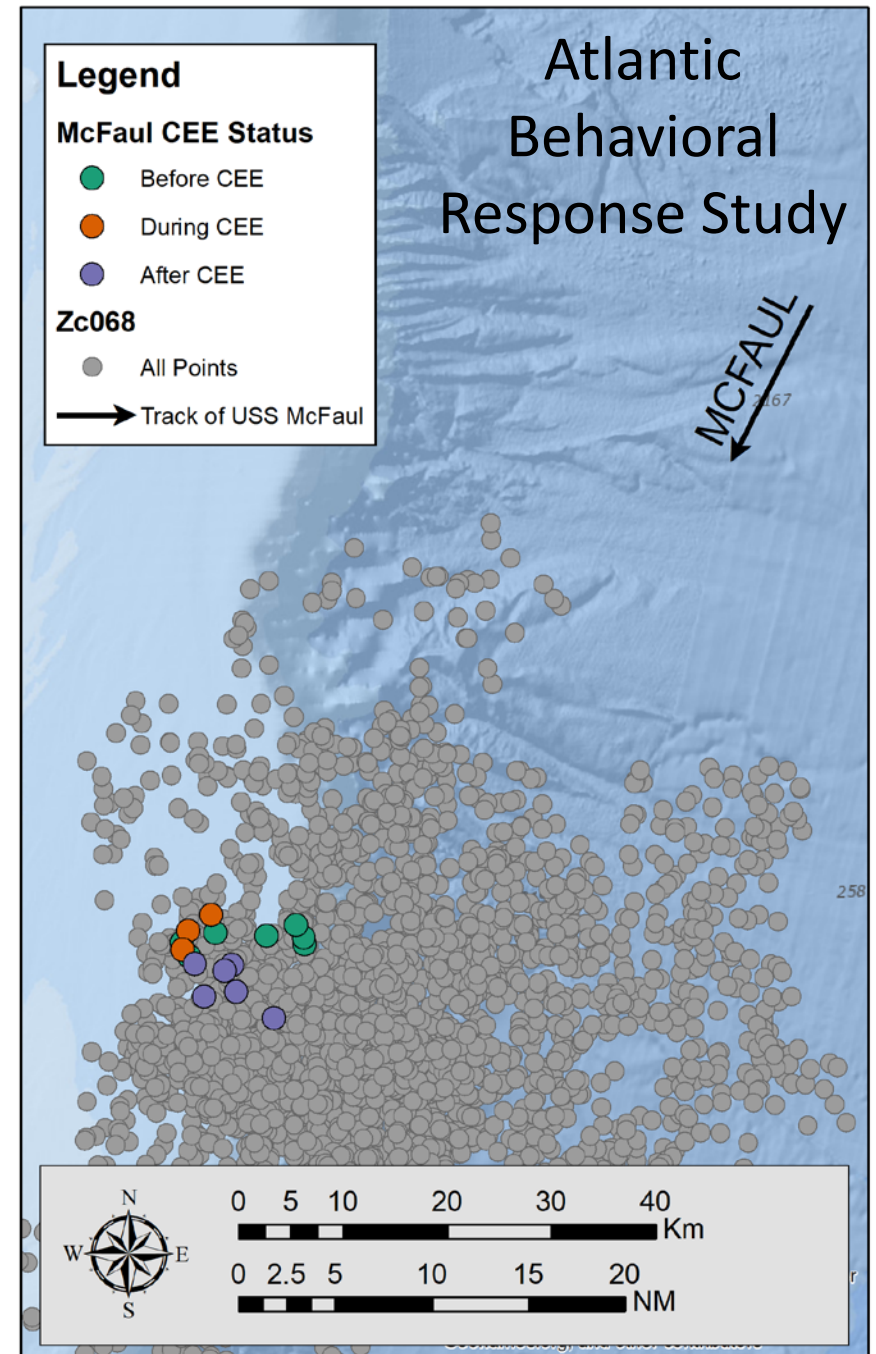
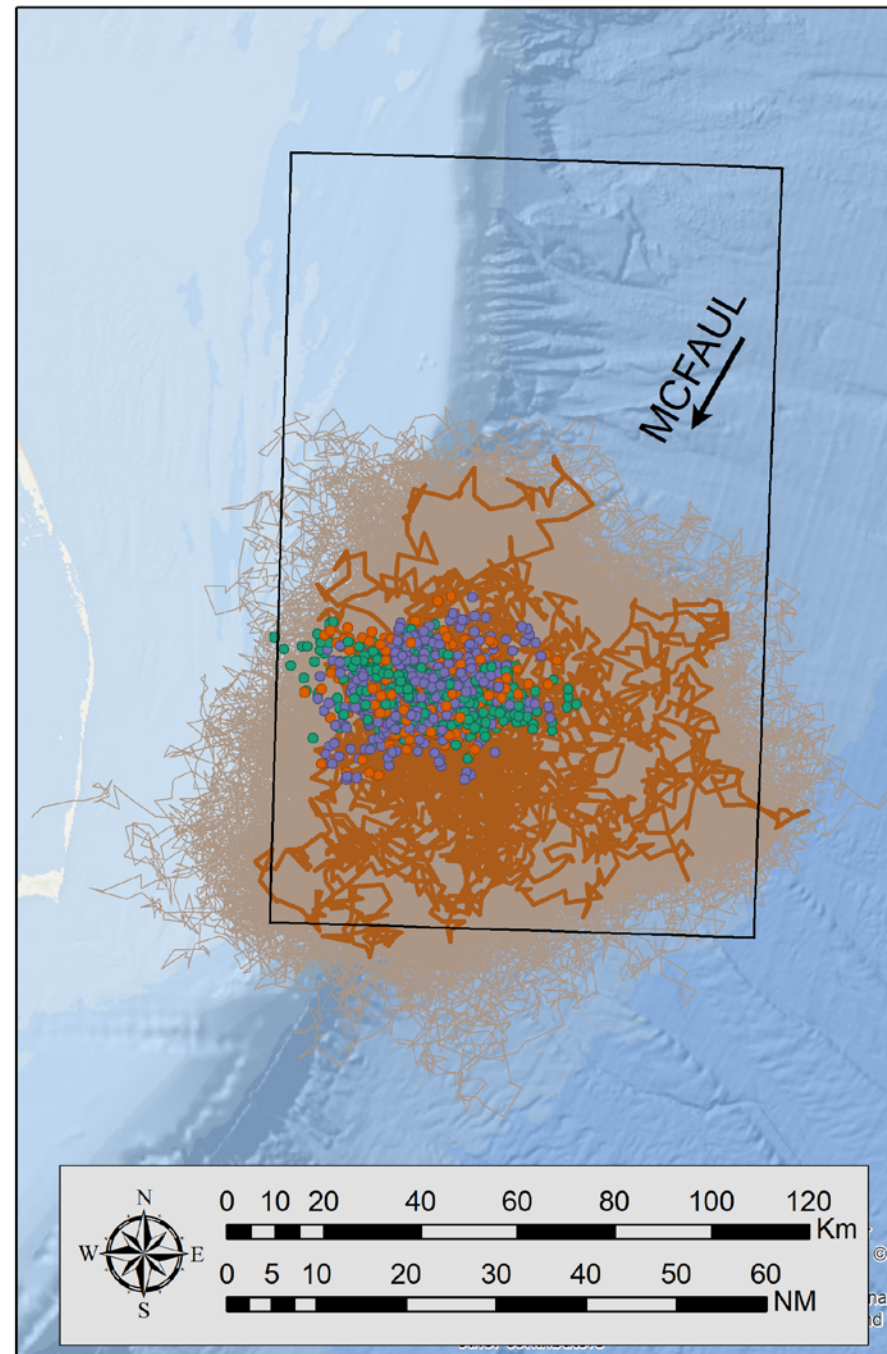


