

Empire Wind References

- Adams, T.P., R.G. Miller, D. Aleynik, and M.T. Burrows. 2014. Offshore marine renewable energy devices as stepping stones across biogeographical boundaries. *Journal of Applied Ecology* 51:330–338 <https://doi.org/10.1111/1365-2664.12207>.
- A.I.S. 2019. Protected Species Observer 90-Day Interim Report Dina Polaris Report. Prepared by A.I.S., Inc. July 10. 2019.
- Allen, A.N., J.J. Schanze, A.R. Solow, and P.L. Tyack. 2014. Analysis of a Blainville's beaked whale's movement response to playback of killer whale vocalizations. *Marine Mammal Science* 30(1): 154-168. <https://doi.org/10.1111/mms.12028>
- Alpine Ocean Seismic Survey, Inc. 2018. Protected Species Observer Report for Ocean Researcher Interim Report I.
- Andersson, M.H. and M.C. Öhman. 2010. Fish and sessile assemblages associated with wind-turbine constructions in the Baltic Sea. *Marine and Freshwater Research* 61(6): 642-650.
- ANSI (American National Standards Institute). 1986. Methods of Measurement for Impulse Noise 3 (ANSI S12.7-1986). Acoustical Society of America, Woodbury, NY.
- ANSI. 1995. Bioacoustical Terminology (ANSI S3.20- 1995). Acoustical Society of America, Woodbury, NY.
- ANSI. 2005. Measurement of Sound Pressure Levels in Air (ANSI S1.13-2005). Acoustical Society of America, Woodbury, NY.
- ANSI. 2013. Acoustic Terminology (ANSI S1.1-2013). Acoustical Society of America, Woodbury, NY.
- APEM and Normandeau Associates. 2018. Digital aerial baseline survey of marine wildlife in support of offshore wind energy: Summer 2016 through spring 2017 annual report. Report prepared for New York State Energy Research and Development Authority (NYSERDA) by Normandeau Associates, Inc. and APEM Ltd. October 2018. 133 pp.
- Astrup, J. and B. Mohl. 1993. Detection of Intense Ultrasound by the Cod *Gadus Morhua*. *Journal of Experimental Biology*, 182: 71–80. <https://doi.org/10.1121/1.421612>
- Astrup, J. 1999. Ultrasound detection in fish - a parallel to the sonar-mediated detection of bats by ultrasound sensitive insects? *Comparative Biochemistry and Physiology, Part A*, 124: 19–27. [https://doi.org/10.1016/S1095-6433\(99\)00093-8](https://doi.org/10.1016/S1095-6433(99)00093-8)
- Au, D.W.K. and W.L. Perryman. 1985. Dolphin habitats in the eastern tropical Pacific. *Fishery Bulletin*, 83: 623– 643.

Au, W.W.L., R.W. Floyd, R.H. Penner, and A.E. Murchison. 1974. Measurement of echolocation signals of the Atlantic bottlenose dolphin, *Tursiops truncatus* Montagu, in open waters. *Journal of the Acoustical Society of America* 56(4): 1280–1290. <https://doi.org/10.1121/1.1903419>

Au, W.W.L. 1993. *The Sonar of Dolphins*. New York: Springer-Verlag.

Au, W.W.L. and M.C. Hastings. 2008. *Principles of Marine Bioacoustics. Modern Acoustics and Signal Processing*.

Austin, M.E. and Z. Li. 2016. Marine Mammal Monitoring and Mitigation During Exploratory Drilling by Shell in the Alaskan Chukchi Sea, July–October 2015: Draft 90-day report. In: Ireland, D.S. and L.N. Bisson (eds.). *Underwater Sound Measurements*. LGL Rep. P1363D. Report from LGL Alaska Research Associates Inc., LGL Ltd., and JASCO Applied Sciences Ltd. For Shell Gulf of Mexico Inc, National Marine Fisheries Service, and US Fish and Wildlife Service. 188 pp + appendices.

Bailey, H., B. Senior, D. Simmons, J. Rusin, G. Picken, and P. M. Thompson. 2010. Assessing underwater noise levels during pile-driving at an offshore windfarm and its potential effects on marine mammals. *Marine Pollution Bulletin* 60:888-897. <https://doi.org/10.1016/j.marpolbul.2010.01.003>

Baird, R.W., D.L. Webster, G.S. Schorr, D.J. McSweeney, and J. Barlow. 2008. Diel variation in beaked whale diving behavior. *Marine Mammal Science* 24(3): 630-642. <https://doi.org/10.1111/j.1748-7692.2008.00211.x>

Barkaszi, M.J., M. Butler, R. Compton, A. Unietis, and B. Bennet. 2012. Seismic survey mitigation measures and marine mammal observer reports. U.S. Dept. of the Interior, Bureau of Ocean Energy Management, Gulf of Mexico OCS Region, New Orleans, LA. OCS Study BOEM 2012-015. 28 pp + apps.

Barlow, J. and Taylor, B.L. 2005. Estimates of sperm whale abundance in the Northeastern temperate Pacific from a combined acoustic and visual survey, *Marine Mammal Science*, 21(3):429 – 445, <https://doi.org/10.1111/j.1748-7692.2005.tb01242.x>

Barlow, J., G.S. Schorr, E.A. Falcone, and D. Moretti. 2020. Variation in dive behavior of Cuvier’s beaked whales with seafloor depth, time-of-day, and lunar illumination. *Marine Ecology Progress Series* 644: 199-214. <https://doi.org/10.3354/meps13350>

Beauchamp, G. and B. Livoreil. 1997. The effect of group size on vigilance and feeding rate in spice finches (*Lonchura punctulata*). *Canadian Journal of Zoology* 75(9): 1526-1531. <https://doi.org/10.1139/z97-77>

Bednekoff, P. A. and S. L. Lima. 1998. Randomness, chaos and confusion in the study of antipredator vigilance. *Trends in Ecology & Evolution* 13(7): 284-287. [https://doi.org/10.1016/S0169-5347\(98\)01327-5](https://doi.org/10.1016/S0169-5347(98)01327-5)

- Bejder, L., A. Samuels, H. Whitehead, N. Gales, J. Mann, R. Connor, et al. 2006. Decline in relative abundance of bottlenose dolphins exposed to long-term disturbance. *Conservation Biology* 20 (6): 1791-1798. <https://doi.org/10.1111/j.1523-1739.2006.00540.x>
- Bejder, L., A. Samuels, H. Whitehead, H. Finn, and S. Allen. 2009. Impact assessment research: Use and misuse of habituation, sensitisation and tolerance in describing wildlife responses to anthropogenic stimuli. *Marine Ecology Progress Series* 395: 177-185. <https://doi.org/10.3354/meps07979>
- Bellmann, M.A. 2014. Overview of existing Noise Mitigation Systems for reducing Pile Driving Noise. InterNoise 2014, Melbourne, Australia. 11 pp.
- Bellmann, M.A. 2019. Results from noise measurements in European offshore wind farms. Presentation at Orsted Underwater Noise Mini Workshop.in Orsted Underwater Noise Mini Workshop, Washington, D.C.
- Bellmann, M. A., J. Brinkmann., A. May, T. Wendt, S. Gerlach, and P. Remmers. 2020. “Underwater noise during the impulse pile-driving procedure: Influencing factors on pile-driving noise and technical possibilities to comply with noise mitigation values.” Supported by the Federal Ministry for the Environment, Nature Conservation and Nuclear Safety (Bundesministerium für Umwelt, Naturschutz und nukleare Sicherheit (BMU)), FKZ UM16 881500. Commissioned and managed by the Federal Maritime and Hydrographic Agency (Bundesamt für Seeschifffahrt und Hydrographie (BSH)), Order No. 10036866. Edited by the itap GmbH.
- Bellmann, M.A., Müller, T., Scheiblich, K., and K. Betke. 2023. “Experience report on operational noise – Cross-project evaluation and assessment of underwater noise measurements from the operational phase of offshore wind farms”, itap report no. 3926, funded by the German Federal Maritime and Hydrographic Agency, funding no. 10054419.
- Betke, K. 2008. Measurement of Wind Turbine Construction Noise at Horns Rev II. Report 1256-08-a-KB. Technical report by Institut für technische und angewandte Physik GmbH (ITAP) for BioConsultSH, Husun, Germany. 30 p. <https://tethys.pnnl.gov/sites/default/files/publications/Betke-2008.pdf>.
- Bettridge, S., C.S. Baker, J. Barlow, P.J. Clapham, M. Ford, D. Gouveia, et al. 2015. Status review of the humpback whale (*Megaptera novaeangliae*) under the Endangered Species Act. NOAA Technical Memorandum NMFS-SWFSC-540, National Marine Fisheries Service: 263.
- Biedron, I. 2009. North Atlantic Right Whale (*Eubalaena Glacialis*) Acoustic Behavior And Feeding In Cape Cod Bay, Massachusetts. A Thesis Presented to the Faculty of the Graduate School of Cornell University In Partial Fulfillment of the Requirements for the Degree of Master of Science
- Bishop, M.J., M. Mayer-Pinto, L. Airoidi, L.B. Firth, R.L. Morris, L.H. Loke, S.J. Hawkins, L.A. Naylor, R.A. Coleman, S.Y. Chee, and K.A. Dafforn. 2017. Effects of ocean sprawl on

ecological connectivity: impacts and solutions. *Journal of Experimental Marine Biology and Ecology* 492: 7-30.

Blackwell, S.B., C.R. Greene, Jr., and W.J. Richardson. 2004a. Drilling and operational sounds from an oil production island in the ice-covered Beaufort Sea. *Journal of the Acoustical Society of America* 116(5): 3199-3211. <https://doi.org/10.1121/1.1806147>.

Blackwell, S.B., J.W. Lawson, and M.T. Williams. 2004b. Tolerance by ringed seals (*Phoca hispida*) to impact pipe- driving and construction sounds at an oil production island. *Journal of the Acoustical Society of America* 115(5): 2346-2357. <https://doi.org/10.1121/1.1701899>.

Blackwell, S.B., C.S. Nations, T.L. McDonald, A.M. Thode, D. Mathias, K.H. Kim, C.R. Greene, Jr., and A.M. Macrander. 2015. Effects of airgun sounds on bowhead whale calling rates: evidence for two behavioral thresholds. *PLoS ONE* 10 (6): e0125720. <https://doi.org/10.1371/journal.pone.0125720>

Blecha, F. 2000. Immune system response to stress. Pages 111-122 in G.P. Moberg & J.A. Mench, eds. *The Biology of Animal Stress: Basic Principles and Implications for Animal Welfare*. CABI Publishing, Oxon, United Kingdom.

Boehlert, G. and Gill, 2010. Environmental and Ecological Effects of Ocean Renewable Energy Development: A Current Synthesis. Oceanographic Society <https://doi.org/10.5670/OCEANOLOG.2010.46>

Bolle, A., J. De Winter, W. Goossens, P. Haerens, and G. Dewaele. 2012, August. Scour monitoring around offshore jackets and gravity based foundations. In *Proceedings of the Sixth International Conference on Scour and Erosion, ICSE* (Vol. 6).

BOEM. 2012. Atlantic OCS Proposed Geological and Geophysical Activities Mid-Atlantic and South Atlantic Planning Areas Draft Programmatic Environmental Impact Statement. OCS EIS/EA BOEM 2012-005, Volume I: Chapters 1-8.

BOEM. 2019. Guidelines for Providing Information on Marine Mammals and Sea Turtles for Renewable Energy Development on the Atlantic Outer Continental Shelf Pursuant to 30 CFR Part 585 Subpart

Booman, C., J. Dalen, H. Leivestad, A. Levsen, T. van der Meer, and K. Toklum. 1996. Effects from airgun shooting on eggs, larvae, and fry. Experiments at the Institute of Marine Research and Zoological Laboratory, University of Bergen. (In Norwegian. English summary and figure legends). *Fisken og havet* No. 3. 83 pp.

Bowles, A.E., M. Smultea, B. Wursig, D.P. DeMaster, and D. Palka. 1994. Relative abundance and behavior of marine mammals exposed to transmissions from the Heard Island feasibility test. *Journal of the Acoustical Society of America* 96 (4): 2469-2484. <https://doi.org/10.1121/1.410120>

Boyd, I., D. Claridge, C. Clark, and B. Southall. 2008. BRS 2008 Preliminary Report. U.S. Navy NAVSEA PEO IWS 5, ONR, U.S. Navy Environmental Readiness Division, NOAA, SERDP.

Brandt, M. J., A. Diederichs, K. Betke, and G. Nehls. 2011. Responses of harbour porpoises to pile driving at the Horns Rev II offshore wind farm in the Danish North Sea. *Marine Ecology Progress Series* 421:205-216. <https://doi.org/10.3354/meps08888>

Brandt, M.J., S. Hansen, A. Diederichs, and G. Nehls. 2014. Do man-made structures and water depth affect the diel rhythms in click recordings of harbor porpoises (*Phocoena phocoena*)? *Marine Mammal Science* 30(3): 1109-1121. <https://doi.org/10.1111/mms.12112>

Brandt, M.J., A.C. Dragon, A. Diederichs, A. Schubert, V. Kosarev, G. Nehls, V. Wahl, A. Michalik, A. Braasch, C. Hinz, and C. Ketzer. 2016. Effects of offshore pile driving on harbour porpoise abundance in the German Bight. Assessment of noise effects. Report by BioConsult SH, IBL Umweltplanung GmbH, and Institute of Applied Ecology (IfAO).

Brandt, M.J., A.C. Dragon, A. Diederichs, M.A. Bellmann, V. Wahl, W. Piper, J. Nabe-Nielsen, and G. Nehls. 2018. Disturbance of harbour porpoises during construction of the first seven offshore wind farms in Germany. *Marine Ecology Progress Series* 596: 213-232. <https://doi.org/10.3354/meps12560>

Branstetter, B.K., and J.J. Finneran. 2008. Comodulation masking release in bottlenose dolphins (*Tursiops truncatus*). *The Journal of the Acoustical Society of America* 1: 625–633. <https://doi.org/10.1121/1.2918545>

Branstetter, B.K., J.S. Trickey, H. Aihara, J.J. Finneran, and T.R. Liberman. 2013. Time and frequency metrics related to auditory masking of a 10 kHz tone in bottlenose dolphins (*Tursiops truncatus*). *J. Acoust. Soc. Am.* 134 (6):4556- 4565. <https://doi.org/10.1121/1.4824680>

Branstetter, B.K., K.L. Bakhtiari, J.S. Trickey, and J.J. Finneran. 2016. Hearing mechanisms and noise metrics related to auditory masking in bottlenose dolphins (*Tursiops truncatus*). p. 109-116 In: A.N. Popper and A. Hawkins (eds.), *The effects of noise on aquatic life II*. Springer, New York, NY. 1292 p.

Brasseur, S., van Polanen Petel, T., G. Aarts, E. Meesters, E. Dijkman, and P. Reijnders. 2010. Grey seals (*Halichoerus grypus*) in the Dutch North sea: population ecology and effects of wind farms. Report number C137/10

Brasseur, S.M.J.M., G. Aarts, E. Meesters, T. van Polanen Petel, E. Dijkman, J. Cremer, and P. Reijnders. 2012. Habitat preferences of harbour seals in the Dutch coastal area: analysis and estimate of effects of offshore wind farms. Report C043-10.

Brenowitz, E.A. 2004. Plasticity of the adult avian song control system. *Annals of the New York Academy of Science* 1016: 560–585. <https://doi.org/10.1196/annals.1298.006>

Brown, D.M., J. Robbins, P.L. Sieswerda, R. Schoelkopf, and E.C.M. Parsons. 2018. “Humpback whale (*Megaptera novaeangliae*) sightings in the New York-New Jersey Harbor Estuary.” *Marine Mammal Science* 34(1): 250-257. <https://doi.org/10.1111/mms.12450>

Brown, D.M., P.L. Sieswerda, and E.C.M. Parsons. 2019. Potential encounters between humpback whales (*Megaptera novaeangliae*) and vessels in the New York Bight apex, USA. *Marine Policy* 106: 103527. <https://doi.org/10.1016/j.marpol.2019.103527>

Brown, D., J. Robbins, P. Sieswerda, C. Ackerman, J. Aschettino, S. Barco, et.al., and J. Wiedenmann. 2022. Site fidelity, population identity and demographic characteristics of humpback whales in the New York Bight apex. *Journal of the Marine Biological Association of the United Kingdom* 102(1-2), 157-165. doi:10.1017/S0025315422000388

Bruintjes, R, J. Lynton-Jenkins, J.W. Jones, and A.N. Radford. 2016. Out-group threat promotes within-group affiliation in a cooperative fish. *Am Nat* 187:274–282.

Brumm, H. 2004. Causes and consequences of song amplitude adjustment in a territorial bird: a case study in nightingales. *Anais da Academia Brasileira de Ciências* 76(2): 289-295. <https://doi.org/10.1590/S0001-37652004000200017>

Buyse, J., K. Hostens, S. Degraer, and A. De Backer. 2022. Offshore wind farms affect the spatial distribution pattern of plaice *Pleuronectes platessa* at both the turbine and wind farm scale. *ICES Journal of Marine Science* 79(6): 1777-1786. <https://doi.org/10.1093/icesjms/fsac107>

Caldwell, D. K. and M. C. Caldwell. 1966. Observations on the distribution, coloration, behavior and audible sound production of the spotted dolphin, *Stenella plagiodon* (Cope). Los Angeles County Museum Contribution to Science 104:1-28. <https://doi.org/10.5962/p.241093>

Carroll, B., B. Cooper, N. Dewey, P. Whitehead, T. Dolphin, J. Rees, A. Judd, R. Whitehouse, and J. Harris. 2010. A further review of sediment monitoring data. Cowrie ScourSed-09, Southampton, UK, 106.

