1,074,404	417,242		5,191,824
SAW REG	1,951,254	80,000		57,698		2,088,952
Total	**13,719,837**	**12,632,895**	**5,922,407**	**535,616**	**1,178,372**	**33,989,127**

3.4 FY23 Projects Within The Range Of ESA-Listed Corals.

Section 2.9.4 of the 2020 SARBO included multiple reporting requirements for those projects within the range of ESA-listed corals including:

- Section 2.94.2 Item 2iii. Tally of all projects within the range of ESA-listed coral.

- Section 2.94.2 Item 4. Project activities located within the range of ESA-listed corals that required a survey. Survey reports are submitted according to the 2020 SARBO Coral PDCs (Appendix C).

- Section 2.94.2 Item 5. Requiring relocation of ESA-listed corals. The tally of these projects will include the total number and type of ESA-listed corals relocated by species and a summary of the survival rates for the year, according to the 2020 SARBO Coral PDCs (Appendix C).

All projects within the range of ESA-listed corals require a survey to determine if coral or coral hardbottom are present. Those projects for which ESA-listed corals are identified are closely coordinated with NMFS and documented on the project tracking workbook located in Appendix A. No ESA-listed coral surveys nor relocations were required in FY23.

Caribbean coral critical habitat was designated 9 August 2023. No projects were completed under the 2020 SARBO within this newly designated area.

3.5 FY23 Projects In Sturgeon Rivers. The 2020 SARBO Sturgeon PDCs provided new requirements in rivers identified as “sturgeon rivers”. Projects occurring in areas identified as sturgeon rivers in the 2020 SARBO Appendix E are required to adhere to the Sturgeon PDCs. The projects completed in FY23 occurring within sturgeon rivers using upland placement sites are shown in Table 4. For certain rivers at specified times of year (labeled as “B” or “C” in Table 56 of the 2020 SARBO), cutterhead dredging

[2] South Atlantic Divisions: Charleston (SAC), Wilmington (SAW), Savannah (SAS), and Jacksonville (SAJ). Regulatory (REG) and Civil Works (CW)

requires monitoring take at upland disposal sites. No sturgeon were observed at any of the upland placement sites monitored.

Table 4. Upland placement projects in Sturgeon Rivers

USACE	Project Name	Dredging Area Name	Sturgeon River	Timing Month+ River Restriction (A-C)	Monitoring Results
SAS CW	Savannah Inner Harbor	Dredge Material Management Area (DMMA) 12A & 13B	Savannah River	July to June, A and C	None Found
SAC REG	Kinder Morgan Bulk Terminals, Inc.	Berths 1 and 2 to Daniel Island DMMA	Cooper River	November, A	Monitoring not required
SAW CW	Wilmington Harbor Anchorage Basin	32' Turning Basin to Eagle Island Cell 2	Cape Fear River	December-March, A	Monitoring not required
SAW REG	Fort Fisher Ferry Channel	Ferry route to Fort Fisher Disposal Area	Cape Fear River	December - February, A	Monitoring not required
SAW CW	Wilmington Harbor Inner Ocean Bar	Smith Channel to Baldhead South Beach	Cape Fear River	December-March, A	Monitoring not required
SAC REG	Charleston Marine Manufacturing Company	Piers to Clouter Creek DMMA	Cooper River	December - January, A	Monitoring not required
SAC REG	Chem Marine of South Carolina, LLC	Existing berth to Clouter Creek DMMA	Cooper River	January, A	Monitoring not required
SAC REG	Amelie Oil Company	Existing berth Clouter Creek DMMA	Cooper River	June, A	Monitoring not required
SAC REG	Buckeye Terminals	Existing berth Clouter Creek DMMA	Cooper River	June, A	Monitoring not required
SAC REG	Joint Base Charleston	Cooper River to Joint Base Charleston DMMA	Cooper River	August- March, A and C	None Found

In FY23, the USACE Engineer Research and Development Center (ERDC) performed genetic testing of Atlantic Sturgeon samples to determine the DPS. There are five DPSs and Section 8.5 of the 2020 SARBO estimated the percent of each sturgeon likely to be encountered annually on projects under 2020 SARBO (Table 5). Atlantic sturgeon genetic samples collected during hopper dredging and relocation trawling are processed to determine the DPS of each fish captured. Since the percent composition of each DPS that may be encountered was the first estimate provided by NMFS using updated data, the genetic analysis completed by USACE is intended to help verify information on the

DPSs. Though the composition of DPSs differs from NMFS estimates in the 2020 SARBO, the composition is expected to vary from year to year based on the location and timing of projects, and the Incidental Take was provided by DPS on a three-year average for this reason. This is the first three-years of samples.

Table 5. Atlantic Sturgeon Percent Composition of DPSs Encountered

Atlantic Sturgeon DPS	FY21 Total	FY22 Total	FY23 Total	Total Captures	% DPS Composition Estimated in SARBO	% DPS Composition of Captures
South Atlantic (SA)	35	33	69	137	52.90%	76%
Carolina	4	14	3	21	33.80%	12%
Chesapeake Bay	3	0	0	3	9.60%	2%
New York Bight	3	0	0	3	3.60%	2%
Gulf of Maine	0	0	0	0	0.10%	0%
Canadian Rivers	1	0	0	1	Not estimated- No take for foreign fish	1%
DPS Unknown	8	4	4	16	0	9%
Total	**54**	**51**	**76**	**181**		
Minus samples identified as the same fish	**1**	**2**	**1**	**4**		
Grand Total	**53**	**49**	**75**	**177**		**100%**

The genetic information also can be used to determine if the tissues from different samples submitted at the same time are likely to belong to a single fish, based on the microsatellite data (identical genotype, where alleles are the same across all 12 loci). In FY23, two samples collected at Brunswick (fresh dead sample on March 13 and a mostly decomposed sample collected on March 14, 2023) were determined to be the same fish. Since the second piece was already not counted as take since it was reported as moderately decomposed, no updates to the take reporting were required.

All pit tag information for Atlantic sturgeon tagged or recaptured during hopper dredging or trawling were submitted to the U.S. Fish and Wildlife Service national database. This allows researchers to know when tagged fish are recaptured and the size and location of the fish for each capture. USACE submitted the tag numbers for work completed during this reporting period.

3.6 FY23 Projects Within the Range of NARW.

The projects completed within the range of NARW that were conducted during the times when these whales may be present (as defined in 2020 SARBO Appendix F) are shown in Appendix B.

No NARW were injured during projects covered during this reporting period. Three NARW observations occurred during hopper dredging in Brunswick Harbor and notifications were sent out triggering a Whale Alert (Table 6). All NARW sightings in

FY23 are shown in Figure 1, demonstrating the density of this species in areas like Brunswick Harbor and highlighting the concern of work occurring concurrent with NARW present during calving season and, therefore, at risk of vessel strikes from vessels working on these projects.

While the aerial surveys are important to detect when whales may be in the area and the Protected Species Observers (PSOs) are important to watch for them, NARWs are hard to spot even in good conditions, and the numerous sightings in and around dredging projects is of concern to USACE. USACE is preparing appropriate documentation to analyze the potential for work to be shifted outside of times when this species is most present to reduce the risk of vessel strikes. The Regional Harbor Dredge Contract (RHDC) Risk Assessments for FY22 and FY23 evaluate when NARW are most likely to be present.

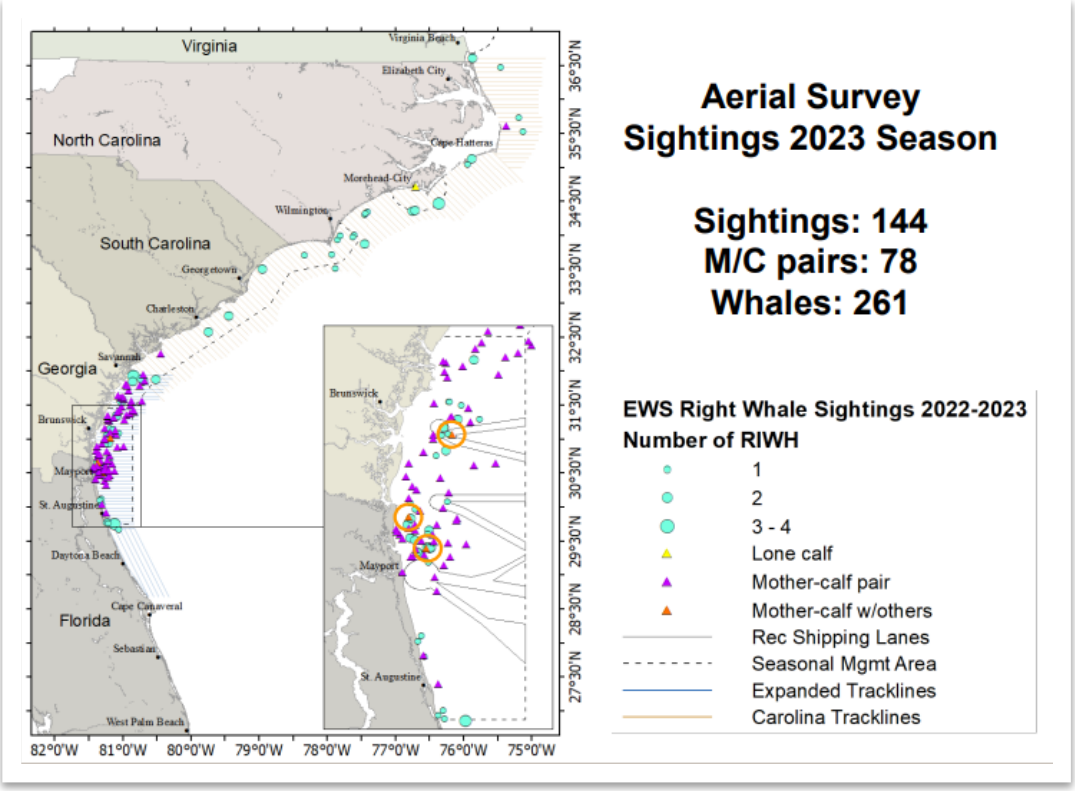

Figure 1. NARW Sightings in FY23

Table 6. NARW Sightings Reported in Brunswick Harbor[3]

Date	Location	Observation Vessel	Whale	Notes
2/14/2023 1203-1210	31.0355, -81.2859	Dodge Island	1 adult + 1 calf	Spotted 0.25-0.50NM away. Whale was stationary with no fins/flippers observed. Adult & calf surfacing

[3] List provided by NMFS Right Whale Maritime Liaison.

				together every 45-60 seconds. Adult ~45-50 ft, calf ~15-18 ft.
2/15/2023 0805-0820	31.0351, -81.3298	Padre Island.	1 adult + 1 calf	Spotted 1-1.5NM East, heading south. Pectoral fins seen breaching surface; blow observed every 20-30 seconds. Adult ~45-50 ft, calf ~15-19 ft.
1425-1427	31.0365, -81.2878	Padre Island	Assume adult	Spotted 1/4 mile from starboard, moving south. Whale head barely surfacing twice for about 3 seconds, body and flippers not observed.

2.1.2.2. Projects using Geophysical and geotechnical surveys. Surveys completed for projects covered under the 2020 SARBO were performed in compliance with the SARBO geophysical survey PDC requirements. As agreed upon with NMFS during the 2020 SARBO FY20-FY23 Annual Review meeting and documented in the agreed upon changes in Section 2.5, USACE will continue to report geophysical surveys conducted on USACE maintained navigation waterways in the USACE publicly available hydrographic website (https://navigation.usace.army.mil/Survey/Hydro). As described on the site, "Maintenance responsibility for more than 25,000 miles of navigation channels and 400 ports and harbors throughout the United States requires extensive surveying and mapping services, including boundary, topographic, hydrographic, terrestrial lidar, and multispectral and hyperspectral aerial imagery collection as well as airborne topographic and bathymetric lidar acquisition, project-level Geographic Information System (GIS) implementation, development of file-based geodatabases, and GIS tool development." Survey information is publicly available on this website for the areas maintained by USACE, including those covered under the 2020 SARBO. Surveys are routinely completed on areas dredged under the 2020 SARBO. As stated on the website, these surveys include those in the "National Channel Framework - an enterprise geodatabase of information on all 61 USACE-maintained high-tonnage channels - hydrographic surveys, which provide assistance in locating navigable channels, determining dredging requirements, verifying dredging accuracy, and maintaining harbors and rivers."

BOEM continues to execute geophysical and geological surveys in accordance with required conditions outlined in a separate consultation with NMFS. This consultation was conducted as a component of BOEM's final Environmental Assessment titled "Sand Survey Activities for BOEM's Marine Minerals Program, Atlantic and Gulf of Mexico" (April 2019).

3.7 Hopper Dredging With Modified Or Removed Inflow Screening.

Since take associated with hopper dredging can occur, as documented in the 2020 SARBO, material entering the hopper of the dredge is screened so the NMFS-approved PSO aboard the vessel can monitor for take. This screening does not minimize or prevent take. The 2020 SARBO also analyzes the potential for take to be observed and assumes that up to half of all take may not be observed, which is evaluated when determining the effects to species populations based on the incidental take statement provided. USACE adhered to all screening requirements set forth in the 2020 SARBO,

specifically including those in PDC hopper.1. Hopper dredge screening modifications are documented by the PSO, described in the publicly available website “Operations and Dredging Endangered Species System (ODESS),” and summarized below.

While hopper dredging In Charleston Harbor, SAC was informed that the dredge encountered significant clay balls. The dredging company requested to increase the inflow screens from 4x4 inch to 8x8 inches and to keep the overflow at 4x4 inches. They were working across three reaches in the areas that were previously deepened and SAC believed the clay balls may be due to the prior deepening since this is not common for this area during routine maintenance. On February 2, 2023, SAD approved this increase based on the photos provided at the time and expecting that these larger screens would allow better visibility of the contents of the screening in the inflow for the remainder of the project, as needed.

