GEORGIA STAKEHOLDER MEETING: EFH AND SARBO RISK ASSESSMENT

Date: 24 August 2022

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2020 SOUTH ATLANTIC REGIONAL BIOLOGICAL OPINION (2020 SARBO)

Nicole Bonine Environmental Compliance Program Manager South Atlantic Division, USACE

24 August 2022

Working Today to Build a Better Tomorrow



NMFS- Risk Evaluation in 2020 SARBO

1. Identify the Risk

79° 2. Analyze the Risk

4. Monitor & Adapt 3. Plan Response

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USACE/ BOEM Risk Monitoring and Response

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Step 1. Risk Management: Identify the Risk How are risks factors identified? This uses driving a car as an





Unfortunately, there is always a risk of injury or death when driving a vehicle, but certain factors increase or decrease that risk.

- example. 1. Equipment Factors- Risk Minimized with safety features
- Ability to stop (anti-lock or auto breaking)
- Traction (Better tires- snow tires, mud tires, etc.)
- Passenger Safety Features in an accident (Seat belts, car seats, airbags, stronger frames, crumple zones)

2. Environmental Factors- Timing & Road Conditions

- Nighttime driving may decrease visibility
- Road Conditions may decrease traction or ability to stop (icy roads, during a hurricane or flooding)

3. Operation Factors

Professional driver, good roads, & no traffic- Lower Risk

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New Driver in Adverse Conditions- Higher Risk



Step 1. Risk Management: Identify the Risk **USACE and BOEM Provided Proposed Action & Mission Requirements**



- 1. Maintenance dredging +BOEM borrow site dredging
- 2. Dredge material placement
- 3. Transportation of dredge materials
- 4. Geophysical and geotechnical surveys
- 5. Monitoring & handling of ESA-listed species



USACE Navigation

Provides safe, reliable, efficient, & environmentally sustainable waterborne transportation systems (channels, harbors, and waterways) for movement of commerce, national security needs, and recreation.



USACE Flood Risk Management Program (FRMP) BOEM Marine Minerals Program

The USACE FRMP works across the agency to focus Leases sand, gravel, &/or shell the policies, programs & expertise of USACE toward reducing overall flood risk. This includes the appropriate use & resiliency of structures such as levees and floodwalls, as well as promoting alternatives when other approaches (e.g., land acquisition, flood proofing) reduce the risk of loss of life, reduce long-term economic damages to the public & private sector, & improve the natural environment.

resources from federal waters on the Outer Continental Shelf for shore protection, beach nourishment, and wetlands restoration with vigorous safety & environmental oversight.





Step 2. Risk Management: Analyze the Risk

Projects Constrained by PDCs in SARBO Appendix:

- B. General PDCs for project covered & equipment used
- C. Coral PDCs
- D. Johnson's Seagrass PDCs
- E. Sturgeon PDCs
- F. North Atlantic Right Whale Conservation Plan
- G. Geophysical and Geotechnical PDCs
- H. Protected Species Observer PDCs

NMFS Considered Effects to Each Species by these Route of Effects:

- 1. Interaction w/ Dredging & Placement
- 2. Entanglement
- 3. Effects from Relocation Trawling
- 4. Vessel Strikes
- 5. Interaction w/ Material Placement
- 6. Blocked Access by Construction or Material Placement
- 7. Habitat Alteration
- 8. Sound Generated by Projects





Step 2. Risk Management: Analyze the Risk



National Marine Fisheries Service:

- Considered take by population segment, recovery units, and age class
- Estimated Take Limit per Species
- Determined if estimated take take would result in "appreciable reduction in the likelihood of either the survival or recovery of a species in the wild"







Step 2. Risk Management: Analyze the Risk NMFS Determined the SARBO Take Incidental Take Limit

