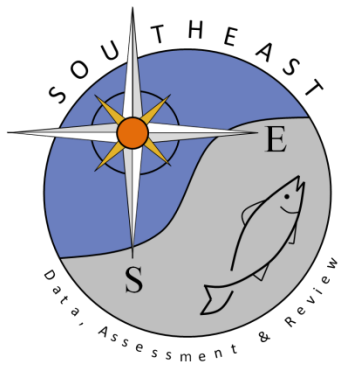


Hammerhead Shark Catches from Bottom Longline and Pelagic Longline Surveys conducted by
Mississippi Laboratories

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Hammerhead Shark Catches from Bottom Longline and Pelagic Longline Surveys conducted by Mississippi Laboratories

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The Southeast Fisheries Science Center (SEFSC) Mississippi Laboratories (MSLABS) has conducted standardized bottom longline (BLL) surveys in the Gulf of Mexico (GOM), Caribbean, and Western North Atlantic Ocean (Atlantic) since 1995. The objective of these surveys is to provide fisheries independent data for stock assessment purposes for as many species as possible. The primary survey is conducted annually in U.S. waters of the GOM and/or the Atlantic, and provide an important source of fisheries independent information on sharks, snappers and groupers. The secondary and experimental surveys were done opportunistically (both temporally and spatially) to answer specific research questions or to test new gear or methodology. The evolution of these surveys has been the subject of many documents [e.g., Ingram et al. 2005 (LCS05/06-DW-27)] and was not described again in this document.

For this document, all bottom longline and pelagic longline stations, along with the catches of great hammerhead (*Sphyrna mokarran*) and scalloped hammerhead (*Sphyrna lewini*) were extracted from the Mississippi Laboratories Oracle Database. Overall, 4,902 bottom longline stations were sampled during the annual Bottom Longline Survey from 1995 through 2020 (Table 1). Scalloped hammerhead were more prevalent in the sampling than great hammerhead, with 489 and 133 individuals, respectively, being captured. The overall distribution of great hammerhead and scalloped hammerhead is shown in Figure 1A and Figure 1B. The secondary and experimental cruises contributed another 827 stations spread throughout the Atlantic Ocean off southeastern United States, the GOM including stations off Mexico, and the Caribbean. The total numbers of great hammerhead and scalloped hammerhead from the secondary and experimental surveys are in Table 2, with the distribution of catches shown in Figure 2. The pelagic longline survey accounted for an additional 194 stations. In contrast to the bottom longline surveys, the pelagic longline encountered more great hammerhead (33) than scalloped hammerhead (1) (Table 3). The distribution of the great hammerhead and scalloped hammerhead from the pelagic survey is shown in Figure 3.

Literature Cited

Ingram, W., T. Henwood, M. Grace, L. Jones, W. Driggers, and K. Mitchell. 2005. Catch rates, distribution and size composition of large coastal sharks collected during NOAA Fisheries Bottom Longline Surveys from the U.S. Gulf of Mexico and U.S. Atlantic Ocean. LCS05/06-DW-27.

Table 1. Breakdown of the number of stations sampled off the eastern coast of the United States and the northern Gulf of Mexico during the NMFS Mississippi Laboratories Bottom Longline Survey, with the total numbers of great hammerhead and scalloped hammerhead caught.

Year	Atlantic			Gulf of Mexico		
	Stations	Great Hammerhead	Scalloped Hammerhead	Stations	Great Hammerhead	Scalloped Hammerhead
1995	45	4	3	82	5	8
1996	57	5	1	84	1	6
1997	65	1	0	169	5	15
1999				161	1	15
2000	105	2	2	137	0	20
2001				277	6	34
2002	184	0	24	212	3	25
2003				280	8	36
2004	40	0	0	249	6	17
2005	27	0	1	93	1	9
2006	58	0	12	150	3	8
2007				156	2	15
2008	37	2	4	108	1	6
2009	32	0	11	185	5	21
2010	26	0	9	151	8	16
2011	50	0	8	128	0	6
2012	41	1	4	142	6	7
2013	36	0	4	169	3	9
2014	46	1	4	120	4	9
2015	44	2	10	161	4	20
2016	48	1	2	154	6	17
2017	43	4	6	149	6	21
2018	43	3	5	152	6	18
2019	51	8	7	118	8	14
2020				37	1	0
Total	1078	34	117	3824	99	372

Table 2. Number of stations sampled, with the total numbers of great hammerhead and scalloped hammerhead caught, during experimental and secondary bottom longline cruises conducted by the NMFS Mississippi Laboratories.