While hopper dredging in King Bay, SAJ was informed inflow screens were badly clogging from the rock/rubble/oyster shell encountered in Cut 1-N STA 100+00 to STA 200+00. They expected work would be complete the next day, but anticipated similar clogging in the next areas planned to be dredged (Cut 1-N at STA 17+00 to 45+00 and STA 72+00 to 100+00) because clogging in these areas has been reported in previous years. The next areas to be dredged account for approximately 25,000 cubic yards of? the approximately 1 million cubic yards planned to be dredged at Kings Bay that year. The contractor requested to temporarily increase inflow screens form 4x4 inch to 8x8 inch opening, only on the bottom line of grates, keeping the upper grates 4x4 inch so that larger shell would pass through those lower grates and prevent the majority of the plugging. Overflow grating would remain at 4x4 inch. They would move back to 4x4 inch inflow grating when clogging was not a problem. Since clogged screens decrease the ability of the PSO to observe take and this modification is compliant with PDC HOPPER.1, USACE SAD approved the modification on February 14, 2023.

While hopper dredging in Fernandina Harbor, SAJ was informed inflow screens were badly clogging from a significant amount of shell and debris forcing the Contractor to shut down the dredge. SAD approved replacing the 4x4 inch screens on the inflow boxes with larger 8x8 inch screens. The larger screens were used for the last seven loads of the project (loads 29 to 35) starting 10 May, while dredging in the channel (AS-2).

While hopper dredging in Jacksonville Harbor, SAJ was informed inflow screens were clogging due to excessive rock and oyster. For this project, the screen size was not changed, but the inflow did not have 100% observation in specific loads since the boxes had to be opened. For loads 100, 101, 252, 253, and 258-271 the PSO reported only 50% observation of the inflow screens. The PSO also reported 0% observation of the inflow boxes on March 2-3, 2023.

SECTION 4 - LESSONS LEARNED.

As required in Section 2.9.4.3, this report includes feedback on the unique situations encountered for projects covered under the 2020 SARBO and how they were resolved. The five specific topics highlighted in the 2020 SARBO under lessons learned discussed below.

4.1 Corrective Action Taken During Construction of a Project.

Canaveral Harbor Maintenance Dredging. In 2015/2016, both USACE and Port Canaveral were conducting dredging projects within Canaveral Harbor. Both parties were using the same dredging contractor. A manatee was taken in the Port's portion of the work resulting in new strict lighting guidelines for manatee for all future Canaveral Harbor. Canaveral Harbor mechanical dredging occurred in FY23 under the 2020 SARBO. Work started on June 1, 2003. The first sea turtle nesting in the area was reported on June 27, 2023, along with a report of sea turtle disorientation on the beach. USACE began working with U.S. Fish and Wildlife Service (FWS) to address lighting concerns since the observers were instructed to use maximum lighting necessary to observe manatees which exceeds the minimum lighting needed to avoid sea turtle disorientation. It was observed that the freshly painted, clean white boat working near the jetties may have also reflected that lighting more than normal. On July 19, 2020, the PSO working to monitor for manatees observed 11 sea turtle hatchlings. The loggerhead hatchlings were sighted surrounding the dredge and dig site. Lights were shut off for two hours along with a dredging standby. On July 20, 2023, FWS contact SAJ reporting numerous disorientations of sea turtles on the beach. USACE ceased nighttime dredging until July 25th to allow time to address lighting concerns. On July 22, 2023, a hatchling turtle was observed off the bow resulting in another dredging shut down. USACE And FWS met onsite on July 26, 2023, resulting in approval to resume work and an amendment to remove the additional lighting requirements east of station 180, where manatees are less likely to congregate and would be required west of station 180, when the dredge was further inside the harbor. Working between the jetties was completed on August 4, 2023, and the dredges moved offshore.

USACE determined that future work in Canaveral expected in FY25 would be awarded earlier in the year (January instead of March) and prioritize dredging the areas alleged as problematic to turtle hatchlings first (i.e., Cut-2 Sta. 180+00 to Cut-1 Sta. 80+00, aka AS4-AS-7).

4.2 Information Gathered During the Risk-Based Adaptive Management Process Including Species Trends and Use of an Area.

Perhaps the biggest lesson learned in implementing the 2020 SARBO was how to gather data clearly and effectively on projects, species, and lessons learned and document decisions concisely that meet the expectations of and needs of USACE staff, other agencies involved, and stakeholders. As discussed throughout this report, USACE reporting evolved as the 2020 SARBO was implemented allowing project and take information to be documented in spreadsheets that could be routinely shared with

NMFS and used to update publicly available resources to meet stakeholders needs. USACE continues to work to update websites and databases to provide more information publicly.

Initially, USACE evaluated risks related to project completion on an individual project basis. These project-specific assessments were informally documented for USACE internal reference, as agreed to by NMFS. Due to the majority of take being associated with larger harbor maintenance projects that are completed by hopper dredging, USACE SAD began completing a formal risk assessment for those projects covered each year under the RHDC, starting for work anticipated in FY22 (RHDC 5.0) and again for work anticipated in FY23 (RHDC 6.0). For FY23, all projects were reviewed as part of a comprehensive regional risk assessment that USACE SAD documented in the FY23/FY24 Project Assessment.

Generally, the risk assessment process required in 2020 SARBO created significant confusion for stakeholders and partners. This is likely due to the generic use of the term "risk assessment" and preconceived expectations associated with it. To alleviate this confusion, the RHDC risk assessment for FY23 documented the steps considered in a generic risk assessment and compared them to those required in 2020 SARBO. This information was also presented to stakeholders in October 2022 and is being incorporated into future documents. Going forward, USACE will use a different term when referring to the risk assessment documentation outlined in the 2020 SARBO by calling it the "SARBO Project Assessment" instead of a risk assessment. These documents are publicly available on the USACE SAD SARBO webpage at https://www.sad.usace.army.mil/Missions/Civil-Works/SARBO/.

4.3 Lessons Learned Based on Site-Specific Conditions Observed During a Project That May Be Relevant to Future Projects.

There were no significant lessons learned on any project that were covered under the 2020 SARBO in FY23. However, USACE continues to address areas that encounter frequent hopper dredging screen clogging as addressed in Section 3.7. In addition, USACE continues to work with contractors working in areas when and where the North Atlantic Right Whale Conservation Plan applies.

4.4 Summary of Successes and Challenges Encountered During Projects Conducted Under the Alternative Review Process.

4.4.1 Partnering to Protect NARW.

USACE also coordinates with other federal partners and stakeholders involved in NARW surveys and conservation to assure information about this critically endangered species is relayed to the public through social media outreach.

The Clearwater Marine Aquarium Research Institute was again awarded the contract to complete the Carolina NARW aerial surveys I FY23. Under this contract, they conducted 14 public outreach events summarized in Table 9 of the Final Performance Report To the Blackledge Group, Inc and USACE, dated May 29, 2024 (Attachment D).

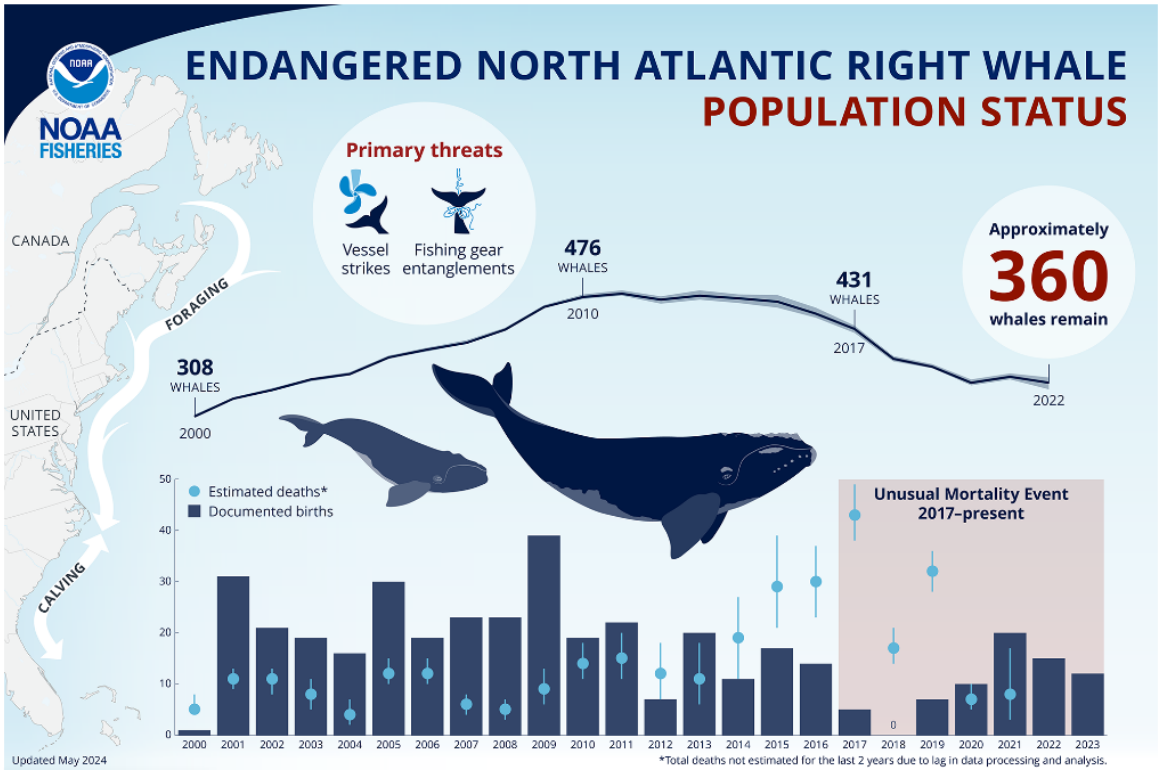

Figure 2. North Atlantic Right Whale Population Status[4]

4.4.2 Non-ESA-listed Species Incidentally Captured (Bycatch).

USACE continued to track non-ESA-listed species as bycatch using a more robust tracking spreadsheet than previously tracked in ODESS. The list of species tracked continues to be refined to report species listed under the Magnuson–Stevens Fishery Conservation and Management Act and state species of concern. Since numerous species may be captured in a single hopper dredging load or relocation trawling tow, it is important to prioritize recording of specific species while continuing to keep the focus on handling and protecting ESA-listed species that may be captured. Many projects completed in FY23 recorded bycatch digitally, and the data is being provided to NMFS Habitat Conservation Division to coordinate a review.

4.5 Discrepancies in the interpretation of PDCs.

There were no reported discrepancies observed between USACE Districts. The USACE SARBO Project Delivery Team consists of representatives from SAD and each of the districts that meet monthly to discuss projects and more frequently as needed.

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JOHN D. FERGUSON, PE
Chief, Operations & Regulatory Division

[4] https://www.fisheries.noaa.gov/national/endangered-species-conservation/north-atlantic-right-whale-calving-season-2023.

APPENDIX A. FY23 SARBO PROJECTS

Table 7. FY23 Project Tracking Workbook[5]

USACE	Project Name	Project Start Date	Project End Date	Dredging Area Name	Placement Area Name	Volume (cubic yards)	Additional PDCs	Critical Habitat (ft2)	Primary Dredge Type
SAC CW	AIWW O&M	2/9/2023	8/3/2023	Watts Cut, Fenwick Cut, & Ashepoo/ Coosaw Cutoff	Various DMMAs & North Edisto River open water	542,239			Cutterhead
SAC CW	Charleston Harbor O&M	7/24/2022	2/20/2023	Charleston Lower Harbor	Charleston ODMDS	2,640,000	NARW Plan		Mechanical
SAC CW	Charleston Harbor O&M (RHDC)	1/30/2023	2/19/2023	Charleston Entrance Channel	Charleston ODMDS	1,041,000	NARW Plan		Hopper
SAC REG	Amelie Oil Company O&M	6/12/2023	6/17/2023	existing berth	Clouter Creek DMMA	25,013	ATS: Cooper River	126,324	Cutterhead
SAC REG	Buckeye Terminals O&M	6/12/2023	6/17/2023	3.88-acre existing berth	Clouter Creek DMMA	9,249	ATS: Cooper River	169,013	Cutterhead
SAC REG	Charleston Marine Manufacturing Company O&M	12/28/2022	1/21/2023	Piers D-South, F-North, G-North, G-South, H-South, J-North, and J-South	Clouter Creek Dredged Material Management Area	397,791	ATS: Cooper River	1,624,788	Cutterhead
SAC REG	Chem Marine of South Carolina, LLC O&M	1/22/2023	1/27/2023	Chem Marine of South Carolina (existing berth)	Clouter Creek DMMA	15,057	ATS: Cooper River	138,956	Cutterhead
SAC REG	Joint Base Charleston O&M	8/10/2022	5/10/2023	Cooper River, Goose Creek, berths: TC Dock, Pier X South, Pier C,	Joint Base Charleston DMMA	1,440,200		236,095	Cutterhead
SAC REG	Kinder Morgan Bulk Terminals, Inc. O&M	11/14/2022	11/21/2022	Berths 1 and 2	Daniel Island DMMA	35,849	ATS: Cooper River	236,095	Cutterhead
SAJ CW	Broward County CSRM Segment III	11/1/2022	4/30/2023	N/A- Truck Haul	Von D. Mizell Eula Johnson State Park	528,765	Acropora CH, LOGG-N-18	1,200,000	Truck Haul

[5] CW: Civil Works, REG: Regulatory, O&M: Operations and Maintenance Dredging, ODMDS: Ocean Dredged Material Disposal Site**,** DMMA: Dredged Material Management Areas, CSRM: Coastal Storm Risk Management, AIWW or IWW: Atlantic Intracoastal Waterway (AIWW), RHDC: Regional Harbor Dredge Contract H: Hopper, C: Cutterhead, M: Mechanical, B: Bed-level, R: Relocation

