

Common bottlenose dolphin (*Tursiops truncatus*) strandings in Pamlico and Albemarle Sounds and adjacent rivers and tributaries, North Carolina, 2010-2017

Victoria G. Thayer^{1,2}, Jill M. Sullivan^{1,2}, and Keith A. Rittmaster³

¹North Carolina Division of Marine Fisheries; ²North Carolina State University, Center for Marine Sciences and Technology; ³North Carolina Maritime Museum



Figure 1. VGT 334, FB 400, Neuse River, 271 cm male, April 5, 2015

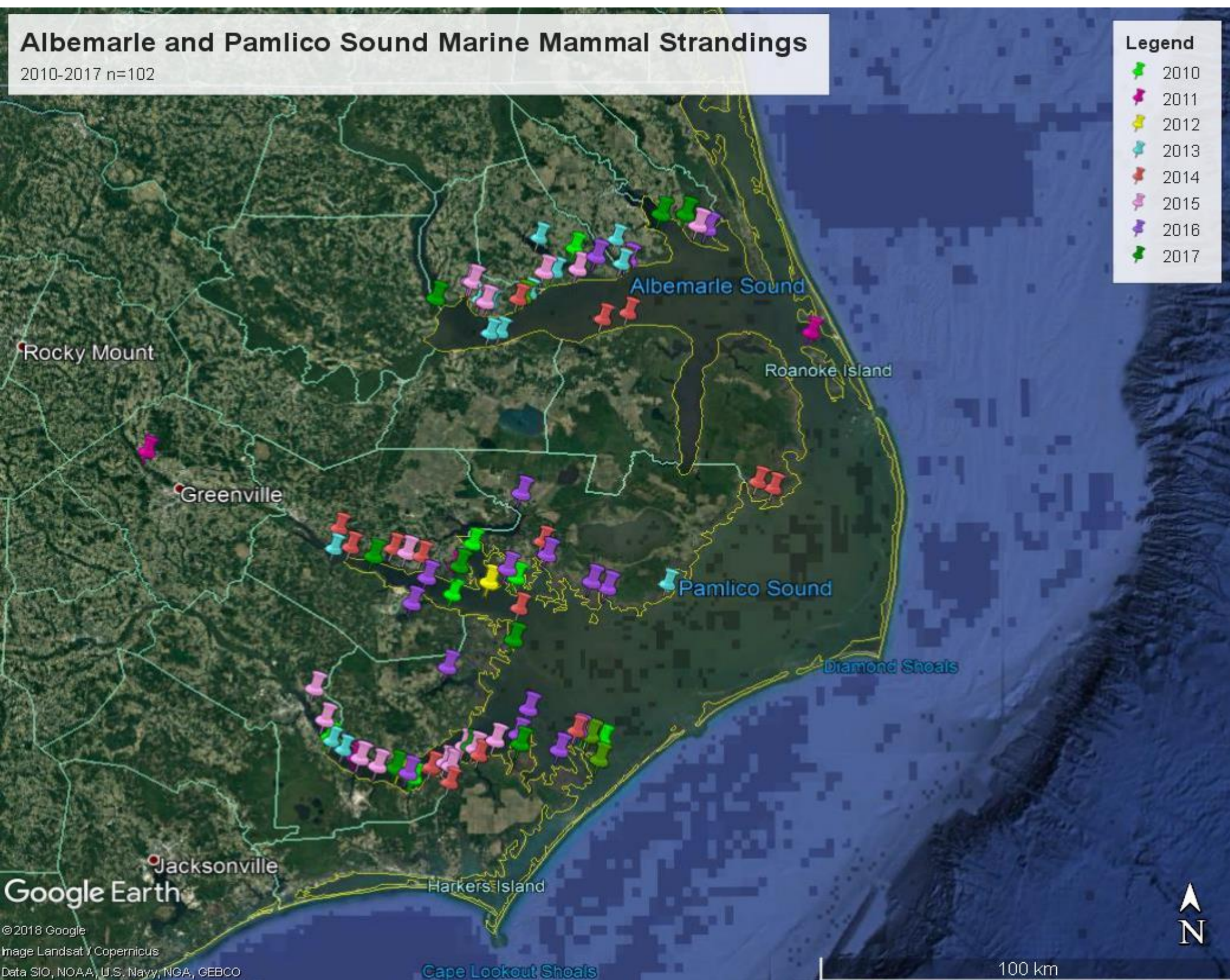


Figure 3. Map of strandings 2010-2017



Figure 7. NDB 001, Neuse River, 237 cm female, August 2, 2010

ABSTRACT

We examined common bottlenose dolphin (*Tursiops truncatus*) strandings in the waters of Albemarle and Pamlico Sounds and adjacent rivers and tributaries from 2010 through 2017. One hundred and two bottlenose dolphins stranded in twelve counties during the eight-year period. Strandings occurred most frequently during summer months (June-August, n=40, 39%), and spring (March-May, n=37, 36%), and less frequently in winter (December-February, n=13, 13%) and fall (September-November, n=12, 12%). Sixty-six (65%) of the stranded dolphins were male, 26 (25%) were females, and 10 (10%) were of undetermined sex. One dolphin (1%) was alive (Code 1), four (4%) of the dolphins were fresh dead (Code 2), most of the stranded dolphins were moderately decomposed (Code 3, n=78, 76%), 18 animals were in an advanced state of decomposition (Code 4, 18%), and one carcass (1%) was skeletal remains (Code 5). Evidence of human interaction could not be determined in 82 (80%) of the stranded animals. Of the 18 animals that could be evaluated for human interaction, eleven dolphins showed evidence of fishing interaction, and seven showed no evidence of interaction. Thirteen animals (13%) were calves (<184 cm length), 22 (22%) were older calves (184-211 cm), 15 (15%) were young adults (212-240 cm), 48 (48%) of the animals were adults (>240 cm), and four animals' lengths could not be collected. Continued, expanded outreach in these remote areas may result in rapid reporting of stranded animals and allow us to collect higher quality data before carcasses decompose.

