

MARINE SENSORY & NEUROBIOLOGY LAB

University of South Carolina Beaufort

NOVEMBER, 2022



NMFS Permit #24033
Photographer: A. Marian

Group of five dolphins traveling together in Chechessee River.



Caroline Tribble (middle) teaching Patrick (right) and Cassandra Beato (left) all about our dolphin surveys.



Caroline Tribble taking pictures on a dolphin survey in the May River.

Meet our new student



Patrick on a dolphin survey in the CCCO area.

Meet our new student Patrick Jones! He received his Bachelor's Degree in Zoology from the University of Wyoming in 2022. Patrick is now a student in the MS Computational Science Graduate Program here at USCB. Through this adventure, Dr. Montie is now mentoring graduate students in the Department of Computer Science and Mathematics at USCB for those students interested in bioacoustics and in programming to analyze large ecological datasets. In our lab, Patrick helps with many tasks including analyzing passive acoustic data, assisting in dolphin surveys, and dolphin photo-identification. Patrick is interested in comparing dolphin vocalizations of multiple estuaries including the May River, Chechessee Creek, Colleton River, and Charleston Harbor. We are so excited to welcome Patrick to our team, and we can't wait to see the great research he accomplishes!

Dolphin vocalizations

Bottlenose dolphins produce a variety of detectable vocal signals (e.g., echolocation clicks, burst pulse sounds, and whistles) as a way to respond to and interact with each other and their environment. Bottlenose dolphins in our estuary primarily use echolocation, but burst pulse sounds and whistles are also included in their repertoire (Marian et al. 2021). Echolocation click trains and buzzes are directional, high frequency vocalizations that are used for navigation and foraging. Burst pulse sounds are more diverse and complex; these sounds are often referred to as barks, squawks, grunts, and screams that are used in a variety of social behaviors including aggression, discipline, courtship, and sexual activity. Lastly, whistles are frequency and amplitude modulated vocalizations that are used for identification and localization. Our lab has been monitoring dolphin vocalizations in the May River since 2013, Charleston Harbor since 2017, and more recently Chechessee Creek and Colleton River since 2019.



NMFS Permit #24033
Photographer: L. Transeue

Jafar with her calf in the Colleton river.

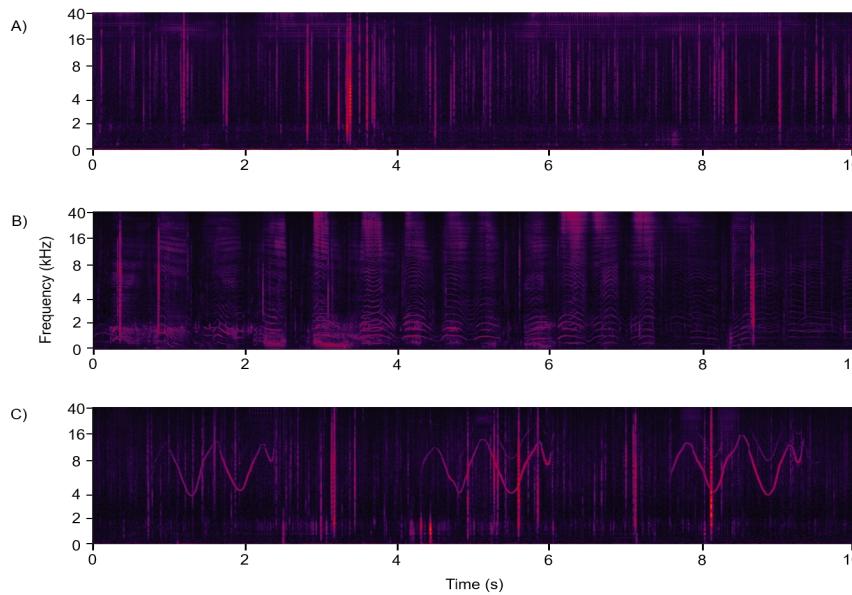


Fig. 1. Examples of bottlenose dolphin A) echolocation bouts, B) burst pulse sounds, and C) whistles collected in the May River estuary.