Accounting for Positional Uncertainty When Modeling Received Levels for Tagged Cetaceans Exposed to Sonar

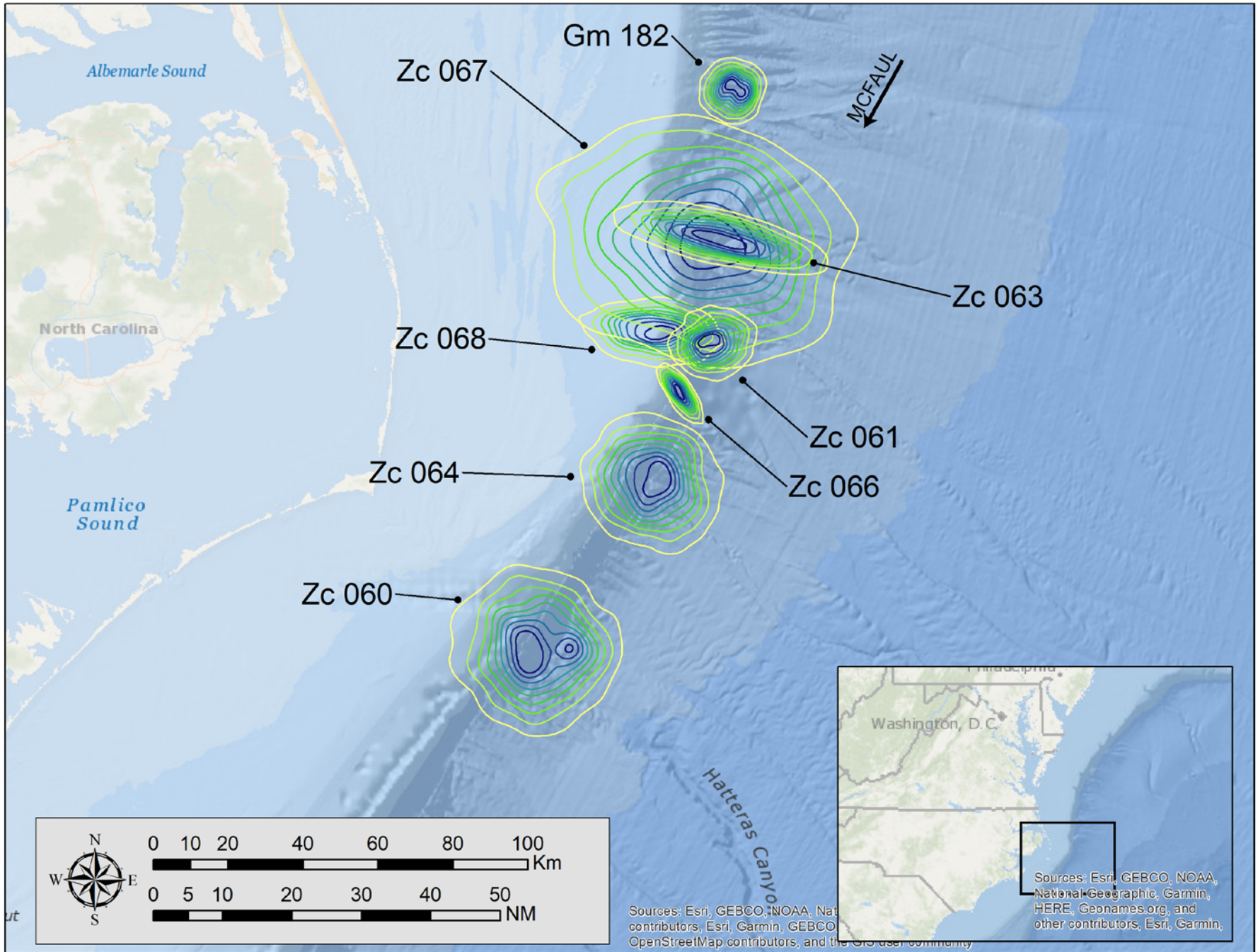
Rob Schick, Matthew Bowers, Stacy DeRuiter, Ari Friedlaender,
John Joseph, Tetyana Margolina, Doug Nowacek, Brandon Southall



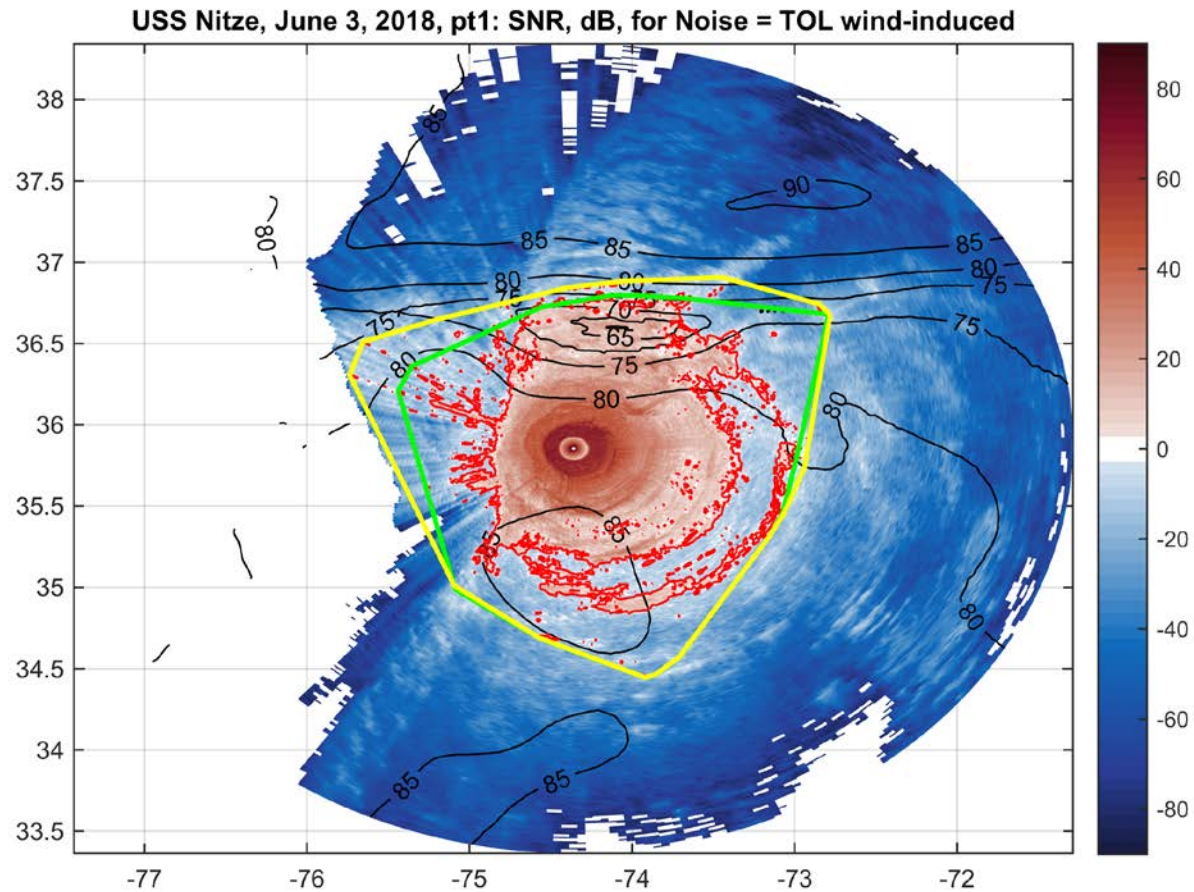
Multiple track imputations of ARGOS location data