Results

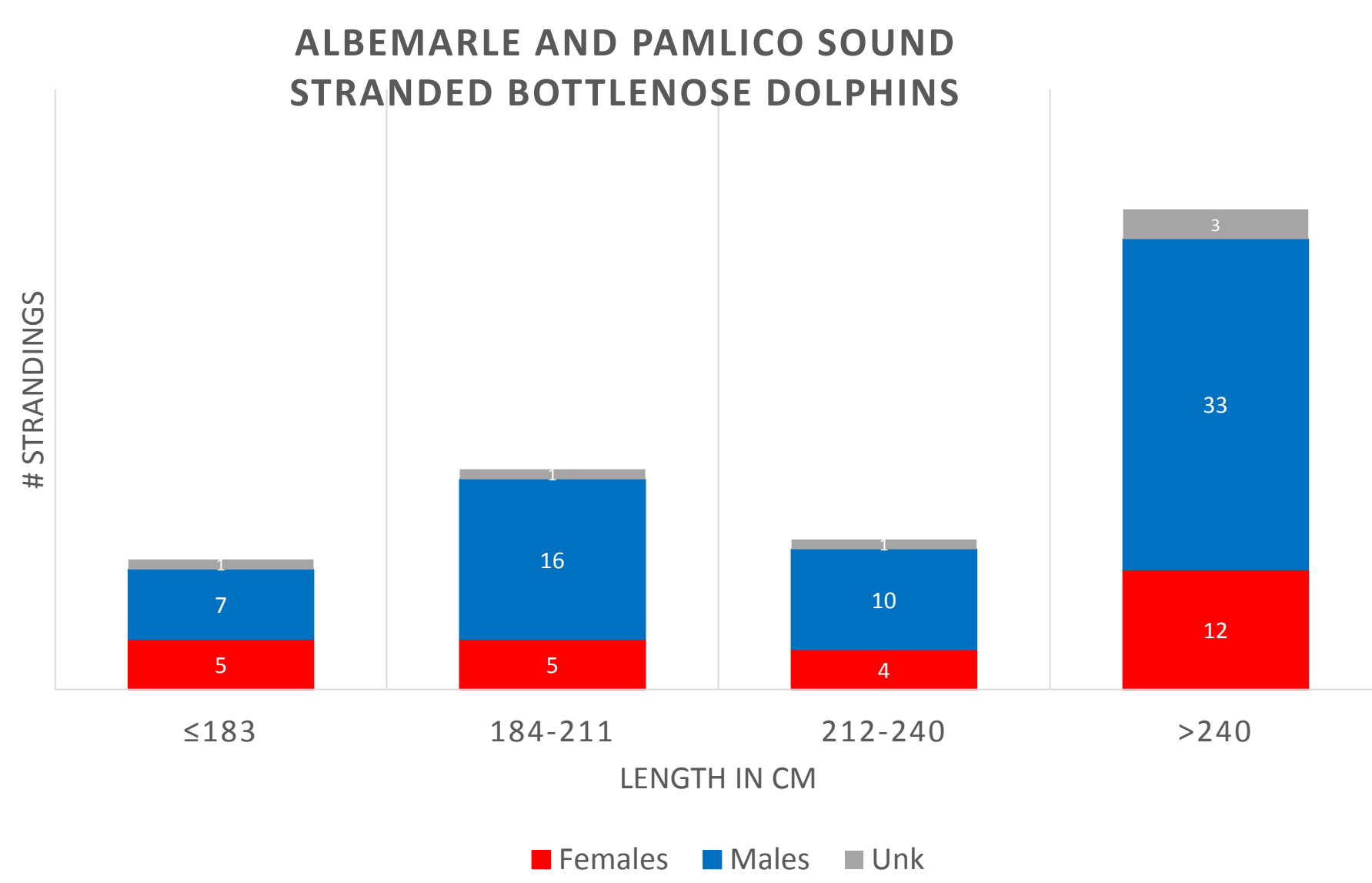


Figure 4. Bottlenose dolphin strandings by length and sex

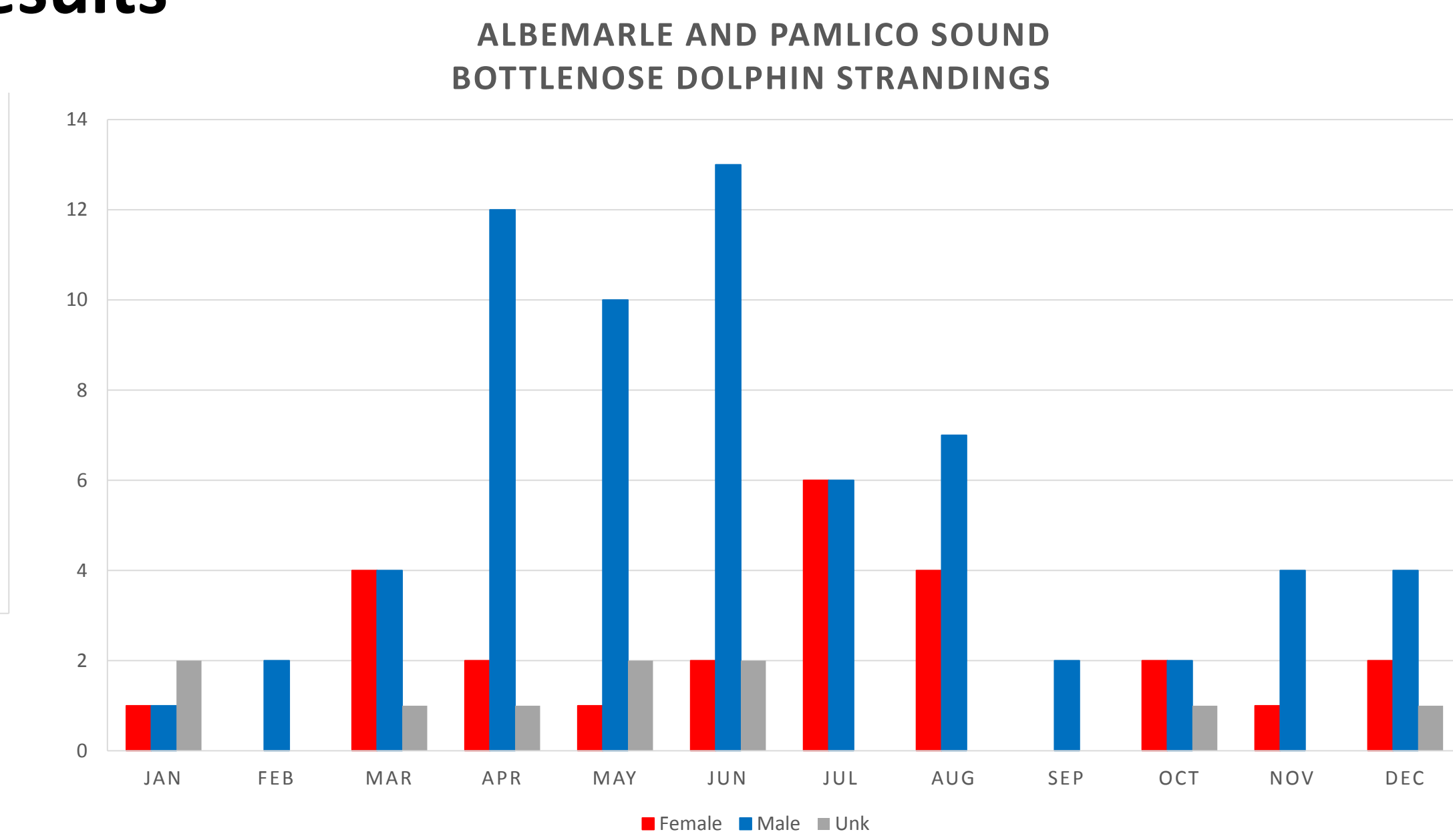


Figure 5. Bottlenose dolphin strandings by month and sex



Figure 8. Lesions on dorsal fin of VGT 334 (FB 400)

- 102 stranded bottlenose dolphins reported in Albemarle and Pamlico Sounds 2010 to 2017
- Two animals known from photo-ID: VGT 334 (FB 400) (Figures 1, 2, 8) sighted since 1998, VGT 284 known since 2006 (K. Urian, Mid-Atlantic Bottlenose Catalog)
- Bottlenose dolphins stranded in 12 counties, every month of the year (Figures 3, 5)
- 66 males (65%), 26 females (25%), 10 undetermined sex (10%) 35% of strandings were males > 240 cm (Figure 4)
- Most animals (n=48, 46%) were > 240 cm, 15% (n=15) were young adults (212-240 cm), 22 % (n=22) were older calves (183-211 cm), and 13% (n=13) were calves (Figure 4)
- 11 animals showed evidence of fishing interaction. Seven showed no evidence of human interaction, in 84 animals (80%), evidence of human interaction could not be determined (Figure 6, 9)
- Three animals floated away before we reached them and two animals incidentally caught in FRG research net and not examined (one live, one dead)
- Eight of the 11 dolphins that showed evidence of fishing interaction were males, one was female, and 2 were unknown sex (Figures 4, 5)
- Six of the FI:Y animals had line impressions, two had line marks and gear attached, one had line marks, mutilation, and gear attached, and two were inadvertently released (one live, one dead) by a FRG researcher (Figure 9)
- Of the 102 animals, nine were tested for cetacean Morbillivirus and eight were negative. VGT 312 was positive
- Two animals were tested for *Brucella*, VGT 325 was positive, one was negative