Casper, B.M., A.N. Popper, F. Matthews, T.J. Carlson, and M.B. Halvorsen. 2012. Recovery of Barotrauma Injuries in Chinook Salmon, *Oncorhynchus tshawytscha* from Exposure to Pile Driving Sound. *PLoS ONE* 7(6): e39593. <https://doi.org/10.1371/journal.pone.0039593>

Casper, B.M., M.B. Halvorsen, F. Matthews, T.J. Carlson, and A.N. Popper. 2013a. Recovery of barotrauma injuries resulting from exposure to pile driving sound in two sizes of hybrid striped bass. *PloS One* 8(9): e73844. <https://doi.org/10.1371/journal.pone.0073844>

Casper, B.M., M.E Smith, M.B Halvorsen, H. Sun, T.J. Carlson, and A.N. Popper. 2013b. Effects of exposure to pile driving sounds on fish inner ear tissues. *Comparative Biochemistry and Physiology Part A: Molecular & Integrative Physiology* 166 (2): 352-360. <https://doi.org/10.1016/j.cbpa.2013.07.008>

Cerchio, S., S. Strindberg, T. Collins, C. Bennett, and H. Rosenbaum. 2014. Seismic surveys negatively affect humpback whale singing activity off northern Angola. *PLoS ONE* 9 (3): e86464. <https://doi.org/10.1371/journal.pone.0086464>

CETAP (Cetacean and Turtles Assessment Program). 1982. A characterization of marine mammals and turtles in the mid- and north Atlantic areas of the U.S. outer continental shelf. Cetacean and Turtle Assessment Program, University of Rhode Island. Final Report #AA551-CT8-48 to the Bureau of Land Management, Washington, DC, 538 pp.

Chen, X., Y. Liu, Q. Wang, J. Lv, J. Wen, X. Chen, C. Kang, S. Cheng, and M.B. McElroy. 2021. Pathway toward carbon-neutral electrical systems in China by mid-century with negative CO₂ abatement costs informed by high-resolution modeling. *Joule* 5 (10): 2715-2741. <https://doi.org/10.1016/j.joule.2021.10.006>

Cholewiak, D., D. Palka, S. Chavez-Rosales, G. Davis, E. Josephson, S. Van Parijs, and S. Weiss. 2018. Updates on sei whale (*Balaenoptera borealis*) distribution, abundance estimates, and acoustic occurrence in the western North Atlantic. Unpublished Scientific Committee meeting document SC/67B/NH07. International Whaling Commission. Cambridge, UK.

Christiansen N., S.M. Dawson, J.W. Durban, H. Fearnbach, C.A. Miller, L. Bejder, M.M. Uhart, M. Sironi, P. Corkeron, W. Rayment, E. Leunissen, E. Haria, R. Ward, H.A. Warick, I. Kerr, M.S. Lynn, H.M. Pettis, and M.J. Moore. 2020. Population comparison of right whale body condition reveals poor state of the North Atlantic right whale. *Marine Ecology Progress Series* 640: 1–16. DOI: 10.3354/meps13299

Christiansen N., U. Daewel, B. Djath, and C. Schrum. 2022. Emergence of large-scale hydrodynamic structures due to atmospheric offshore wind farm wakes. *Front. Mar. Sci.* 9: doi: 10.3389/fmars.2022.818501

Clark C.W. and G.C. Gagnon. 2002 Insights from IUSS detections, locations and tracking from 1992 to 1996. *J. Underwater Acoustics*. 52: 609–640.

Clark, C.W., W.T. Ellison, B.L. Southall, L.T. Hatch, S.M. Van Parijs, A.S. Frankel, and D.W. Ponirakis. 2009. Acoustic masking in marine ecosystems: Intuitions, analysis, and implication. *Marine Ecology Progress Series* 395: 201-222. <https://doi.org/10.3354/meps08402>.

Clark, C.W., M.W. Brown, and P. Corkeron. 2010. Visual and acoustic surveys for North Atlantic right whales, *Eubalaena glacialis*, in Cape Cod Bay, Massachusetts, 2001–2005: Management implications. *Marine Mammal Science*. 26(4): 837–854. <https://doi.org/10.1111/j.1748-7692.2010.00376.x>

Coates, D.A., Y. Deschutter, M. Vincx, and J. Vanaverbeke. 2014. Enrichment and shifts in macrobenthic assemblages in an offshore wind farm area in the Belgian part of the North Sea. *Marine Environmental Research* 95:1-12. <https://doi.org/10.1016/j.marenvres.2013.12.008>

Cody, A.R. and B.M. Johnstone. 1981. Acoustic trauma: Single neuron basis for the "half-octave shift". *The Journal of the Acoustical Society of America*, 70 (3): 707-711. <https://doi.org/10.1121/1.386906>

Collins, M.D. 1993. A split-step Padé solution for the parabolic equation method. *Journal of the Acoustical Society of America* 93(4): 1736-1742. <https://doi.org/10.1121/1.406739>

Committee on Taxonomy, The Society for Marine Mammalogy. 2022. List of Marine Mammal Species and Subspecies. Accessed on 23 January 2024 at <https://marinemammalscience.org/science-and-publications/list-marine-mammal-species-subspecies/>

Conn, P. and G. Silber. 2013. Vessel speed restrictions reduce risk of collision-related mortality for North Atlantic right whales. *Ecosphere* 4(4): 32. <https://doi.org/10.1890/ES13-00004.1>

Connor, R.C. and M.R. Heithaus. 1996. Approach by great white shark elicits flight response in bottlenose dolphins. *Marine Mammal Science* 12 (4): 602-606. <https://doi.org/10.1111/j.1748-7692.1996.tb00074.x>

Cooke, J.G. 2020. *Eubalaena glacialis* (errata version published in 2020). The IUCN Red List of Threatened Species 2020: e.T41712A178589687. <https://dx.doi.org/10.2305/IUCN.UK.2020-2.RLTS.T41712A178589687.en>. Accessed on 15 November 2022.

Corkeron, P., R.M. Rolland, K.E. Hunt, and S.D. Kraus. 2017. A right whale pootree: classification trees of faecal hormones identify reproductive states in North Atlantic right whales (*Eubalaena glacialis*). *Conservation Physiology* 5 (1): cox006. <https://doi.org/10.1093/conphys/cox006>

Costa, D.P., D.E. Crocker, J. Gedamke, P.M. Webb, D.S. Houser, S.B. Blackwell, et al. 2003. The effect of a low-frequency sound source (acoustic thermometry of the ocean climate) on the diving behavior of juvenile northern elephant seals, *Mirounga angustirostris*. *Journal of the Acoustical Society of America* 113 (2): 1155-1165. <https://doi.org/10.1121/1.1538248>

Cowlishaw, G., M. J. Lawes, M. Lightbody, A. Martin, R. Pettifor, and J. M. Rowcliffe. 2004. A simple rule for the costs of vigilance: empirical evidence from a social forager. *Proceedings of the Royal Society of London. Series B: Biological Sciences* 271 (1534): 27- 33. <https://doi.org/10.1098/rspb.2003.2522>

Cox, T.M., T.J. Ragen, A.J. Read, E. Vos, R.W. Baird, K. Balcomb, J. Barlow, J. Caldwell, T. Cranford, L. Crum, A. D'Amico, G.D. Spain, A. Fernandez, J. Finneran, R. Gentry, W. Gerth, F. Gulland, J. Hildebrand, D. Houser, T. Hullar, P.D. Jepson, D. Ketten, C. D. MacLeod, P. Miller, S. Moore, D. Mountain, D. Palka, P. Ponganis, S. Rommel, T. Rowles, B. Taylor, P. Tyack, D. Wartzok, R. Gisiner, J. Mead and L. Benner. 2006. Understanding the impacts of anthropogenic sound on beaked whales. *J. Cetacean Res. Manage.* 7(3): 177-187.

CRESLI. 2019. CRESLI Educator Material. Accessed on 23 January 2024 at https://www.cresli.org/common/resources/resource_details.cfm?clientID=12000&subsection=side_bar&TopicID=298.

Crocker, S.E. and F.D. Fratantonio. 2016. *Characteristics of Sounds Emitted During High-Resolution Marine Geophysical Surveys*. Report by Naval Undersea Warfare Center Division.

NUWC-NPT Technical Report 12,203, Newport, RI, USA. 266 p.
<https://apps.dtic.mil/dtic/tr/fulltext/u2/1007504.pdf>.

Croll, D.A., C.W. Clark, J. Calambokidis, W.T. Ellison, and B.R. Tershy. 2001. Effect of anthropogenic low-frequency noise on the foraging ecology of Balaenoptera whales. *Animal Conservation* 4 (1): 13-27. <https://doi.org/10.1017/S1367943001001020>

Crum, N., T. Gowan, A. Krzystan, and J. Martin. 2019. Quantifying risk of whale–vessel collisions across space, time, and management policies. *Ecosphere* 10(4):e02713.
<https://doi.org/10.1002/ecs2.2713>

Cummings, W.C. and P.O. Thompson. 1971. Gray whales, *Eschrichtius robustus*, avoid the underwater sounds of killer whales, *Orcinus orca*. *Fish Bull* 69: 525–530.

Cunningham, K.A., B.L. Southall, and C. Reichmuth. 2014. Auditory sensitivity of seals and sea lions in complex listening scenarios. *The Journal of the Acoustical Society of America* 136(6): 3410-3421. <https://doi.org/10.1121/1.4900568>

Curé C, L.D. Sivle, F. Visser, P.J. Wensveen, et al. 2015. Predator sound playbacks reveal strong avoidance responses in a fight strategist baleen whale. *Marine Ecology Progress Series* 526: 267–282. doi: 10.3354/meps11231

Curé, C., S. Isojunno, F. Visser, P.J. Wensveen, L.D. Sivle, P.H. Kvadsheim, F.P.A. Lam, and P.J. Miller. 2016. Biological significance of sperm whale responses to sonar: comparison with anti-predator responses. *Endangered Species Research*, 31, pp.89-102.
<https://doi.org/10.3354/esr00748>

Curtice, C., J. Cleary, E. Shumchenia, and P.N. Halpin. 2019. Marine-life Data and Analysis Team (MDAT) technical report on the methods and development of marine-life data to support regional ocean planning and management. Prepared on behalf of the Marine-life Data and Analysis Team (MDAT). Available online at:
<http://seamap.env.duke.edu/models/MDAT/MDAT-Technical-Report.pdf>.

D’Amico, A., R.C. Gisiner, D.R. Ketten, J.A. Hammock, C. Johnson, P.L. Tyack, and J. Mead. 2009. Beaked whale strandings and naval exercises. *Aq. Mamm.* 35(4): 452-472. DOI: 10.1578/AM.35.4.2009.452

Daan, S., C. Deerenberg, and C. Dijkstra. 1996. Increased daily work precipitates natural death in the kestrel. *Journal of Animal Ecology*: 539-544. <https://doi.org/10.2307/5734>

Dähne, M., A. Gilles, K. Lucke, V. Peschko, S. Adler, K. Krügel, J. Sundermeyer, and U. Siebert. 2013. Effects of pile-driving on harbour porpoises (*Phocoena phocoena*) at the first offshore wind farm in Germany. *Environmental Research Letters* 8(2): 025002.
<https://doi.org/10.1088/1748-9326/8/2/025002>

Dähne, M., et al. 2017. Bubble curtains attenuate noise from offshore wind farm construction and reduce temporary habitat loss for harbour porpoises. *Marine Ecology Progress Series* 580:221-237. <https://doi.org/10.3354/meps12257>

Dalen, J. and G.M. Knutsen. 1987. Scaring Effects in Fish and Harmful Effects on Eggs, Larvae and Fry by Offshore Seismic Explorations. In: Merklinger, H.M. (eds) *Progress in Underwater Acoustics*. Springer, Boston, MA. https://doi.org/10.1007/978-1-4613-1871-2_12

Daoust, P.Y., E.L. Couture, T. Wimmer, and L. Bourque. 2017. Incident Report: North Atlantic Right Whale Mortality Event in the Gulf of St. Lawrence, 2017. Collaborative Report Produced by: Canadian Wildlife Health Cooperative, Marine Animal Response Society, and Fisheries and Oceans Canada. 256 pp.

David, J.A. 2006. Likely sensitivity of bottlenose dolphins to pile-driving noise. *Water and Environment Journal* 20 (1): 48-54. <https://doi.org/10.1111/j.1747-6593.2005.00023.x>

Davis, G.E., M.F. Baumgartner, J.M. Bonnell, J. Bell, C. Berchok, J.B. Thornton, S. Brault, G. Buchanan, R.A. Charif, D. Cholewiak, and C.W. Clark. 2017. Long-term passive acoustic recordings track the changing distribution of North Atlantic right whales (*Eubalaena glacialis*) from 2004 to 2014. *Scientific Reports* 7(1):13460. DOI:10.1038/s41598-017-13359-3

Davis, G.E., M.F. Baumgartner, P.J. Corkeron, J. Bell, C. Berchok, J.M. Bonnell, J. Bort Thornton, S. Brault, G.A. Buchanan, D.M. Cholewiak, and C.W. Clark. 2020. Exploring movement patterns and changing distributions of baleen whales in the western North Atlantic using a decade of passive acoustic data. *Global Change Biology* 26 (9): 4812-4840. <https://doi.org/10.1111/gcb.15191>

Davis, K.T.A and S.W. Brilliant. 2019. Mass human-caused mortality spurs federal action to protect endangered North Atlantic right whales in Canada. *Marine Policy* 104: 157-162. <https://doi.org/10.1016/j.marpol.2019.02.019>

Deecke, V. B., P. J. B. Slater, and J. K. B. Ford. 2002. Selective habituation shapes acoustic predator recognition in harbour seals. *Nature* 420(14 November): 171–173. DOI: 10.1038/nature01030

Degraer, S., D.A. Carey, J.W.P. Coolen, Z.L. Hutchison, F. Kerckhof, B. Rumes, and J. Vanaverbeke. 2020. Offshore wind farm artificial reefs affect ecosystem structure and functioning: A synthesis. *Oceanography* 33(4):48–57, <https://doi.org/10.5670/oceanog.2020.405>.

De Mesel, I., F. Kerckhof, A. Norro, B. Rumes, and S. Degraer. 2015. Succession and seasonal dynamics of the epifauna community on offshore wind farm foundations and their role as stepping stones for non-indigenous species. *Hydrobiologia* 756(37):37–50. <https://doi.org/10.1007/s10750-014-2157-1>.

DeRuiter, S.L. and K.L. Doukara. 2012. Loggerhead turtles dive in response to airgun sound exposure. *Endangered Species Research* 16(1): 55-63. <https://doi.org/10.3354/esr00396>

DeRuiter, S.L., B.L. Southall, J. Calambokidis, W.M.X. Zimmer, D. Sadykova, E.A. Falcone, A.S. Friedlaender, J.E. Joseph, D. Moretti, G.S. Schorr, L. Thomas, and P.L. Tyack. 2013. First

direct measurements of behavioural responses by Cuvier's beaked whales to mid-frequency active sonar. *Biology Letters* 9: 20130223. <https://doi.org/10.1098/rsbl.2013.0223>

DeRuiter, S.L., R. Langrock, T. Skirbutas, J.A. Goldbogen, J. Calambokidis, A.S. Friedlaender, and B.L. Southall. 2017. A multivariate mixed hidden Markov model for blue whale behaviour and responses to sound exposure. *The Annals of Applied Statistics* 11(1): 362-392. DOI: 10.1214/16-AOAS1008

Di Iorio, L. and C.W. Clark. 2009. Exposure to seismic survey alters blue whale acoustic communication. *Biology Letters* 6 (3): 334-335. <https://doi.org/10.1098/rsbl.2009.0651>

Department of the Navy (DoN). 2005. Marine Resources Assessment for the Northeast Operating Areas: Atlantic City, Narragansett Bay, and Boston. Final Report. Contract Number N62470 -02-D-9997, CTO 0018. Department of the Navy, U.S. Fleet Forces Command, Norfolk, VA. Prepared by Geo- Marine, Inc., Newport News, VA. xvi + 535 pp.

Department of the Navy (DoN). 2017. Criteria and Thresholds for U.S. Navy Acoustic and Explosive Effects Analysis (Phase III). Technical Report.

Dooling, R.J. 2004. Audition: Can Birds Hear Everything They Sing? *Nature's Music: The Science of Birdsong*. P. Marler and H. Slabbekoorn, Eds., pp 206-225. Elseviers-Academic Press, San Diego.

Dorrell R. M., C.J. Lloyd, B.J. Lincoln, T.P. Rippeth, J.R. Taylor, C.C.P. Caulfield, et al. 2022. Anthropogenic mixing in seasonally stratified shelf seas by offshore wind farm infrastructure *Front. Mar. Sci.* 9: 830927. doi: 10.3389/fmars.2022.830927/abstract

Dukas, R. 2002. Behavioural and ecological consequences of limited attention. *Philosophical Transactions of the Royal Society of London. Series B: Biological Sciences* 357 (1427): 1539-1547. <https://doi.org/10.1098/rstb.2002.1063>

Dunlop, R.A., D.H. Cato, and M.J. Noad. 2010. Your attention please: increasing ambient noise levels elicits a change in communication behaviour in humpback whales (*Megaptera novaeangliae*). *Proceedings of the Royal Society B: Biological Sciences* 277 (1693): 2521-2529. <https://doi.org/10.1098/rspb.2009.2319>

Dunlop, R. A., D.H. Cato, and M.J. Noad. 2014.. Evidence of a Lombard response in migrating humpback whales (*Megaptera novaeangliae*). *The Journal of the Acoustical Society of America* 136(1): 430-437. DOI: 10.1016/j.marpolbul.2015.12.044

Dunlop, R. A. 2016. The effect of vessel noise on humpback whale, *Megaptera novaeangliae*, communication behaviour. *Animal Behaviour* 111: 13-21. <https://doi.org/10.1016/j.anbehav.2015.10.002>

Dunlop, R.A., M.J. Noad, and D.H. Cato. 2016a. A spatially explicit model of the movement of humpback whales relative to a source. *Meetings on Acoustics (POMA)*. Volume 27(1), 16 Jul 2016. Acoustical Society of America, Dublin, Ireland. <https://doi.org/10.1121/2.0000296>.

