

*DRAFT*

*DRAFT*

*DRAFT*

**USACE Hopper Dredging Interactions with Sea Turtles,  
Shortnose and Atlantic Sturgeon:  
Fiscal Year 12 Annual Summary Report  
For the South Atlantic Region  
Of the USACE South Atlantic Division**

**PREPARED BY:**

**Dena D. Dickerson  
Craig. T. Theriot**

**Sensitive Species Navigation Support Team  
Wetlands and Coastal Ecology Branch  
Environmental Laboratory  
USACE Engineer Research & Development Center  
Vicksburg, MS**

**FINAL REPORT**



## **BACKGROUND**

This report summarizes data collected for dredging interactions with sea turtles during USACE hopper dredging operations throughout the South Atlantic Region in Fiscal Year (FY) 2012 (1 October 2011 through 30 September 2012). Data were collected by contracted observer companies as part of the Endangered Species Observer Program administered by the USACE Districts Jacksonville, Savannah, Charleston, and Wilmington as specified and mandated by the South Atlantic Regional Biological Opinion (SARBO) (issued by the Southeast Region National Marine Fisheries Service on 25 November 1991 and revised 25 August 1995 (Revision 1) and 25 September 1997 (Revision 2) and the USACE SARBO Management Protocol (USMP) (issued by the USACE South Atlantic Division in FY 2003). These data are for hopper (trailing-suction style) dredging projects only and do not include non-hopper (i.e. clamshell bucket, cutterhead) dredging projects. Non-hopper dredges are not monitored for sea turtle entrainments since the mechanical operation of these dredges has been identified as having minimal or no risk to sea turtles (SARBO). Hopper dredges were used instead of non-hopper dredges for the projects presented in this report due to factors related to crew/vessel safety, sea and weather conditions, project configurations, and productivity costs. This report provides a regional summary of hopper dredging-related incidental takes and trawling-related captures/relocations of sea turtles within the south Atlantic region of the USACE South Atlantic Division.

## **METHODS AND DATA SOURCES**

Appendix A provides a map designating the 12 locations for the 13 USACE hopper dredging projects in the South Atlantic during FY 2012 by USACE District and geographic subregion. The USACE Districts Jacksonville, Savannah, Charleston, and Wilmington were responsible for implementing these hopper dredging projects and for complying with the environmental requirements designated by the SARBO and the USMP (i.e., use of deflectors, 100% observer coverage, relocation trawling). Due to potential differences in habitat use by sea turtles and differences in dredging environments, the South Atlantic region was divided into 2 subregions (South Atlantic (SA) and Central Atlantic (CA) for some data presented in this report. The dividing boundary for these two subregions is the coastal border between Georgia and South Carolina. These subregions are consistent with those presented in Dickerson et al. 2007 to allow continuity in data comparisons.

Data summarized in this report were compiled from individual project correspondence updates throughout the project as well as any of the Endangered Species Observer Reports submitted by each of the contracted observer companies. Reports are electronically linked within the reference section of this document. These report, along with individual data profiles for each documented sea turtle incidental take, protocols for mitigation efforts and data collection, and links to the SARBO and USMP are archived for reference on the USACE Sea Turtle Data Warehouse website: (<http://el.erdc.usace.army.mil/seaturtles/>).

## **RESULTS**

During FY 2012, 13 hopper dredging projects (11 civil works (CW) channel/harbor maintenance, 1 (CW) erosion protection regulatory and 1 (R) beach restoration project) were conducted along the South Atlantic. A total of 18 sea turtles were incidentally taken during hopper dredging projects during FY2012 for the South Atlantic Region. Non capture sweep trawling was performed during 2 CW projects (1 channel/harbor maintenance and 1 beach renourishment) and both Navy projects in Mayport that used its own Biological Opinion and turtle take numbers.

## REFERENCES AND RESOURCES

USACE Sea Turtle Database Warehouse, (<http://el.erdc.usace.army.mil/seaturtles/>).

Dickerson, D., C. Theriot, M. Wolters, C. Slay, T. Bargo, W. Parks. 2007. “[Effectiveness of relocation trawling during hopper dredging for reducing incidental take of sea turtles](#),” *In: Proceedings of the World Dredging Congress XVIII, USACE ERDC Research Initiatives*. Central Dredging Association, 27 May-1 June 2007, Lake Buena Vista, Florida.

Dickerson, D. D., M. S. Wolters, C. T. Theriot, C. Slay. 2005. “[Dredging impacts on sea turtles in the Southeastern USA: A historical review of protection](#),” *In: Proceedings of the World Dredging Conference XVII, Dredging in a Sensitive Environment*. Central Dredging Association, 27 September-1 October 2004, Hamburg, Germany.