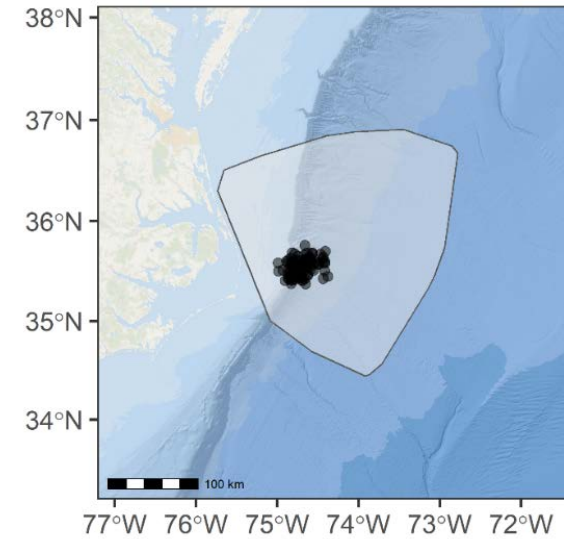
Characterizing positional uncertainty



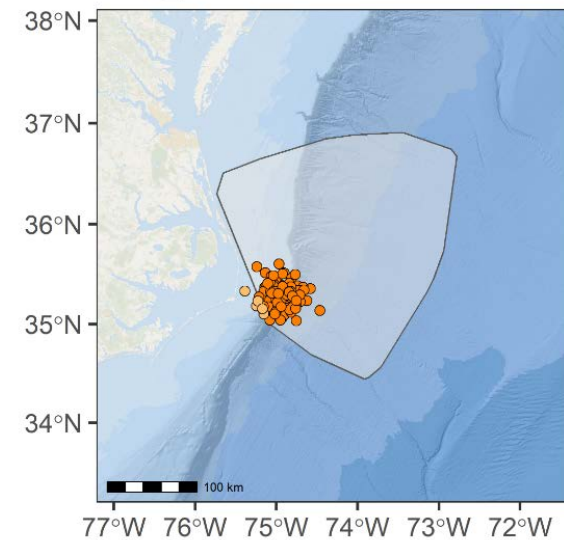
Was the Animal Exposed?



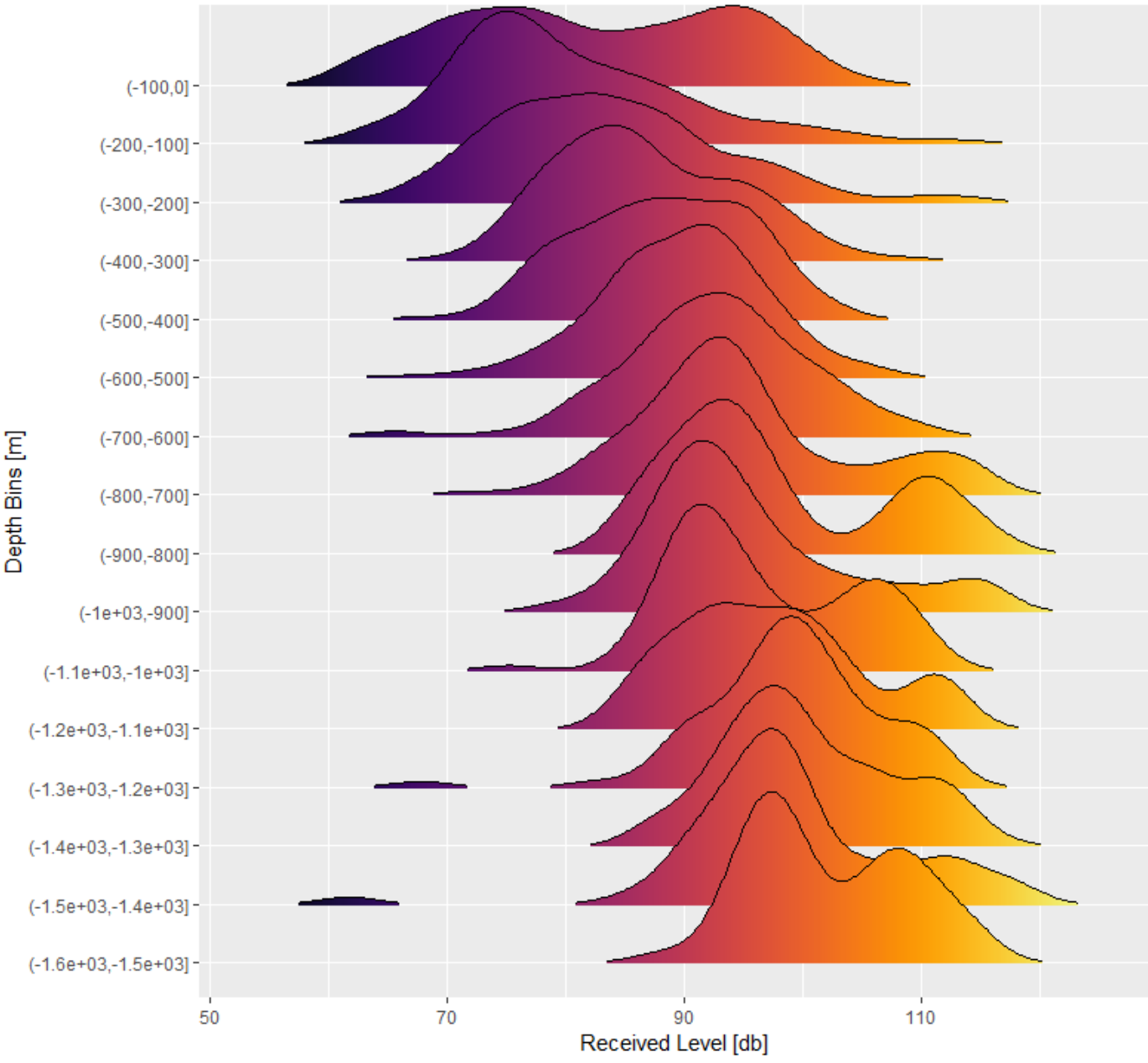
Is ZcTag069 Within RL Polygon?
CEE_18-04