Year	Atlantic			Caribbean			Northern Gulf of Mexico			Mexico		
	Stations	Great Hammerhead	Scalloped Hammerhead	Stations	Great Hammerhead	Scalloped Hammerhead	Stations	Great Hammerhead	Scalloped Hammerhead	Stations	Great Hammerhead	Scalloped Hammerhead
1997										25	0	0
1998				25	1	9				110	0	3
1999	29	0	4				60	0	15			
2000							99	0	28			
2001										38	0	0
2002										30	0	0
2004							6	0	1			
2009				55	0	3						
2011												
2015							131	0	21			
2016							56	1	10			
2017							126	2	99			
2018	1	0	0				36	2	14			
Total	30	0	4	80	1	12	514	5	188	203	0	3

Table 3. Number of stations sampled, with the total numbers of great hammerhead and scalloped hammerhead caught, during pelagic longline cruises conducted by the NMFS Mississippi Laboratories.

Year	Atlantic			Caribbean			Gulf of Mexico		
	Stations	Great Hammerhead	Scalloped Hammerhead	Stations	Great Hammerhead	Scalloped Hammerhead	Stations	Great Hammerhead	Scalloped Hammerhead
1996	5	0	0				5	0	0
1998				74	1	0			
2004	13	0	0						
2005							43	6	0
2006	54	26	1						
Total	72	26	1	74	1	0	48	6	0