- Dunlop, R.A., M.J. Noad, R.D. McCauley, E. Kniest, R. Slade, D. Paton, and D.H. Cato. 2016b. Response of humpback whales (*Megaptera novaeangliae*) to ramp-up of a small experimental air gun array. *Marine Pollution Bulletin* 103(1–2): 72-83. <https://doi.org/10.1016/j.marpolbul.2015.12.044>.
- Dunlop, R.A., M.J. Noad, R.D. McCauley, E. Kniest, R. Slade, D. Paton, and D.H. Cato. 2017a. The behavioural response of migrating humpback whales to a full seismic airgun array. *Proceedings of the Royal Society B: Biological Sciences* 284 (1869): 20171901. <https://doi.org/10.1098/rspb.2017.1901>
- Dunlop, R.A., M.J. Noad, R.D. McCauley, L. Scott-Hayward, E. Kniest, R. Slade, D. Paton, and D.H. Cato. 2017b. Determining the behavioural dose–response relationship of marine mammals to air gun noise and source proximity. *Journal of Experimental Biology* 220 (16): 2878-2886. <https://doi.org/10.1242/jeb.160192>
- Dunlop, R.A., M.J. Noad, R.D. McCauley, E. Kniest, R. Slade, D. Paton, and D.H. Cato. 2018. A behavioural dose-response model for migrating humpback whales and seismic air gun noise. *Marine Pollution Bulletin* 133: 506-516. <https://doi.org/10.1016/j.marpolbul.2018.06.009>
- Dunlop, R.A., J. Braithwaite, L.O. Mortensen, and C.M. Harris. 2021. Assessing population-level effects of anthropogenic disturbance on a marine mammal population. *Frontiers in Marine Science* 8: 624981. <https://doi.org/10.3389/fmars.2021.624981>
- Edren, S.M., S.M. Andersen, J. Teilmann, J. Carstensen, P.B. Harders, R. Dietz, and L.A. Miller. 2010. The effect of a large Danish offshore wind farm on harbor and gray seal haul-out behavior. *Marine Mammal Science* 26 (3): 614-634. <https://doi.org/10.1111/j.1748-7692.2009.00364.x>
- Edwards, E.F., Hall, C., Moore, T.J., Sheredy, C., and J.V. Redfern. 2015. Global distribution of fin whales *Balaenoptera physalus* in the post-whaling era (1980–2012), *Mammal Review*, 45(4), October 2015, Pages 197-214. <https://doi.org/10.1111/mam.12048>
- Ellison, W.T., B.L. Southall, C.W. Clark, and A.S. Frankel. 2012. A new context-based approach to assess marine mammal behavioral responses to anthropogenic sounds. *Conservation Biology* 26(1):21-28. <http://dx.doi.org/10.1111/j.1523-1739.2011.01803.x>
- Empire Wind. 2023. Unpublished PSO HRG survey data of the Empire Wind Project Area, 17 June - 02 August 2023.
- Erbe, C. and D.M. Farmer. 2000. A software model to estimate zones of impact on marine mammals around anthropogenic noise. *The Journal of the Acoustical Society of America* 108(3): 1327-1331. <https://doi.org/10.1121/1.1288939>
- Erbe, C. 2008. Critical ratios of beluga whales (*Delphinapterus leucas*) and masked signal duration. *Journal of the Acoustical Society of America* 124 (4): 2216-2223. <https://doi.org/10.1121/1.2970094>

Erbe, C., C. Reichmuth, K. Cunningham, K. Lucke, and R. Dooling. 2016. Communication masking in marine mammals: a review and research strategy. *Marine Pollution Bulletin* 103:15-38. <https://doi.org/10.1016/j.marpolbul.2015.12.007>

Erbe, C., R.D. McCauley, and A. Gavrilov. 2016. Characterizing marine soundscapes. In Popper, A.N. and A.D. Hawkins (eds.). *The Effects of Noise on Aquatic Life II*. Volume 875. Springer, New York. pp. 265-271. https://doi.org/10.1007/978-1-4939-2981-8_31.

Eschmeyer, W. N., and J. D. Fong. 2016. Species by Family/Subfamily in the Catalog of Fishes. San Francisco, CA: California Academy of Sciences.

Estabrook, B. J., K. B. Hodge, D.P. Salisbury, D. Ponirakis, D.V. Harris, J.M. Zeh, S.E. Parks, and A.N. Rice. 2019. Year-1 Annual Survey Report for New York Bight Whale Monitoring Passive Acoustic Surveys October 2017–October 2018. Contract C009925. New York State Department of Environmental Conservation

Estabrook, B., J. Tielens, A. Rahaman, D. Ponirakis, C. Clark, and A. Rice. 2022. Dynamic spatiotemporal acoustic occurrence of North Atlantic right whales in the offshore Rhode Island and Massachusetts Wind Energy Areas. *Endangered Species Research* (49): 115-133. <https://doi.org/10.3354/esr01206>

Fair, P.A. and P.R. Becker. 2000. Review of stress in marine mammals. *Journal of Aquatic Ecosystem Stress and Recovery* 7(4): 335-354. <http://dx.doi.org/10.1023/A:1009968113079>

Falcone, E.A., G. S. Schorr, S. L. Watwood, S. L. DeRuiter, A. N. Zerbini, R. D. Andrews, R. P. Morrissey, and D. J. Moretti. 2017. Diving behaviour of Cuvier's beaked whales exposed to two types of military sonar. *Royal Society Open Science* 4 (170629): 1–21. <https://doi.org/10.1098/rsos.170629>

Farmer, N.A., K. Baker, D.G. Zeddies, S.L. Denes, D.P. Noren, L.P. Garrison, A. Machernis, E.M. Fougères, and M. Zykov. 2018. Population consequences of disturbance offshore oil and gas activity for endangered sperm whales (*Physeter macrocephalus*). *Biological Conservation* 227: 189-204. <https://doi.org/10.1016/j.biocon.2018.09.006>

Fay, R.R., A.N. Popper, and J.F. Webb. 2008. Introduction to fish bioacoustics. In: Webb, J.F., R.R. Fay, and A.N. Popper, eds. *Fish Bioacoustics*. Springer Handbook of Auditory Research 32, 1-15. https://doi.org/10.1007/978-0-387-73029-5_1

Fay, R.R. 2009. Soundscapes and the sense of hearing of fishes. *Integrative Zoology*, 4: 26-32. <https://doi.org/10.1111/j.1749-4877.2008.00132.x>

Feare, C. J. 1976. Desertion and abnormal development in a colony of Sooty Terns *Sterna fuscata* infested by virus-infected ticks. *Ibis* 118(1): 112-115. <https://doi.org/10.1111/j.1474-919X.1976.tb02015.x>

Fewtrell, J. L., and R. D. McCauley. 2012. Impact of air gun noise on the behaviour of marine fish and squid. *Marine Pollution Bulletin* 64 (5): 984–993. <https://doi.org/10.1016/j.marpolbul.2012.02.009>

Fernandez-Betelu, Oihane, et al. 2022. Far-field effects of impulsive noise on coastal bottlenose dolphins, Dryad, Dataset, <https://doi.org/10.5061/dryad.6hdr7sr17>

Fields, D. M., N.O. Handegard, J. Dalen, C. Eichner, K. Malde, Ø. Karlsen, A.B. Skiftesvik, C.M.F. Durif, and H.I. Browman. 2019. Airgun blasts used in marine seismic surveys have limited effects on mortality, and no sublethal effects on behaviour or gene expression, in the copepod *Calanus finmarchicus*. – *ICES Journal of Marine Science*, doi:10.1093/icesjms/fsz126.

Finneran, J. J., C.E. Schlundt, D.A. Carder, J.A. Clark, J.A. Young, J.B. Gaspin, and S.H. Ridgway. 2000. Auditory and behavioral responses of bottlenose dolphins (*Tursiops truncatus*) and a beluga whale (*Delphinapterus leucas*) to impulsive sounds resembling distant signatures of underwater explosions. *Journal of the Acoustical Society of America* 108: 417-431. <https://doi.org/10.1121/1.429475>

Finneran, J. J., R. Dear, D. A. Carder, and S. H. Ridgway. 2002. Auditory and behavioral responses of California sea lions (*Zalophus californianus*) to single underwater impulses from an arc-gap transducer. *Journal of the Acoustical Society of America* 114(3): 1667. <https://doi.org/10.1121/1.1598194>

Finneran, J.J., R. Dear, D.A. Carder, and S.H. Ridgway. 2003. Auditory and behavioral responses of California sea lions (*Zalophus californianus*) to single underwater impulses from an arc-gap transducer. *Journal of the Acoustical Society of America* 114 (3): 1667. <https://doi.org/10.1121/1.1598194>

Finneran, J.J. 2015. Auditory weighting functions and TTS/PTS exposure functions for cetaceans and marine carnivores. Technical report by SSC Pacific, San Diego, CA, USA.

Finneran, J.J., 2018. Conditioned attenuation of auditory brainstem responses in dolphins warned of an intense noise exposure: Temporal and spectral patterns. *The Journal of the Acoustical Society of America* 143(2): 795-810. <https://doi.org/10.1121/1.5022784>

Fish J.F. and J.S. Vania. 1971. Killer whale, *Orcinus orca*, sounds repel white whales, *Delphinapterus leucas*. *Fish Bull* 69: 531–536.

Foote, A.D., R.W. Osborne, and A.R. Hoelzel. 2004. Whale-call response to masking boat noise. *Nature* 428: 910. <https://doi.org/10.1038/428910a>

Ford, J.K. and R.R. Reeves. 2008. Fight or flight: antipredator strategies of baleen whale. *Mammal Review* 38(1): 50-86. <https://doi.org/10.1111/j.1365-2907.2008.00118.x>

Forney, K. A., B. L. Southall, E. Sloaten, S. Dawson, A. J. Read, R. W. Baird, and R. L. Brownell, Jr. 2017. Nowhere to go: noise impact assessments for marine mammal populations with high site fidelity. *Endangered Species Research* 32: 391–413. <https://doi.org/10.3354/esr00820>

Francis, C. and J. Barber. 2013. A framework for understanding noise impacts on wildlife: An urgent conservation priority. *Frontiers in Ecology and the Environment* 11: 10.1890/120183.

Frankel, A.S. and C.W. Clark. 2000. Behavioral responses of humpback whales (*Megaptera novaeangliae*) to full-scale ATOC signals. *Journal of the Acoustical Society of America* 108 (4): 1930-1937. <https://doi.org/10.1121/1.1289668>

Frid, A., and L. Dill. 2002. Human-caused disturbance stimuli as a form of predation risk. *Conservation Ecology* 6(1): 11. DOI:10.5751/ES-00404-060111

Friedlaender, A. S., E. L. Hazen, J. A. Goldbogen, A. K. Stimpert, J. Calambokidis, and B. L. Southall. 2016. Prey-mediated behavioral responses of feeding blue whales in controlled sound exposure experiments. *Ecological Applications* 26(4): 1075–1085. <https://doi.org/10.1002/15-0783>

Frings, H. and M. Frings. 1967. Underwater sound fields and behavior of marine invertebrates. *Marine bio-acoustics* 2: 261-282.

Fristrup, K. M., L. T. Hatch and C. W. Clark. 2003. Variation in humpback whale (*Megaptera novaeangliae*) song length in relation to low-frequency sound broadcasts. *The Journal of Acoustical Society of America* 113(6): 3411–3424. <https://doi.org/10.1121/1.1573637>

Fritts, T. H., A.B. Irvine, R D. Jennings, L.A. Collum, W. Hoffman, and M.A. McGehee. 1983. Turtles, birds, and mammals in the northern Gulf of Mexico and nearby Atlantic waters. U.S. Fish and Wildlife Service, Division of Biological Services, Washington, D.C., FWS/OBS-82/65, 455 pp.

Fritz, H., M. Guillemain, and D. Durant. 2002. The cost of vigilance for intake rate in the mallard (*Anas platyrhynchos*): an approach through foraging experiments. *Ethology Ecology & Evolution* 14(2): 91-97. <https://doi.org/10.1080/08927014.2002.9522748>

Gailey, G., B. Wursig, and T.L. McDonald. 2007. Abundance, behavior, and movement patterns of western gray whales in relation to a 3-D seismic survey, northeast Sakhalin Island, Russia. *Environmental Monitoring and Assessment* 134 (1-3): 75-91. DOI: 10.1007/s10661-007-9812-1

Gailey, G., O. Sychenko, T. McDonald, R. Racca, A. Rutenko, and K. Bröker. 2016. Behavioural responses of western gray whales to a 4-D seismic survey off northeastern Sakhalin Island, Russia. *Endangered Species Research* 30: 53–71. <https://doi.org/10.3354/esr00713>

Gallagher, C.A., V. Grimm, L.A. Kyhn, C.C. Kinze, and J. Nabe-Nielsen. 2021. Movement and seasonal energetics mediate vulnerability to disturbance in marine mammal populations. *The American Naturalist* 197(3): 296-311. DOI: 10.1086/712798

Gardline. 2021a. Empire Wind Protected Species Observer Interim Report 1. Prepared by Gardline. R. Portugal, A. Stevens.

Gardline. 2021b. Empire Wind Protected Species Observer Final Report. Prepared by Gardline. W. Arundel, P. Batard, J. Benford, C. Cinco, D. Cuevas-Miranda, G. Duguid, I. Edgar, J. Ellis, B. Gomes De Souza, M. Goulton, K. Hamilton, C. Hough, H. Janczak, A. Leszczynska, S. McBride-Kebert, A. Meadows, J. Marosz, K. Pawlowski, R. Portugal, T. Scott-Heagerty, M. Da Silva, A. Stevens, and A. Tilt. July 9, 2021.

Garrison, L.P., P.E. Rosel, A.A. Hohn, R. Baird and W. Hoggard. 2016. Abundance of the coastal morphotype of bottlenose dolphin *Tursiops truncatus*, in U.S. continental shelf waters between New Jersey and Florida during winter and summer 2002. Southeast Fisheries Science Center, Protected Resources and Biodiversity Division, 75 Virginia Beach Dr., Miami, FL 33140. PRBD Contribution # PRBD-2017-03. 135pp.

Geo-Marine. 2010. Ocean/Wind Power Ecological Baseline Studies: January 2008 – December 2009. Final Report.

Geoquip Marine. 2021. Protected Species Observer Final Report Empire Wind – BOEM Lease OCS-A-0512. Prepared for Equinor. November 24, 2021.

Gerrodette, T., B.L. Taylor, R. Swift, L. Rojas-Bracho, and A.M.J. Legorreta. 2011. A combined visual and acoustic estimate of 2008 abundance, and change in abundance since 1997, for the vaquita, *Phocoena sinus*. *Marine Mammal Science*. 27(2):E79 - E100. DOI: 10.1111/j.1748-7692.2010.00438.x

Gervaise, C., N. Roy, Y. Simard, B. Kinda, and N. Menard. 2012. Shipping noise in whale habitat: characteristics, sources, budget, and impact on belugas in Saguenay-St. Lawrence Marine Park hub. *J. Acoust. Soc. Am.* 132(1):76-89. <https://doi.org/10.1121/1.4728190>

Gilles A., M.Scheidat, and U. Siebert. 2009. Seasonal distribution of harbour porpoises and possible interference of offshore windfarms in the German North Sea. *Marine Ecology Progress Series* 383: 295–307. doi: 10.3354/meps08020.

Goldbogen, J. A., B. L. Southall, S. L. DeRuiter, J. Calambokidis, A. S. Friedlaender, E. L. Hazen, E. A. Falcone, G. S. Schorr, A. Douglas, D. J. Moretti, C. Kyburg, M. F. McKenna, and P. L. Tyack. 2013a. Blue whales respond to simulated mid-frequency military sonar. *Proc Biol Sci* 280(1765): 20130657. doi:10.1098/rspb.2013.0657

Goldbogen, J. A., A.S. Friedlaender, J. Calambokidis, M.F. McKenna, M. Simon, and D.P. Nowacek. 2013b. Integrative approaches to the study of baleen whale diving behavior, feeding performance, and foraging ecology. *Bioscience* 63: 90–100. doi: 10.1525/bio.2013.63.2.5

Gomez, C., Lawson, J.W., Wright, A.J., Buren, A.D., Tollit, D. and V. Lesaged. 2016. A systematic review on the behavioural responses of wild marine mammals to noise: the disparity between science and policy. *Canadian Journal of Zoology* 94(12): 801-819, <https://doi.org/10.1139/cjz-2016-0098>.

Goold, J. 1996. Acoustic Assessment Of Populations Of Common Dolphin *Delphinus Delphis* In Conjunction With Seismic Surveying. *J. Mar. Biol. Ass. U.K.* 76: 811-820. <https://doi.org/10.1017/S0025315400031477>

Gordon, J., D. Gillespie, J. Potter, A. Frantzis, M.P. Simmonds, R. Swift, and D. Thompson. 2003. A review of the effects of seismic surveys on marine mammals. *Marine Technology Society Journal* 37(4): 16-34. <https://doi.org/10.4031/002533203787536998>

Götz, T., G. Hastie, L.T. Hatch, O. Raustein, B.L. Southall, M. Tasker, and F. Thomsen. 2009. Overview of the impacts of anthropogenic underwater sound in the marine environment. OSPAR Commission, 134 pp.

Gowan, T. A., Ortega-Ortiz, J. G., Hostetler, J. A., Hamilton, P. K., Knowlton, A. R., Jackson, K. A., George, R. C., Taylor, C. R., and Naessig, P. J. 2019. Temporal and demographic variation in partial migration of the North Atlantic right whale. *Scientific Reports*, 9(1), 353, Article 353. <https://doi.org/10.1038/s41598-018-36723-3>

GRLWEAP, Pile Dynamics, Inc. 2010. GRLWEAP. Accessed on 23 January 2024 at: <https://www.pile.com/>.