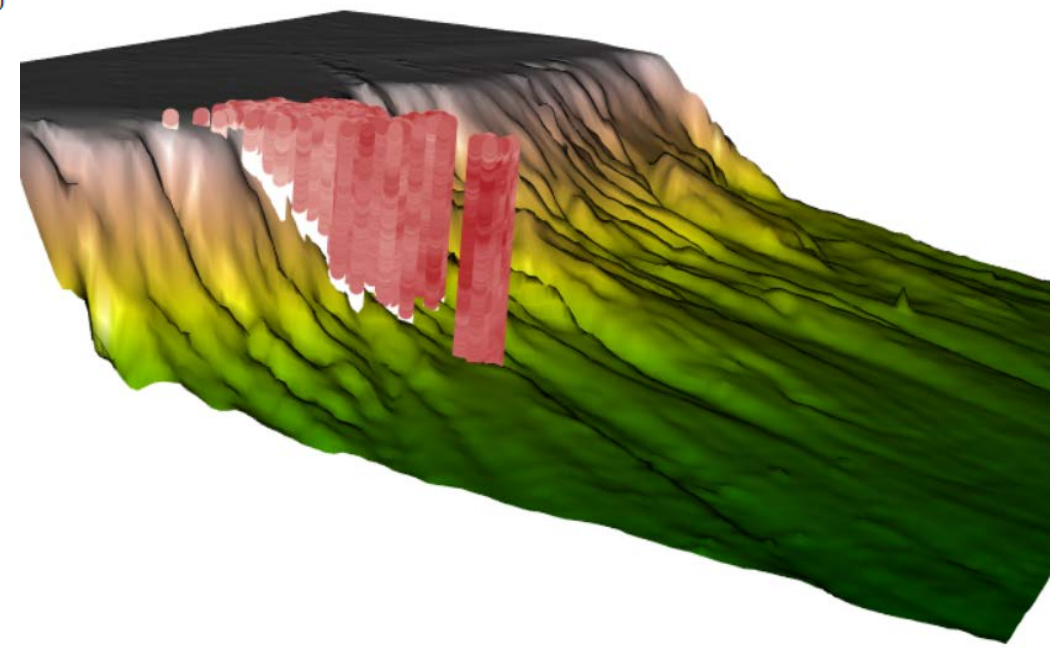
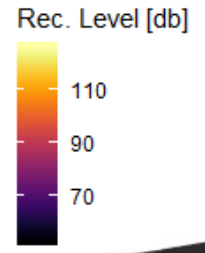
Is ZcTag070 Within RL Polygon?
CEE_18-04



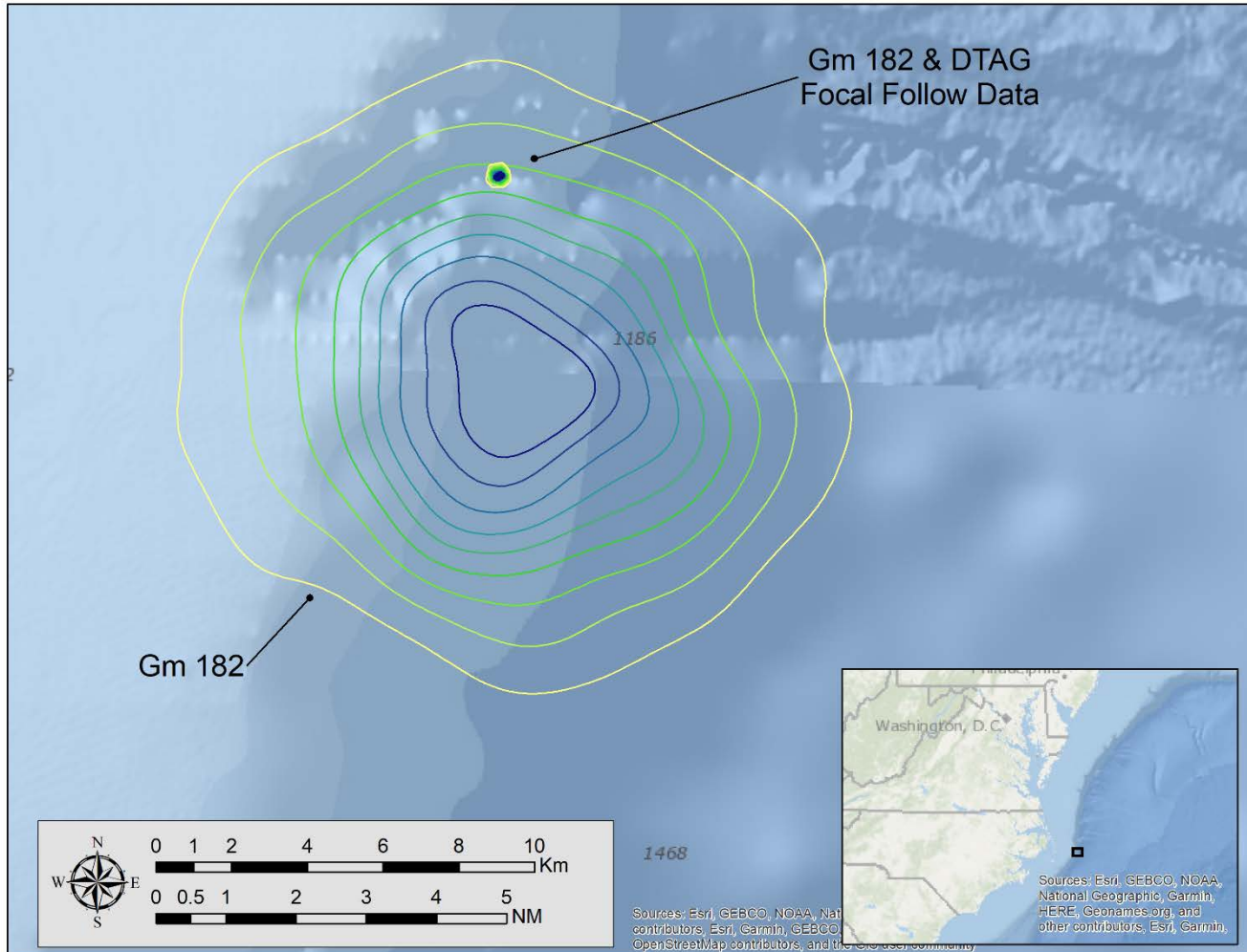
Received Level by Depth Slice: Zc068



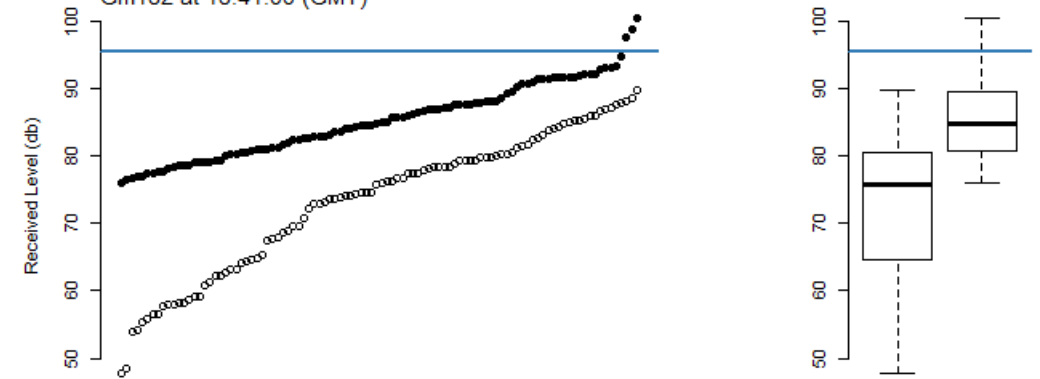
Volumetric (3-D) Calculations of Received Level