USACE	Project Name	Project Start Date	Project End Date	Dredging Area Name	Placement Area Name	Volume (cubic yards)	Additional PDCs	Critical Habitat (ft2)	Primary Dredge Type
SAJ CW	Dade County CSRM	9/1/2021	7/28/2023	N/A- Truck Haul	Miami Beach, Dade E - Main Segment	649,607	Acropora CH, LOGG-N-19 Constricted Migratory, Breeding	481,015,160	Truck Haul
SAJ CW	Fernandina Harbor O&M	4/25/2023	5/16/2023	Cut-4, Cut-5, Turning Basin	Fernandina Beach ODMDS	90,000	ATS: St. Marys River	15,000	Hopper
SAJ CW	Fort Pierce CSRM	3/13/2023	4/25/2023	Capron Shoal	Fort Pierce Beach R-34 to R-41	680,727	LOGG-N-19	1,500,000	Hopper
SAJ CW	IWW Jacksonville to Miami, Palm Valley South Reach O&M	4/3/2023	5/11/2023	IWW Palm Valley Reaches I- II, cuts DU-7 to DU-9 & SJ-1 to SJ-9	DMMA SJ-14	195,000			Cutterhead
SAJ CW	IWW Volusia County O&M	5/7/2023	6/13/2023	Ponce de Leon Inlet	New Smyrna Beach R-140 to R-148	60,676			Modified Hopper
SAJ CW	Jacksonville Harbor O&M	1/8/2023	5/22/2023	JBar Cut-3 to UTC w/ portions Cuts F & G	Buck Island Cell A and Bartram Island Cell F	1,672,388			Hopper
SAJ CW	Palm Beach Harbor O&M	2/9/2023	3/6/2023	Palm Beach Harbor, entrance channel & settling basins	Palm Beach R-77 to R-80.35, Nearshore	250,811	Coral PDCS (no CH), LOGG-N-19 Nearshore Reproductive	2,868,141	Cutterhead
SAJ CW	St. Johns County CSRM	8/21/2023	3/26/2024	N-3 (Borrow Area)	South Ponte Vedra Beach & Vilano Beach R-103.5 to R-116.5	1,417,092	LOGG-N-14, NARW Plan	470,000,000	Hopper
SAJ REG	Canaveral Harbor NOTU, O&M	6/2/2023	9/29/2023	Entrance channel (Cut 1-3) middle turning basin/ access channel, West turning basin/ access channel, Canaveral barge canal Reach 1.	Canaveral ODMDS	2,208,003	LOGG-N-17 Breeding, Constricted Migratory, and Nearshore Reproductive	15,730,990	Mechanical
SAJ REG	Deerfield Beach/Town of Hillsboro CSRM	4/7/2023	4/24/2023	Ebb Shoal Borrow Area	North End (R5)	250,000	Acropora CH, LOGG-19 breeding, constricted migratory,	1,870,000	Cutterhead

USACE	Project Name	Project Start Date	Project End Date	Dredging Area Name	Placement Area Name	Volume (cubic yards)	Additional PDCs	Critical Habitat (ft2)	Primary Dredge Type
							nearshore reproductive		
SAJ REG	IWW Jacksonville to Miami O&M	2/1/2023	6/1/2023	Palm Valley South Reach	Jacksonville ODMDS Zone A	1,323,169			Hopper
SAJ REG	Jupiter Inlet District Sand Trap/ CSRM	4/3/2023	5/4/2023	Jupiter Inlet Sand Trap	Jupiter-Carlin Beach R14- R18	173,531	Coral PDCS (no CH), LOGG-19	161,000	Cutterhead
SAJ REG	Kings Bay O&M	2/7/2023	3/28/2023	Entrance Channel Cut-1N to Range-E.	Fernandina Beach ODMDS	634,694	ATS: St. Marys River, NARW Plan	14,641,000	Hopper
SAJ REG	Marine Corps Slipway Channel at Blount Island O&M	9/29/2023	12/21/2023	Marine Corps Slipway Channel	Dayson Island	125,094			Cutterhead
SAJ REG	Naval Station Mayport O&M	1/31/2023	6/1/2023	Entrance Channel, Navy Fuel Pier 111	Jacksonville ODMDS Zone A	1,579,111	NARW Plan		Hopper
SAJ REG	South Boca CSRM	3/24/2023	4/6/2023	Boca Raton Inlet Ebb Shoal	S. Boca R-223+269' to R-227+946'	209,643	Acropora CH	247,500	Cutterhead
SAS CW	AIWW-Selective Sites O&M	2/9/2023	9/4/2023	Fields Cut	DMCA 14B	80,482			Cutterhead
SAS CW	Brunswick Harbor O&M (RHDC)	1/27/2023	3/20/2023	Entrance Channel STA 0+000 to -45+000	Brunswick ODMDS	2,035,968	NARW Plan		Hopper
SAS CW	Brunswick Inner Harbor O&M	9/21/2022	10/22/2022	East River, Turning Basin, Lower Turtle River, South Brunswick River	Andrews Island DMMA	473,292		8,128,445	Cutterhead
SAS CW	Brunswick Inner Harbor O&M	9/26/2023	11/25/2023	East River Station 0+000 to 12+000, East River Turning Basin, Lower Turtle River 35+000 to 36+000	Andrews Island DMCA	776,604			Cutterhead
SAS CW	Savannah Harbor O&M (RHDC)	1/1/2023	2/6/2023	Entrance Channel 0+000 to -50+000	Savannah ODMDS	584,784	NARW Plan		Hopper
SAS CW	Savannah Inner Harbor O&M	7/26/2022	6/24/2023	Stations 0+000 to 105+500	DMMA 12A	4,562,512	ATS: Savannah River	47,475,000	Cutterhead

USACE	Project Name	Project Start Date	Project End Date	Dredging Area Name	Placement Area Name	Volume (cubic yards)	Additional PDCs	Critical Habitat (ft2)	Primary Dredge Type
SAW CW	AIWW North O&M	11/16/2022	3/13/2023	S2 tan J and Jacksonville	Onslow Beach	348,415	LOGG-N-04	1,150,000	Cutterhead
SAW CW	AIWW South O&M	11/21/2022	9/1/2023	Section 4 Tan 2 and Shinn's Creek Crossing	DA 248 and DA 256	58,419	LOGG-N-04	1,150,000	Cutterhead
SAW CW	Big Foot Slough	6/28/2023	6/28/2023	Big Foot Slough	Sidecast	615			Modified Hopper
SAW CW	Bogue Inlet	2/3/2023	2/8/2023	Bogue Inlet	Sidecast	10,285	NARW Plan		Modified Hopper
SAW CW	Bulkhead Channel	3/27/2023	3/29/2023	Bulkhead Channel	Morehead City Harbor Nearshore	7,070	NARW Plan		Modified Hopper
SAW CW	Carolina Beach Inlet	10/29/2022	11/4/2022	Carolina Beach Inlet	Sidecast	12,100	NARW Plan		Modified Hopper
SAW CW	Carolina Beach Inlet	1/15/2023	1/31/2023	Carolina Beach Inlet	Sidecast	27,325	NARW Plan		Modified Hopper
SAW CW	Carolina Beach Inlet	3/19/2023	3/28/2023	Carolina Beach Inlet	Sidecast	15,405	NARW Plan		Modified Hopper
SAW CW	Carolina Beach Inlet	4/18/2023	4/19/2023	Carolina Beach Inlet	Carolina Beach Borrow Area	3,205	NARW Plan		Modified Hopper
SAW CW	Carolina Beach Inlet	5/11/2023	5/22/2023	Carolina Beach Inlet	Sidecast	18,165			Modified Hopper
SAW CW	Carolina Beach Inlet	8/16/2023	8/31/2023	Carolina Beach Inlet	Sidecast	13,935			Modified Hopper
SAW CW	Hatteras Connector Channel	12/29/2022	1/11/2023	Hatteras Connector Channel	Sidecast	23,765			Modified Hopper
SAW CW	Hatteras Ferry & Sloop Channel	7/4/2023	7/10/2023	Hatteras Ferry & Sloop Channel	Sidecast	10,005			Modified Hopper
SAW CW	Hatteras Ferry	12/8/2022	12/19/2022	Hatteras Ferry	Sidecast	24,250			Modified Hopper
SAW CW	Hatteras Ferry	3/21/2023	3/26/2023	Hatteras Ferry	Within deep section of Barney Slough Channel	8,315	NARW Plan		Modified Hopper
SAW CW	Hatteras Ferry	7/27/2023	8/15/2023	Hatteras Ferry	Sidecast	24,082			Modified Hopper

USACE	Project Name	Project Start Date	Project End Date	Dredging Area Name	Placement Area Name	Volume (cubic yards)	Additional PDCs	Critical Habitat (ft2)	Primary Dredge Type
SAW CW	Hatteras Ferry	9/5/2023	9/12/2023	Hatteras Ferry	Sidecast	13,935			Modified Hopper
SAW CW	Hatteras	2/20/2023	3/15/2023	Hatteras	Sidecast	43,435	NARW Plan		Modified Hopper
SAW CW	Lockwoods Folly Inlet	10/3/2022	10/28/2022	Lockwoods Folly Inlet	Sidecast	40,250			Modified Hopper
SAW CW	Manteo Channels, Silver Lake O&M	11/16/2022	3/11/2023	Ranges 16, 17, 17 Ext., Big Foot Slough	Island D	410,188	LOGG-N-04 Unit:	1,150,000	Cutterhead
SAW CW	Military Ocean Terminal Sunny Point (MOTSU) O&M	2/26/2023	5/5/2023	MOTSU wharf basin	Wilmington ODMDS	1,074,404	ATS: Cape Fear River, NARW Plan	14,000,000	Mechanical
SAW CW	New River Inlet	5/4/2023	5/10/2023	New River Inlet	Sidecast	12,350			Modified Hopper
SAW CW	New Topsail Inlet	4/24/2023	5/3/2023	New Topsail Inlet	Sidecast	12,205			Modified Hopper
SAW CW	Oregon Inlet	11/7/2022	12/7/2022	Oregon Inlet	Sidecast	34,600	NARW Plan		Modified Hopper
SAW CW	Oregon Inlet	12/28/2022	12/28/2022	Oregon Inlet	Sidecast	650	NARW Plan		Modified Hopper
SAW CW	Oregon Inlet	1/1/2023	1/4/2023	Oregon Inlet	Pea Island nearshore	2,415	NARW Plan		Modified Hopper
SAW CW	Rollinson Channel	6/30/2023	7/2/2023	Rollinson Channel	Within deep section of Barney Slough Channel	1,050			Modified Hopper
SAW CW	Sloop Channel	8/3/2023	8/13/2023	Sloop Channel	Sidecast	12,670			Modified Hopper
SAW CW	Teaches Hole	5/25/2023	5/30/2023	Teaches Hole	Sidecast	8,905			Modified Hopper
SAW CW	Teaches Hole	6/16/2023	6/16/2023	Teaches Hole	Sidecast	100			Modified Hopper
SAW CW	Teaches Hole	6/23/2023	6/27/2023	Teaches Hole	Sidecast	10,665			Modified Hopper
SAW CW	Teaches Hole	6/29/2023	7/3/2023	Teaches Hole	Sidecast	12,810			Modified Hopper

USACE	Project Name	Project Start Date	Project End Date	Dredging Area Name	Placement Area Name	Volume (cubic yards)	Additional PDCs	Critical Habitat (ft2)	Primary Dredge Type
SAW CW	Topsail Inlet	2/9/2023	2/19/2023	Topsail Inlet	Sidecast	12,680	NARW Plan		Modified Hopper
SAW CW	Wilmington Harbor Inner Ocean Bar O&M	12/9/2022	3/29/2023	Smith Channel	Baldhead South Beach	1,200,823	ATS: Cape Fear River (10,000), NARW Plan, LOGG-N-05 (7,000,000)	10,000	Cutterhead
SAW CW	Wilmington Harbor O&M	12/4/2022	3/20/2023	Anchorage Basin, 32' Turning Basin	Eagle Island Cell 2	972,683	ATS: Cape Fear River	8,128,445	Cutterhead
SAW CW	Wilmington Harbor O&M (RHDC)	3/12/2023	5/14/2023	Wilmington Harbor OOB	New Wilmington ODMDS	709,650	NARW Plan		Hopper
SAW REG	Duck Beach CSRM	4/11/2023	5/8/2023	Borrow Area A	1.6 miles of shore in town limits	553,000			Hopper
SAW REG	Fort Fisher Ferry Channel O&M	12/7/2022	2/9/2023	existing ferry route	Fort Fisher Disposal Area	80,000	ATS: Cape Fear River	315,000	Cutterhead
SAW REG	Lockwoods Folly Inlet O&M	5/5/2023	6/20/2023	Lockwoods Folly Inlet	Holden Beach Nearshore Area	57,698			Modified Hopper
SAW REG	Southern Shores CSRM	10/18/2022	11/22/2022	Borrow Area A	Southern Shores	1,356,254		315,000	Hopper
SAW REG	Southern Shores CSRM	5/9/2023	5/11/2023	Borrow Area A	1.6 miles of shore	42,000			Hopper

Table 8. Hopper Dredge Effort

District	Project	Dredge	Start	End	Loads	Approximate Dredge Days
SAS	Brunswick Harbor Entrance Channel	Padre Island	1/27/23	3/20/23	1- 278	49
SAS	Brunswick Harbor Entrance Channel	Dodge Island	2/7/23	2/16/23	214- 250	9
SAS	Brunswick Harbor Entrance Channel	Ellis Island	2/20/23	3/3/23	48-80	10
SAS	Brunswick Harbor Entrance Channel	Liberty Island	3/3/23	3/17/23	1- 49	14
SAC	Charleston Entrance Channel	Ellis Island	1/30/23	2/19/23	1-47	17
SAC	Charleston Entrance Channel	Dodge Island	3/11/23	3/12/23	251-253	1
SAW	Duck Beach, NC (Beach Nourishment)	Magdalen	4/11/23	5/11/23	216-321	30
SAJ	Fernandina Harbor	Mighty Quinn	4/25/23	5/16/23	1-35	21
SAJ	Fort Pierce Shore Protection Project	Bayport	3/13/20	4/25/23	1- 195	35
SAJ	Jacksonville Harbor	Bayport	1/8/23	3/3/23	1- 254	50
SAJ	Jacksonville Harbor	Bayport	3/10/23	3/11/23	255 -257	2
SAJ	Jacksonville Harbor	Newport	4/1/23	5/18/23	1- 235	44
SAJ	Jacksonville Harbor	Bayport	4/27/23	5/15/23	258 -335	17
SAJ	Kings Bay Entrance Channel	Liberty Island	2/7/23	3/3/23	1-78	25
SAJ	Kings Bay Entrance Channel	Ellis Island	3/3/23	3/10/23	1-23	7
SAJ	Kings Bay Entrance Channel	Dodge Island	3/13/23	3/23/23	1-41	10
SAJ	Kings Bay Entrance Channel	Liberty Island	3/19/23	3/28/23	79-98	6
SAW	Kitty Hawk, NC (Beach Nourishment)	RN Weeks, B.E. Lindholm	8/25/22	10/16/22	1-280	0
SAS	Savannah Harbor Entrance Channel	Dodge Island	1/1/23	2/6/23	1-213	30
SAJ	South Ponte Vedra/ Vilano, FL (Beach Nourishment)	Magdalen	8/19/23	Ongoing in FY24		
SAW	Southern Shores, NC (Beach Nourishment)			Ongoing in FY24		
SAJ	US Naval Station Mayport	Mister B	2/20/23	3/16/23	1- 663	22.5
SAJ	US Naval Station Mayport	Newport	2/15/23	4/1/23	1- 195	37
SAW	Wilmington Harbor	Ellis Island	3/12/23	3/23/23	81-143	11
SAW	Wilmington Harbor	Padre Island	3/22/23	4/6/23	279-340	14