SARBO 3 Consecutive Year Take Limit

Species	Nonlethal Lethal Take- Take-		Lethal Take-	Total Lethal Observed +	Sea Turtle Lost Egg	
	Observed	Observed	Unobserved	Unobserved Take	Clutch	
Green Sea Turtle North Atlantic DPS	742	59	59	118	3	
Green Sea Turtle South Atlantic DPS	40	4	4	8	0	
Kemp's Ridley Sea Turtle	1,340	58	58	116	1	
Leatherback Sea Turtle	369	0	4	4	6	
Loggerhead Sea Turtle Northwest Atlantic DPS	5,270	107	107	214	65	
Atlantic Sturgeon South Atlantic DPS	499	73	0	73	-	
Atlantic Sturgeon Carolina DPS	319	47	0	47	-	
Atlantic sturgeon Chesapeake Bay DPS	91	14	0	14	-	
Atlantic Sturgeon New York Bight DPS	34	5	0	5	-	
Atlantic Sturgeon Gulf of Maine DPS	1	1	0	1	-	
Shortnose Sturgeon	6	8	6	14	_	
Giant manta ray	89	0	0	0	-	

Incidental Take- Import Terms

Term & General Definition	Examples
Nonlethal Take- Observed. ESA-listed species captured alive and released alive	 Relocation trawling moving turtles or sturgeon Relocating coral
Lethal Take-Observed. ESA-listed species captured dead or dies from injuries while being observed	 Turtle or sturgeon found dead during hopper dredging Turtle sent to rehab that dies from injuries
Lethal Take-Unobserved. Lethal Take NMFS estimated in SARBO to determine the level of effects to species populations from the action. NMFS assumed it may occur, but not be seen. For turtles, this is double the estimated observed lethal take, which is assumed to be an overestimate.	 Turtle killed at the hopper draghead, but not entrained Turtle killed by hopper dredging, but not observed by PSO Turtle released alive that died later
Sea Turtle Lost Egg Clutch . Take NMFS estimated in SARBO to determine the level of effects to species populations from the action.	 Gravid sea turtle captured during trawling that drops her eggs/ doesn't nest from the stress of being relocated.
Distinct Population Segment (DPS) . Groups of animals that are genetically different enough to be listed under the ESA as a separate population. Take is tracked by the DPS.	 2 DPS of green sea turtles occur in the SARBO action area of the 11 DPS found worldwide DPS determined through genetic testing



Step 2. Risk Management: Analyze the Risk NMFS Determined the SARBO Take Incidental Take Limit

SARBO Take Limit: ≥ 3 Consecutive Years

Species	Nonlethal Take-	Lethal Take-	Lethal Take-			
	Observed	Observed	Unobserved			
Smalltooth sawfish (U.S. DPS)	1 total per 3 year period	1 total per 9 year period				
Elkhorn Coral	2 total per 10 year period	1 total per 10 year period				
Staghorn coral	1,105 total per 10 year period	195 total per 10 year period	O a rat rata a atia r			
Lobed star	43 total per	8 total per	monitoring required			
coral	10 year period	10 year period				
Mountainous	136 total per	25 total per	lake expected			
star coral	10 year period	10 year period				
Boulder star	63 total per	11 total per				
coral	10 year period	10 year period				

No Lethal Take:

- Giant Manta Ray
- Leatherback Sea Turtle

No Lethal or Non-lethal Take

• North Atlantic Right Whale

						Observed Lethal Take
Species	SARBO 1 Year Observed	3 Year Observed	~1 Year Observed Lethal Take Limit	3 Year Unobserved	Observed Lethal Take NMFS CALCULATED ≤ 35 Take/ 1 Year	NMFS CALCULATED ≤ 107 Take/ 3 Year = ~ 35/ 1 Year
	Lethal Take	Lethal Take Limit		Lethal Take	Unobserved Lethal Take	Unobserved Lethal Take NMFS ASSUMED/
Sea Turtles					NMFS ASSUMED/	ESTIMATED
Green - Both DPSs	7	63	~21	63	NOT CALCULATED	\leq 107 Take/ 5 Year = ~ 35 Take/ 1 Year
Kemp's Ridley	7	58	~19	58	Loss of Sos Turtla	Loop of Sop Turtle
Hawksbill	2	0	0	0	Egg Clutch	Eag Clutch
Leatherback	0	0	0	0	NOT CONSIDERED BY	NMFS ASSUMED/
Loggerhead- Northwest Atlantic DPS	35	107	~35	107	NMFS	ESTIMATED
Sturgeon					1997 SARBO	2020 SARBO
Atlantic Sturgeon- All 5 DPSs	0	63	~46	63		
Shortnose <mark>s</mark> turgeon	5	58	~2	58		
Other Species						
Giant manta ray	0	0	0	0		