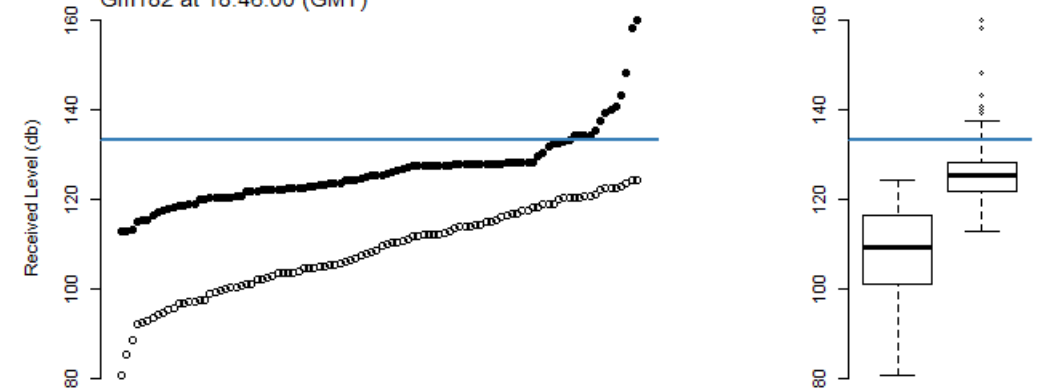
Statistical RL characterization



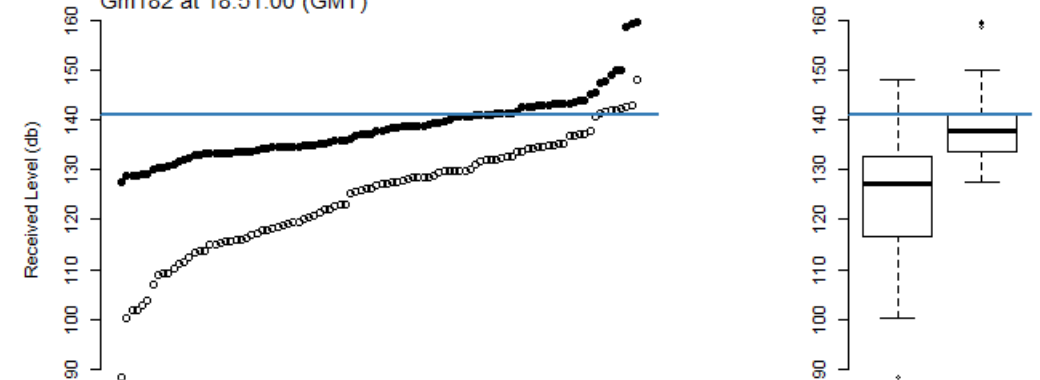
Mean RL Through the Water Column During Kahuna CEE:
Gm182 at 18:41:00 (GMT)



Gm182 at 18:46:00 (GMT)



Gm182 at 18:51:00 (GMT)



<http://bit.ly/rec-level>

Accounting for Positional Uncertainty When Modeling Received Levels for Tagged Cetaceans Exposed to Sonar

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John Joseph,⁶ Tetyana Margolina,⁶ Douglas P. Nowacek,⁷ and Brandon L. Southall^{4,5}

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ONR (Transitions from SOCAL-BRS)



Will Sloger, Mark Wilson, Dave Moretti, Robin Baird, Dave Anderson, John Hildebrand, Kait Frazier, Jen Dunn, Ron Morrissey, Stephanie Watwood, Alex Shorter