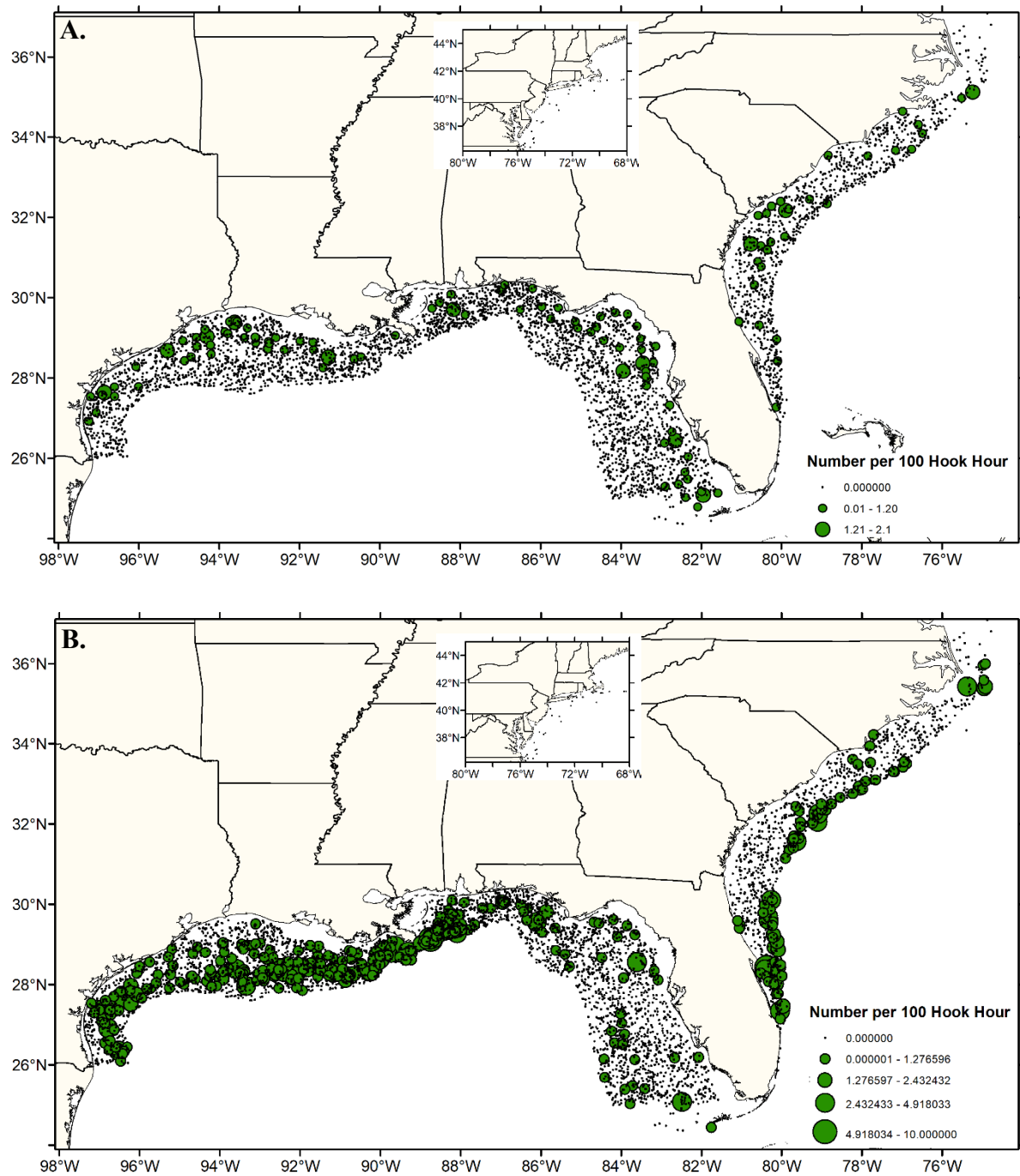


Figure 1. Distribution of stations sampled during the annual NMFS Mississippi Laboratories Bottom Longline Survey with the catch rates of **A.** great hammerhead and **B.** scalloped hammerhead. The inlaid map represents an area north of the primary survey area that had been sampled sporadically when time allowed (note that there was no recorded catch of either species past North Carolina).

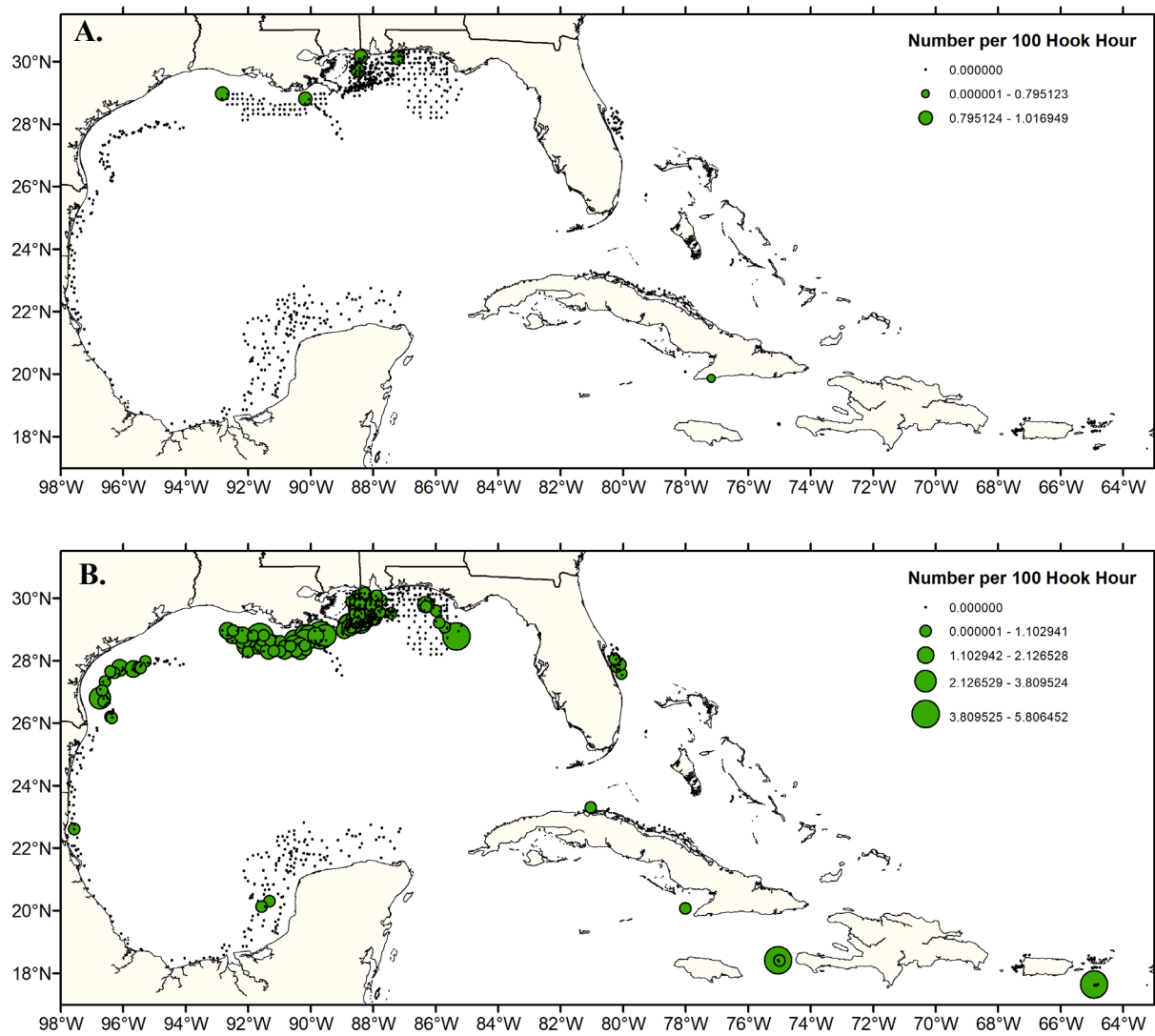


Figure 2. Distribution of stations sampled during experimental and secondary bottom longline surveys conducted by NMFS Mississippi Laboratories with the catch rates of **A.** great hammerhead and **B.** scalloped hammerhead.