Graham, I.M., Merchant, N.D., Farcas, A., Barton, T.R., Cheney, B., Bono, S., Thompson, P.M. 2019. Harbour porpoise responses to pile-driving diminish over time. *R. Soc. Open sci.* 6: 190335. <http://dx.doi.org/10.1098/rsos.190335>

Hain, J.H.W., M.J. Ratnaswamy, R.D. Kenney, and H.E. Winn. 1992. The fin whale, *Balaenoptera physalus*, in waters of the northeastern United States continental shelf. *Rep. Int. Whal. Commn* 42:653B669.

Halvorsen, M. B., B.M. Casper, F. Matthews, T.J. Carlson, and A.N. Popper. 2012a. Effects of exposure to piledriving sounds on the lake sturgeon, Nile tilapia and hogchoker. *Proceedings of the Royal Society of London B: Biological Sciences* 279 (1748): 4705-4714. <https://doi.org/10.1098/rspb.2012.1544>

Halvorsen, M. B., B.M. Casper, C.M. Woodley, T.J. Carlson, and A.N. Popper. 2012b. Threshold for onset of injury in Chinook salmon from exposure to impulsive pile driving sounds. *PLoS One* 7(6): e38968. <https://doi.org/10.1371/journal.pone.0038968>

Hamazaki, T. 2002. Spatiotemporal prediction models of cetacean habitats in the midwestern North Atlantic Ocean (from Cape Hatteras, North Carolina, USA. to Nova Scotia, Canada). *Marine Mammal Science* 18(4): 920-939.

Hamilton P.K., A.R. Knowlton, M.N. Hagbloom, K.R. Howe, M.K. Marx, H.M. Pettis, A.M. Warren, and M.A. Zani. 2021. Maintenance of the North Atlantic right whale catalog, whale scarring and visual health databases, anthropogenic injury case studies, and near real-time matching for biopsy efforts, entangled, injured, sick, or dead right whales. Woods Hole (MA): U.S. Department of Commerce, National Oceanic and Atmospheric Administration, National Marine Fisheries Service, Northeast Fisheries Science Center. 105 p.

Hammond, P.S., P. Berggren, H. Benke, D.L. Borchers, A. Collet, M.P. Heide-Jørgensen, S. Heimlich, A.R. Hiby, M.F. Leopold, and N. Øien. 2002. Abundance of harbour porpoise and other cetaceans in the North Sea and adjacent waters. *Journal of Applied Ecology* 39(2): pp.361-376. <https://doi.org/10.1046/j.1365-2664.2002.00713.x>

Hamre, L., S.F. Khankandi, P.J. Strøm, and C. Athanasiu. 2011. Lateral behaviour of large diameter monopiles at Sheringham Shoal Wind Farm. *Frontiers in offshore geotechnics II*, pp.575-580.

Hare, J.A., B.J. Blythe, K.H. Ford, S. Godfrey-McKee, B.R. Hooker, B.M. Jensen, A. Lipsky, C. Nachman, L. Pfeiffer, M. Rasser, and K. Renshaw. 2022. NOAA Fisheries and BOEM Federal Survey Mitigation Implementation Strategy - Northeast U.S. Region, Northeast Fisheries Science Center (U.S.), NOAA technical memorandum NMFS-NE; 292. <https://doi.org/10.25923/jqse-x746>

Harris, C.M., ed. 1998. Handbook of Acoustical Measurements and Noise Control. Acoustical Society of America, Woodbury, NY.

Harris, C.M., L. Thomas, E.A. Falcone, J. Hildebrand, D. Houser, P.H. Kvalsheim, F.A. Lam, P.J.O. Miller, D.J. Moretti, A.J. Read, H. Slabbekoorn, B.L. Southall, P.L. Tyack, D. Wartzok, and V.M. Janik. 2017. Marine mammals and sonar: Dose-response studies, the risk- disturbance hypothesis and the role of exposure context, 396 *J Appl Ecol.* 2018; 55:396–404. <https://doi.org/10.1111/1365-2664.12955>

Harris, C. M., L.J. Wilson, C.G. Booth, and J. Harwood. 2017. October 21-28, 2017. Population consequences of disturbance: A decision framework to identify priority populations for PCoD modelling. Paper presented at the 22nd Biennial Conference on the Biology of Marine Mammals, Halifax, Nova Scotia, Canada.

Harrison, S. and M. Rousseau. 2020. Comparison of artificial and natural reef productivity in Nantucket Sound, MA, USA. *Estuaries and Coasts*, 43(8), pp.2092-2105.

Harwood, J., and C. Booth. 2016. The application of an interim PCoD (PCoD Lite) protocol and its extension to other marine mammal populations and sites Final Report (SMRUCONR-2016-004).

Hastie, G., D. J. F. Russell, B. McConnell, S. Moss, D. Thompson, and V. M. Janik. 2015. Sound exposure in harbour seals during the installation of an offshore wind farm: predictions of auditory damage. *Journal of Applied Ecology* 52:631-640. <https://doi.org/10.1111/1365-2664.12403>

Hastings, M.C., and A.N. Popper. 2005. Effects of sound on fish. Prepared by Jones & Stokes for the California Department of Transportation: 82.

Hatch, L.T., C.W. Clark, S.M. van Parijs, A.S. Frankel, and D.W. Ponirakis. 2012. Quantifying loss of acoustic communication space for right whales in and around a U.S. National Marine Sanctuary. *Conservation Biology* 26 (6): 983-994. <https://doi.org/10.1111/j.1523-1739.2012.01908.x>

Hawkins, A.D. and A.D.F. Johnstone. 1978. The hearing of the Atlantic salmon, *Salmo salar*. *Fish Biology* 13: 655-673. <https://doi.org/10.1111/j.1095-8649.1978.tb03480.x>

- Hayes, S.A., E. Josephson, K. Maze-Foley, and P.E. Rosel (eds.). 2020. U.S. Atlantic and Gulf of Mexico marine mammal stock assessments: 2019. NOAA Technical Memorandum NMFSNE-264, National Marine Fisheries Service: 479.
- Hayes, S. A., E. Josephson, K. Maze-Foley, and P. E. Rosel. 2021. Draft U.S. Atlantic and Gulf of Mexico Marine Mammal Stock Assessments 2021. Woods Hole, MA.
- Hayes, S.A., E. Josephson, K. Maze-Foley, P.E. Rosel, and J. Turek. 2021. *US Atlantic and Gulf of Mexico Marine Mammal Stock Assessments 2020*. US Department of Commerce. US Department of Commerce. NOAA Technical Memorandum NMFS-NE-271, Woods Hole, MA, USA. 394 p.
- Hayes, S.A., E. Josephson, K. Maze-Foley, P.E. Rosel, and J. Wallace (eds). 2022. U.S. Atlantic and Gulf of Mexico marine mammal stock assessments: 2021. NOAA Technical Memorandum NMFS-NE-271, National Marine Fisheries Service: 386. Available at: <https://doi.org/10.25923/6tt7-kc16>
- Hayes, S.A., E. Josephson, K. Maze-Foley, P.E. Rosel, J. McCordic, and J. Wallace (eds). 2023. U.S. Atlantic and Gulf of Mexico marine mammal stock assessments: 2022. NOAA Technical Memorandum NMFS-NE-304, National Marine Fisheries Service: 257.
- HDR. 2023. Field Observations During Offshore Wind Structure Installation and Operation, Volume 2. Final Report to U.S. Department of the Interior, Bureau of Ocean Energy Management, Office of Renewable Energy Programs. Contract No. M15PC00002. Report No. OCS Study BOEM 2023-033, pp 48.
- Hemila, S., S. Nummela, A. Berta, and T. Reuter. 2006. High-frequency hearing in phocid and otariid pinnipeds: An interpretation based on inertial and cochlear constraints. *Journal of the Acoustical Society of America* 120 (6): 3463-3466. <https://doi.org/10.1121/1.2372712>
- Henderson, D., B. Hu, and E. Bielefeld. 2008. Patterns and mechanisms of noise-induced cochlear pathology. In *Auditory trauma, protection, and repair* (pp. 195-217). Springer, Boston, MA.
- Henderson, E.E., S.W. Martin, R. Manzano-Roth, and B.M. Matsuyama. 2016. Occurrence and habitat use of foraging Blainville's beaked whales (*Mesoplodon densirostris*) on a US Navy range in Hawaii. *Aquatic Mammals* 42(4): 549. DOI 10.1578/AM.42.4.2016.549
- Hermanssen, L., J. Tougaard, K. Beedholm, J. Nabe-Nielsen, and P.T. Madsen. 2014. High frequency components of ship noise in shallow water with a discussion of implications for harbor porpoises (*Phocoena phocoena*). *J. Acoust. Soc. Am.* 136(4): 1640-1653. <https://doi.org/10.1121/1.4893908>
- Herzing, D. L. 1997. The natural history of tree-ranging Atlantic spotted dolphins (*Stenella frontalis*): Age classes, color phases and female reproduction. *Marine Mammal Science* 13:40-59.

- Hildebrand, J. A. 2009. Anthropogenic and natural sources of ambient noise in the ocean. *Marine Ecology Progress Series* 395: 5–20. <https://doi.org/10.3354/meps08353>
- Holberton, R. L., B. Helmuth, B., and J.C. Wingfield. 1996. The corticosterone stress response in gentoo and king penguins during the non-fasting period. *The Condor* 98(4): 850-854.
- Holme, C., M. Simurda, S. Gerlach, and M.A. Bellman. 2023. Relation Between Underwater Noise and Operating Offshore Wind Turbines. Conference: The Effects of Noise on Aquatic Life. http://dx.doi.org/10.1007/978-3-031-10417-6_66-1
- Holt, M.M., D.P. Noren, V. Veirs, C.K. Emmons, and S. Veirs. 2009. Speaking up: Killer whales (*Orcinus orca*) increase their call amplitude in response to vessel noise. *Journal of the Acoustical Society of America* 125(1): EL27- EL32. <https://doi.org/10.1121/1.3040028>.
- Holt, M. M., D. P. Noren, and C. K. Emmons. 2011. Effects of noise levels and call types on the source levels of killer whale calls. *The Journal of the Acoustical Society of America*, 130(5): 3100–3106. <https://doi.org/10.1121/1.3641446>
- Holt, M.M., D.P. Noren, R.C. Dunkin, and T.M. Williams. 2015. Vocal performance affects metabolic rate in dolphins: implications for animals communicating in noisy environments. *The Journal of Experimental Biology* 218(11): 1647-1654. <https://doi.org/10.1242/jeb.122424>
- Holt, M.M., J.B. Tennessen, E.J. Ward, M.B. Hanson, C.K. Emmons, D.A. Giles, and J.T. Hogan. 2021. Effects of vessel distance and sex on the behavior of endangered killer whales. *Frontiers in Marine Science* 7: 582182. <https://doi.org/10.3389/fmars.2020.582182>
- Hood, L. C., P.D. Boersma, and J.C. Wingfield. 1998. The adrenocortical response to stress in incubating Magellanic penguins (*Spheniscus magellanicus*). *The Auk*: 76-84. <https://doi.org/10.2307/4089113>
- Hooper, T., Beaumont, N., and C. Hattam. 2017. The implications of energy systems for ecosystem services: a detailed case study of offshore wind. *Renewable and Sustainable Energy Reviews*, 70, 230-241.
- Houser, D. S., S.W. Martin, and J.J. Finneran. 2013a. Behavioral responses of California sea lions to mid-frequency (3250-3450 Hz) sonar signals. *Marine Environmental Research* 92: 268-278. <https://doi.org/10.1016/j.marenvres.2013.10.007>
- Houser, D. S., S.W. Martin, and J.J. Finneran. 2013b. Exposure amplitude and repetition affect bottlenose dolphin behavioral responses to simulated mid-frequency sonar signals. *Journal of Experimental Marine Biology and Ecology* 443: 123-133. <http://dx.doi.org/10.1016/j.jembe.2013.02.043>
- Houser, D.S. and P.W. Moore. 2014. Report on the current and future status of underwater hearing research. Report NMMF-001-14, National Marine Mammal Foundation: 46 pp.

- Hu, M., H. Y. Yan, W. S. Chung, J. C. Shiao, and P. P. Hwang. 2009. Acoustical evoked potentials in two cephalopods inferred using the auditory brainstem response (ABR) approach. *Comparative Biochemistry and Physiology Part A: Molecular and Integrative Physiology* 153: 278-283. <https://doi.org/10.1016/j.cbpa.2009.02.040>
- Hutchison, Z.L., D.H. Secor, and A.B. Gill. 2020. The interaction between resource species and electromagnetic fields associated with electricity production by offshore wind farms. *Oceanography* 33(4): 96-107. <https://doi.org/10.5670/oceanog.2020.409>
- ICES. 1995. Underwater noise of research vessels: review and recommendations. ICES Cooperative Research Report No. 209. pp. 61. <https://doi.org/10.17895/ices.pub.5317>.
- ISO (International Organization for Standardization). 2003. Acoustics – Description, Measurement and Assessment of Environmental Noise – Part 1: Basic Quantities and Assessment Procedures (ISO 1996-1:2003(E)). International Organization for Standardization, Geneva.
- ISO (International Organization for Standardization). 2017. Underwater Acoustics ISO 18405. Geneva, Switzerland: International Organization for Standardization.
- Isojunno, S., C. Curé, P.H. Kvasdheim, F.P.A. Lam, P.L. Tyack, P.J. Wensveen, and P.J.O.M. Miller. 2016. Sperm whales reduce foraging effort during exposure to 1–2 kHz sonar and killer whale sounds. *Ecological Applications* 26(1): 77-93. <https://doi.org/10.1890/15-0040>
- Jansen, E., and C.D. Jong. (2016). Underwater noise measurements in the North Sea in and near the Princess Amalia Wind Farm in operation. <https://www.semanticscholar.org/paper/Underwater-noise-measurements-in-the-North-Sea-in-Jansen-Jong/9015c18a4d4afe381231f4a204b14b12c11a0d98>
- Jefferson, T.A., M.A. Webber, and R.L. Pitman. 2015. *Marine Mammals of the World: A Comprehensive Guide to their Identification*. Elsevier. 2nd edition.
- Jensen, A. S. and G. K. Silber. 2003. Large Whale Ship Strike Database. Retrieved from: <http://www.nmfs.noaa.gov/pr/overview/publicat.html>
- Jessop, T. S., A.D. Tucker, C.J. Limpus, and J.M. Whittier. 2003. Interactions between ecology, demography, capture stress, and profiles of corticosterone and glucose in a free-living population of Australian freshwater crocodiles. *General and comparative endocrinology* 132(1): 161-170. [https://doi.org/10.1016/S0016-6480\(03\)00078-9](https://doi.org/10.1016/S0016-6480(03)00078-9)
- Johnson T.L., J.J. van Berkel, L.O. Mortensen, M.A. Bell, I. Tiong, B. Hernandez, D.B. Snyder, F. Thomsen, and O. Svenstrup Petersen. 2021. Hydrodynamic modeling, particle tracking and agent-based modeling of larvae in the U.S. mid-Atlantic bight. Lakewood (CO): US Department of the Interior, Bureau of Ocean Energy Management. OCS Study BOEM 2021-049. 232 p. https://epis.boem.gov/final%20reports/BOEM_2021-049.pdf

- Jones, I.T., J.A. Stanley, and T.A. Mooney. 2020. Impulsive pile driving noise elicits alarm responses in squid (*Doryteuthis pealeii*). *Marine pollution bulletin* 150: 110792. <https://doi.org/10.1016/j.marpolbul.2019.110792>
- Juanes, F., K. Cox, and L. Brennan. 2017. The effect of anthropogenic and biological noise on fish behavior and physiology: A meta-analysis. *Journal of the Acoustic Society of America* 141 (3862). <https://doi.org/10.1111/gcb.14106>
- Kaifu K., T. Akamatsu, and S. Segawa. 2008. Underwater sound detection by cephalopod statocyst. *Fisheries Sci* 74: 781–86. <https://doi.org/10.1111/j.1444-2906.2008.01589.x>
- Kastelein, R.A., D. de Haan, N. Vaughan, C. Staal, and N.M. Schooneman. 2001. The influence of three acoustic alarms on the behaviour of harbour porpoises (*Phocoena phocoena*) in a floating pen. *Marine Environmental Research* 52 (4): 351-371. [https://doi.org/10.1016/S0141-1136\(01\)00090-3](https://doi.org/10.1016/S0141-1136(01)00090-3)
- Kastelein, R. A., W. C. Verboom, M. Muijsers, N. V. Jennings, and S. van der Heul. 2005. Influence of acoustic emissions for underwater data transmission on the behaviour of harbour porpoises (*Phocoena phocoena*) in a floating pen. *Marine Environmental Research* 59: 287–307. <https://doi.org/10.1016/j.marenvres.2004.05.005>
- Kastelein, R.A., N. Jennings, W.C. Verboom, D. de Haan, and N.M. Schooneman. 2006a. Differences in the response of a striped dolphin (*Stenella coeruleoalba*) and a harbour porpoise (*Phocoena phocoena*) to an acoustic alarm. *Marine Environmental Research* 61 (3): 363-378. <https://doi.org/10.1016/j.marenvres.2005.11.005>
- Kastelein, R.A., P. Wensveen, L. Hoek, and J.M. Terhune. 2009. Underwater hearing sensitivity of harbor seals (*Phoca vitulina*) for narrow noise bands between 0.2 and 80 kHz. *Journal of the Acoustical Society of America* 126 (1):476-483. <https://doi.org/10.1121/1.3132522>
- Kastelein, R.A., L. Helder-Hoek, S. Van de Voorde, S. deWinter, S. Janssen, and M.A. Ainslie. 2018. Behavioral responses of harbor porpoises (*Phocoena phocoena*) to sonar playback sequences of sweeps and tones (3.5-4.1 kHz). *Aquatic Mammals* 44 (4): 389–404. <https://doi.org/10.1578/AM.44.4.2018.389>
- Keen, K.A., R.S. Beltran, E. Pirotta, and D.P. Costa. 2021. Emerging themes in Population Consequences of Disturbance models. *Proc. R. Soc. B* 288: 20210325. <https://doi.org/10.1098/rspb.2021.0325>
- Kenney, R.D., M.A.M. Hyman, and H.E. Winn. 1985. Calculation of Standing Stocks and Energetic Requirements of the Cetaceans of the North-east United States Outer Continental Shelf. NOAA Technical Memorandum NMFS-F/NEC-41. National Marine Fisheries Service, Woods Hole, Massachusetts.
- Kenney, R.D. and K.J. Vigness-Raposa. 2010. Marine Mammals and Sea Turtles of Narragansett Bay, Block Island Sound, Rhode Island Sound, and Nearby Waters: An Analysis of Existing Data for the Rhode Island Ocean Special Area Management Plan. Final Technical Report to the Rhode Island Office of Energy Resources and Rhode Island Coastal Resources

Management Council. University of Rhode Island, Graduate School of Oceanography, Narragansett, RI. 340 pp.