Contact Us

Facebook: <https://www.facebook.com/MarineNeuroLabAtUSCB/>

Website: <https://academics.uscb.edu/natural-sciences/faculty/eric-montie.html>

Website: <https://marinebiology.cofc.edu/about-the-program/faculty-listing/montie-eric.php>

Behavior spotlight: breaching

Why do dolphins breach? Breaching is a unique aerial display in which the dolphin brings its entire body out of the water. Scientists are still unsure of exactly why many whales and dolphins engage in this behavior. Breaching tends to occur in more social species, like the bottlenose dolphin, and can be associated with communication, feeding, play, and sexual activity. The dolphin pictured here in the Colleton River was seen breaching while in a group of eight dolphins in which we witnessed many socializing and feeding behaviors.

Bottlenose dolphin visual data

Table 1. Abundance of bottlenose dolphins sighted on our most recent surveys.

	September 2022		October 2022	
	May River	CCCO	May River	CCCO
# adults	29	36	24	42
# calves	3	2	3	1
# neonates	0	0	0	0

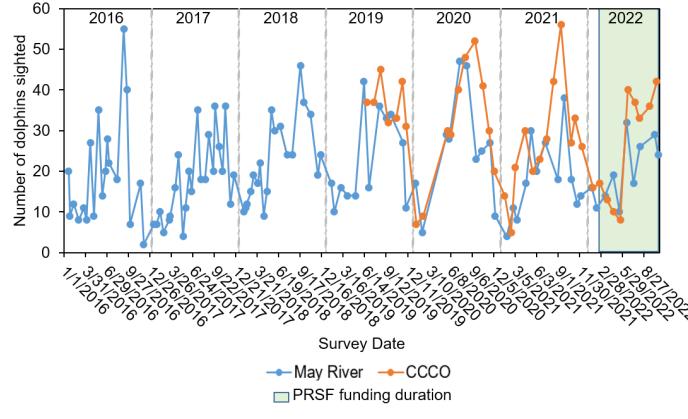


Fig. 2 This figure shows the abundance of dolphins sighted on each survey in both the May River (blue) and Chechessee Creek, Chechessee River, Colleton River and Okatie River (CCCO) (orange) during January, 2016 to October, 2022. Surveys in CCCO began in June, 2019.

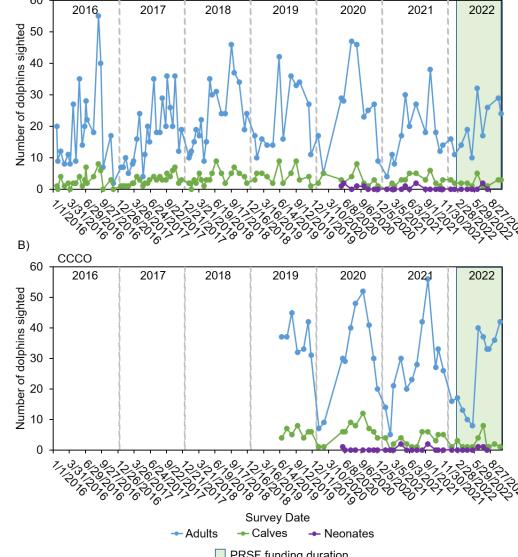


Fig. 3 This figure shows the number of bottlenose dolphins, including the number of calves and neonates sighted in (A) the May River and (B) Chechessee Creek, Chechessee River, Colleton River and Okatie River (CCCO) from January 1st, 2016 to October 31st, 2022. Surveys in CCCO began in June, 2019. The Port Royal Sound Foundation funding period is highlighted in green.

Contact UsFacebook: <https://www.facebook.com/MarineNeuroLabAtUSCB/>Website: <https://academics.uscb.edu/natural-sciences/faculty/eric-montie.html>Website: <https://marinebiology.cofc.edu/about-the-program/faculty-listing/montie-eric.php>