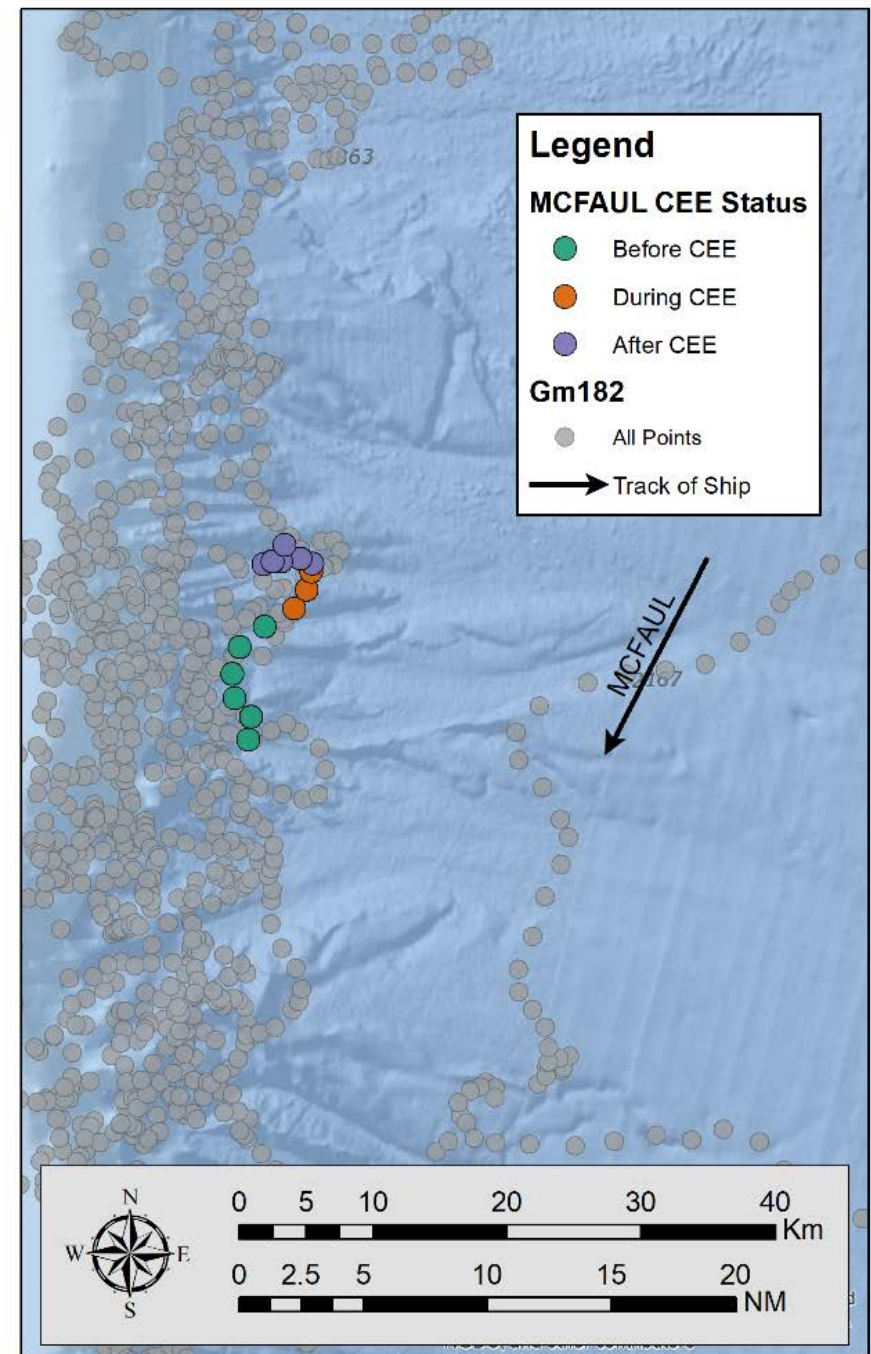
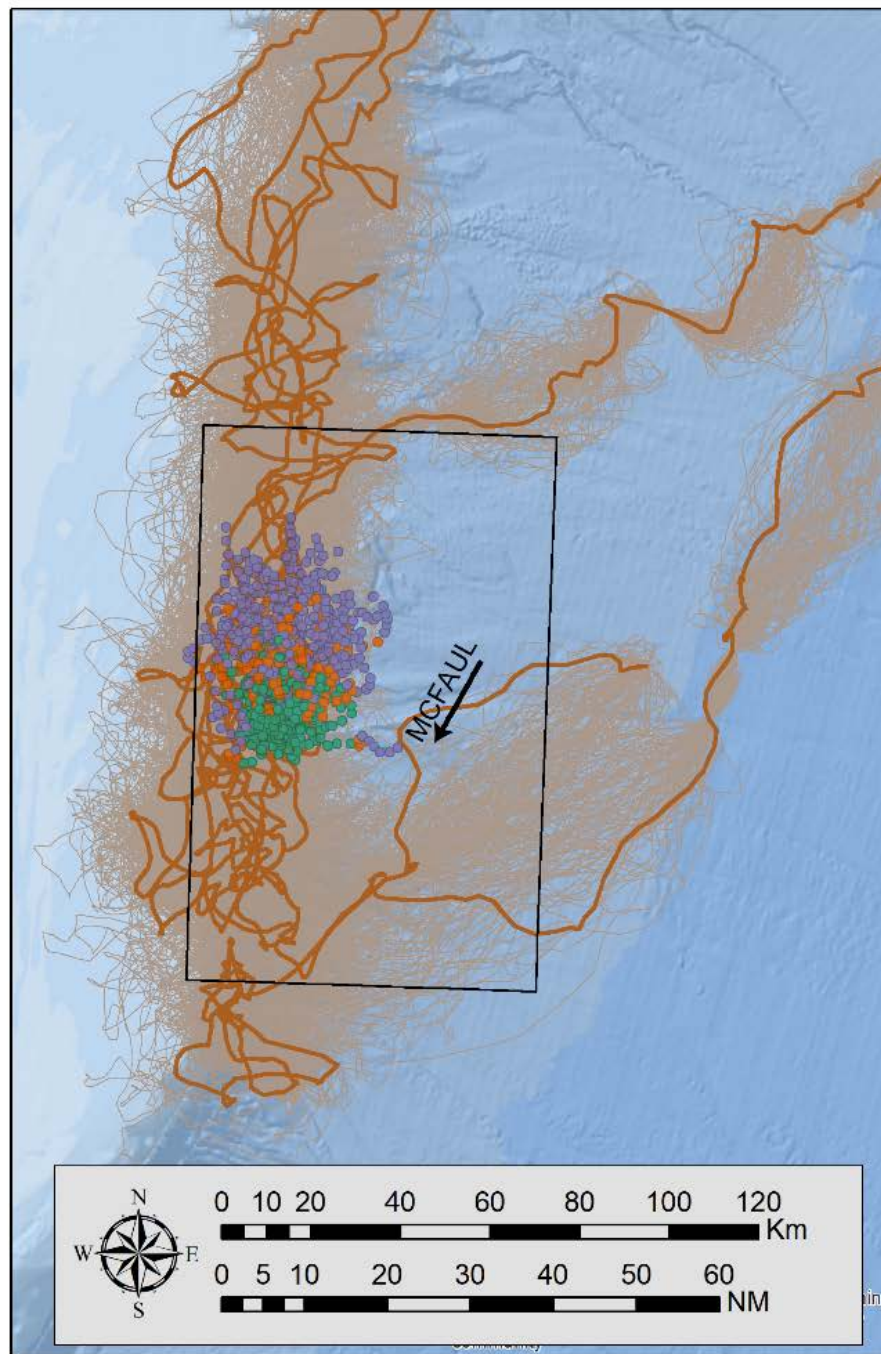
The 7th Effects of Sound in the Ocean on Marine Mammals (ESOMM-2020) will be held on 3-6 November 2020 in Beaufort, North Carolina, USA

ESOMM-2020 will continue to build on the tradition of presentations and discussions of research, monitoring, new field and analytical methods of measuring and understanding how noise from different sound sources may affect marine mammals, as well as most effectively managing these issues.