King, C.D., M.L. Chou E, Rekdahl, S.G. Trabue, and H.C. Rosenbaum. 2021. Baleen whale distribution, behavior and overlap with anthropogenic activity in coastal regions of the New York Bight. *Marine Biology Research* 17: 380–400.
<https://doi.org/10.1080/17451000.2021.1967993>

King, S.L., R.S. Schick, C. Donovan, C.G. Booth, M. Burgman, L. Thomas, J. Harwood, and C. Kurle. 2015. An Interim Framework for Assessing the Population Consequences of Disturbance. *Methods in Ecology and Evolution* 6(10):1150–1158. Accessed: September 9, 2020. Retrieved from: <https://besjournals.onlinelibrary.wiley.com/doi/epdf/10.1111/2041-210X.12411>

Knowlton, A.R., F.T. Korsmeyer, J.E. Kerwin, H.Wu, and B. Hynes. 1995. The hydrodynamic effects of large vessels on right whales. Pages 62 in Eleventh Biennial Conference on the Biology of Marine Mammals, Orlando, Florida.

Knowlton, A.R. and S.D. Kraus. 2001. Mortality and serious injury of northern right whales (*Eubalaena glacialis*) in the western North Atlantic Ocean. *Journal of Cetacean Research and Management Special Issue* 2:193-208. <https://doi.org/10.47536/jcrm.vi.288>

Knowlton, A.R., P.K. Hamilton, M.K. Marx, H.M. Pettis and S.D. Kraus. 2012. Monitoring North Atlantic right whale *Eubalaena glacialis* entanglement rates: A 30 year retrospective. *Marine Ecology Progress Series*. 466: 293–302. <https://doi.org/10.3354/meps09923>

Knowlton, A.R., J. S. Clark, P.K. Hamilton, S.D. Kraus, H.M. Pettis, R.M. Rolland, and R.S. Schick. 2022. Fishing gear entanglement threatens recovery of critically endangered North Atlantic right whales. *Conservation Science and Practice* 4(8): e12736.
<https://doi.org/10.1111/csp2.12736>

Koschinski, S. and K. Lüdemann. 2013. *Development of Noise Mitigation Measures in Offshore Wind Farm Construction*. Commissioned by the Federal Agency for Nature Conservation (Bundesamt für Naturschutz, BfN). Original report (in German) published Jul 2011, updated Feb 2013, Nehnten and Hamburg, Germany. 97 p.
https://www.bfn.de/fileadmin/MDB/documents/themen/meeresundkuestenschutz/downloads/Berichte- und-Positionspapiere/Mitigation-Measures-Underwater-Noise_2013-08-27_final.pdf.

Kostyuchenko, L.P. 1973. Effects of elastic waves generated in marine seismic prospecting of fish eggs in the Black Sea. *Hydrobiol. Jour.* 9 (5): 45-48.

Kraus, S.D., S. Leiter, K. Stone, B. Wikgren, C. Mayo, P. Hughes, R.D. Kenney, C.W. Clark, A. N. Rice, B. Estabrook and J. Tielens. 2016. Northeast Large Pelagic Survey Collaborative Aerial and Acoustic Surveys for Large Whales and Sea Turtles. U.S. Department of the Interior, Bureau of Ocean Energy Management, Sterling, Virginia. OCS Study BOEM 2016-054. 117 pp. + appendices.

- Kraus, S.D., R.D Kenney, and L. Thomas. 2019. A framework for studying the effects of offshore wind development on marine mammals and turtles. Report prepared for the Massachusetts Clean Energy Center, Boston, MA, 2110.
- Krausman, P.R., L.K. Harris, C.L. Blasch, K.K.G. Koenen, and J. Francine. 2004. Effects of military operations on behavior and hearing of endangered Sonoran pronghorn. *Wildlife Monographs* 157: 1-41. [http://dx.doi.org/10.2193/0084-0173\(2004\)157\[1:EOMOOB\]2.0.CO;2](http://dx.doi.org/10.2193/0084-0173(2004)157[1:EOMOOB]2.0.CO;2)
- Krone, R., L. Gutow, T.J. Joschko, and A. Schröder. 2013. Epifauna dynamics at an offshore foundation- Implications of future wind power farming in the North Sea. *Marine Environmental Research* 85: 1-12. <https://doi.org/10.1016/j.marenvres.2012.12.004>
- Krumpel, A., A. Rice, K.E. Frasier, F. Reese, J.S. Trickey, A.E. Simonis, J.P. Ryan, S.M. Wiggins, A. Denzinger, H.U. Schnitzler, and S. Baumann-Pickering. 2021. Long-Term Patterns of Noise from Underwater Explosions and Their Relation to Fisheries in Southern California. *Frontiers in Marine Science* 8. <https://doi.org/10.3389/fmars.2021.796849>
- Kryter, K.D., W.D. Ward, J.D. Miller, and D.H. Eldredge. 1966. Hazardous exposure to intermittent and steady-state noise. *Journal of the Acoustical Society of America* 39 (3): 451-464. <https://doi.org/10.1121/1.1909912>
- Krzystan, A. M., Gowan, T. A., Kendall, W. L., Martin, J., Ortega-Ortiz, J. G., Jackson, K., Knowlton, A. R., Naessig, P., Zani, M., Schulte, D. W., and Taylor, C. R. 2018. Characterizing residence patterns of North Atlantic right whales in the southeastern USA with a multistate open robust design model. *Endangered Species Research*, 36, 279-295. <https://doi.org/10.3354/esr00902>
- Küsel, E.T., M.J. Weirathmueller, K.E. Zammit, E. C. R. Ozanich, C.O. Kanu, S.G. Dufault, M.L. Reeve, K.E. Limpert, M.E. Clapsaddle, and D.G. Zeddies. 2022. Empire Wind Acoustic and Exposure Modeling. Document 02585, Version 4.2 FINAL. Technical report by JASCO Applied Sciences for Equinor US.
- La Brecque, E., C. Curtice, J. Harrison, S.M. Van Parijs, and P.N. Halpin. 2015. Biologically Important Areas for Cetaceans within US Waters: Gulf of Mexico region. *Aquatic Mammals* 41 (1): 30-38. <http://dx.doi.org/10.1578/AM.41.1.2015.1>
- Ladich, F. and A. N. Popper. 2004. Parallel Evolution in Fish Hearing Organs. In G. A. Manley, A. N. Popper & R. R. Fay (Eds.), *Evolution of the Vertebrate Auditory System*, Springer Handbook of Auditory Research. New York, NY: Springer-Verlag
- Ladich, F. and T. Schulz-Mirbach. 2016. Diversity in Fish Auditory Systems: One of the Riddles of Sensory Biology. *Frontiers in Ecology and Evolution*, 4, 26. <https://doi.org/10.3389/fevo.2016.00028>
- Laist, D.W., A.R. Knowlton, J.G. Mead, A.S. Collet, and M. Podesta. 2001. Collisions between ships and whales. *Marine Mammal Science* 17(1): 35–75. <https://doi.org/10.1111/j.1748-7692.2001.tb00980.x>

Lambrechts, M.M. 1996. Organization of bird song and constraints on performance. - In: Kroodsma, D. E. and Miller, E. H. (eds). Ecology and evolution of acoustic communication in birds. Cornell Univ. Press, Ithaca and London, pp. 305-320.

Langhamer, O. and D. Wilhelmsson. 2009. Colonisation of fish and crabs of wave energy foundations and the effects of manufactured holes- a field experiment. *Marine Environmental Research* 68 (4): 151-7. <https://doi.org/10.1016/j.marenvres.2009.06.003>

Langhamer, O., 2012. Artificial reef effect in relation to offshore renewable energy conversion: state of the art. *The Scientific World Journal*: 2012. <https://doi.org/10.1100/2012/386713>

Lankford, S. E., T.E Adams, R.A. Miller, and J.J. Cech Jr. 2005. The cost of chronic stress: impacts of a nonhabituating stress response on metabolic variables and swimming performance in sturgeon. *Physiological and Biochemical Zoology* 78 (4): 599-609. <https://doi.org/10.1086/430687>

Lesage, V., C. Barrette, M.C. Kingsley, and B. Sjare. 1999. The effect of vessel noise on the vocal behavior of belugas in the St. Lawrence River estuary, Canada. *Marine Mammal Science* 15 (1): 65-84. <https://doi.org/10.1111/J.1748-7692.1999.TB00782.X>

Lillis, A., D. D. Bohnenstiehl, and D. Eggleston. 2014. Soundscape manipulation enhances larval recruitment of a reef-building mollusk. *PeerJ* 3: 10.7717/peerj.999.

Lindeboom, H.J., H.J. Kouwenhoven, M.J.N. Bergman, S. Bouma, S. Brasseur, R. Daan, R.C. Fijn, D. de Haan, S. Dirksen, et al. 2011. Short-term ecological effects of an offshore wind farm in the Dutch coastal zone; a compilation. *Environmental Research Letters* 6(3): 1-13. <https://doi.org/10.1088/1748-9326/6/3/035101>.

Linden, D.W. 2023. Population size estimation of North Atlantic right whales from 1990-2022. US Dept Commer Northeast Fish Sci Cent Tech Memo 314. 14 p.

Liu, M., L. Dong, M. Lin, and S. Li. 2017. Broadband ship noise and its potential impacts on Indo-Pacific humpback dolphins: Implications for conservation and management. *The Journal of the Acoustical Society of America* 142 (5): 2766. <https://doi.org/10.1121/1.5009444>

Lohr, B., T.F. Wright, and R.J. Dooling. 2003. Detection and discrimination of natural calls in masking noise by birds: estimating the active space of a signal. *Animal Behaviour* 65(4): 763-777. <https://doi.org/10.1006/anbe.2003.2093>

Lovell, J. M., M.M. Findlay, R.M. Moate, and H.Y. Yan. 2005. The hearing abilities of the prawn *Palaemon serratus*. *Comparative Biochemistry and Physiology Part A: Molecular & Integrative Physiology* 140 (1): 89-100. <https://doi.org/10.1016/j.cbpb.2004.11.003>

Lucke, K., S. Storch, J. Cooke, and U. Siebert. 2006. Literature Review of offshore wind farms with regard to marine mammals. Ecological Research on Offshore Wind Farms: International Exchange of Experiences. Part B: Literature Review of Ecological Impacts, pp.199-284.

- Lucke, K., M. Dähne, S. Adler, A. Brandecker, K. Krügel, J.K. Sundermeyer, and U. Siebert. 2012. Evaluating the effects of offshore pile driving on *Phocoena phocoena* (harbor porpoises) by using passive acoustic monitoring. In *The Effects of Noise on Aquatic Life* (pp. 285-287). Springer, New York, NY.
- Lusseau, D. and L. Bejder. 2007. The Long-term Consequences of Short-term Responses to Disturbance Experiences from Whalewatching Impact Assessment. *International Journal of Comparative Psychology* 20: 228-236. <https://doi.org/10.46867/IJCP.2007.20.02.04>
- MacGillivray, A.O. and N.R. Chapman. 2012. Modeling underwater sound propagation from an airgun array using the parabolic equation method. *Canadian Acoustics* 40 (1) (Mar. 2012): 19–25.
- MacGillivray, A.O. 2014. A model for underwater sound levels generated by marine impact pile driving. *Proceedings of Meetings on Acoustics* 20(1). <https://doi.org/10.1121/2.0000030>
- Madsen, P.T., M. Johnson, P.J.O. Miller, N.A. Soto, J. Lynch, and P. Tyack. 2006. Quantitative measures of air-gun pulses recorded on sperm whales (*Physeter macrocephalus*) using acoustic tags during controlled exposure experiments. *Journal of the Acoustical Society of America* 120 (4): 2366- 2379. <https://doi.org/10.1121/1.2229287>
- Malme, C.I., P.R. Miles, C.W. Clark, P.L. Tyack, and J.E. Bird. 1983. *Investigations of the Potential Effects of Underwater Noise from Petroleum Industry Activities on Migrating Gray Whale Behavior. Final Report for the Period of 7 June 1982 - 31 July 1983*. Report 5366. Report by Bolt Beranek and Newman Inc. for US Department of the Interior, Minerals Management Service, Alaska OCS Office, Cambridge, MA, USA. <https://www.boem.gov/sites/default/files/boem-newsroom/Library/Publications/1983/rpt5366.pdf>.
- Malme, C.I., P.R. Miles, C.W. Clark, P.L. Tyack, and J.E. Bird. 1984. *Investigations of the Potential Effects of Underwater Noise from Petroleum Industry Activities on Migrating Gray Whale Behavior. Phase II: January 1984 Migration*. Report 5586. Report by Bolt Beranek and Newman Inc. for the US Department of the Interior, Minerals Management Service, Cambridge, MA, USA.
- Mann, D.A. 2016. Acoustic Communications in Fishes and Potential Effects of Noise. In A. N. Popper & A. D. Hawkins (Eds.), *The Effects of Noise on Aquatic Life II* (pp. 673–678). New York, NY: Springer.
- Marine Mammal Commission. 2023. [Spring Newsletter](#), accessed online December 13, 2023.
- Marsh H. and D.F. Sinclair. 1989. Correcting for visibility bias in strip transect aerial surveys of aquatic fauna. *J. Wildlife Manage* 53: 1017–1024. <https://doi.org/10.2307/3809604>
- Mavraki, N., J.W. Coolen, D.A. Kapasakali, S. Degraer, J. Vanaverbeke, and J. Beermann. 2022. Small suspension-feeding amphipods play a pivotal role in carbon dynamics around offshore

man-made structures. *Marine Environmental Research* 178: 105664.
10.1016/j.marenvres.2022.105664

Marine Ventures International. 2021. Protected Species Observer Technical Report Equinor Empire Wind, BOEM Lease Area OCS-A 0512 (M/V *Stril Explorer*). Final Report. Prepared for Equinor Wind US LLC, 120 Long Ridge Road, Suite 3E01, Stamford, CT 06902 and CSA Ocean Sciences Inc., 8502 SW Kansas Avenue Stuart, Florida 34997.

Marten, K. and P. Marler. 1977. Sound transmission and its significance for animal vocalization. *Behavioral ecology and sociobiology* 2 (3): 271-290.

Matthews, L. 2017. Harbor seal (*Phoca vitulina*) reproductive advertisement behavior and the effects of vessel noise. Ph.D. Thesis, Syracuse University. 139 p.

McCauley, R.D., R. Day, K.M. Swadling, Q.P Fitzgibbon, R.A. Watson, and J.M. Semmens. 2017. Widely used marine seismic survey air gun operations negatively impact zooplankton. *Nature Ecology & Evolution* 1: 0195. <https://doi.org/10.1038/s41559-017-0195>

McDonald, M. A., J. A. Hildebrand, and S. C. Webb. 1995. Blue and fin whales observed on a seafloor array in the Northeast Pacific. *The Journal of Acoustical Society of America* 98 (2): 712–721. <https://doi.org/10.1121/1.413565>

McDonald, M. A., J. A. Hildebrand, S. M. Wiggins, D. W. Johnston, and J. J. Polovina. 2009. An acoustic survey of beaked whales at Cross Seamount near Hawaii. *The Journal of the Acoustical Society of America* 125(2): 624–627. <https://doi.org/10.1121/1.305031>

McFadden, D. 1986. The curious half-octave shift: evidence for a basalward migration of the traveling-wave envelope with increasing intensity. In: Salvi RJ, Henderson D, Hamernik RP, Coletti V (eds) Basic and applied aspects of noise-induced hearing loss, vol 111. Proceedings of a NATO advanced studies institute on applied and basic aspects of noise- induced hearing loss, held September 23–29, 1985, in Lucca. NATO ASI Series A, Life Sciences edn. Plenum, New York, pp 295–312.

McHuron, E.A., L.K. Schwarz, D.P. Costa, and M. Mangel. 2018. A state-dependent model for assessing the population consequences of disturbance on income-breeding mammals. *Ecological Modeling* 385: 133-144. <https://doi.org/10.1016/j.ecolmodel.2018.07.016>

McKenna, M.F., S.M. Wiggins, D. Ross, and J.A. Hildebrand. 2012a. Underwater radiated noise from modern commercial ships. *J Acoust Soc Am* 131: 92–103.
<https://doi.org/10.1121/1.3664100>

McKenna, M.F., S.L. Katz, S.M. Wiggins, D. Ross, and J.A. Hildebrand. 2012b. A quieting ocean: unintended consequence of a fluctuating economy. *J Acoust Soc Am* 132: EL169–EL175.
<https://doi.org/10.1121/1.4740225>

Mead, J.G. 1975. Preliminary report on the former net fisheries for *Tursiops truncatus* in the western North Atlantic. *Journal of the Fisheries Board of Canada* 32(7): 1155-1162.