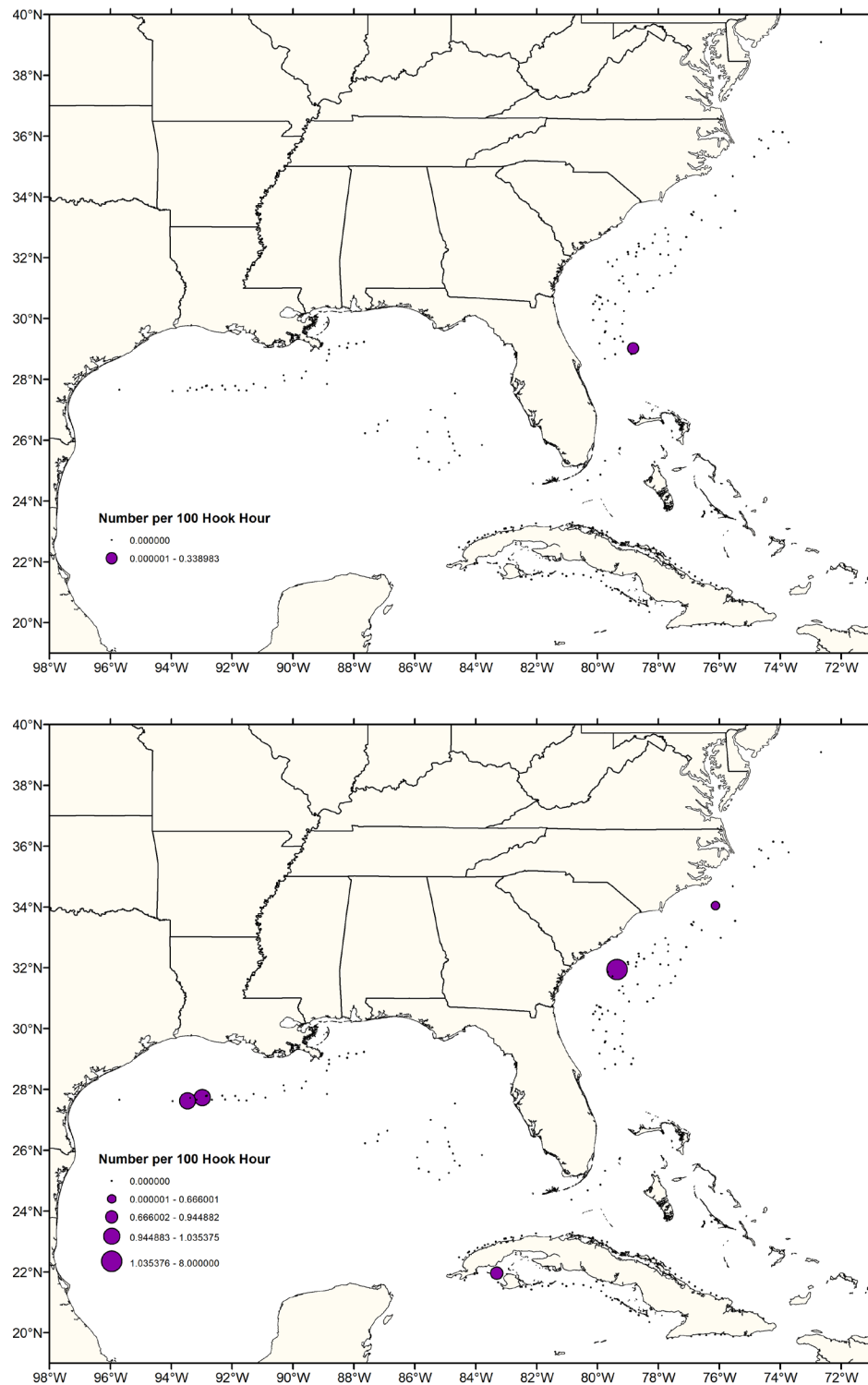


Figure 3. Distribution of stations sampled during experimental and secondary bottom longline surveys conducted by NMFS Mississippi Laboratories with the catch rates of **A.** great hammerhead and **B.** scalloped hammerhead.