Table 9. Hopper Dredge Lethal Take

District	Project Name	Dredge	Date	Load	Species
SAS	Brunswick Harbor	Dodge Island	02/07/23	215	Kemp's Ridley
SAS	Brunswick Harbor	Padre Island	02/14/23	103	Kemp's Ridley
SAS	Brunswick Harbor	Padre Island	02/15/23	108	Green
SAS	Brunswick Harbor	Dodge Island	02/15/23	245	Kemp's Ridley
SAS	Brunswick Harbor	Padre Island	02/18/23	126	Kemp's Ridley
SAS	Brunswick Harbor	Padre Island	02/18/23	127	Kemp's Ridley
SAS	Brunswick Harbor	Ellis Island	02/25/23	65	Atlantic Sturgeon
SAS	Brunswick Harbor	Padre Island	02/25/23	153	Atlantic Sturgeon
SAS	Brunswick Harbor	Padre Island	02/26/23	158	Atlantic Sturgeon
SAS	Brunswick Harbor	Padre Island	03/02/23	179	Loggerhead
SAS	Brunswick Harbor	Ellis Island	03/03/23	80	Kemp's Ridley
SAS	Brunswick Harbor	Padre Island	03/04/23	190	Kemp's Ridley
SAS	Brunswick Harbor	Liberty Island	03/04/23	4	Kemp's Ridley
SAS	Brunswick Harbor	Liberty Island	03/05/23	7	Kemp's Ridley
SAS	Brunswick Harbor	Padre Island	03/10/23	222	Kemp's Ridley
SAS	Brunswick Harbor	Liberty Island	03/12/23	27	Atlantic Sturgeon[6]
SAS	Brunswick Harbor	Liberty Island	03/13/23	33	Atlantic Sturgeon
SAS	Brunswick Harbor	Padre Island	03/17/23	262	Kemp's Ridley
SAS	Brunswick Harbor	Liberty Island	03/17/23	49	Kemp's Ridley
SAS	Brunswick Harbor	Padre Island	03/20/23	274	Loggerhead
SAJ	Jacksonville Harbor	Bayport	01/15/23	44	
SAJ	Kings Bay Entrance Channel	Liberty Island	02/17/23	37	Kemp's Ridley
SAJ	Kings Bay Entrance Channel	Liberty Island	02/17/23	37	
SAJ	Kings Bay Entrance Channel	Liberty Island	02/27/23	70	Atlantic Sturgeon
SAJ	Kings Bay Entrance Channel	Ellis Island	03/05/23	6	Loggerhead
SAJ	US Naval Station Mayport	Newport	02/18/23	15	
SAJ	US Naval Station Mayport	Newport	02/18/23	15	Kemp's Ridley
SAJ	US Naval Station Mayport	Newport	02/18/23	15	
SAJ	US Naval Station Mayport	Newport	02/25/23	17	Kemp's Ridley
SAJ	US Naval Station Mayport	Newport	03/10/23	109	Loggerhead
SAJ	US Naval Station Mayport	Newport	03/15/23	133	Kemp's Ridley
SAJ	US Naval Station Mayport	Newport	03/27/23	173	Loggerhead

[6] Pit Tag 982091061393356

Table 10. Hopper Dredging Captures Not Counted as Lethal Take

Project Name	Date	Load	Species	Comments
Jacksonville Harbor	01/14/23	38	Green	Live juvenile rehabilitated at Volusia Marine Science Center. Released alive 07-APR-23. Updated to non-lethal take.
Jacksonville Harbor	01/19/23	62	Unknown	Moderately decomposed unidentifiable sea turtle
US Naval Station Mayport	02/26/23	31	Kemp's ridley	Moderately decomposed; may be part of the 2nd Kemps take.
US Naval Station Mayport	02/27/23	39	Unknown	Moderately decomposed. Partial right front flipper
Brunswick Harbor	02/28/23	168	Kemp's ridley	Moderately decomposed, head width 7.6cm.
Brunswick Harbor	03/01/23	173	Kemp's ridley	Moderately decomposed, partial remains, plastron measured 19.8cm.
Brunswick Harbor	03/02/23	178	Loggerhead	Recovered dead. Piece of loggerhead carapace.
Brunswick Harbor	03/02/23	180	Kemp's ridley	Moderately decomposed. Flipper recovered.
Brunswick Harbor	03/02/23	183	Kemp's ridley	Moderately decomposed, front half recovered. Head width 4.8cm.
Kings Bay Entrance Channel	03/05/23	7	Loggerhead	Mostly decomposed. Rear flipper. Due to size/ decomposition, believed to be turtle as load 6.
US Naval Station Mayport	03/05/23	85	Kemp's ridley	Moderately decomposed
Brunswick Harbor	03/10/23	22	Kemp's ridley	Moderately decomposed
Kings Bay Entrance Channel	03/10/23	22	Loggerhead	Moderately decomposed
Brunswick Harbor	03/14/23	34	Atlantic Sturgeon	Duplicate. Genetically same fish as load 33
Brunswick Harbor	03/16/23	258	Loggerhead	Moderately decomposed
Brunswick Harbor	03/17/23	262	Loggerhead	Moderately decomposed. Rear flipper and connective tissue
Brunswick Harbor	03/19/23	273	Loggerhead	Moderately decomposed. Lower mandible, L front flipper, rear flippers, shattered carapace and plastron.
Brunswick Harbor	03/20/23	275	Loggerhead	Moderately decomposed. Total size 15 x 10 cm.
Brunswick Harbor	03/20/23	275	Green	Moderately decomposed
Brunswick Harbor	03/20/23	275	Loggerhead	Moderately decomposed
Brunswick Harbor	03/20/23	278	Kemp's ridley	Moderately decomposed. Head/ front left flipper. Head width 7.4cm.
Wilmington Harbor	03/22/23	139	Atlantic Sturgeon	Moderately decomposed partial specimen. Estimated length 71.9 cm.
Wilmington Harbor	03/26/23	292	Loggerhead	Moderately decomposed
Wilmington Harbor	03/26/23	293	Kemp's ridley	Moderately decomposed
Wilmington Harbor	04/02/23	320	Kemp's ridley	Moderately decomposed

Table 11. Relocation Trawling Effort

District	Project	Area	Trawler	Start Date	End Date	Surface Temp Range (°C)	Tow #'s	Approx. Trawl Days	Loggerhead Takes	Kemps Ridley Takes	Green Takes	Atlantic Sturgeon Takes
SAS	Brunswick	Channel	Brenda K	02/16/23	03/20/23	16.2 - 20.7	1 - 846	32	11	25	0	16
SAS	Brunswick	Channel	Simple Man	02/20/23	03/18/23	16.7 - 20.7	1 - 709	26	2	24	1	25
SAW	Duck	Borrow Area	Simple Man	04/12/23	05/11/23	13.2 - 20.0	2415 - 3050	24	21	0	0	0
SAW	Duck	Borrow Area	Jessica Marie	04/12/23	05/11/23	13.2 - 20.0	2415 - 3050	24	21	0	0	0
SAW	Kill Devil Hills	Borrow Area A	Simple Man	08/20/22	10/06/22	20.6 - 26.8	784 - 1629	33	8			
SAW	Kill Devil Hills	Borrow Area A	Mister B	09/17/22	10/06/22	20.6 - 25.4	1 - 293	9.5	3	0	0	0
SAJ	Kings Bay	Channel	Jessica Marie	02/07/23	03/28/23	15.4 - 20.9	1 - 1044	45	11	23	3	22
SAJ	Kings Bay	Channel	Simple Man	03/18/23	03/23/23	17.4 - 18.7	1 - 99	5	5	3	1	6
SAJ	Mayport	Bar Cut 3	Mister B	02/20/23	04/01/23	16.1 - 22.4	1 - 1125	37	14	13	1	1
SAW	Southern Shores	Borrow Area A	Mister B	10/06/22	11/17/22	17.0-25.4	293-1003	42	6	4	1	0

Table 12. Relocation Trawling Captures[7]

District	Project Name	Trawler	Date	Tow	Species	CCL/ TL (cm)	LFF Tag	RFF Tag	PIT Tag (RECAPTURE)
SAW	Kitty Hawk	Mister B	10/06/22	277	Loggerhead	103	FFL079	FFL078	989001040620375
SAW	Kitty Hawk	Mister B	10/06/22	290	Loggerhead	88.3	FFL080	FFL081	989001040620371
SAW	Kitty Hawk	Simple Man	10/07/22	1638	Loggerhead	90.7	FFG700	FFG699	989001040620504
SAW	Kitty Hawk	Mister B	10/08/22	350	Loggerhead	92.9	FFL082	FFL083	989001040620410
SAW	Kitty Hawk	Mister B	10/09/22	375	Leatherback	151	FFL084	FFL085	989001040620538
SAW	Kitty Hawk	Mister B	10/11/22	434	Loggerhead	72.5	FFL086	FFL087	989001039936192
SAW	Kitty Hawk	Mister B	10/12/22	460	Loggerhead	81.4	FFL088	FFL089	989001040620389
SAW	Kitty Hawk	Simple Man	10/13/22	1820	Loggerhead	87.6	FFG688	FFG689	989001040620528
SAW	Kitty Hawk	Simple Man	10/14/22	1847	Loggerhead	86.4	FFG690	FFG691	989001039097927
SAW	Kitty Hawk	Simple Man	10/15/22	1862	Loggerhead	62.1	FFG693	FFG692	989001040620483
SAW	Kitty Hawk	Mister B	10/15/22	546	Kemp's Ridley	22.8	-	-	989001040620425
SAW	Kitty Hawk	Mister B	10/15/22	555	Kemp's Ridley	29.4	-	-	989001040620411
SAW	Southern Shores	Simple Man	10/19/22	1956	Kemp's Ridley	29.1	-	-	989001040620499
SAW	Southern Shores	Simple Man	10/20/22	1978	Loggerhead	92.7	FFG694	FFG695	989001040620539
SAW	Southern Shores	Mister B	10/20/22	635	Kemp's Ridley	26	-	-	989001040620368
SAW	Southern Shores	Mister B	10/21/22	669	Loggerhead	97.7	FFL090	FFL091	989001039936179
SAW	Southern Shores	Mister B	10/21/22	674	Kemp's Ridley	32.5	-	-	989001040620357
SAW	Southern Shores	Mister B	10/26/22	733	Loggerhead	64.9	FFL094	FFL095	989001039936171
SAW	Southern Shores	Simple Man	10/26/22	2064	Kemp's Ridley	32.8	-	-	989001040620500
SAW	Southern Shores	Simple Man	10/27/22	2069	Kemp's Ridley	28.8	-	-	989001039097765
SAW	Southern Shores	Simple Man	11/04/22	2165	Loggerhead	68.8	FFL245	FFL246	989001040620516
SAW	Southern Shores	Mister B	11/04/22	846	Loggerhead	68.9	FFL096	FFL097	989001040620349
SAJ	Kings Bay Entrance Channel	Jessica Marie	02/07/23	12	Atlantic Sturgeon - S. Atlantic	195	-	-	989001040620431
SAJ	Kings Bay Entrance Channel	Jessica Marie	02/09/23	57	Kemp's Ridley	38.3	FFL048	FFL049	989001040620365
SAJ	Kings Bay Entrance Channel	Jessica Marie	02/14/23	176	Atlantic Sturgeon - S. Atlantic	159.9	-	-	989001040620374

[7] Curved carapace length (CCL)/ total length (TL), left front flipper (LFF), right front flipper (RFF)