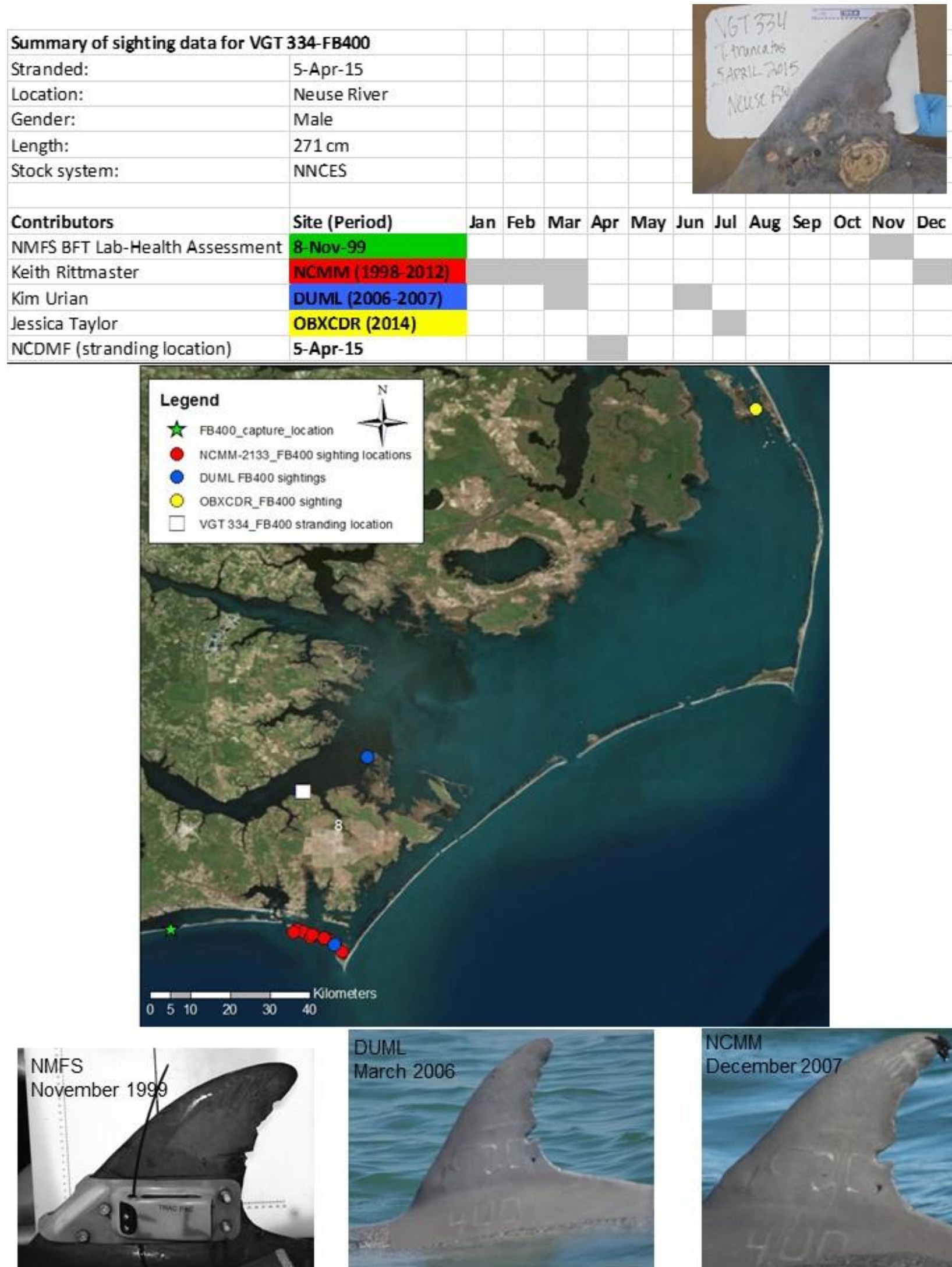


Figure 2. FB 400 Sighting history from K. Urian, Mid-Atlantic Bottlenose Dolphin Catalog

Methods

- Respond to all reported strandings in Albemarle and Pamlico Sound and conduct complete necropsies when animals are Codes 1-3
- Collect morphometrics, photos, conduct necropsies, evaluate for human interaction^{1,2}
- Record location, take photos for individual ID, genetics, life history, histopathology, biotoxins when possible
- Arrange for transport by NC Division of Marine Fisheries Marine Patrol officers when boat access required
- Archive and disseminate photos and samples

We would like to acknowledge the NC Stranding Partners and all the volunteers who continue to contribute to this work. We especially thank the NC Division of Marine Fisheries Marine Patrol and the NC DMF Observer Program, and the Pine Knoll Shores Aquarium. K. Urian, provided the figure for FB 400. We also thank W. McLellan, D. A. Pabst, J. K. Clark, P. Doshkov, T. Curlings, C. Brickhouse, D. Bridges, NC Students, Duke Students. We could not have performed this work if not for the help of the NC Maritime Museum, Cape Lookout National Seashore, the NC DMF Marine Patrol, Hammocks Beach State Park, Camp Lejeune Marine Corps Base, and all the local law enforcement officials. We are grateful for the support of J. H. Prescott Marine Mammal Assistance Grants in 2009-2014, and 2016-2017.

