Enhancing Interpretation of Cetacean Acoustic Monitoring: Investigating Factors that Influence Vocalization Patterns of Atlantic Bottlenose Dolphins in an Urbanized Estuary, Charleston Harbor, South Carolina, USA

Supplemental Figures

Caroline Tribble,^{1,2,¶} Agnieszka Monczak,^{1,3} Lindsey Transue,^{1,2} Alyssa Marian,¹ Patricia Fair,^{4,5} Brian Balmer,^{2,6} Joseph Ballenger,⁷ Hannah Baker,⁴ Meghan Weinpress-Galipeau,⁴ Alayna Robertson,⁴ Allan Strand,² and Eric W. Montie^{1,2,¶}

> ¹Department of Natural Sciences, University of South Carolina Beaufort, Bluffton, SC, USA E-mail: emontie@uscb.edu
> ²Graduate Program in Marine Biology, College of Charleston, Charleston, SC, USA
> ³Institute of Biological and Environmental Sciences, University of Aberdeen, Aberdeen, UK ⁴South Carolina Aquarium, Charleston, SC, USA
> ⁵Medical University of South Carolina, Charleston, SC, USA ⁶Dolphin Relief and Research, Clancy, MT, USA
> ⁷South Carolina Department of Natural Resources, Charleston, SC, USA ⁹These authors contributed equally to this work.

70 60 50 40 30 20 10 0 21:00 21:00 18:00 18:00 15:00 15:00 Time (hr : min) 9:00 9:00 9:00 9:00 12:00 Time (hr : min) 9:00 6:00 3:00 0:00 0:00 1. 2. j. 1.

Supplemental Figure 1. Temporal patterns in coastal bottlenose dolphin (*Tursiops erebennus*) echolocation bouts and corresponding depth fluctuations at (A) Wando River, (B) Drum Island, (C) SC Aquarium, (D) Fort Sumter, (E) Ashley River, and (F) Citadel. The color scale on the left indicates intensity based on echolocation (warmer colors represent more echolocation bouts), and the color scale on the right indicates intensity based on depth (warmer colors represent greater depths).

Jan 18

Mar 18 May 18 Jul 18 Sep 18

May 18 Jul 18 Sep 18 Nov 18 Jan 19 Mar 19 May 19

Tribble et al.

Echo bouts 80 Depth (m) 10

8

6

4

2

May 19

Mar 19

Nov 18 Jan 19

А

В

С

D

Ε

F

Jan 18 Mar 18

Driving Factors of Bottlenose Dolphin Vocalizations and Distribution in an Urbanized Estuary





Supplemental Figure 2. Variable importance of confirmed factors influencing bottlenose dolphin vocalizations determined through random forest regression modeling for focused fish and noise models: (A) focused fish model, total vocalizations; (B) focused fish model, echolocation bouts; (C) focused noise model, total vocalizations; (D) focused noise model, echolocation bouts; and (E) focused noise model, whistles.