- Melcón, M. L., A. J. Cummins, S. M. Kerosky, L. K. Roche, S. M. Wiggins, and J. A. Hildebrand. 2012. Blue whales respond to anthropogenic noise. *PLoS ONE*: 7 (2): 1-6. <https://doi.org/10.1371/journal.pone.0032681>
- Merchant, N.D., K.M. Fristrup, M.P. Johnson, P.L. Tyack, M.J. Witt, P. Blondel, and S.E. Parks. 2015. Measuring acoustic habitats. *Methods Ecol Evol*, 6: 257-265. <https://doi.org/10.1111/2041-210X.12330>
- Messina, P. and P. Stoffer. 1996. Geology and Geography of New York Bight Beaches. Available online at: <http://www.geo.hunter.cuny.edu/bight/coast.html>. Accessed January 23, 2024.
- Meyer-Gutbrod, E., C. Greene, K. Davies, and D. Johns. 2021. Ocean regime shift is driving collapse of the North Atlantic right whale population. *Oceanography* 34 (3): 22-31. <https://doi.org/10.5670/oceanog.2021.308>
- Meyer-Gutbrod, E.L., Davies, K.T.A., Johnson, C.L., Plourde, S., Sorochan, K.A., Kenney, R.D., Ramp, C., Gosselin, J., Lawson, J.W., and C.H. Greene. 2022. Redefining North Atlantic right whale habitat-use patterns under climate change. *Limnology and Oceanography* 9999: 1-16. <https://doi.org/10.1002/lno.12242>
- Miksis-Olds, J.L. 2006. Manatee Response to Environmental Noise. A Dissertation Submitted in Partial Fulfillment of the Requirements for the Degree of Doctor of Philosophy in Oceanography. University of Rhode Island, 2006
- Miller, J.D. 1974. Effects of noise on people. *Journal of the Acoustical Society of America* 56 (3): 729- 764. <https://doi.org/10.1121/1.1903322>
- Miller, P.J.O., N. Biassoni, A. Samuels, and P.L. Tyack. 2000. Whale songs lengthen in response to sonar. *Nature* 405 (6789): 903. <https://doi.org/10.1038/35016148>
- Miller, P.J.O., M.P. Johnson, P.T. Madsen, N. Biassoni, M. Quero, and P.L. Tyack. 2009. Using at-sea experiments to study the effects of airguns on the foraging behavior of sperm whales in the Gulf of Mexico. *Deep Sea Research I* 56 (7): 1168–1181. <https://doi.org/10.1016/j.dsr.2009.02.008>
- Moberg, G.P. 1987. A model for assessing the impact of behavioral stress on domestic animals. *Journal of Animal Science* 65 (5): 1228-1235. <https://doi.org/10.2527/jas1987.6551228x>
- Moberg and J.A. Mench, eds. 2000. *The Biology of Animal Stress: Basic Principles and Implications for Animal Welfare*. CABI Publishing, Oxon, United Kingdom.
- Mooney, T. A., R.T. Hanlon, J. Christensen-Dalsgaard, P.T. Madsen, D.R. Ketten, and P.E. Nachtigall. 2010. Sound detection by the longfin squid (*Loligo pealeii*) studied with auditory evoked potentials: sensitivity to low-frequency particle motion and not pressure. *Journal of Experimental Biology* 213 (21): 3748-3759. <https://doi.org/10.1242/jeb.048348>

Moore, J.E. and J.P. Barlow. 2013. Declining abundance of beaked whales (Family *Ziphiidae*) in the California current large marine ecosystem. *PLoS One* 8(1): e52770. <https://doi.org/10.1371/journal.pone.0052770>

Moore, M. J., Rowles, T. K., Fauquier, D. A., Baker, J. D., Biedron, I., Durban, J. W., Hamilton, P. K., Henry, A. G., Knowlton, A. R., McLellan, W. A., Miller, C. A., Pace, R. M., Pettis, H. M., Raverty, S., Rolland, R. M., Schick, R. S., Sharp, S. M., Smith, C. R., Thomas, L., . . . Ziccardi, M. H. 2021. Assessing North Atlantic right whale health: threats, and development of tools critical for conservation of the species. *Diseases of Aquatic Organisms* 143: 205-226. <https://doi.org/10.3354/dao03578>

Moore, S.E., Reeves, R.R., Southall, B.L., Ragen, T.J., Suydam, R.S., and C.W. Clark. 2012. A New Framework for Assessing the Effects of Anthropogenic Sound on Marine Mammals in a Rapidly Changing Arctic, *BioScience*, Volume 62, Issue 3, March 2012, Pages 289–295, <https://doi.org/10.1525/bio.2012.62.3.10>

Morano, J.L., D.P. Salisbury, A.N. Rice, K.L. Conklin, K.L. Falk, and C.W. Clark. 2012. Seasonal changes in fin whale song in the western North Atlantic Ocean. *Journal of the Acoustical Society of America* 132 (2): 1207-1212. <https://doi.org/10.1121/1.4730890>.

Martin, J., Sabatier, Q., Gowan, T.A., Giraud, C., Gurarie, E., Calleson, C.S., Ortega-Ortiz, J.G., Deutsch, C.J., Rycyk, A., and S.M. Koslovsky. 2015. A quantitative framework for investigating risk of deadly collisions between marine wildlife and boats. *Methods Ecol. Evol.* 42–50. <https://doi.org/10.1111/2041-210X.12447>

Morton, A.B. and H.K. Symonds. 2002. Displacement of *Orcinus orca* (L.) by high amplitude sound in British Columbia, Canada. *ICES Journal of Marine Science* 59 (1): 71-80. <https://doi.org/10.1006/jmsc.2001.1136>

Mueller-Blenkle, C., P.K. McGregor, A.B. Gill, M.H. Andersson, J. Metcalfe, V. Bendall, P. Sigray, D.T. Wood, and F. Thomsen. 2010. *Effects of Pile-driving Noise on the Behaviour of Marine Fish*. COWRIE Ref: Fish 06-08; Cefas Ref: C3371. 62 p. <https://dspace.lib.cranfield.ac.uk/handle/1826/8235>.

Müllner, A., K.E. Linsenmair, and M. Wikelski. 2004. Exposure to ecotourism reduces survival and affects stress response in hoatzin chicks (*Opisthocomus hoazin*). *Biological Conservation* 118(4): 549-558.

Nabe-Nielsen, J., F.M. van Beest, V. Grimm, R.M. Sibly, J. Teilmann, and P.M. Thompson. 2018. Predicting the impacts of anthropogenic disturbances on marine populations. *Conserv. Lett.* 11:e12563. doi: 10.1111/conl.12563

Nachtigall, P.E. and A. Supin. 2008. A false killer whale adjusts its hearing when it echolocates. *Journal of Experimental Biology* 211(11): 1714-1718. <https://doi.org/10.1242/jeb.013862>

Nachtigall P.E. and A.Y.A. Supin. 2013. False killer whales reduce their hearing sensitivity if a loud sound is preceded by a warning. *Journal of Experimental Biology* 216: 3062–70. <https://doi.org/10.1242/jeb.085068>

Nachtigall P.E. and A.Y.A. Supin. 2015. Conditioned frequency dependent hearing sensitivity reduction in the bottlenose dolphin (*Tursiops truncatus*) *Journal of Experimental Biology* 218: 999–1005. <https://doi.org/10.1242/jeb.114066>

Nachtigall P.E., A.Y.A. Supin, J.A. Esteban, and A.F. Pacini. 2016a. Learning and extinction of conditioned hearing sensation change in the beluga whale (*Delphinapterus leucas*). *Journal of Comparative Physiology A* 202: 105–13. <https://doi.org/10.1111/1749-4877.12286>.

Nachtigall P.E., A.Y.A. Supin, A.B. Smith, and A.F. Pacini. 2016b. Expectancy and conditioned hearing sensation level in the bottlenose dolphin (*Tursiops truncatus*). *Journal of Experimental Biology* 219: 844–50. <https://doi.org/10.1242/jeb.133777>

Nachtigall P.E., A.Y.A. Supin, A.H. Pacini, and R. Kastelein. 2016c. Conditioned sensitivity change in the harbour porpoise (*Phocoena phocoena*) *Journal of the Acoustical Society of America* 140: 960–67. <https://doi.org/10.1121/1.4960783>

Nachtigall, P.E., A.Y. Supin, A.F. Pacini, and R.A. Kastelein. 2018. Four odontocete species change hearing levels when warned of impending loud sound. *Integrative Zoology*, 13 (2): pp.160-165. <https://doi.org/10.1111/1749-4877.12286>

Nachtsheim, D.A., S. Viquerat, N.C. Ramírez-Martínez, B. Unger, U. Siebert, and A. Gilles. 2021. Small cetacean in a human high-use area: trends in harbor porpoise abundance in the North Sea over two decades. *Frontiers in Marine Science*: 7: 606609. <https://doi.org/10.3389/fmars.2020.606609>

NASEM (National Academies of Sciences, Engineering, and Medicine). 2017. Approaches to Understanding the Cumulative Effects of Stressors on Marine Mammals. Washington, DC: The National Academies Press. <https://doi.org/10.17226/23479>

NMFS (National Marine Fisheries Service). 2016. Ocean Noise Strategy Roadmap. National Oceanographic and Atmospheric Administration. 138 p

NMFS. 2018. 2018 revision to: Technical guidance for assessing the effects of anthropogenic sound on marine mammal hearing (Version 2.0). NOAA Technical Memorandum NMFS-OPR-59, National Marine Fisheries Service: 178.

NMFS. 2018c. Frequent Questions: 2017-2018 Minke Whale Unusual Mortality Event. Available online at: <https://www.fisheries.noaa.gov/national/marine-life-distress/frequent-questions-2017-2022-minke-whale-unusual-mortality-event>. Accessed on 23 January 2024.

NMFS. 2020. User Spreadsheet Tool (Version 2. 1) for: 2018 Technical Guidance for Assessing the Effects of Anthropogenic Sound on Marine Mammal Hearing (Version 2.0): Underwater

Thresholds for Onset of Permanent and Temporary Threshold Shifts. Silver Spring, Maryland: Office of Protected Resources, National Marine Fisheries Service.

National Research Council (NRC). 2003. Ocean noise and marine mammals. National Academy of Sciences: 220.

National Research Council (NRC). 2005. Marine mammal populations and ocean noise. Washington, D.C.: National Academies Press.

NRC. 2017. Approaches to understanding the cumulative effects of stressors on marine mammals. National Academy of Sciences, Engineering, and Medicine, Washington, D.C: The National Academies Press. <https://doi.org/10.17226/23479>

Nedelec, S. L., S.D. Simpson, E.L. Morley, B. Nedelec, and A.N. Radford. 2015. Impacts of regular and random noise on the behaviour, growth and development of larval Atlantic cod (*Gadus morhua*). *Proceedings of the Royal Society B* 282 (1817): 20151943. <https://doi.org/10.1098/rspb.2015.1943>

Nedwell, J. R., B. Edwards, A. W. H. Turnpenny, and J. Gordon. 2004. Fish and marine mammal audiograms: A summary of available information (Subacoustech Report ref: 534R0214). Hampshire, UK.

Nehls, G., A. Rose, A. Diederichs, M.A. Bellmann, and H. Pehlke. 2016. Noise Mitigation During Pile Driving Efficiently Reduces Disturbance of Marine Mammals. (Chapter 92) *In* Popper, A.N. and A.D. Hawkins (eds.). *The Effects of Noise on Aquatic Life II*. Volume 875. Springer, NY, USA. pp. 755-762. https://doi.org/10.1007/978-1-4939-2981-8_92.

New, L.F., J. Harwood, L. Thomas, C. Donovan, J.S. Clark, G. Hastie, P.M. Thompson, B. Cheney, L. Scott-Hayward, and D. Lusseau. 2013. Modelling the biological significance of behavioural change in coastal bottlenose dolphins in response to disturbance. *Funct Ecol* 27: 314-322. <https://doi.org/10.1111/1365-2435.12052>

New, L. F., J. S. Clark, D. P. Costa, E. Fleishman, M. A. Hindell, T. Klanjšček, D. Lusseau, S. Kraus, C. R. McMahon, P. W. Robinson, R. S. Schick, L. K. Schwarz, S. E. Simmons, L. Thomas, P. Tyack, and J. Harwood. 2014. Using short-term measures of behaviour to estimate long-term fitness of southern elephant seals. *Marine Ecology Progress Series* 496: 99–108. <https://doi.org/10.3354/meps10547>

Ng, S.L. and S. Leung. 2003. Behavioral response of Indo-Pacific humpback dolphin (*Sousa chinensis*) to vessel traffic. *Marine Environmental Research* 56 (5): 555. [https://doi.org/10.1016/S0141-1136\(03\)00041-2](https://doi.org/10.1016/S0141-1136(03)00041-2)

NIOSH (National Institute for Occupational Safety and Health). 1998. Criteria for a Recommended Standard: Occupational Noise Exposure. United States Department of Health and Human Services, Cincinnati, OH.

Noren, D.P., Holt, M.M., Dunkin, R.C., Thometz, N.M. and T.M. Williams. 2017. July. Comparative and cumulative energetic costs of odontocete responses to anthropogenic

disturbance. In Proceedings of Meetings on Acoustics 4ENAL (Vol. 27, No. 1, p. 040011). Acoustical Society of America.

Noren, D.P., M.M. Holt, R.C. Dunkin, and T.M. Williams. 2020. The metabolic cost of whistling is low but measurable in dolphins. *Journal of Experimental Biology* 223 (11): .jeb224048. <https://doi.org/10.1242/jeb.224048>

Normandeau Associates, Inc. and APEM Inc. 2019a. Digital Aerial Baseline Survey of Marine Wildlife in Support of Offshore Wind Energy: Spring 2019 Taxonomic Analysis Summary Report. Report by Normandeau Associates, Inc. and APEM Inc. for New York State Energy Research and Development Authority. https://remote.normandeau.com/docs/NYSERDA_Spring_2019_Taxonomic_Analysis_Summary_Report.pdf

Normandeau Associates, Inc. and APEM Inc. 2019b. Digital Aerial Baseline Survey of Marine Wildlife in Support of Offshore Wind Energy: Summer 2016–Spring 2018 Fourth Interim Report. Second annual report by Normandeau Associates, Inc. and APEM Inc. for New York State Energy Research. 149 p. https://remote.normandeau.com/docs/NYSERDA_2016-2018_4th_Semi-Annual_report.pdf.

Normandeau Associates, Inc. and APEM Inc. 2019c. Digital Aerial Baseline Survey of Marine Wildlife in Support of Offshore Wind Energy: Fall 2018 Taxonomic Analysis Summary Report. Report by Normandeau Associates, Inc. and APEM Inc. for New York State Energy Research and Development Authority. https://remote.normandeau.com/docs/NYSERDA_Fall_2018_Taxonomic_Analysis_Summary_Report.pdf

Normandeau Associates, Inc. and APEM Inc. 2020. Digital Aerial Baseline Survey of Marine Wildlife in Support of Offshore Wind Energy: Winter 2018-2019 Taxonomic Analysis Summary Report. Report by Normandeau Associates, Inc. and APEM Inc. for New York State Energy Research and Development Authority. https://remote.normandeau.com/docs/NYSERDA_Winter_2018_19_Taxonomic_Analysis_Summary_Report.pdf

Nowacek, D.P., M.P. Johnson, and P.L. Tyack. 2004. North Atlantic right whales (*Eubalaena glacialis*) ignore ships but respond to alerting stimuli. *Proceedings of the Royal Society of London B: Biological Sciences* 271 (1536): 227-231. <https://doi.org/10.1098/rspb.2003.2570>

Nowacek, D.P., L.H. Thorne, D.W. Johnston, and P.L. Tyack. 2007. Responses of cetaceans to anthropogenic noise. *Mammal Review* 37 (2): 81-115. <https://doi.org/10.1111/j.1365-2907.2007.00104.x>

O'Brien, O., D.E. Pendleton, L.C. Ganley, K.R. McKenna, R.D. Kenney, E. Quintana-Rizzo, C.A. Mayo, S.D. Kraus, and J.V. Redfern. 2022. Repatriation of a historical North Atlantic right whale habitat during an era of rapid climate change. *Nature* 12: 12407. <https://doi.org/10.1038/s41598-022-16200-8>

Obis. 2023. Ocean Biodiversity Information System Spatial Ecological Analysis of Megavertebrate Populations. Available online at: <https://seamap.env.duke.edu/> Accessed on 23 January 2024.

Pace, R.M., III, P.J. Corkeron, and S.D. Kraus. 2017. State-space mark-recapture estimates reveal a recent decline in abundance of North Atlantic right whales. *Ecology and Evolution* 7(21): 8730-8741. <https://doi.org/10.1002/ece3.3406>.

Pace, R. M., Williams, R., Kraus, S. D., Knowlton, A. R., and Pettis, H. M. 2021. Cryptic mortality of North Atlantic right whales. *Conservation Science and Practice* 3(2): Article e346. <https://doi.org/10.1111/csp2.346>

Packard, A., H.E. Karlsen, and O. Sand. 1990. Low frequency hearing in cephalopods. *Journal of Comparative Physiology A* 166 (4): 501-505. <https://doi.org/10.1007/BF00192020>

Palka D, Aichinger Dias L, Broughton E, Chavez-Rosales S, Cholewiak D, Davis G, DeAngelis A, Garrison L, Haas H, Hatch J, Hyde K, Jech M, Josephson E, Mueller-Brennan L, Orphanides C, Pegg N, Sasso C, Sigourney D, Soldevilla M, Walsh H. 2021. Atlantic Marine Assessment Program for Protected Species: FY15 – FY19. Washington DC: US Department of the Interior, Bureau of Ocean Energy Management. OCS Study BOEM 2021-051. 330 p.

Papale, E., M. Gamba, M. Perez-Gil, V.M. Martin, and C. Giacoma. 2015. Dolphins adjust species-specific frequency parameters to compensate for increasing background noise. *PLoS ONE* 10(4):e0121711. <https://doi.org/10.1371/journal.pone.0121711>

Parks, S.E., C.W. Clark, and P.L. Tyack. 2007. Short-and long-term changes in right whale calling behavior: The potential effects of noise on acoustic communication. *Journal of the Acoustical Society of America* 122(6): 3725-3731. <https://doi.org/10.1121/1.2799904>.