District	Project Name	Trawler	Date	Tow	Species	CCL/ TL (cm)	LFF Tag	RFF Tag	PIT Tag (RECAPTURE)
SAJ	Kings Bay Entrance Channel	Jessica Marie	02/15/23	196	Kemp's Ridley	30.7	-	-	989001040620480
SAS	Brunswick Entrance Channel	Brenda K	02/16/23	1	Atlantic Sturgeon - S. Atlantic	136.7	-	-	989001039097915
SAJ	Kings Bay Entrance Channel	Jessica Marie	02/16/23	221	Atlantic Sturgeon - S. Atlantic	137	-	-	989001040620351
SAS	Brunswick Entrance Channel	Brenda K	02/16/23	9	Kemp's Ridley	44.9	FFG559	FFG560	989001039936333
SAJ	Kings Bay Entrance Channel	Jessica Marie	02/16/23	226	Kemp's Ridley	40	FFL140	FFL141	989001041837213
SAS	Brunswick Entrance Channel	Brenda K	02/17/23	17	Atlantic Sturgeon - S. Atlantic	96.6	-	-	989001039936342
SAS	Brunswick Entrance Channel	Brenda K	02/17/23	18	Atlantic Sturgeon - S. Atlantic	121.9	-	-	989001039936304
SAJ	Kings Bay Entrance Channel	Jessica Marie	02/17/23	248	Atlantic Sturgeon - S. Atlantic	167.5	-	-	989001040620377
SAJ	Kings Bay Entrance Channel	Jessica Marie	02/17/23	249	Loggerhead	49.2	FFL046	FFL047	989001040620470
SAJ	Kings Bay Entrance Channel	Jessica Marie	02/17/23	248	Kemp's Ridley	49.6	FFL026	FFL027	989001040620350
SAJ	Kings Bay Entrance Channel	Jessica Marie	02/17/23	255	Kemp's Ridley	44.5	FFL044	FFL045	989001041837221
SAS	Brunswick Entrance Channel	Brenda K	02/18/23	40	Kemp's Ridley	48.5	FFG561	FFG562	989001038168886
SAS	Brunswick Entrance Channel	Brenda K	02/18/23	54	Kemp's Ridley	40.9	FFG576	FFG577	989001039097818
SAS	Brunswick Entrance Channel	Brenda K	02/18/23	59	Kemp's Ridley	45.1	FFG578	FFG579	989001039936336
SAJ	Kings Bay Entrance Channel	Jessica Marie	02/18/23	264	Kemp's Ridley	45.1	FFL042	FFL043	989001040620542
SAJ	Kings Bay Entrance Channel	Jessica Marie	02/19/23	290	Atlantic Sturgeon - S. Atlantic	176.2	-	-	989001040620511
SAJ	Kings Bay Entrance Channel	Jessica Marie	02/19/23	291	Atlantic Sturgeon - S. Atlantic	189.2	-	-	989001040620498
SAS	Brunswick Entrance Channel	Brenda K	02/19/23	73	Kemp's Ridley	44.1	FFG580	FFG581	989001039936369
SAJ	Kings Bay Entrance Channel	Jessica Marie	02/20/23	297	Atlantic Sturgeon - S. Atlantic	161.2	-	-	989001040620419
SAJ	Kings Bay Entrance Channel	Jessica Marie	02/20/23	304	Atlantic Sturgeon - S. Atlantic	167.7	-	-	989001040620383
SAJ	Kings Bay Entrance Channel	Jessica Marie	02/20/23	305	Atlantic Sturgeon - S. Atlantic	105.6	-	-	989001040620403

District	Project Name	Trawler	Date	Tow	Species	CCL/ TL (cm)	LFF Tag	RFF Tag	PIT Tag (RECAPTURE)
SAJ	Kings Bay Entrance Channel	Jessica Marie	02/20/23	311	Atlantic Sturgeon - Carolina	155.2	-	-	989001040620522
SAS	Brunswick Entrance Channel	Brenda K	02/20/23	97	Loggerhead	70.9	FFG582	FFG583	989001039097763
SAJ	Kings Bay Entrance Channel	Jessica Marie	02/20/23	301	Loggerhead	78.9	FFL143	FFL144	989001040620404
SAJ	US Naval Station Mayport	Mister B	02/20/23	4	Kemp's Ridley	35.2	FFP751	FFP752	989001041837068
SAS	Brunswick Entrance Channel	Brenda K	02/21/23	133	Atlantic Sturgeon - S. Atlantic	80.1	-	-	989001038168908
SAJ	Kings Bay Entrance Channel	Jessica Marie	02/21/23	334	Loggerhead	67.9	FFL040	FFL041	989001040620469
SAS	Brunswick Entrance Channel	Brenda K	02/21/23	123	Kemp's Ridley	32.7	FFG584	FFG585	989001039097772
SAS	Brunswick Entrance Channel	Simple Man	02/21/23	20	Kemp's Ridley	41.3	FFP601	FFP602	989001040620463
SAS	Brunswick Entrance Channel	Brenda K	02/21/23	136	Kemp's Ridley	50.9	FFG586	FFG587	989001038168891
SAS	Brunswick Entrance Channel	Brenda K	02/21/23	138	Kemp's Ridley	44.9	FFG588	FFG589	989001039936341
SAJ	Kings Bay Entrance Channel	Jessica Marie	02/21/23	334	Kemp's Ridley	37	-	-	989001039936206
SAS	Brunswick Entrance Channel	Simple Man	02/22/23	25	Atlantic Sturgeon - S. Atlantic	109.4	-	-	989001026624494
SAS	Brunswick Entrance Channel	Simple Man	02/22/23	43	Atlantic Sturgeon - S. Atlantic	111.1	-	-	989001041837134
SAS	Brunswick Entrance Channel	Simple Man	02/22/23	44	Atlantic Sturgeon - S. Atlantic	105.4	-	-	989001026624652
SAS	Brunswick Entrance Channel	Brenda K	02/22/23	148	Loggerhead	61.5	FFG590	FFG591	989001039936326
SAJ	US Naval Station Mayport	Mister B	02/22/23	63	Loggerhead	67.7	FFP753	FFP754	989001041837069
SAJ	US Naval Station Mayport	Mister B	02/22/23	63	Loggerhead	70.4	FFP755	FFP756	**989001041837085**
SAJ	Kings Bay Entrance Channel	Jessica Marie	02/22/23	343	Kemp's Ridley	42.1	FFL038	FFL039	989001040620514
SAJ	Kings Bay Entrance Channel	Jessica Marie	02/22/23	354	Kemp's Ridley	49.1	FFL028	FFL029	989001040620502
SAJ	US Naval Station Mayport	Mister B	02/22/23	63	Kemp's Ridley	49.1	FFP757	FFP758	989001041837089
SAS	Brunswick Entrance Channel	Brenda K	02/23/23	177	Atlantic Sturgeon - DPS Unknown	101.1	-	-	989001026307346
SAS	Brunswick Entrance Channel	Simple Man	02/23/23	66	Atlantic Sturgeon - S. Atlantic	123.5	-	-	989001041837118
SAS	Brunswick Entrance Channel	Brenda K	02/23/23	186	Atlantic Sturgeon - S. Atlantic	65.3	-	-	989001039936271

District	Project Name	Trawler	Date	Tow	Species	CCL/ TL (cm)	LFF Tag	RFF Tag	PIT Tag (RECAPTURE)
SAJ	Kings Bay Entrance Channel	Jessica Marie	02/23/23	384	Loggerhead	80.5	FFL036	FFL037	989001040620434
SAS	Brunswick Entrance Channel	Brenda K	02/23/23	178	Kemp's Ridley	28.4	-	-	989001039936312
SAJ	Kings Bay Entrance Channel	Jessica Marie	02/23/23	368	Kemp's Ridley	47.8	FFL030	FFL031	989001040620450
SAJ	US Naval Station Mayport	Mister B	02/23/23	73	Kemp's Ridley	49.1	FFP759	FFP760	989001041837091
SAJ	US Naval Station Mayport	Mister B	02/23/23	78	Kemp's Ridley	45.5	FFP761	FFP762	989001040620378
SAJ	US Naval Station Mayport	Mister B	02/23/23	78	Kemp's Ridley	42.9	FFP763	FFP764	989001041837055
SAJ	US Naval Station Mayport	Mister B	02/23/23	78	Kemp's Ridley	44.8	FFP765	FFP766	989001041837063
SAJ	US Naval Station Mayport	Mister B	02/23/23	79	Kemp's Ridley	27.9	FFP767	FFP768	989001041837105
SAJ	US Naval Station Mayport	Mister B	02/23/23	89	Kemp's Ridley	26.4	FFP769	FFP770	989001041837102
SAS	Brunswick Entrance Channel	Simple Man	02/24/23	95	Atlantic Sturgeon - S. Atlantic	107	-	-	989001041837062
SAJ	Kings Bay Entrance Channel	Jessica Marie	02/24/23	415	Atlantic Sturgeon - S. Atlantic	172.6	-	-	989001040620360
SAS	Brunswick Entrance Channel	Brenda K	02/24/23	209	Loggerhead	65.1	FFG594	FFG595	989001039936346
SAJ	Kings Bay Entrance Channel	Jessica Marie	02/24/23	411	Loggerhead	72.8	FFL051	FFL052	989001040620532
SAS	Brunswick Entrance Channel	Brenda K	02/24/23	205	Kemp's Ridley	40.4	FFG592	FFG593	989001039936283
SAJ	Kings Bay Entrance Channel	Jessica Marie	02/24/23	392	Kemp's Ridley	46.1	FFL035	FFL033	989001040620533
SAJ	Kings Bay Entrance Channel	Jessica Marie	02/24/23	404	Kemp's Ridley	38.2	FFL034	FFL050	989001040620393
SAS	Brunswick Entrance Channel	Brenda K	02/25/23	242	Atlantic Sturgeon - S. Atlantic	117	-	-	989001039936305
SAS	Brunswick Entrance Channel	Simple Man	02/25/23	123	Atlantic Sturgeon - S. Atlantic	182.3	-	-	989001041837144
SAS	Brunswick Entrance Channel	Brenda K	02/25/23	227	Kemp's Ridley	42.5	FFG596	FFG597	989001039097840
SAS	Brunswick Entrance Channel	Brenda K	02/25/23	235	Kemp's Ridley	57.3	FFG598	FFG599	989001039936308
SAS	Brunswick Entrance Channel	Simple Man	02/25/23	120	Kemp's Ridley	33.4	FFP603	FFP604	989001041837129
SAJ	Kings Bay Entrance Channel	Jessica Marie	02/25/23	422	Kemp's Ridley	47.9	FFL072	FFL073	989001040620346
SAJ	Kings Bay Entrance Channel	Jessica Marie	02/25/23	424	Kemp's Ridley	30.7	-	-	989001040620364
SAJ	Kings Bay Entrance Channel	Jessica Marie	02/25/23	434	Kemp's Ridley	38	VAQ270	VAQ271	985113004541592
SAS	Brunswick Entrance Channel	Simple Man	02/26/23	135	Atlantic Sturgeon - S. Atlantic	67.1	-	-	989001041837235

District	Project Name	Trawler	Date	Tow	Species	CCL/ TL (cm)	LFF Tag	RFF Tag	PIT Tag (RECAPTURE)
SAS	Brunswick Entrance Channel	Simple Man	02/26/23	142	Atlantic Sturgeon - S. Atlantic	85.3	-	-	989001041837237
SAJ	Kings Bay Entrance Channel	Jessica Marie	02/26/23	464	Atlantic Sturgeon - S. Atlantic	93.4	-	-	989001040620395
SAS	Brunswick Entrance Channel	Simple Man	02/26/23	127	Kemp's Ridley	44.7	FFP605	FFP606	985114000026671
SAS	Brunswick Entrance Channel	Simple Man	02/26/23	132	Kemp's Ridley	34.4	FFP607	FFP608	989001041837232
SAS	Brunswick Entrance Channel	Brenda K	02/26/23	258	Kemp's Ridley	33.6	FFA831	FFA832	989001039936280
SAS	Brunswick Entrance Channel	Simple Man	02/26/23	135	Kemp's Ridley	46.8	FFP610	FFP609	989001041837120
SAS	Brunswick Entrance Channel	Simple Man	02/26/23	140	Kemp's Ridley	34.7	FFP611	FFP612	989001041837125
SAJ	Kings Bay Entrance Channel	Jessica Marie	02/26/23	450	Kemp's Ridley	34.2	-	-	989001040620352
SAS	Brunswick Entrance Channel	Brenda K	02/27/23	284	Atlantic Sturgeon - S. Atlantic	212.1	-	-	989001039936352
SAS	Brunswick Entrance Channel	Simple Man	02/27/23	173	Atlantic Sturgeon - S. Atlantic	128.6	-	-	989001041837113
SAJ	US Naval Station Mayport	Mister B	02/27/23	199	Green	34.7	FFP771	FFP772	989001041837050
SAS	Brunswick Entrance Channel	Simple Man	02/27/23	157	Kemp's Ridley	46.9	FFP613	FFP614	989001041837079
SAS	Brunswick Entrance Channel	Brenda K	02/27/23	282	Kemp's Ridley	59.4	FFA833	FFA834	989001039097795
SAS	Brunswick Entrance Channel	Simple Man	02/27/23	160	Kemp's Ridley	45.8	FFP615	FFP616	989001041837133
SAS	Brunswick Entrance Channel	Brenda K	02/27/23	287	Kemp's Ridley	43.2	FFA835	FFA836	989001038168912
SAJ	US Naval Station Mayport	Mister B	02/27/23	208	Kemp's Ridley	46.5	FFP773	FFP774	989001041837109
SAS	Brunswick Entrance Channel	Brenda K	02/28/23	310	Atlantic Sturgeon - S. Atlantic	130	-	-	989001039936337
SAJ	Kings Bay Entrance Channel	Jessica Marie	02/28/23	519	Atlantic Sturgeon - DPS Unknown	141.5	-	-	989001041837077
SAS	Brunswick Entrance Channel	Simple Man	02/28/23	196	Loggerhead	52.6	FFP619	FFP620	989001041837080
SAJ	Kings Bay Entrance Channel	Jessica Marie	02/28/23	507	Loggerhead	69.1	FFL070	FFL071	989001040620540
SAJ	Kings Bay Entrance Channel	Jessica Marie	02/28/23	518	Loggerhead	58.6	FFL068	FFL069	989001041837047
SAS	Brunswick Entrance Channel	Simple Man	02/28/23	195	Kemp's Ridley	44.2	FFP617	FFP618	989001041837131
SAS	Brunswick Entrance Channel	Simple Man	02/28/23	201	Kemp's Ridley	44.9	FFP621	FFP622	989001041837121
SAJ	Kings Bay Entrance Channel	Jessica Marie	02/28/23	518	Kemp's Ridley	50	FFL066	FFL067	989001041837075