[South Atlantic Regional Biological Opinion \(SARBO\). 1991.](#)

[South Atlantic Regional Biological Opinion \(SARBO\). 1995 revision.](#)

[South Atlantic Regional Biological Opinion \(SARBO\). 1997 revision.](#)

[USACE South Atlantic SARBO Management Protocol.](#)

**FY 2012 USACE District Annual Reports for Sea Turtle Monitoring during Maintenance Dredging/Beach Nourishment Projects along the South Atlantic US Coast:**  
(Archived at <http://el.erdc.usace.army.mil/seaturtles/>)

USACE Savannah District, FY 2012. [Annual Sea Turtle Monitoring Report](#)

**FY 2012 Project Sea Turtle/Dredging Data Submitted by Endangered Species Observer Companies and USACE Districts** (Archived at <http://el.erdc.usace.army.mil/seaturtles/>)

[USACE Jacksonville District \(FY 2012\)](#)

[Duval County SPP](#) (Coastwise Consulting, Inc.)

[Palm Beach Harbor O&M](#) (Coastwise Consulting, Inc.)

[Kings Bay Entrance Channel](#), (REMSA, Inc.)

**DRAFT**

**DRAFT**

**DRAFT**

Savannah District

Brunswick Harbor Bar Channel, (Coastwise Consulting, Inc.)

Savannah Harbor Bar Channel, (Coastwise Consulting, Inc.)

Charleston District

NONE

Wilmington Harbor

Nags Head Beach Nourishment, (Coastwise Consulting, Inc.)

Wilmington Harbor Ocean Bar, (Coastwise Consulting, Inc.)

NOTE: (Mayport Harbor Channel projects/efforts

**APPENDICES**

Appendix A.....Map of FY12 South Atlantic Region Hopper Dredging Projects

Appendix B-1.....Incidental Take Limits Designated by the South Atlantic Region Biological Opinion

Appendix B-2..... Documented Summary of Incidental Takes, Relocated Turtles, and Shortnose Sturgeon

Appendix C.....Dredging Project Summary Data

Appendix D.....Distribution of Sea Turtle Incidental Takes by Species

Appendix E.....Hopper Dredge/Capture Trawler Related Sea Turtle Incidental Take Summary

Appendix F.....Capture Relocation Trawling Summary Data

Appendix G.....Dredging Project Summary Data by Subregion and USACE District

Appendix H.....Capture Relocation Trawling Summary Data by Subregion and USACE District

Appendix I.....Non-Capture Sweep Trawling Summary Data by District

Appendix J.....CPUE Comparisons for Sea Turtle Dredge Takes and Capture Trawl Relocations

Appendix K.....Distribution of Dredged Material Quantities by Geographic Subregion and USACE Districts

Appendix L.....Distribution of Sea Turtle Takes by Month

Appendix M.....Distribution of Dredge Days by Month

Appendix N.....Non-Sea Turtle Species Incidental Takes or Noted Occurrences

***DRAFT***

***DRAFT***

***DRAFT***

**APPENDIX A**  
**FY12 South Atlantic Region Hopper Dredging Projects**

**APPENDIX B-1**  
**Incidental Take Limits Designated by the**  
**South Atlantic Region Biological Opinion**

<i>FY12 Incidental Take Limits as stated in the South Atlantic Biological Opinion (1997) for Hopper Dredges</i>				
<b>Loggerhead</b> <i>(Caretta caretta)</i>	<b>Green</b> <i>(Chelonia mydas)</i>	<b>Kemp's ridley</b> <i>(Lepidochelys kempii)</i>	<b>Hawksbill</b> <i>(Eretmochelys imbricata)</i>	<b>Shortnose Sturgeon</b> <i>(Acipenser brevirostrum)</i>
<b>35</b>	<b>7</b>	<b>7</b>	<b>2</b>	<b>5</b>

**APPENDIX B-2**  
**FY 2012 Documented Summary of Incidental Takes, Relocated Turtles, and**  
**Shortnose Sturgeon**

<i>FY12 Incidental Takes for the South Atlantic Region</i>				
<b>Loggerhead</b> <i>(Caretta caretta)</i>	<b>Green</b> <i>(Chelonia mydas)</i>	<b>Kemp's ridley</b> <i>(Lepidochelys kempii)</i>	<b>Unknown</b>	<b>Shortnose Sturgeon</b> <i>(Acipenser brevirostrum)</i>
<b>9</b>	<b>3</b>	<b>6</b>	<b>0</b>	<b>0</b>