Parks, S.E., D.R. Ketten, J.T. O'Malley, and J. Arruda. 2007. Anatomical predictions of hearing in the North Atlantic right whale. *The Anatomical Record* 290 (6): 734-744. <https://doi.org/10.1002/ar.20527>

Parks, S. E. 2009. Assessment of acoustic adaptations for noise compensation in marine mammals. Paper presented at the 2009 Office of Naval Research Marine Mammal Program Review. Alexandria, VA.

Parks, S.E., M. Johnson, D. Nowacek, and P.L. Tyack. 2011. Individual right whales call louder in increased environmental noise. *Biol. Lett.* 7 (1): 33-35. <https://doi.org/10.1098/rsbl.2010.0451>

Patricelli, G. L. and J.L. Blickley. 2006. Avian communication in urban noise: causes and consequences of vocal adjustment. *The Auk* 123 (3): 639-649. <https://doi.org/10.1093/auk/123.3.639>

Pearson, W.H., J.R. Skalski, and C.I. Malme. 1992. Effects of sounds from a geophysical survey device on behavior of captive rockfish (*Sebastes* spp.). *Canadian Journal of Fisheries and Aquatic Sciences* 49: 1343-1356. <https://doi.org/10.1139/f92-150>

Perrin, W. F., E. D. Mitchell, J. G. Mead, D. K. Caldwell, M. C. Caldwell, P. J. H. van Bree and W. H. Dawbin. 1987. Revision of the spotted dolphins, *Stenella* spp. *Marine Mammal Science* 3(2):99-170.

Pettis, H.M., R.M. Pace III, and P.K. Hamilton. 2021. North Atlantic right whale consortium 2021 annual report card. Report to the North Atlantic Right Whale Consortium. Accessed on 23 January 2024 at: <https://www.narwc.org/report-cards.html>.

Pettis, H.M., R.M. Pace III, and P.K. Hamilton. 2023. North Atlantic Right Whale Consortium 2022 Annual Report Card. Report to the North Atlantic Right Whale Consortium. Accessed on 06 December 2023 at: <https://www.narwc.org/uploads/1/1/6/6/116623219/2022reportcardfinal.pdf>

Pezy, J.P., Raoux, A. and Dauvin, J.C., 2020. An ecosystem approach for studying the impact of offshore wind farms: a French case study. *ICES Journal of Marine Science* 77(3): 1238-1246. <https://doi.org/10.1093/icesjms/fsy125>

Pijanowski, B., L. Villanueva-Rivera, S. Dumyahn, A. Farina, B. Krause, B. Napoletano, . . . N. Pieretti. 2011. Soundscape Ecology: The Science of Sound in the Landscape. *BioScience* 61(3): 203-216. doi:10.1525/bio.2011.61.3.6

Pirotta, E., C. G. Booth, D. P. Costa, E. Fleishman, S. D. Kraus, D. Lusseau, D. Moretti, L. F. New, R. S. Schick, L. K. Schwarz, S. E. Simmons, L. Thomas, P. L. Tyack, M. J. Weise, R. S. Wells, and J. Harwood. 2018a. Understanding the population consequences of disturbance. *Ecology and Evolution* 8(19): 9934–9946. <https://doi.org/10.1002/ece3.4458>

Pirotta, E., M. Mangel, D.P. Costa, B. Mate, J.A. Goldbogen, D.M. Palacios, L.A. Hüeckstädt, E.A. McHuron, L. Schwarz, and L. New. 2018b. A dynamic state model of migratory behavior and physiology to assess the consequences of environmental variation and anthropogenic disturbance on marine vertebrates. *The American Naturalist* 191(2): pp.E40-E56. <https://doi.org/10.1086/695135>

Pirotta, E., C.G. Booth, D.E. Cade, J. Calambokidis, D.P. Costa, J.A. Fahlbusch, A.S. Friedlaender, J.A. Goldbogen, J. Harwood, E.L. Hazen, and L. New. 2021. Context-dependent variability in the predicted daily energetic costs of disturbance for blue whales. *Conservation physiology* 9(1): p.coaa137. <https://doi.org/10.1093/conphys/coaa137>

Popper, A. N., R. R. Fay, C. Platt, and O. Sand. 2003. Sound detection mechanisms and capabilities of teleost fishes. In S. P. Collin & N. J. Marshall (Eds.), *Sensory Processing in Aquatic Environment*. New York, NY: Springer-Verlag.

Popper, A. N., J. Ramcharitar, and S. E. Campana. 2005. Why Otoliths? Insights from Inner Ear Physiology and Fisheries Biology. *Marine and Freshwater Research* 56: 8. <https://doi.org/10.1071/MF04267>

Popper, A.N. and M.C. Hastings. 2009a. The effects of human-generated sound on fish. *Integrative Zoology* 4: 43–52. <https://doi.org/10.1111/j.1749-4877.2008.00134.x>

- Popper, A.N. and M.C. Hastings. 2009b. The effects of anthropogenic sources of sound on fishes. *Journal of Fish Biology* 75: 455–489. <https://doi.org/10.1111/j.1095-8649.2009.02319.x>
- Popper, A. N., and R. R. Fay. 2011. Rethinking sound detection by fishes. *Hearing Research* 273(1–2): 25–36. <https://doi.org/10.1016/j.heares.2009.12.023>
- Popper, A. N., A. D. Hawkins, R. R. Fay, D. A. Mann, S. M. Bartol, T. J. Carlson, S. Coombs, W. T. Ellison, R. L. Gentry, M. B. Halvorsen, S. Løkkeborg, P. H. Rogers, B. L. Southall, D. G. Zeddies, and W. N. Tavolga. 2014. *Sound Exposure Guidelines for Fishes and Sea Turtles*. Springer Cham, 76 pp. <https://doi.org/10.1007/978-3-319-06659-2>
- Popper, A.N. and A.D. Hawkins. 2018. The importance of particle motion to fishes and invertebrates. *Journal of the Acoustical Society of America* 143(1): 470-488. <https://doi.org/10.1121/1.5021594>.
- Popper, A.N. and A.D Hawkins. 2019. An overview of fish bioacoustics and the impacts of anthropogenic sounds on fishes. *J Fish Biol.* 94: 692– 713. <https://doi.org/10.1111/jfb.13948>
- Posner, M.I. 1994. Attention: the mechanisms of consciousness. *Proceedings of the National Academy of Sciences* 91(16): 7398-7403. <https://doi.org/10.1073/pnas.91.16.7398>
- Reeves, R.R. and P.J. Reijnders. 2002. Conservation and management. *Marine mammal biology: An evolutionary approach*, pp.388-415.
- Reichmuth, C., J.M. Sills, J. Mulsow, and A. Ghoul. 2019. Long-term evidence of noise-induced permanent threshold shift in a harbor seal (*Phoca vitulina*). *Acoustical Society of America*. Published online on 21 October 2019, p.2552–2561. <https://doi.org/10.1121/1.5129379>
- Rough, V. 1995. Gray Seals in Nantucket Sound, Massachusetts, Winter and Spring 1994. Final report to Marine Mammal Commission, Bethesda MD. Contract T10155615, 28 pp. NTIS Publication PB95-191391
- Smith, A. 2014. Mystic Aquarium's marine mammal and sea turtle stranding data 1976-2011. Data downloaded from OBIS-SEAMAP (<http://seamap.env.duke.edu/dataset/945>) on 2023-08-14.
- Smultea, K., T. Hartin, C. Souder, E. Reiser, Cranmer, and T. Sullivan. Prepared for Equinor Wind US LLC, 2107 Citywest Blvd, Suite 100, Houston, TX 77042. 10 July 2021. Prepared for Equinor. November 24, 2021.
- Southall, B.L., A.E. Bowles, W. Ellison, J. Finneran, et al. 2007. Marine mammal noise exposure criteria: Initial Scientific Recommendations. *Aquatic Mammals* 33(4): 411-521. <https://doi.org/10.1578/AM.33.4.2007.411>

Southall, B.L., J.J. Finneran, C. Reichmuth, P.E. Nachtigall, D.R. Ketten, A.E. Bowles, W.T. Ellison, D.P. Nowacek, and P.L. Tyack. 2019 (a). Marine Mammal Noise Exposure Criteria: Updated Scientific Recommendations for Residual Hearing Effects. *Aquatic Mammals* 45(2): 125-232, DOI 10.1578/AM.45.2.2019.125

Southall, B.L., D.P. Nowacek, A.E. Bowles, V. Senigaglia, L. Bejder, and P.L. Tyack. 2021. Marine Mammal Noise Exposure Criteria: Assessing the Severity of Marine Mammal Behavioral Responses to Human Noise. *Aquatic Mammals* 47(5): 421-464, <https://doi.org/10.1578/AM.47.5.2021.421>

Pumphrey, R.J. 1950, January. Hearing. In Symposia of the Society for Experimental Biology (Vol. 4, pp. 3-18). UNIV CAMBRIDGE DEPT ZOOLOGY, DOWNING ST, CAMBRIDGE CB2 3EJ, CAMBS, ENGLAND: COMPANY BIOLOGISTS LTD.

Purser, J. and A.N. Radford. 2011. Acoustic noise induces attention shifts and reduces foraging performance in three-spined sticklebacks (*Gasterosteus aculeatus*). *PLoS ONE* 6 (2): e17478. <https://doi.org/10.1371/journal.pone.0017478>

Quintana-Rizzo, E., S. Leiter, T.V.N. Cole, M.N. Hagbloom, A.R. Knowlton, P. Nagelkirk, O. O'Brien, C.B. Khan, A.G. Henry, P.A. Duley, L.M. Crowe, C.A. Mayo, and S.D. Kraus. 2021. Residency, demographics, and movement patterns of North Atlantic right whales *Eubalaena glacialis* in an offshore wind energy development area in southern New England, USA. *Endangered Species Research* 45: 251-268. <https://doi.org/10.3354/esr01137>

Raoux, A., S. Tecchio, J.P. Pezy, G. Lassalle, S. Degraer, D. Wilhelmsson, M. Cachera, B. Ernande, C. Le Guen, M. Haraldsson, and K. Grangeré. 2017. Benthic and fish aggregation inside an offshore wind farm: which effects on the trophic web functioning? *Ecological Indicators*, 72, pp.33-46.

Record, N.R., J.A. Runge, D.E. Pendleton, W.M. Balch, K.T.A. Davies, A.J. Pershing, C.L. Johnson, K. Stamieszkin, R. Ji, Z. Feng, S.D. Kraus, R.D. Kenney, C.A. Hudak, C.A. Mayo, C. Chen, J.E. Salisbury, and C.R.S. Thompson. 2019. Rapid climate-driven circulation changes threaten conservation of endangered North Atlantic right whales. *Oceanography*. 32 (2): 162169., <https://doi.org/10.5670/oceanog.2019.201>

Reed, J., L. New, P. Corkeron, and R. Harcourt. 2022. Multi-event modeling of true reproductive states of individual female right whales provides new insights into their decline. *Frontiers in Marine Science*: 994481. <https://doi.org/10.3389/fmars.2022.994481>

Reed, J., R. Harcourt, L. New, and K. Bilgmann. 2020. Extreme Effects of Extreme Disturbances: A Simulation Approach to Assess Population Specific Responses. *Frontiers in Marine Science*. 7:519845. <https://doi.org/10.3389/fmars.2020.519845>

Reeves, R.R., B.S. Stewart, P.J. Clapham, and J.A. Powell. 2002. Guide to Marine Mammals of the World. National Audubon Society. Ref. Doc. 92-05.

- Reichmuth, C., M.M. Holt, J. Mulsow, J.M. Sills, and B.L. Southall. 2013. Comparative assessment of amphibious hearing in pinnipeds. *Journal of Comparative Physiology, A: Neuroethology, Sensory, Neural and Behavioral Physiology* 199 (6): 491-507. <https://doi.org/10.1007/s00359-013-0813-y>
- Reichmuth, C., J.M. Sills, J. Mulsow, and A. Ghouli. 2019. Long-term evidence of noise-induced permanent threshold shift in a harbor seal (*Phoca vitulina*). *Journal of the Acoustical Society of America* 146: 2552–2561. <https://doi.org/10.1121/1.5129379>
- Reubens, J.T., S. Degraer, and M. Vincx. 2013. The ecology of benthopelagic fishes at offshore wind farms: a synthesis of 4 years of research. *Hydrobiologia* 727: 121-236. <https://doi.org/10.1007/s10750-013-1793-1>
- Richardson, W.J., C.R. Greene, Jr., C.I. Malme, and D.H. Thomson. 1995. *Marine Mammals and Noise*. Academic Press, San Diego, CA, USA. 576 p. <https://doi.org/10.1016/C2009-0-02253-3>.
- Richardson, A. J., Matear, R. J., and A. Lenton. 2017. Potential Impacts on Zooplankton of Seismic Surveys. CSIRO, Australia. 34 pp. <https://doi.org/10.4225/08/59724f38211cd>
- RI-CRMC. 2010. Rhode Island Ocean Special Area Management Plan. Adopted by the RI CRMC on October 19, 2010.
- Ridgway, S.H., D.A. Carder, R.R. Smith, T. Kamolnick, C.E. Schlundt, and W.R. Elsberry. 1997. Behavioral responses and temporary shift in masked hearing threshold of bottlenose dolphins, *Tursiops truncatus*, to 1-second tones of 141 to 201 dB re 1 μ Pa. Technical Report 1751, Naval Command, Control and Ocean Surveillance Center: 32.
- Risch, D., P.J. Corkeron, W.T. Ellison, and S.M. Van Parijs. 2012. Changes in humpback whale song occurrence in response to an acoustic source 200 km away. *PLoS ONE* 7(1): e29741. <https://doi.org/10.1371/journal.pone.0029741>
- Risch, D., M. Castellote, C.W. Clark, G.E. Davis, P.J. Dugan, L.E.W. Hodge, A. Kumar, K. Lucke, D.K. Mellinger, S.L. Nieuwkerk, C.M. Popescu, C. Ramp, A.J. Read, A.N. Rice, M.A. Silva, U. Siebert, K.M. Stafford, H. Verdatt, and S.M. Van Parijs. 2014. Seasonal migrations of North Atlantic minke whales: novel insights from large-scale passive acoustic monitoring networks. *Movement Ecology* 2:24. <https://doi.org/10.1186/s40462-014-0024-3>
- Roberts, J. J., B. D. Best, L. Mannocci, E. Fujioka, P. N. Halpin, D. L. Palka, L. P. Garrison, K. D. Mullin, T. V. N. Cole, C. B. Khan, W. A. McLellan, D. A. Pabst, and G. G. Lockhart. 2016a. Habitat based cetacean density models for the U.S. Atlantic and Gulf of Mexico. *Scientific Reports* 6:22615. DOI: 10.1038/srep22615
- Roberts, J. J., L. Mannocci, and P. N. Halpin. 2016b. Final Project Report: Marine Species Density Data Gap Assessments and Update for the AFTT Study Area, 2015-2016 (Base Year). Document Version 1.0. Report prepared for Naval Facilities Engineering Command, Atlantic by the Duke University Marine Geospatial Ecology Lab, Durham, NC, USA.

Roberts, J. J., L. Mannocci, and P. N. Halpin. 2017. Final Project Report: Marine Species Density Data Gap Assessments and Update for the AFTT Study Area, 2016-2017 (Opt. Year 1). Version 1.4. Report by Duke University Marine Geospatial Ecology Lab for Naval Facilities Engineering Command, Atlantic, Durham, NC, USA.

Roberts, J. J., L. Mannocci, R. S. Schick, and P. N. Halpin. 2018. Final Project Report: Marine Species Density Data Gap Assessments and Update for the AFTT Study Area, 2017-2018 (Opt. Year 2). Version 1.2. Report by the Duke University Marine Geospatial Ecology Lab for Naval Facilities Engineering Command, Atlantic Durham, NC, USA.

Roberts J. J., R. S. Schick, and P. N. Halpin. 2020. Final Project Report: Marine Species Density Data Gap Assessments and Update for the AFTT Study Area, 2018-2020 (Opt. Year 3). Version 1.4. Report prepared for Naval Facilities Engineering Command, Atlantic by the Duke University Marine Geospatial Ecology Lab, Durham, NC.

Roberts, J. J., R. S. Schick, and P. N. Halpin. 2021a. Final Project Report: Marine Species Density Data Gap Assessments and Update for the AFTT Study Area, 2020 (Opt. Year 4). Version 1.0. Report by the Duke University Marine Geospatial Ecology Lab for Naval Facilities Engineering Command, Atlantic Durham, NC, USA.

Roberts, J. J., R. S. Schick, and P. N. Halpin. 2021b. Final Project Report: Marine Species Density Data Gap Assessments and Update for the AFTT Study Area, 2020 (Option Year 4). Document version 1.0 (DRAFT). Report prepared for Naval Facilities Engineering Command, Atlantic by the Duke University Marine Geospatial Ecology Lab, Durham, NC, USA.

Roberts, J.J. and P.N. Halpin. 2022. Updated habitat-based cetacean density models for the U.S. Atlantic and Gulf of Mexico. Accessed on 23 January 2024. Available at: <https://seamap.env.duke.edu/models/Duke/EC/>

Roberts, J.J., T.M. Yack, and P.N. Halpin. 2023. Marine mammal density models for the U.S. Navy Atlantic Fleet Training and Testing (AFTT) study area for the Phase IV Navy Marine Species Density Database (NMSDD). Document version 1.3. Report prepared for Naval Facilities Engineering Systems Command, Atlantic by the Duke University Marine Geospatial Ecology Lab, Durham, North Carolina. Available at: https://seamap.env.duke.edu/seamap-models-files/Duke/Reports/AFTT_Marine_Mammal_Density_Models_2022_v1.3.pdf

Rolland, R. M., S. E. Parks, K. E. Hunt, M. Castellote, P. J. Corkeron, D. P. Nowacek, S. K. Wasser, and S. D. Kraus. 2012. Evidence that ship noise increases stress in right whales. *Proceedings of the Royal Society B: Biological Sciences* 279 (1737): 2363–2368. <https://doi.org/10.1098/rspb.2011.2429>

Romano, T., M. Keogh, and K. Danil. 2002a. Investigation of the effects of repeated chase and encirclement on the immune system of spotted dolphins (*Stenella attenuata*) in the eastern tropical Pacific. Administrative Report LJ-02-35C, National Marine Fisheries Service: 37.