District	Project Name	Trawler	Date	Tow	Species	CCL/ TL (cm)	LFF Tag	RFF Tag	PIT Tag (RECAPTURE)
SAS	Brunswick Entrance Channel	Simple Man	03/01/23	210	Atlantic Sturgeon - S. Atlantic	152.1	-	-	989001041837234
SAS	Brunswick Entrance Channel	Brenda K	03/01/23	344	Atlantic Sturgeon - Carolina	103.5	-	-	989001039097789
SAJ	Kings Bay Entrance Channel	Jessica Marie	03/01/23	528	Atlantic Sturgeon - S. Atlantic	140	-	-	989001041837065
SAS	Brunswick Entrance Channel	Brenda K	03/01/23	340	Loggerhead	61.9	FFA876	FFA877	989001039936328
SAS	Brunswick Entrance Channel	Simple Man	03/01/23	209	Kemp's Ridley	50.7	FFP623	FFP624	989001041837143
SAS	Brunswick Entrance Channel	Simple Man	03/01/23	211	Kemp's Ridley	32.2	-	-	989001041837088
SAS	Brunswick Entrance Channel	Brenda K	03/01/23	338	Kemp's Ridley	50.4	FFA837	FFA838	989001039936357
SAS	Brunswick Entrance Channel	Simple Man	03/01/23	218	Kemp's Ridley	37.3	FFA928	FFA929	989001041837182
SAS	Brunswick Entrance Channel	Simple Man	03/01/23	222	Kemp's Ridley	34.7	FFA930	FFA931	989001041837128
SAS	Brunswick Entrance Channel	Brenda K	03/01/23	344	Kemp's Ridley	29.4	-	-	989001039936358
SAS	Brunswick Entrance Channel	Brenda K	03/01/23	344	Kemp's Ridley	36.5	FFA878	FFA879	989001039097820
SAJ	Kings Bay Entrance Channel	Jessica Marie	03/01/23	529	Kemp's Ridley	55.8	FFL064	FFL065	989001041837046
SAJ	US Naval Station Mayport	Mister B	03/01/23	261	Kemp's Ridley	60.7	FFP775	FFP776	989001041837124
SAS	Brunswick Entrance Channel	Simple Man	03/02/23	227	Atlantic Sturgeon - S. Atlantic	108.6	-	-	989002009134680
SAS	Brunswick Entrance Channel	Brenda K	03/02/23	350	Atlantic Sturgeon - S. Atlantic	100.5	-	-	989001033206521
SAS	Brunswick Entrance Channel	Brenda K	03/02/23	361	Atlantic Sturgeon - S. Atlantic	115.1	-	-	989001039936266
SAS	Brunswick Entrance Channel	Brenda K	03/02/23	361	Atlantic Sturgeon - S. Atlantic	145.1	-	-	989001039936272
SAS	Brunswick Entrance Channel	Brenda K	03/02/23	364	Atlantic Sturgeon - Carolina	143.9	-	-	989001039936344
SAS	Brunswick Entrance Channel	Brenda K	03/02/23	357	Loggerhead	71.8	FFA880	FFA882	989001039936329
SAS	Brunswick Entrance Channel	Simple Man	03/02/23	234	Green	51.1	FFA933	FFA932	989001039936197
SAS	Brunswick Entrance Channel	Simple Man	03/02/23	235	Kemp's Ridley	34.4	FFA934	FFA935	989001041837241
SAS	Brunswick Entrance Channel	Simple Man	03/02/23	243	Kemp's Ridley	30.7	-	-	989001041837142
SAJ	Kings Bay Entrance Channel	Jessica Marie	03/03/23	582	Atlantic Sturgeon - S. Atlantic	187	-	-	989001041837054

District	Project Name	Trawler	Date	Tow	Species	CCL/ TL (cm)	LFF Tag	RFF Tag	PIT Tag (RECAPTURE)
SAJ	Kings Bay Entrance Channel	Jessica Marie	03/03/23	588	Loggerhead	72.1	FFL061	FFL062	989001041837056
SAS	Brunswick Entrance Channel	Simple Man	03/03/23	254	Kemp's Ridley	49.3	FFA936	FFA937	989001039936307
SAJ	Kings Bay Entrance Channel	Jessica Marie	03/03/23	584	Kemp's Ridley	48.7	FFL139	FFL142	985114000068005
SAJ	Kings Bay Entrance Channel	Jessica Marie	03/03/23	588	Kemp's Ridley	33.1	-	-	989001041837132
SAS	Brunswick Entrance Channel	Brenda K	03/04/23	401	Atlantic Sturgeon - S. Atlantic	154.2	-	-	989001039936263
SAS	Brunswick Entrance Channel	Simple Man	03/04/23	294	Atlantic Sturgeon - S. Atlantic	171	-	-	989001039936314
SAS	Brunswick Entrance Channel	Brenda K	03/04/23	406	Loggerhead	86.1	FFA882	FFA883	989001039936290
SAS	Brunswick Entrance Channel	Simple Man	03/04/23	286	Kemp's Ridley	53.5	FFA938	FFA939	989001041837137
SAS	Brunswick Entrance Channel	Simple Man	03/04/23	289	Kemp's Ridley	35.4	-	-	989001039936313
SAJ	Kings Bay Entrance Channel	Jessica Marie	03/04/23	606	Kemp's Ridley	50.1	FFL137	FFL138	989001041837110
SAJ	US Naval Station Mayport	Mister B	03/04/23	359	Kemp's Ridley	51.7	FFP777	FFP778	989001041837082
SAS	Brunswick Entrance Channel	Simple Man	03/05/23	325	Atlantic Sturgeon - S. Atlantic	139.2	-	-	989001041837098
SAJ	Kings Bay Entrance Channel	Jessica Marie	03/05/23	620	Atlantic Sturgeon - S. Atlantic	211.2	-	-	989001041837106
SAS	Brunswick Entrance Channel	Brenda K	03/05/23	413	Loggerhead	67.6	FFA839	FFA840	989001039936261
SAS	Brunswick Entrance Channel	Brenda K	03/05/23	426	Kemp's Ridley	38.1	FFA841	FFA842	989001039097792
SAS	Brunswick Entrance Channel	Simple Man	03/06/23	331	Atlantic Sturgeon - S. Atlantic	115.2	-	-	989001038168888
SAJ	US Naval Station Mayport	Mister B	03/06/23	417	Loggerhead	69.4	FFG526	FFG527	989001039097816
SAJ	US Naval Station Mayport	Mister B	03/06/23	419	Loggerhead	63.5	FFL256	FFG528	989001039936324
SAS	Brunswick Entrance Channel	Brenda K	03/06/23	445	Kemp's Ridley	30.6	-	-	989001039936279
SAS	Brunswick Entrance Channel	Brenda K	03/06/23	446	Kemp's Ridley	34.5	FFA843	FFA844	989001039936315
SAS	Brunswick Entrance Channel	Brenda K	03/06/23	456	Kemp's Ridley	36.8	FFA845	FFA846	989001039936273
SAS	Brunswick Entrance Channel	Brenda K	03/07/23	471	Atlantic Sturgeon - S. Atlantic	65.2	-	-	989001039936284
SAS	Brunswick Entrance Channel	Simple Man	03/07/23	372	Atlantic Sturgeon - S. Atlantic	80.5	-	-	989001041836104

District	Project Name	Trawler	Date	Tow	Species	CCL/ TL (cm)	LFF Tag	RFF Tag	PIT Tag (RECAPTURE)
SAS	Brunswick Entrance Channel	Simple Man	03/07/23	372	Atlantic Sturgeon - S. Atlantic	77.4	-	-	989001041837139
SAJ	US Naval Station Mayport	Mister B	03/07/23	438	Atlantic Sturgeon - S. Atlantic	159	-	-	989001039936270
SAS	Brunswick Entrance Channel	Brenda K	03/07/23	473	Loggerhead	63.4	FFP801	FFP802	989001039936339
SAJ	Kings Bay Entrance Channel	Jessica Marie	03/08/23	681	Atlantic Sturgeon - S. Atlantic	180.3	-	-	989001041837064
SAS	Brunswick Entrance Channel	Brenda K	03/08/23	488	Kemp's Ridley	44.3	FFP803	FFP804	989001039936340
SAS	Brunswick Entrance Channel	Simple Man	03/08/23	388	Kemp's Ridley	36	-	-	989001039936286
SAS	Brunswick Entrance Channel	Simple Man	03/09/23	421	Atlantic Sturgeon - S. Atlantic	162.5	-	-	989001039936306
SAS	Brunswick Entrance Channel	Simple Man	03/09/23	434	Atlantic Sturgeon - S. Atlantic	110.1	-	-	989001030566099
SAJ	Kings Bay Entrance Channel	Jessica Marie	03/09/23	690	Atlantic Sturgeon - S. Atlantic	173.9	-	-	989001041837058
SAJ	Kings Bay Entrance Channel	Jessica Marie	03/09/23	708	Atlantic Sturgeon - S. Atlantic	127.3	-	-	989001041837138
SAS	Brunswick Entrance Channel	Brenda K	03/09/23	514	Loggerhead	74.2	FFP805	FFP806	989001039936274
SAJ	US Naval Station Mayport	Mister B	03/09/23	478	Loggerhead	42.2	FFG537	FFG538	989001039936338
SAJ	Kings Bay Entrance Channel	Jessica Marie	03/09/23	706	Green	66	FFL053	FFL054	989001041837111
SAJ	Kings Bay Entrance Channel	Jessica Marie	03/09/23	707	Green	32.2	-	-	**989001041837052**
SAS	Brunswick Entrance Channel	Simple Man	03/10/23	449	Atlantic Sturgeon - S. Atlantic	123.6	-	-	989001039362264
SAS	Brunswick Entrance Channel	Simple Man	03/10/23	449	Atlantic Sturgeon - S. Atlantic	130	-	-	982091061393418
SAJ	Kings Bay Entrance Channel	Jessica Marie	03/10/23	722	Loggerhead	74.2	FFG510	FFG512	**989001041837052**
SAS	Brunswick Entrance Channel	Simple Man	03/11/23	491	Atlantic Sturgeon - S. Atlantic	166.9	-	-	989001041837141
SAJ	Kings Bay Entrance Channel	Jessica Marie	03/11/23	730	Atlantic Sturgeon - S. Atlantic	138.1	-	-	989001041837051
SAS	Brunswick Entrance Channel	Simple Man	03/11/23	473	Kemp's Ridley	37.8	-	-	989001041837130

District	Project Name	Trawler	Date	Tow	Species	CCL/ TL (cm)	LFF Tag	RFF Tag	PIT Tag (RECAPTURE)
SAS	Brunswick Entrance Channel	Simple Man	03/12/23	509	Atlantic Sturgeon - S. Atlantic	155.3	-	-	989001041837123
SAS	Brunswick Entrance Channel	Simple Man	03/12/23	526	Loggerhead	89.6	FFA940	FFA941	989001038168899
SAJ	US Naval Station Mayport	Mister B	03/12/23	546	Loggerhead	61.2	FFG539	FFG540	989001039097843
SAJ	US Naval Station Mayport	Mister B	03/12/23	558	Loggerhead	76.8	FFG541	FFG542	989001039936334
SAS	Brunswick Entrance Channel	Simple Man	03/13/23	550	Atlantic Sturgeon - S. Atlantic	143.2	-	-	989001041837119
SAS	Brunswick Entrance Channel	Simple Man	03/13/23	557	Atlantic Sturgeon - S. Atlantic	149	-	-	989001041837117
SAJ	US Naval Station Mayport	Mister B	03/13/23	592	Loggerhead	67.5	FFP779	FFP780	**989001041837085**
SAS	Brunswick Entrance Channel	Simple Man	03/13/23	534	Kemp's Ridley	56.1	FFA942	FFA943	989001039097904
SAS	Brunswick Entrance Channel	Simple Man	03/13/23	547	Kemp's Ridley	31.4	-	-	989001039936287
SAS	Brunswick Entrance Channel	Simple Man	03/13/23	558	Kemp's Ridley	45.6	FFA944	FFA945	989001041372216
SAJ	Kings Bay Entrance Channel	Jessica Marie	03/14/23	795	Kemp's Ridley	43.3	FFG514	FFG515	989001040620518
SAS	Brunswick Entrance Channel	Simple Man	03/15/23	620	Atlantic Sturgeon - S. Atlantic	159.9	-	-	989001041837185
SAJ	US Naval Station Mayport	Mister B	03/15/23	646	Loggerhead	67.3	FFP781	FFP782	989001041837074
SAS	Brunswick Entrance Channel	Brenda K	03/15/23	705	Kemp's Ridley	31.9	FFP807	FFP808	989001038168916
SAJ	Kings Bay Entrance Channel	Simple Man	03/18/23	6	Loggerhead	74.5	FFA946	FFA947	989001041837223
SAJ	US Naval Station Mayport	Mister B	03/18/23	674	Loggerhead	76.3	FFP783	FFP784	989001039097909
SAJ	US Naval Station Mayport	Mister B	03/18/23	688	Loggerhead	88.4	FFP785	FFP786	989001041837067
SAJ	Kings Bay Entrance Channel	Simple Man	03/19/23	16	Atlantic Sturgeon - S. Atlantic	219.1	-	-	989001041837218
SAJ	Kings Bay Entrance Channel	Simple Man	03/19/23	31	Atlantic Sturgeon - S. Atlantic	144.2	-	-	989001041837201
SAS	Brunswick Entrance Channel	Brenda K	03/19/23	809	Loggerhead	74.1	FFP811	FFP812	989001041837180
SAS	Brunswick Entrance Channel	Brenda K	03/19/23	812	Loggerhead	61.3	FFP824	FFP825	989001041837172
SAJ	Kings Bay Entrance Channel	Simple Man	03/19/23	7	Loggerhead	74.3	FFA948	FFA949	989001041837197
SAS	Brunswick Entrance Channel	Brenda K	03/19/23	798	Kemp's Ridley	36.5	FFP809	FFP810	989001041837157
SAJ	Kings Bay Entrance Channel	Simple Man	03/19/23	7	Kemp's Ridley	61.4	-	FFA625	989001041837161
SAJ	Kings Bay Entrance Channel	Jessica Marie	03/19/23	892	Kemp's Ridley	41.2	FFL074	FFL075	989001041837071