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Step 3. Risk Management: Plan Response

		Severity of Consequence of completing our mission							
Probability/ Likelihood of Occurrence		<u>Low</u> No Take Expecte d	<u>Medium</u> Take may occur, but covered by SARBO or Other Opinion	<u>High</u> Take not covered					
	Unlikely to be in area	Low Risk	Low Risk	Low Risk					
	May be in area	Low Risk	Medium Risk Monitor Closely & use appropriate risk minimization measures	High Risk Prioritize risk minimization measures & monitor closely					
	Likely to be in area		Medium Risk Monitor Closely & use appropriate risk minimization measures	High Risk Prioritize risk minimization measures & monitor closely					

Risk = Probability of Occurrence x Consequence

USACE & BOEM use risk assessment to:

- Consider probability of take at individual projects & all SARBO projects
- Consider consequence of completing individual project and all SARBO projects
- take of and risk of completing mission requirements

Must follow SARBO PDC minimization measures with project designed based on risk assessment. Cannot exceed take



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Step 3. Risk Management: Plan Response

Probability of Sea Turtle Take by Species Three-Year Take Limits Account for Variability By Year



Species Compilation of Total Lethal Take Reported in FY22 Under 2020 SARBO Projects Green Atlantic 12% sturgeon 26% Kemp's Ridley Loggerhead, 43% 19%





FY22 Kemp's Ridley Sea Turtle Captures







Step 3. Risk Management: Plan Response Probability of Encounter North Atlantic Right Whale

NORTH ATLANTIC RIGHT WHALE



<u>Probability of encountering</u>: Varies by area and time of year

<u>Consequence if encountered</u>: No take (lethal or nonlethal) covered under SARBO Even one take could affect the ability for the species to survive or recover



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All SEUS Sightings 2022 Season

Sightings: 277 M/C pairs: 189 Whales: 523



2022 Sightings

Only 14 North Atlantic Calves Born This Season on the Planet



11-year-old #4180 with her second calf



20-year-old #3220 with 3rd calf



32-year-old Naevus with 6th calf





21-year-old Seamount w/ 3rd calf





#1515 with

8th calf





39-year-old Half Note with 7th calf



36-year-old Mantis w/ 7th calf

29-year-old

5th calf

Derecha with



26-year old Tripelago with 5th calf



25-year old Arpeggio with 3rd calf



40-year old Slalom with 6th calf

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None were Born in 2018

34-year-old



Georgia's State Marine Mammal North Atlantic Right Whale



December 2019

- Snow Cone with 1st calf off Sapelo Island, GA
- Traveled to Gulf of Mexico!
- Calf found dead at 6 months old in New Jersey from a vessel strike.



Snow Cone



December 2021

- Snow Cone with 2nd calf off Cumberland Island, GA
- Mom gave birth while entangled in fishing line.

July 23, 2022 Spotted in Gulf of St Lawrence still entangled and without her calf.



March 2021 Unable to be freed by crews in Cape Cod





Step 3. Risk Management: Plan Response FY21 SARBO Projects



	Project w/ 0 Take					
	Project w/ 1 Take					
	Project w/ ≥ 2 Takes					
	Total days dredged					
Drodao	For example:					
Dreuge	2 hopper dredges					
DayS	x 20 calendar days					
	= 40 dredge days					