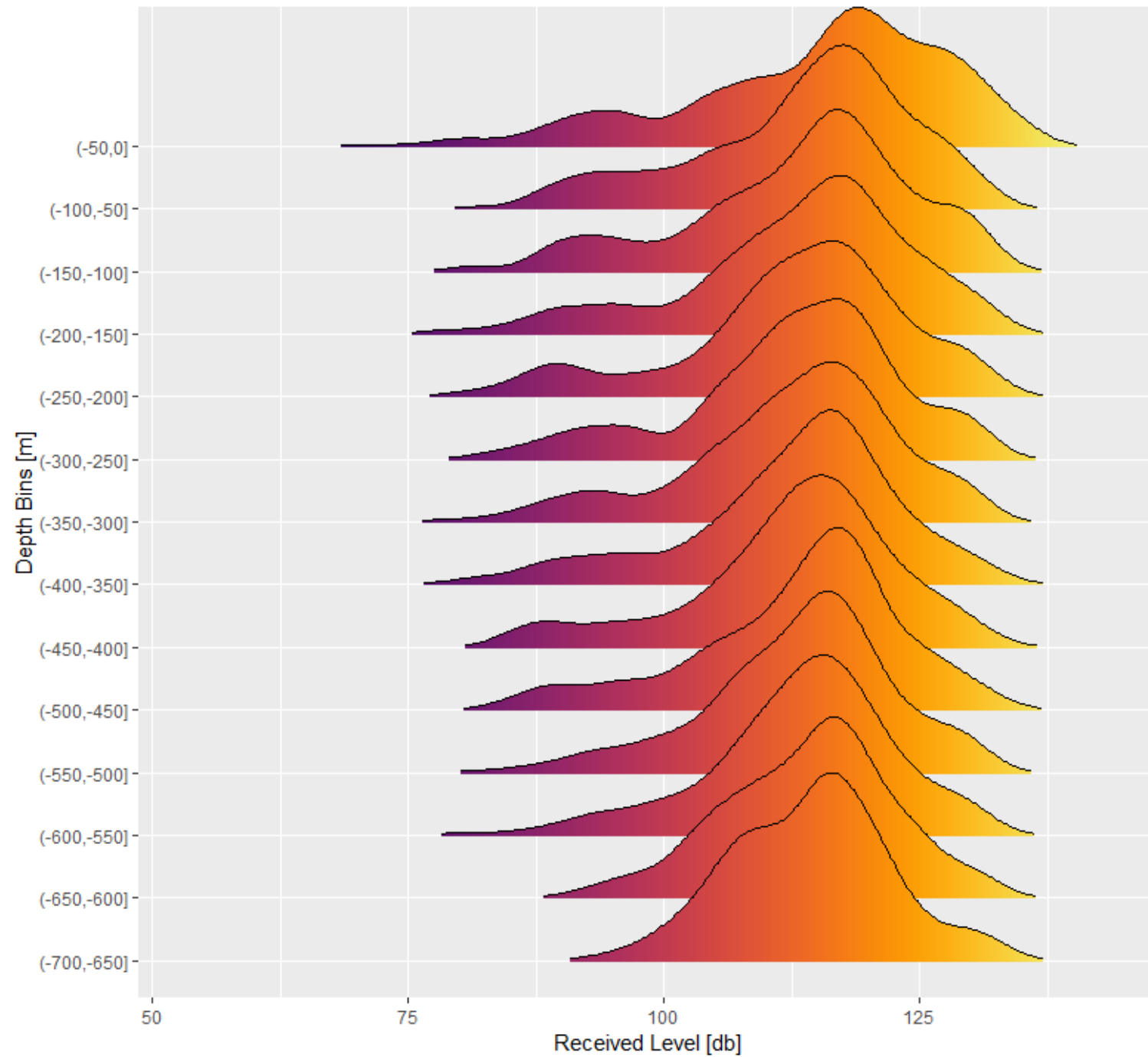
Brandon Southall, Doug Nowacek, Andy Read (ESOMM-2020 Co-Chairs)

Extra Slides

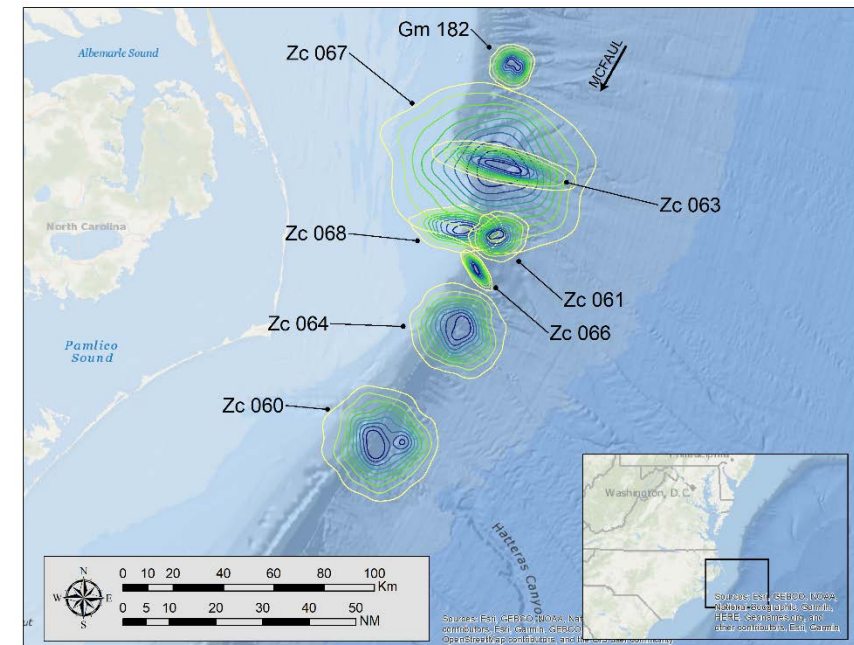
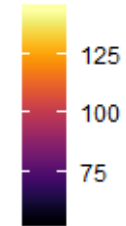
Pilot Whale