District	Project Name	Trawler	Date	Tow	Species	CCL/ TL (cm)	LFF Tag	RFF Tag	PIT Tag (RECAPTURE)
SAJ	Kings Bay Entrance Channel	Simple Man	03/20/23	61	Atlantic Sturgeon - S. Atlantic	177	-	-	989001041837217
SAJ	Kings Bay Entrance Channel	Simple Man	03/20/23	50	Loggerhead	102.4	FFP626	FFP627	989001041837236
SAJ	Kings Bay Entrance Channel	Jessica Marie	03/20/23	911	Loggerhead	53.2	FFL130	FFL131	989001041387048
SAJ	Kings Bay Entrance Channel	Simple Man	03/20/23	46	Kemp's Ridley	30.9	-	-	989001041837230
SAJ	Kings Bay Entrance Channel	Simple Man	03/22/23	76	Atlantic Sturgeon - S. Atlantic	155.8	-	-	6C00057654
SAJ	Kings Bay Entrance Channel	Simple Man	03/22/23	85	Atlantic Sturgeon - S. Atlantic	129.3	-	-	989001041837229
SAJ	Kings Bay Entrance Channel	Simple Man	03/22/23	72	Loggerhead	68.2	FFP628	FFP629	989001041837190
SAJ	Kings Bay Entrance Channel	Simple Man	03/22/23	78	Loggerhead	72	FFP630	FFP631	989001041837211
SAJ	Kings Bay Entrance Channel	Simple Man	03/22/23	85	Green	53	FFP632	FFP633	982000410609759
SAJ	Kings Bay Entrance Channel	Simple Man	03/22/23	79	Kemp's Ridley	29.8	-	-	989001041837192
SAJ	Kings Bay Entrance Channel	Simple Man	03/23/23	89	Atlantic Sturgeon - S. Atlantic	197.7	-	-	989001041837207
SAJ	Kings Bay Entrance Channel	Jessica Marie	03/23/23	951	Atlantic Sturgeon - DPS Unknown	167.4	-	-	989001003460910
SAJ	Kings Bay Entrance Channel	Jessica Marie	03/23/23	952	Atlantic Sturgeon - S. Atlantic	165.4	-	-	989001041837135
SAJ	Kings Bay Entrance Channel	Jessica Marie	03/23/23	950	Loggerhead	82.1	FFL132	FFL133	989001041837078
SAJ	US Naval Station Mayport	Mister B	03/23/23	826	Loggerhead	70.4	FFP795	FFP796	989001041837239
SAJ	Kings Bay Entrance Channel	Jessica Marie	03/23/23	950	Green	50.8	FFL134	FFL135	989001041837127
SAJ	US Naval Station Mayport	Mister B	03/25/23	895	Kemp's Ridley	51.4	FFP797	FFP798	989001039936214
SAJ	US Naval Station Mayport	Mister B	03/27/23	954	Kemp's Ridley	53.4	FFP799	FFP800	989001041837226
SAJ	US Naval Station Mayport	Mister B	03/28/23	997	Loggerhead	68.4	FFP727	FFP726	989001041837222
SAJ	US Naval Station Mayport	Mister B	03/29/23	1024	Loggerhead	74.6	FFP729	FFP728	989001041837220
SAW	Duck Renourishment	Simple Man	04/16/23	2547	Loggerhead	103.3	FFP635	FFP634	989001041837188
SAW	Duck Renourishment	Simple Man	04/16/23	2550	Loggerhead	95.8	FFP637	FFP636	989001041837186
SAW	Duck Renourishment	Simple Man	04/17/23	2570	Loggerhead	75.8	FFP639	FFP638	989001041837204
SAW	Duck Renourishment	Simple Man	04/17/23	2578	Loggerhead	92.5	FFP640	FFP641	989001041837209
SAW	Duck Renourishment	Simple Man	04/17/23	2588	Loggerhead	62.7	FFP642	FFP643	989001041837148

District	Project Name	Trawler	Date	Tow	Species	CCL/ TL (cm)	LFF Tag	RFF Tag	PIT Tag (RECAPTURE)
SAW	Duck Renourishment	Simple Man	04/18/23	2608	Loggerhead	74.1	FFP644	FFP645	989001041837215
SAW	Duck Renourishment	Simple Man	04/19/23	2643	Loggerhead	69.6	FFP646	FFP647	989001041837231
SAW	Duck Renourishment	Simple Man	04/20/23	2652	Loggerhead	84.6	FFP648	FFP649	989001041837199
SAW	Duck Renourishment	Simple Man	04/20/23	2656	Loggerhead	102.1	FFA950	FFP650	989001041837208
SAW	Duck Renourishment	Simple Man	04/20/23	2661	Loggerhead	87	FFP701	FFP702	989001041837243
SAW	Duck Renourishment	Simple Man	04/21/23	2681	Loggerhead	99.9	FFP703	FFP704	989001041837171
SAW	Duck Renourishment	Simple Man	04/21/23	2690	Loggerhead	73.8	FFP705	FFP706	-
SAW	Duck Renourishment	Simple Man	04/22/23	2702	Loggerhead	81.1	FFP707	FFP708	-
SAW	Duck Renourishment	Jessica Marie	04/26/23	2800	Loggerhead	73.6	FFP709	FFP710	989001041837238
SAW	Duck Renourishment	Jessica Marie	04/27/23	2815	Loggerhead	81.5	FFP724	FFP725	989001040620372
SAW	Duck Renourishment	Jessica Marie	05/02/23	2867	Loggerhead	98.2	KKS119	KKS085	989000407602252
SAW	Duck Renourishment	Jessica Marie	05/02/23	2877	Loggerhead	97.2	FFP711	FFP712	989001040620517
SAW	Duck Renourishment	Jessica Marie	05/03/23	2901	Loggerhead	95.5	FFP713	FFP714	9890010406620350
SAW	Duck Renourishment	Jessica Marie	05/06/23	2968	Loggerhead	84	FFP715	FFP716	989001041837227
SAW	Duck Renourishment	Jessica Marie	05/08/23	3010	Loggerhead	77.1	FFP717	FFP718	989001040620430
SAW	Duck Renourishment	Jessica Marie	05/08/23	3012	Loggerhead	99.4	FFP719	FFP720	989001040620373

APPENDIX B. AREA MAPS

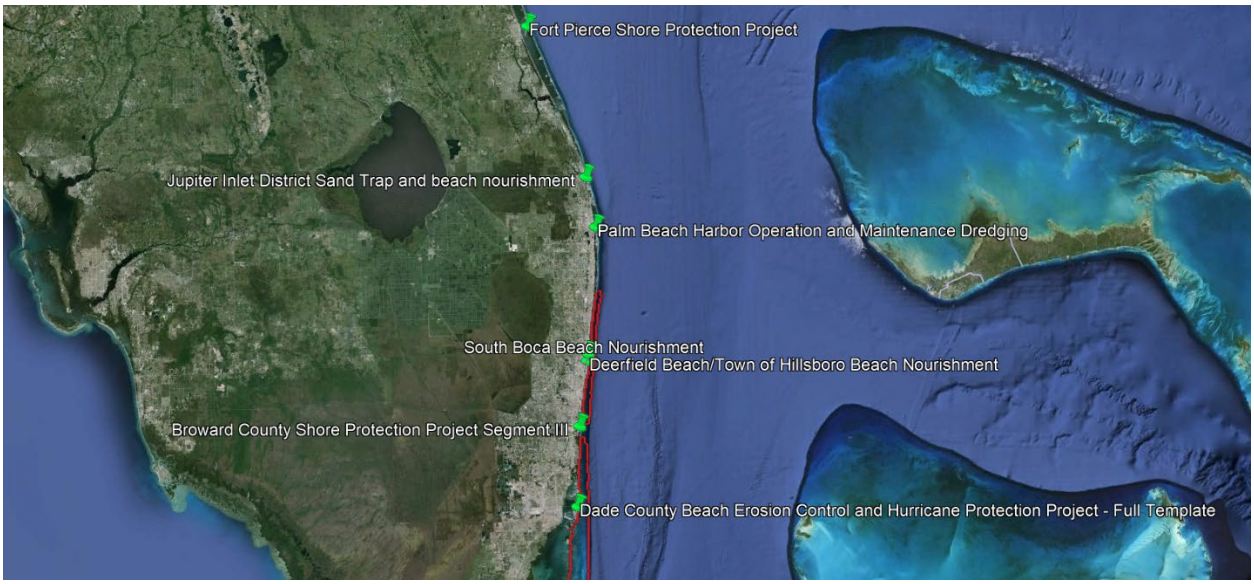

Figure 3. Projects within the Range of ESA-listed Corals
(Acropora Critical Habitat Outlined in Red)

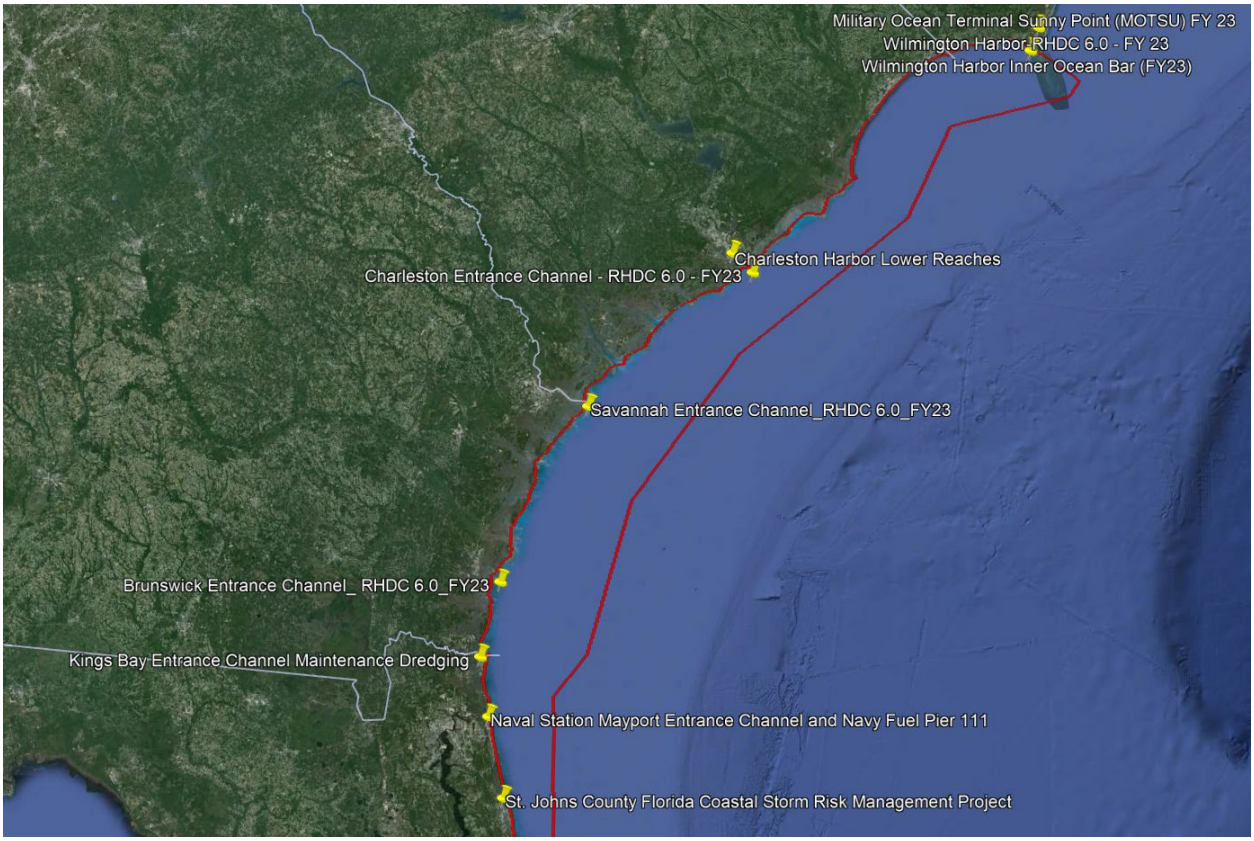

Figure 4. FY23 Projects Within the Range of North Atlantic Right Whale During Calving Season.
(North Atlantic right whale critical habitat outlined in red)

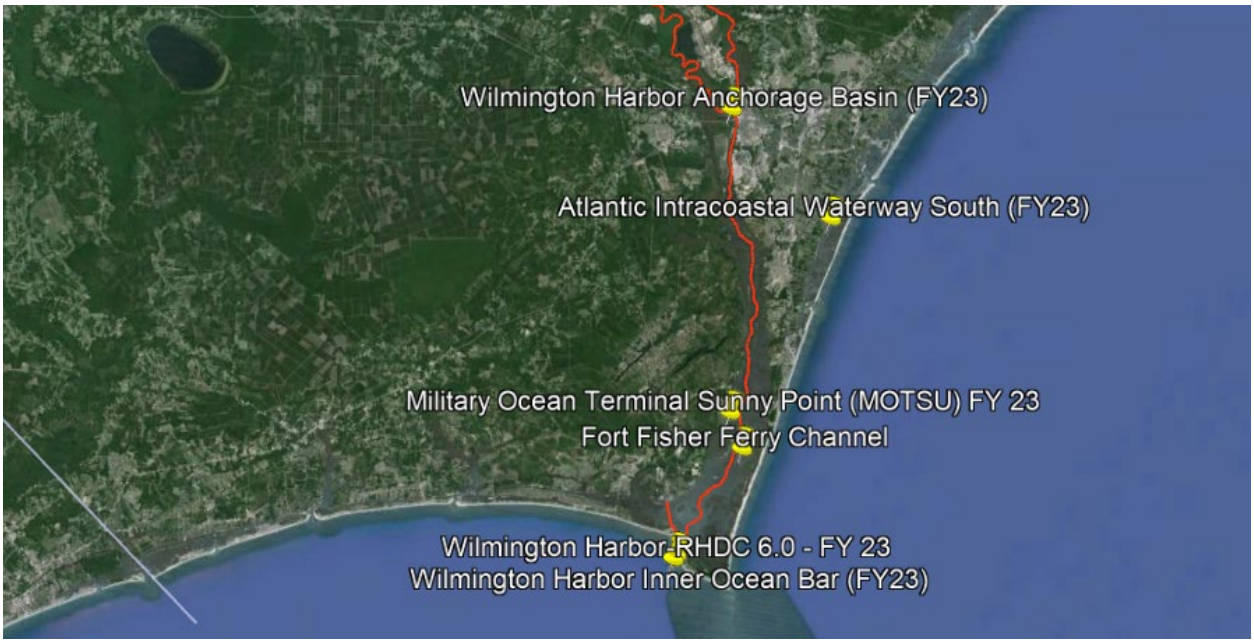

Figure 5. FY23 Projects in Atlantic Sturgeon Critical Habitat (Cape Fear River)