FY22 SARBO Projects



Step 3. Risk Management: Plan Response

Species	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	ОСТ	NOV	DEC
Whales (Blue, Fin, Sei, Sperm)	These whale species are deep water pelagic species not expected to be to be found within areas where activity would occur. The likelihood of encounter is very low. No reported encounters with dredging or related activities. No take covered under SARBO.											
North Atlantic Right Whale	Present in and/ c calving season. strikes. No take species populati	or near project Highly suscep allowed. Take on and recover	areas during tible to vessel would affect ry.	Not expected	d to be present; mię	grate north d	uring these r	nonths.				
Sea turtles	Sea turtles present year-round. Entrainment: Hopper dredging and trawling frequently result in encounters with higher numbers in Brunswick than Savannah. Loggerheads nest in the area May to mid-August. Infrequent nests from leatherback, green, and Kemp's ridley. Medium risk because probability of encounters is high, but risk of take changing survivability or recover of species based on take limits in 2020 SARBO is low.											
Oceanic Whitetip shark	This shark is a deep-water pelagic species. The likelihood of encounter is very low and the risk to this species from the routes of effects identified is low, as described in the 2020 SARBO.											
Giant manta ray	Based on observations, giant manta ray may be present year-round with higher likelihood in warmer months as they migrate up the Atlantic coast in summer months. No reported encounters with hopper dredges and rare encounters with relocation trawling. Therefore, the likelihood of encounter is low and the risk to this species from the routes of effects identified is low, as described in the 2020 SARBO. Non-lethal capture by relocation trawling (take) is provided in the 2020 SARBO.											
Smalltooth sawfish	Observations north of Florida are rare and typically limited to Georgia. No reported encounters with hopper dredges and rare encounters with relocation trawling. Therefore, the likelihood of encounter is very low and the risk to this species from the routes of effects identified is low, as described in the 2020 SARBO. Non-lethal capture by relocation trawling (take) is provided in the 2020 SARBO.											
Atlantic Sturgeon	Frequent encour winter months, b survivability or re take limits in 202	nters by hoppe out risk of take ecover of speci 20 SARBO is lo	r and trawler in changing es based on ow.									
Shortnose Sturgeon	Shortnose sturge likelihood of enc	eon typically st ounter is very l	ay in spawning ow and the risk	rivers year-ro to this specie	und and there are r s from the routes o	no records of f effects ider	hopper drec tified is low,	dging take of th as described i	nis species in n the 2020 S	these project a ARBO.	areas. Therefo	re, the



Step 4. Risk Management: Monitor and Control



. USACE SARBO Monitoring:

- Districts oversee project implementation and monitor dredging
- SAD monitors all SARBO projects
- Operations and Dredging Endangered Species System (ODESS)
 - Public take tracking website for lethal take by hopper dredging. https://dqm.usace.army.mil/odess/#/dash board
 - QA/QC of data underway
 - Relocation trawling records being added
 - Updated website coming soon







Environmental Benefits

- Marsh Creation Thin Layer Placement
- Bird habitat Upland Islands
- Turtle Nesting Beaches Renourishments
- Reef Creation Rock
- Oyster Habitat











Additional Ongoing Research

- USACE water quality changes around dredging
- USACE hydrodynamic modeling
- Regional Sediment Management
- BOEM sea turtle and Giant Manta behavior studies and relocation trawling efficacy study





Continued Collaboration Sea Turtles- Jekyll Island



Jekyll Island first turtle tagged in 1958
 & started routinely tagging turtles in 1972

- Georgia Sea Turtle Center opened in 2007 offering rehabilitation, research, and education!
- 2022- Record nesting season!
 235 loggerhead nests & ~6,109 hatchlings emerged!











FY22 MAINTENANCE DREDGING BRUNSWICK HARBOR ENTRANCE CHANNEL CEDAR HAMMOCK RANGE

Mary Richards Biologist Savannah District

FY22 Maintenance Dredging

Brunswick Harbor Entrance Channel Cedar Hammock Range

Great Lakes Dredge & Dock Company Padre Island – 18 Jan 2022 to 19 Feb 2022 Dodge Island – 18 Jan 2022 to 20 Feb 2022 Ellis Island – 21 Mar 2022 to 24 Mar 2022

ODMDS

BED LEVELER OPERATIONS

25 Jan 2022 – 25 Feb 2022 01 Apr 2022 – 08 Apr 2022 Total ~ 367 hours

21 20 19 18

K OF DAW

Not Approved

42 .43

-45

Approved



Brunswick Harbor Entrance Channel

Hopper Dredge M/C Pair

09 February 2022

PSOs aboard hopper dredge sight NARW ~500 yards from vessel

FY22 Brunswick Harbor O&M Dredging



-45





BYCATCH MONITORING DATA

Summer Wright Biologist Savannah District



BYCATCH MONITORING



- What is relocation trawling?
 - Relocation trawling is a method of net fishing conducted before or during dredging operations to remove ESA-listed species in danger of being taken by a working hopper dredge.