<i>FY12 Relocated Turtles and Sturgeon for South Atlantic Region</i> <i>Non relocated- Non Capture Sweep Trawling Performed</i>			
<b>Sea Turtle Relocations</b>	<b>Sea Turtle (any species) Relocation Takes (injured or killed)</b>	<b>Shortnose Sturgeon Relocations</b>	<b>Shortnose Sturgeon Relocation Takes (injured or killed)</b>
<b>8</b>	<b>0</b>	<b>0</b>	<b>0</b>





DRAFT

DRAFT

DRAFT

**APPENDIX E**  
**Hopper Dredge/Non-Capture Trawler-related Incidental Take Summary**  
**(FY12 South Atlantic Region Hopper Dredging)**

District	Sub-region	Project	Species	Take Date	Dredge Load #	Time Recovered	Lat	Long	Water Temp*	SI used?	Trawling used?
Cc = Loggerhead ( <i>Caretta caretta</i> ); Cm = Green turtle ( <i>Chelonia mydas</i> ); Lk = Kemp's ridley ( <i>Lepidochelys kempi</i> ); Unk = Unknown SI used? = Silent Inspector in use during dredging project?											
* Method and location in water column more than likely surface temp. + Non-capture trawling performed in Duval County and Kings Bay after turtles were taken and not performed during. Observer recorded lat/long of turtle takes are either the beginning, middle, or end of the load. Usually the beginning of the load (Chris Slay from Coastwise Consulting).											



**DRAFT**

**DRAFT**

**DRAFT**

**APPENDIX G**

**Dredging Project Summary Data by Subregion and USACE District  
(FY12 South Atlantic Region Hopper Dredging)**

Dredging Data Summary	Subregion		
	South Atlantic	Central Atlantic	TOTAL
Total Dredge Projects			
Total Turtle Takes			
Total Dredge Days			
Total Turtle Takes/Days Dredged			
Total Cubic Yards			
Total Cubic Meters			
Total Turtle Takes/1000-y <sup>3</sup>			
Total Turtle Takes/1000-m <sup>3</sup>			

Dredging Summary Data	USACE District				
	Jacksonville	Savannah	Charleston	Wilmington	Total
Total Dredge Projects					
Total Turtle Takes					
Total Dredge Days					
Total Turtle Takes/Days Dredged					
Total Cubic Yards					
Total Cubic Meters					
Total Turtle Takes/1000-y <sup>3</sup>					
Total Turtle Takes/1000-m <sup>3</sup>					

**DRAFT**

**DRAFT**

**DRAFT**

**APPENDIX H**

**Relocation Trawling Summary Data by Subregion and USACE District  
(FY12 South Atlantic Region Hopper Dredging)**

Relocation Trawling Summary Data	Subregion		
	South Atlantic	Central Atlantic	TOTAL
Total Trawl Projects			
Total Turtles Relocated			
Total Trawl Days			
Total Tows			
Total Turtles Trawled/Total Days			
Total Turtles Trawled/Total Tows			
Average Tows per day			

N/A = No relocation trawling performed.

Relocation Trawling Summary Data	USACE District				
	Jacksonville	Savannah	Charleston	Wilmington	Total
Total Trawl Projects					
Total Turtles Relocated					
Total Trawl Days					
Total Tows					
Total Turtles Trawled/Total Days					
Total Turtles Trawled/Total Tows					
Average Tows per day					

N/A = No relocation trawling performed.

**APPENDIX I**

**Non-Capture Sweep Trawling Summary Data by District  
(FY12 South Atlantic Region Hopper Dredging)**

Relocation Trawling Summary Data	USACE District				
	Jacksonville	Savannah	Charleston	Wilmington	Total
Total Sweep Projects					
Total Sweep Days					
Total Tows					
Total Sweeps					

**APPENDIX J**

***DRAFT***

***DRAFT***

***DRAFT***

**Catch per Unit Effort Comparisons for Sea Turtle Dredge Takes and  
Trawl Relocations by Subregion and USACE District  
(FY12 South Atlantic Region Hopper Dredging)**

***DRAFT***

***DRAFT***

***DRAFT***

**APPENDIX K**

**Distribution of Dredged Material Quantities (Cubic Yards) by Geographic Subregion and  
USACE Districts**

(FY12 South Atlantic Region Hopper Dredging)





**DRAFT**

**DRAFT**  
**APPENDIX N**

**DRAFT**

**Non-Sea Turtle Species Incidental Takes or Noted Occurrences**  
**(FY12 South Atlantic Region Hopper Dredging)**

<b>Species</b>	<b>Project</b>	<b>Observations/Remarks</b>
Sturgeon		
Whales/Manatees		
Dolphin		
Shark		
Horseshoe Crab		
Note:		