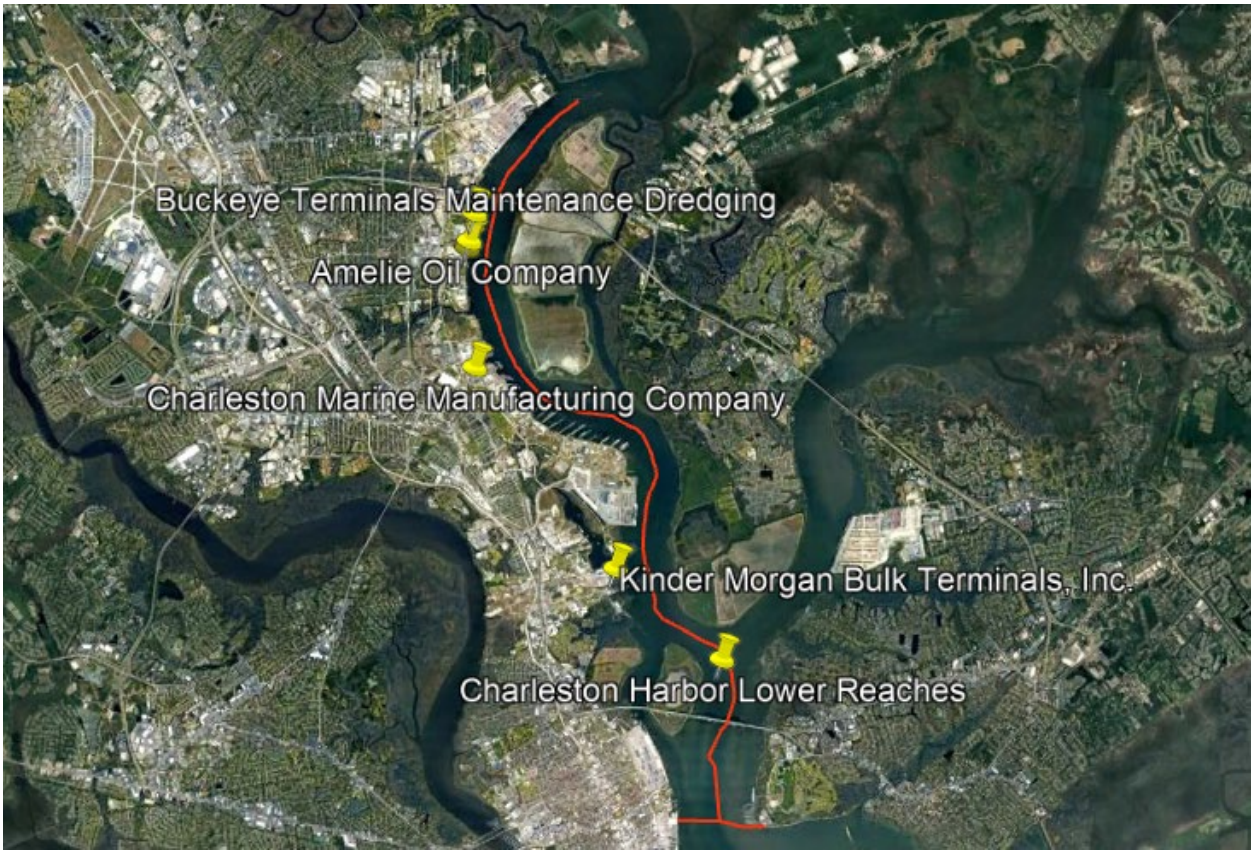

Figure 6. FY23 Projects in Atlantic Sturgeon Critical Habitat (Santee-Cooper Rivers)

Figure 7. FY23 Projects in Atlantic Sturgeon Critical Habitat (Savannah River)

Figure 8. FY23 Projects in Atlantic Sturgeon Critical Habitat (St Marys River)

APPENDIX C. FY23 ATLANTIC STURGEON DISTINCT POPULATION SEGMENT REPORT

14 Sept 2023

FY23 Report: Distinct Population Segment Assignments for Atlantic Sturgeon Incidental Takes Occurring during FY23 United States Army Corps of Engineers (USACE) Dredging Activities

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Provided to: USACE-South Atlantic Division, in accordance with the South Atlantic Regional Biological Opinion (SARBO) for Dredging and Material Placement Activities in the Southeast United States

Summary and Findings

A total of 78 Atlantic sturgeon were encountered by USACE South Atlantic Division during FY23 dredging activities (Suppl. File 1). Tissues were submitted for 74 of the 78 Atlantic sturgeon; they were submitted by three USACE Districts: Jacksonville (SAJ), Savannah (SAS), Wilmington (SAW) (Table 1; Suppl. File 1). These tissues underwent DNA genotyping across 12 microsatellite loci (as in White et al. 2021). The produced genetic data was then used to assess the distinct population segment (DPS) from which each encountered sturgeon most likely originated. The assessment was aided by a comprehensive reference database provided by the US Geological Survey Eastern Ecological Science Center (USGS-EESC) and followed published methods as detailed on page 2 of this report.

For the 74 received tissues, genotype data indicated that two dredge takes involved the same dismembered fish (S44, S45; Suppl. File 1); sturgeon parts determined to be of the same fish were captured at Brunswick Harbor (SAS) on March 13 and 14. Thus, USACE encountered 73 unique fish: six via dredge (five lethal takes, one decomposed/non-take fish) and 67 via trawl with subsequent relocation. Of the 73 unique fish, a majority assigned to the South Atlantic DPS (Table 1; Suppl. File 1).

While eight individuals were noted as "previously tagged on another project" by the observer (Suppl. File 1), none were identified as USACE-specific recaptures based on FY21 – 23 PIT tag numbers and microsatellite genotypes. Thus, no fish had been previously encountered by USACE FY21 – 23.

Table 1. Distinct population segment (DPS) assignments for 73 unique Atlantic sturgeon encountered by USACE in FY23. Dredge encounter marked by * represents a decomposed/non-take fish; (-1) represents tissues S44 and S45, which were identified by genotype as belonging to the same dismembered fish.

	USACE-District and project						
	Jacksonville (SAJ)		Savannah (SAS)		Wilmington (SAW)		
	Kings Bay, US Naval St. Mayport		Brunswick Harbor		Wilmington Harbor		
DPS Assignment	Trawl	Dredge	Trawl	Dredge	Trawl	Dredge	Total
Gulf of ME	0	0	0	0	0	0	0
NY Bight	0	0	0	0	0	0	0
Chesapeake	0	0	0	0	0	0	0
Carolina	1	0	2	0	0	0	3
S. Atlantic	26	1	38	5 (-1)	0	1*	70
Total	28		44		1		73

1

Detailed methods

All tissues underwent DNA extraction using Qiagen DNeasy Blood and Tissue kits. DNA extractions then underwent multiplex PCR to amplify 12 microsatellite loci (LS19, LS39, LS54, LS68, Aox12, Aox23, Aox45, AoxD44, AoxD165, AoxD170, AoxD188, and AoxD241; May et al. 1997; King et al. 2001; Henderson-Arzapalo and King 2002), using Qiagen Multiplex Master Mix and PCR conditions optimized by USGS-EESC. Negative controls were included to allow for detection of potential cross-contamination issues and for adherence to quality assurance/quality control measures; no cross-contamination issues were observed. Fragment analysis occurred on an ABI 3500xl DNA analyzer (Applied Biosystems), where fragment peak sizes were determined using Liz600 fragment size standards (Genescan). Resulting chromatograms were visualized and genotyped in Geneious Prime 2019.2.3 (https://www.geneious.com).

To assess DPS for each encountered Atlantic sturgeon, genotypes were analyzed in Geneclass2 (Piry et al. 2004) following White et al. (2021). Geneclass2 assigns individuals to the most likely population (here, river) of origin using a reference dataset. The utilized reference dataset was acquired from USGS-EESC, and contains the genotypes of 2500+ Atlantic sturgeon from 14 rivers throughout the species' entire distribution and from across all currently recognized DPS, as determined by the 2012 Endangered Species Act Final Rulings (NOAA 2012a, 2012b). The probability of correctly assigning samples to the river and/or DPS of origin using Geneclass2 and the USGS-EESC reference dataset is high (White et al. 2021).

In the reference database, populations are defined by the river from which tissues were collected, with rivers then sorted into pre-defined DPS units. For FY23 DPS assignments, we followed similar logic: first assigning samples to the river of origin and then to the appropriate DPS to which the river belongs. To do this, we used Geneclass2 and implemented a Bayesian criteria for computation (Rannala and Mountain 1997).

We used two types of data, microsatellite genotypes and PIT tag numbers, to identify possible USACE-specific recaptures in FY23 and across FY21 – 23. To find recaptures based on identical genotypes, we used the R package *poppr* 2.9.3 (Kamvar et al. 2014, 2015) and its associated function *mlg.id()*. The package was implemented in R 4.2.1 (R Core Team 2021) and visualized in RStudio 2022.07.02 (RStudio Team 2022). To find recaptures based on identical PIT tag numbers, we used "Conditional Formatting" within an Excel file containing PIT tag numbers from FY21 – 23 to "Highlight Cells" with "Duplicate Values".

Supplementary File 1: Excel file associated with this report, containing DPS assignments and data required by SARBO for all tissues received. The file has been updated to include two spreadsheets useful for reporting to FWS (tag submissions) and NOAA-NMFS (via USGS-EESC tissue repository). Excel file was sent to USACE-SAD via email, alongside this updated report.

S. Feist will provide the NOAA-NMFS spreadsheet to USGS-EESC upon sample submission. S. Feist is not submitting the FWS tag submissions spreadsheet to any entity other than USACE-SAD.

NOTES

Tissues and associated genetic data are being transferred to USGS-EESC so as to be accessioned into the nationwide Atlantic sturgeon tissue repository and associated genetic database.

Literature Cited

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APPENDIX D. FY23 NORTH ATLANTIC SURVEY REPORT

4.6 SARBO Projects Within the Range of NARW.

4.6.1 Whale Alerts.

The NARW Sightings are sent to mariners, to include USACE vessels and contractor vessels, through Whale Alerts based on the aerial survey sightings, volunteer sightings, and those reported from the public. NMFS coordinates Whale Alerts with Florida Fish & Wildlife Conservation Commission. USACE continued to work with these agencies to offer suggestions to streamline the system and to address technical issues encountered.

4.6.2 Automatic Identification System.

The NARW Conservation Plan states that all project vessels will carry operational Automatic Identification System transmitters, and NMFS will be provided the vessel name and vessel tracking number (maritime mobile service identities). Furthermore, vessel tracking numbers will be recorded in ODESS and emailed to NMFS for all vessels over 33 feet in length operating from the Virginia/North Carolina border south to Cape Canaveral, Florida, during the NARW migration and calving season (November 1 through April 30). It proved challenging to provide this information on an individual project basis because companies working on these projects often switch vessels between projects. To resolve this issue, USACE provided NMFS a list of USACE survey vessels, modified hoppers, and vessels used by other companies on projects covered under the 2020 SARBO. A system was developed to monitor those vessels relative to specified project areas so that the information can more easily be monitored. USACE continues to work closely with contractors and USACE vessel operators to stress the importance of adherence to these speed restrictions to be compliant with the 2020 SARBO and to protect this critically endangered species.

4.6.3 Vessel Speed Requirements.

The NARW Conservation Plan includes vessel speed requirements relative to the location of an identified NARW. This include requirements for smaller vessels (33 feet to 65 feet) that are currently not required to adhere to the NARW Vessel Speed Rule (cite rule), which continues to create some confusion despite USACE providing extensive outreach and coordination with contractors. Any exceedance of speed is immediately handled internally by USACE with the contractors involved and coordinated with NMFS. Information that has been and continues to be clarified includes the following:

- Northern and southern limits. Virginia/North Carolina border south to Cape Canaveral, Florida.

- Shoreline/waterward limit. COLREGS Demarcation Line, which is generally the shoreline but also includes areas inside of jetties even if they extend waterward of the shoreline.

- Timeframe. The NARW Conservation Plan applies from November 1 through April 30; however, the Early Warning System aerial surveys are completed from December 1 to March 31, and the Mid-Atlantic surveys are completed from November 15 to April 15.

- When requirements apply to USACE vs non-USACE owned and operated vessels. Vessels contracted to work on USACE-funded or permitted projects covered under the 2020 SARBO are required to adhere to the NARW Conservation Plan. However, the 2020 SARBO requirements only apply once the vessel arrives at the project site and is working on the project, not when transiting to or from a project that is covered. When transiting to or from the project, the vessel is required to adhere to any other federally mandated NARW protections (for example, 50 CFR 224.105). USACE owned and operated vessels shall adhere to the NARW Conservation Plan throughout the geographic range and during the specified period (e.g., survey vessels surveying a USACE-maintained navigation channel, which is not actively being dredged, to determine the condition of the channel).

- Which Seasonal Management Areas (SMAs) require additional Requirements. As set forth in Table 58 of the 2020 SARBO, the NARW Conservation Plan requires vessels 33 to 65 feet in length to slow to 10 knots for different amounts of time depending on whether the vessel is within or outside of the SMA. The NARW Conservation Plan specifically lists the Calving and Nursery Grounds located from approximately Sapelo Island in Georgia (latitude 31º27'N) south to Matanzas Inlet in Florida (latitude 29º45'N) and east to longitude 080º51'36"W. This SMA applies from November 15 - April 15. Other current or proposed SMAs do not require an additional restriction. This is consistent with the NARW Conservation Plan since the Calving and Nursery Ground SMA covers the areas where NARW are present for longer periods for calving, and other SMAs are identified for whales migrating through an area that is surveyed with these other SMAs having applicable speed restrictions when whales are sighted in the area.