• Why do we care about relocation trawling?

- Ensures safety of species while providing detailed health assessments of each one caught.
- Effectively reduces take of species.
- Provides idea of how many species are in channel.
- Records bycatch in the channel for monitoring.
- Useful in determining likelihood of encountering shark and other species.
- Why do we care about sharks?
 - Sharks bycatch not covered under SARBO-does not affect SARBO Risk Assessment.
 - However, used in Brunswick Risk Assessment for EFH!



2018 BRUNSWICK RELOCATION TRAWLING AND BYCATCH DATA



Background

- Relocation trawling efforts were conducted in the Brunswick Harbor entrance channel from JAN 31 to MAR 15, 2018.
- 43 trawl points over 43 days.
- Bycatch data were recorded.
- Species reported without quantity (bycatch):
 - Jellyfish, forage fish, trout, catfish, crabs, stingrays, sharks, dogfish, croaker, skates, and black drum.
- Species reported with quantity (relocated ESA-listed species):
 - Atlantic and Shortnose Sturgeon, Kemp's Ridley, Green, Loggerhead, and leatherback sea turtles.
- Beginning of long-term monitoring.



2018 RELOCATION TRAWLING OF STURGEON





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2018 RELOCATION TRAWLING OF SEA TURTLES



Legend Sea Turtles St Simons Island ast Beach Convention & Visitors Bureau 10 11 11 Priftwood Beach Jekvll Island Google Earth Waves Water Park Data SIO, NOAA, U.S. Navy, NGA, GEBCO 4 mi mage © 2022 TerraMetrics

Red: Loggerhead (3)

Green: Kemp's Ridley

Pink: Leatherback (1)

Blue: Green (1)

(14)



Atlantic Sturgeon and Water Temperature

Disclaimer: No trends can be identified with the amount of data presented so far





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Sea Turtles and Water Temperature







2022 BRUNSWICK HARBOR HOPPER DREDGE BYCATCH





From JAN 18 to FEB 19, 2022, two Red Drum, blue crab jellyfish, and stingrays were observed in the bycatch. No sharks were observed in the bycatch during this period.



2018 RELOCATION TRAWLING BYCATCH-SHARKS







GA DNR LONGLINE SURVEY DATA



- GA DNR provided USACE with longline survey data (2006 to 2019).
- Depths of samples between 13 to 65 feet.
- Four shark species found near GA coast: Atlantic Sharpnose, Blacknose, Blacktip, and Bonnethead.
- Important data for evaluating likelihood of encountering sharks in Brunswick Harbor dredging channel.



GA DNR LONGLINE SURVEY SAMPLING POINTS







GA DNR LONGLINE SURVEY SHARK DATA-ATLANTIC SHARPNOSE





Summer (June 22- Sept 21) Autumn (Sept 22-Dec 21) Winter (Dec 22-Mar 19)

Spring (Mar 20-June 21)



GA DNR LONGLINE SURVEY SHARK DATA-BLACKNOSE





Summer (June 22- Sept 21) Autumn (Sept 22-Dec 21) Winter (Dec 22-Mar 19) Spring (Mar 20-June 21)



GA DNR LONGLINE SURVEY SHARK DATA-BLACKTIP





Autumn (Sept 22-Dec 21) Winter (Dec 22-Mar 19)

Spring (Mar 20-June 21)



GA DNR LONGLINE SURVEY SHARK DATA-BONNETHEAD



14



Sept 21) Autumn (Sept 22-Dec 21) Winter (Dec 22-Mar 19)

Summer (June 22-

Spring (Mar 20-June 21)



- Intro to long-term bycatch monitoring for EFH.
- In-depth data analysis will come in the future with more data.