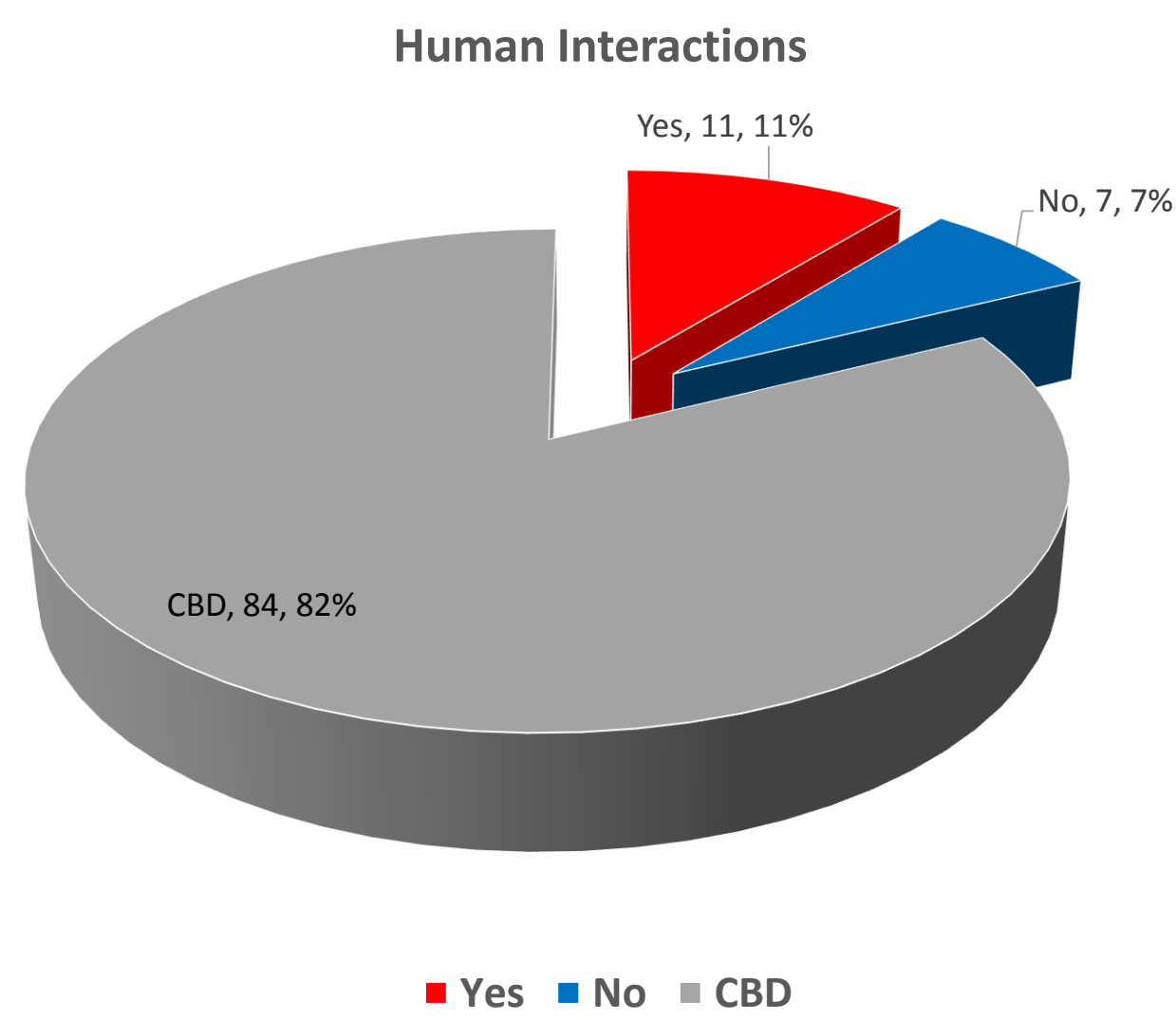


Figure 6. Percentage of Albemarle and Pamlico Sound bottlenose dolphin human interactions

Acknowledgments

References

¹Byrd, B., A.A. Hohn, G. N. Lovewell, K.M. Altman, S.G. Barco, A. Friedlaender, C. A. Harms, W.A. McLellan, K.T. Moore, P.E. Rosel, V.G. Thayer: Strandings as indicators of marine mammal biodiversity and human interactions off the coast of North Carolina. 2014. Fish. Bull. 112:1-23. ²Read, A.J., K.T. Murray: 2000. Gross Evidence of Human-Induced Mortality in Small Cetaceans. NOAA Technical Memorandum NMFS-OPR-15.,