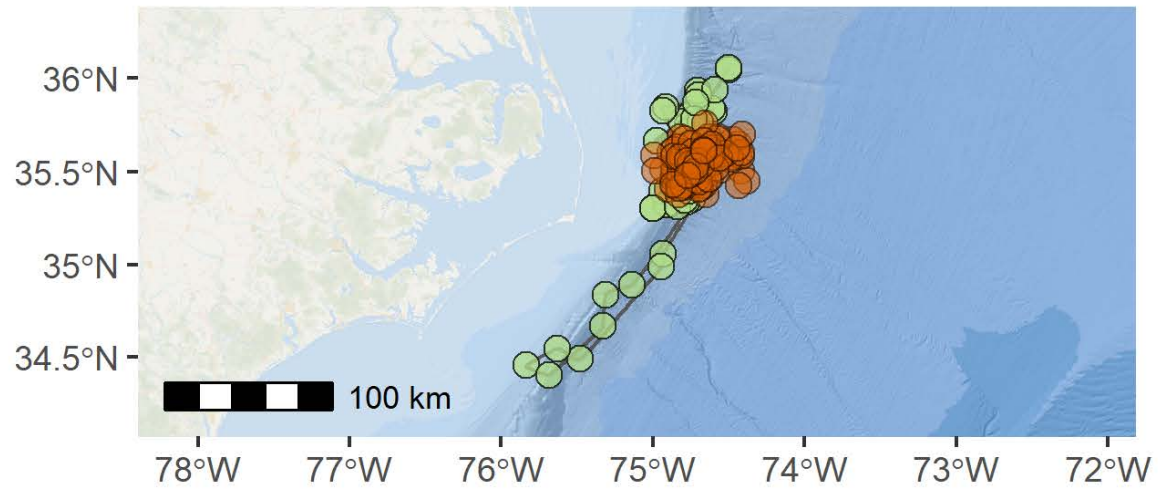
Received Level by Depth Slice: Gm182



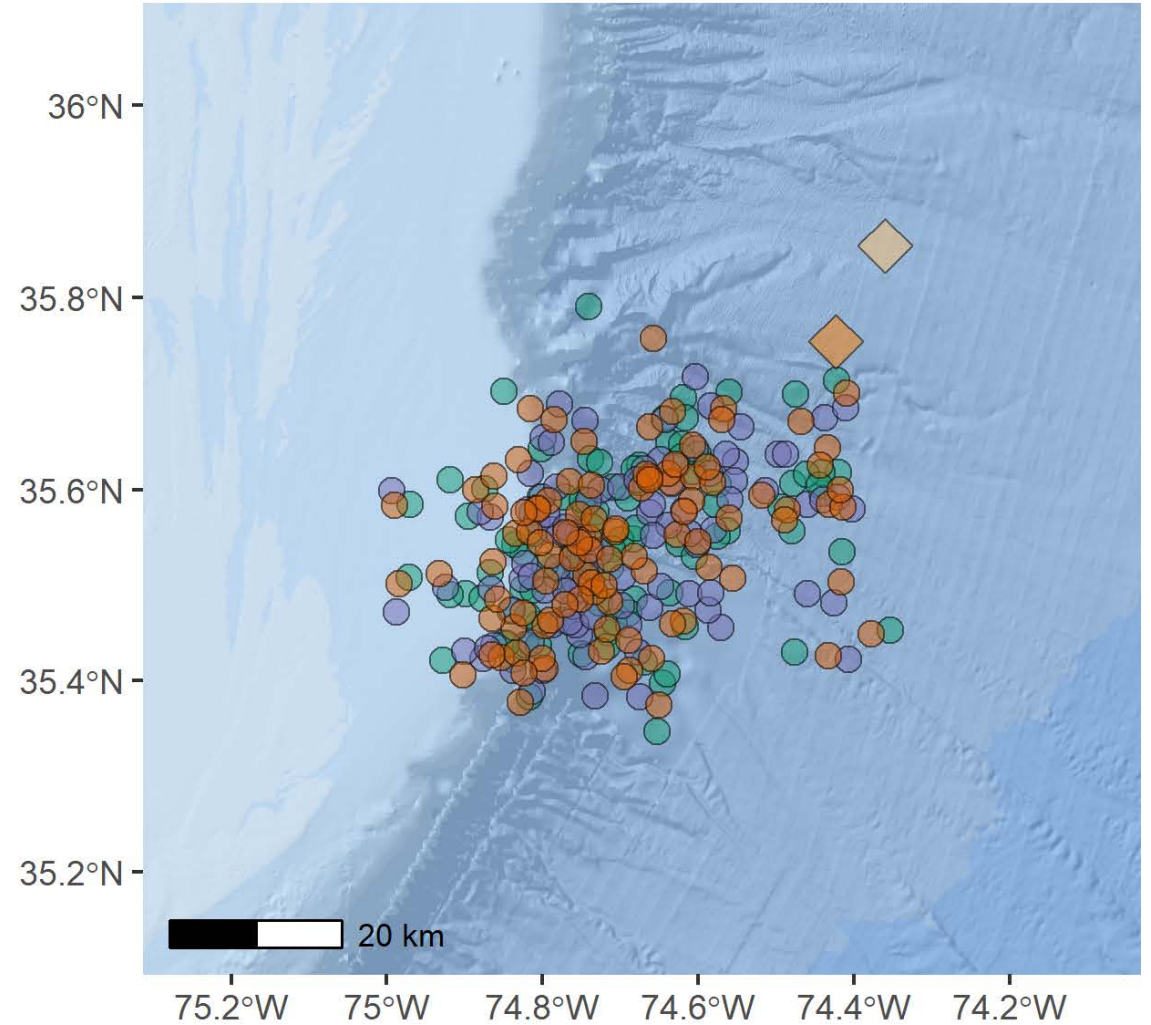
Rec. Level [db]



Estimated Positions from Crawl Model:
ZcTag069

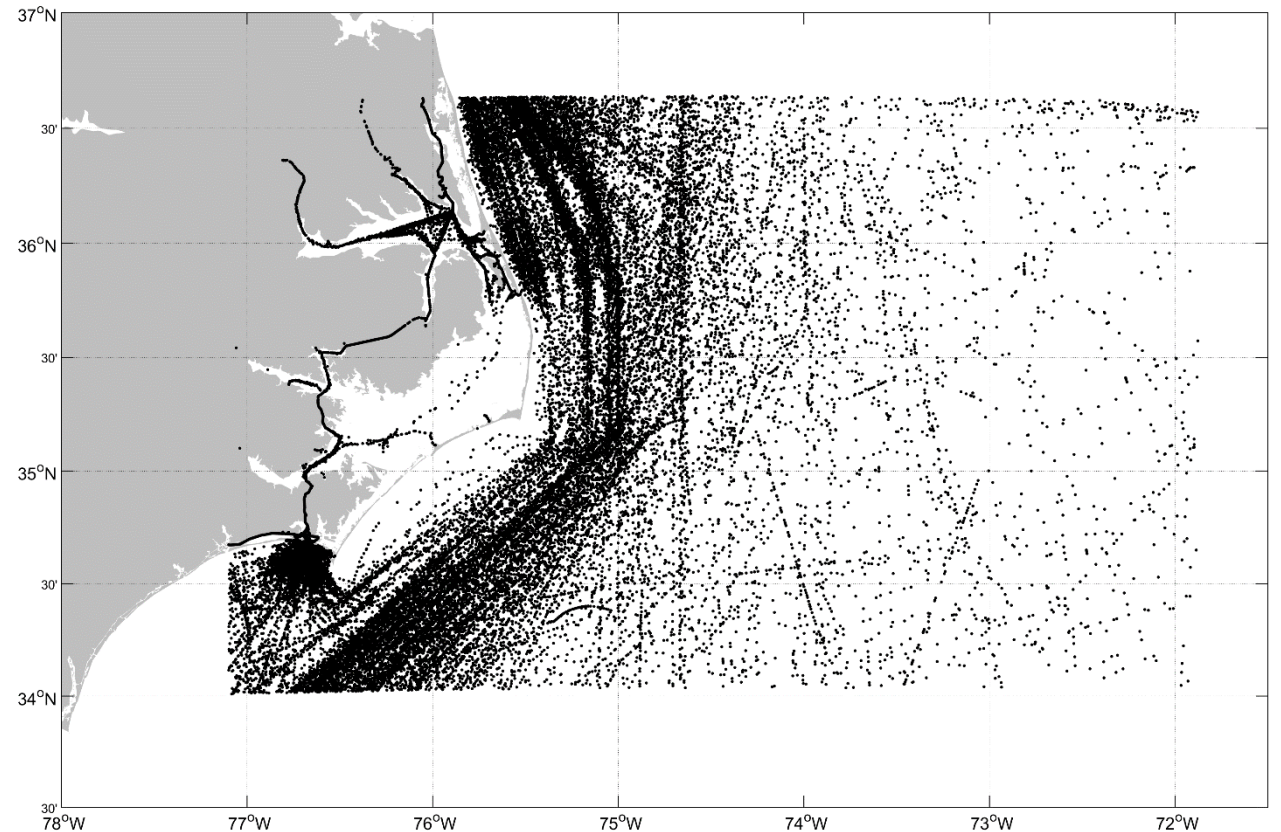


100 Modeled Locations (B, D, A)
Based on Filtered Track: CEE_18-04



Future Work

- Matching covariates at depth with newer tags
- Adding other sources of sound
 - Wind-driven noise
 - Low-frequency data from ships



Thanks to Brian Wong