Romano, T. A., J.A. Olschowka, S.Y. Felten, V. Quaranta, S.H. Ridgway, and D.L. Felten. 2002b. Immune response, stress, and environment: Implications for cetaceans. Pages 253-279 In *Molecular and Cell Biology of Marine Mammals*. Krieger Publishing Co., Malabar, Florida.

- Romano, T.A., M.J. Keogh, C. Kelly, P. Feng, L. Berk, C.R. Schlundt, et al. 2004. Anthropogenic sound and marine mammal health: Measures of the nervous and immune systems before and after intense sound exposure. *Canadian Journal of Fisheries and Aquatic Sciences* 61:1124-1134. <https://doi.org/10.1139/f04-055>
- RPS. 2021. Equinor Empire Wind High Resolution Geophysical Survey Protected Species Observer Final Report. Prepared for Alpine Ocean on behalf of Equinor Wind. July 1, 2021.
- Russell, D.J., G.D. Hastie, D. Thompson, V.M. Janik, P.S. Hammond, L.A. Scott-Hayward, J. Matthiopoulos, E.L. Jones, and B.J. McConnell. 2016. Avoidance of wind farms by harbour seals is limited to pile driving activities. *Journal of Applied Ecology* 53(6): 1642-1652. <https://doi.org/10.1111/1365-2664.12678>
- Sætre, R. and E. Ona. 1996. Seismiske undersøkelser og skader på fiskeegg og larver. En vurdering av mulige effekter på bestandsnivå.
- Saino, N. 1994. Time budget variation in relation to flock size in carrion crows, *Corvus corone corone*. *Animal Behaviour* 47 (5): 1189-1196. <https://doi.org/10.1006/anbe.1994.1157>
- Samson, J.E., T.A. Mooney, S.W. Gusssekloo, and R.T. Hanlon. 2014. Graded behavioral responses and habituation to sound in the common cuttlefish *Sepia officinalis*. *Journal of Experimental Biology* 217 (24): 4347-4355. <https://doi.org/10.1242/jeb.113365>
- Scheifele, P.M., S. Andrew, R.A. Cooper, M. Darre, F.E. Musiek, and L. Max. 2005. Indication of a Lombard vocal response in the St. Lawrence River beluga. *The Journal of the Acoustical Society of America* 117 (3): 1486-1492. <https://doi.org/10.1121/1.1835508>
- Schlundt, C. E., J. J. Finneran, D. A. Carder, and S. H. Ridgway. 2000. Temporary shift in masked hearing thresholds of bottlenose dolphins, *Tursiops truncatus*, and white whales, *Delphinapterus leucas*, after exposure to intense tones. *Journal of the Acoustical Society of America* 107: 3496-3508. <https://doi.org/10.1121/1.429420>
- Schorr, G.S., E.A. Falcone, D.J. Moretti, and R.D. Andrews. 2014. First long-term behavioral records from Cuvier's beaked whales (*Ziphius cavirostris*) reveal record breaking dives. *PloS one* 9(3): e92633. <https://doi.org/10.1371/journal.pone.0092633>
- Schultze, L.K.P., L.M. Merckelbach, J. Horstmann, S. Raasch, and J.R. Carpenter. 2020. Increased mixing and turbulence in the wake of offshore wind farm foundations. *Journal of Geophysical Research: Oceans* 125(8): e2019JC015858. <https://doi.org/10.1029/2019JC015858>
- Schultz-von Glahn, M., Betke, K., and G. Nehls. 2006. Underwater noise reduction of pile driving for offshore wind turbines – Evaluation of several techniques under offshore conditions. UFOPLAN Ref. No. 205 53 113, final report. The Federal Environment Agency (Umweltbundesamt), Berlin.

Schwartz, F.J. 1962. Summer occurrence of an immature little piked whale, *Balaenoptera acutorostrata*, in Chesapeake Bay, Maryland. *Chesapeake Science* 3: 206–209 (1962). <https://doi.org/10.2307/1350996>

Sergeant, D. 1977. Stocks of fin whales (*Balaenoptera physalus*) in the North Atlantic Ocean. Report - International Whaling Commission. 35:357-362.

Seyle, H. 1950. Stress and the general adaptation syndrome. *British Medical Journal* June 17: 1383-1392. <https://doi.org/10.1136/bmj.1.4667.1383>

Sharp, S.M., W.A. McLellan, D.S. Rotstein, A.M. Costidis, S.G. Barco, K. Durham, T.D. Pitchford, K.A. Jackson, P.Y. Daoust, T. Wimmer, E.L. Couture, L. Bourque, T. Frasier, B. Frasier, D. Fauquier, T.K. Rowles, P.K. Hamilton, H. Pettis, and M.J. Moore. 2019. Gross and histopathologic diagnoses from North Atlantic right whale *Eubalaena glacialis* mortalities between 2003 and 2018. *Diseases of Aquatic Organisms* 135: 1-31. <https://doi.org/10.3354/dao03376>

Siddagangaiah, Shashidhar & Chen, Chi-Fang and Hu, Wei-Chun & Pieretti, Nadia. 2021. Impact of pile-driving and offshore windfarm operational noise on fish chorusing. *Remote Sensing in Ecology and Conservation*. 8. 10.1002/rse2.231.

Silber, G.K., J. Slutsky, and S. Bettridge. 2010. Hydrodynamics of a ship/whale collision. *Journal of Experimental Marine Biology and Ecology* 391: 10–19. <https://doi.org/10.1016/j.jembe.2010.05.013>

Silber, G.K., J.D. Adams, and C.J. Fonnesebeck. 2013. Compliance with vessel speed restrictions to protect North Atlantic right whales. *PeerJ* 2:e399 <https://doi.org/10.7717/peerj.399>

Simpson, S.D., J. Purser, and A.N. Radford. 2014. Anthropogenic noise compromises antipredator behaviour in European eels. *Global Change Biology* 21: 586– 593. <https://doi.org/10.1111/gcb.12685>

Sivle, L. D., P. H. Kvadsheim, M. A. Ainslie, A. Solow, N. O. Handegard, N. Nordlund, and F. P. A. Lam. 2012. Impact of naval sonar signals on Atlantic herring (*Clupea harengus*) during summer feeding. *ICES Journal of Marine Science* 69 (6): 1078–1085. <https://doi.org/10.1093/icesjms/fss080>

Sivle, L. D., P. H. Kvadsheim, C. Curé, S. Isojunno, P. J. Wensveen, F. A. Lam, F. Visser, L. Kleivane, P. L. Tyack, C. M. Harris, and P. J. O. Miller. 2015. Severity of expert-identified behavioural responses of humpback whale, minke whale, and northern bottlenose whale to naval sonar. *Aquatic Mammals* 41(4): 469–502. <http://dx.doi.org/10.1578/AM.41.4.2015.469>

Sivle, L. D., P. J. Wensveen, P. H. Kvadsheim, F. P. A. Lam, F. Visser, C. Curé, C. M. Harris, P. L. Tyack, and P. J. O. Miller. 2016. Naval sonar disrupts foraging in humpback whales. *Marine Ecology Progress Series* 562: 211–220. <https://doi.org/10.3354/meps11969>

Slabbekoorn, H., N. Bouton, I. van Opzeeland, A. Coers, C. ten Cate, and A. N. Popper. 2010. A noisy spring: the impact of globally rising underwater sound levels on fish. *Trends in Ecology & Evolution* 25 (7): 419-427. <https://doi.org/10.1016/j.tree.2010.04.005>

Skeate, E.R., M.R. Perrow, and J.J. Gilroy. 2012. Likely effects of construction of Scroby Sands offshore wind farm on a mixed population of harbour (*Phoca vitulina*) and grey (*Halichoerus grypus*) seals. *Marine pollution bulletin* 64 (4): 872-881. <https://doi.org/10.1016/j.marpolbul.2012.01.029>

Slavik, K., Lemmen, C., Zhang, W., Kerimoglu, O., Klingbeil, K. and K.W. Wirtz. 2019. The large-scale impact of offshore wind farm structures on pelagic primary productivity in the southern North Sea. *Hydrobiologia*, 845, pp.35-53. <https://doi.org/10.48550/arXiv.1709.02386>

Smith, T.D., J. Allen, P.J. Clapham, P.S. Hammond, S. Katona, F. Larsen, J. Lien, D. Mattila, P.J. Palsboll, J. Sigurjonsson, P.T. Stevick and N. Øien. 1999. An ocean-basin-wide mark-recapture study of the North Atlantic humpback whale (*Megaptera novaeangliae*). *Mar. Mamm. Sci.* 15: 1–32. <https://doi.org/10.1111/j.1748-7692.1999.tb00779.x>

Smith, M. E., A.B. Coffin, L.D. Miller, and A.N. Popper. 2006. Anatomical and functional recovery of the goldfish (*Carassius auratus*) ear following noise exposure. *Journal of Experimental Biology* 209 (21): 4193-4202. <https://doi.org/10.1242/jeb.02490>

Smith, A. 2014. Mystic Aquarium's marine mammal and sea turtle stranding data 1976-2011. Data downloaded from OBIS-SEAMAP (<http://seamap.env.duke.edu/dataset/945>) on 2023-08-14.

Smith, S.E., D.M. Brown, J.R. Oliveras, P.L.Sieswerda, S. Ahearn, and D. Reiss. 2022. A Preliminary Study on Humpback Whales Lunge Feeding in the New York Bight, United States. *Frontiers in Marine Science* VOL. 9

Smultea, M.A., J.R. Mobley, Jr., D. Fertl, and G.L. Fulling. 2008. An unusual reaction and other observations of sperm whales near fixed-wing aircraft. *Gulf and Caribbean Research* 20(1): 75-80. <https://doi.org/10.18785/gcr.2001.10>

Smultea Environmental Sciences. 2019. Protected Species Observer Technical Report for the Equinor Empire Wind Farm, BOEM Lease Area OCS-A 0512, 2019. Final Report. October 19, 2019.

Smultea Environmental Sciences. 2020. Protected Species Observer Technical Report for the Equinor Empire Wind Farm, BOEM Lease Area OCS-A 0512, Offshore New York, 2020. Final Report. Prepared by M.A. Smultea, T. Sullivan, T. Cloutier, K. Hartin, C. Brewin, and O.M. Bates. Prepared for Equinor Wind US LLC, 120 Long Ridge Road, Suite 3E01, Stamford, CT 06902. 04 December 2020.

Smultea Environmental Sciences. 2021. Protected Species Observer Report for Empire Wind OWF Geotechnical Surveys by Fugro Explorer and Brazos, BOEM Lease OCS-A 0512,

December 2020– April 2021. Final Report under the Equinor Wind US 2020 HRG and Geotechnical Survey Plan.

Solé, M., M. Lenoir, M. Durfort, M. López-Bejar, A. Lombarte, M. Van Der Schaar, and M. André. 2013. Does exposure to noise from human activities compromise sensory information from cephalopod statocysts? *Deep Sea Research Part II: Topical Studies in Oceanography* 95: pp.160-181. <https://doi.org/10.1016/j.dsr2.2012.10.006>

Sole, M., P. Sigray, M. Lenoir, M. Van der Schaar, E. Lalander, and M. André. 2017. Offshore exposure experiments on cuttlefish indicate received sound pressure and particle motion levels associated with acoustic trauma. *Scientific Reports* 7 (45899): 1–13. <https://doi.org/10.1038/srep45899>

Sorochan, K. A., Plourde, S., Morse, R., Pepin, P., Runge, J., Thompson, C., and Johnson, C. L. 2019. North Atlantic right whale (*Eubalaena glacialis*) and its food: (II) interannual variations in biomass of *Calanus* spp. on western North Atlantic shelves. *Journal of Plankton Research*, 41(5), 687-708. <https://doi.org/10.1093/plankt/fbz044>

Southall, B.L., A.E. Bowles, W.T. Ellison, J.J. Finneran, R.L. Gentry, C.R. Greene, Jr., D. Kastak, D.R. Ketten, J.H. Miller, et al. 2007. Marine Mammal Noise Exposure Criteria: Initial Scientific Recommendations. *Aquatic Mammals* 33(4): 411-521. <https://doi.org/10.1578/AM.33.4.2007.411>.

Southall, B.L., J. Calambokidis, P. Tyack, D. Moretti, J. Hildebrand, C. Kyburg, R. Carson, A. Friedlaender, E. Falcone, G. Schorr, A. Douglas, S. DeRuiter, J. Goldbogen, and J. Barlow. 2011. Biological and Behavioral Response Studies of Marine Mammals in Southern California, 2010 (“SOCAL-10”). Pearl Harbor, HI: U.S. Navy Pacific Fleet.

Southall, B.L., D. Moretti, B. Abraham, J. Calambokidis, S.L. DeRuiter, and P.L. Tyack. 2012. Marine Mammal Behavioral Response Studies in Southern California: Advances in Technology and Experimental Methods. *Marine Technology Society Journal* 46(4): 46-59. <https://doi.org/10.4031/MTSJ.46.4.1>

Southall, B.L., J.J. Finneran, C. Reichmuth, P.E. Nachtigall, D.R. Ketten, A.E. Bowles, W.T. Ellison, D.P. Nowacek, and P.L. Tyack. 2019. Marine Mammal Noise Exposure Criteria Updated Scientific Recommendations for Residual Hearing Effects. *Aquatic Mammals* 45(2):125-232. DOI 10.1578/AM.45.2.2019.125

Southall, B.L., D.P. Nowacek, A.E. Bowles, V. Senigaglia, L. Bejder, and P.L. Tyack. 2021. Marine Mammal Noise Exposure Criteria: Assessing the Severity of Marine Mammal Behavioral Responses to Human Noise. *Aquatic Mammals* 47(5): 421-464. <https://doi.org/10.1578/AM.47.5.2021.421>.

Stevick, P.T., J. Allen, P.J. Clapham, N. Friday, S.K. Katona, F. Larsen, J. Lien, D.K. Mattila, P.J. Palsbll, J. Sigurjansson, T.D. Smith, N. Øien and P.S. Hammond. 2003. North Atlantic humpback whale abundance and rate of increase four decades after protection from whaling. *Marine Ecology Progress Series*. 258: 263–273. <https://doi.org/10.3354/meps258263>

- Stewart, J.D., J.W. Durban, A.R. Knowlton, M.S. Lynn, H. Fearnbach, J. Barbaro, W.L. Perryman, C.A. Miller, and M.J. Moore. 2021. Decreasing body lengths in North Atlantic right whales. *Current Biology* 31 (14): 3174-3179. <https://doi.org/10.1016/j.cub.2021.04.067>
- Stewart, J.D., J.W. Durban, H. Fearnbach, P.K. Hamilton, A.R. Knowlton, M.S. Lynn, C.A. Miller, W.L. Perryman, B.W. Tao, and M.J. Moore. 2022. Larger females have more calves: influence of maternal body length on fecundity in North Atlantic right whales. *Marine Ecology Progress Series* 689: 179-189. <https://doi.org/10.3354/meps14040>.
- Stober and Thomsen. 2021. How could operational underwater sound from future offshore wind turbines impact marine life? *The Journal of the Acoustical Society of America* 149(3):1791-1795. <https://doi.org/10.1121/10.0003760>
- Stone, G.S., L. Cavagnaro, A. Hutt, S. Kraus, K. Baldwin, and J. Brown. 2000. Reactions of Hector's dolphins to acoustic gillnet pingers. New Zealand Department of Conservation: 28.
- Stone, C. J. 2015. Marine mammal observations during seismic surveys from 1994–2010. JNCC Rep. No. 463a. 64 p.
- Sutcliffe, W.H., and Brodie, P.F. 1977. Whale Distributions in Nova Scotia Waters. Fisheries & Marine Service Technical Report No. 722.
- Sutherland, W. J. and N. J. Crockford. 1993. Factors affecting the feeding distribution of redbreasted geese *Branta ruficollis* wintering in Romania. *Biological Conservation*, 63(1): 61-65.
- Tal, D., H. Shachar-Bener, D. Hershkovitz, Y. Arieli, and A. Shupak. 2015. Evidence for the initiation of decompression sickness by exposure to intense underwater sound. *Journal of Neurophysiology* 114 (3): 1521-1529. <https://doi.org/10.1152/jn.00466.2015>
- Taormina, B., C. Di Poi, A.L. Agnalt, A. Carlier, N. Desroy, R.H. Escobar-Lux, J.F., J.F. D'eu, F. Freydet, and C.M. Durif. 2020. Impact of magnetic fields generated by AC/DC submarine power cables on the behavior of juvenile European lobster (*Homarus gammarus*). *Aquatic Toxicology*, 220, p.105401.
- Taylor, B.I., R. Baird, J. Barlow, S.M. Dawson, J. Ford, J.G. Mead, G. Notarbartolo Di Sciara, P. Wade, and R. Pitman. 2008. *Physeter macrocephalus*. In IUCN Red List of Threatened Species. Version 2010.4. <http://www.iucnredlist.org>.
- Teilmann, J., J. Tougaard, L. A. Miller, T. Kirketerp, K. Hansen, and S. Brando. 2006. Reactions of captive harbor porpoises (*Phocoena phocoena*) to pinger-like sounds. *Marine Mammal Science* 22 (2): 240–260. <https://doi.org/10.1111/j.1748-7692.2006.00031.x>
- Teilmann, J. and J. Carstensen. 2012. Negative long term effects on harbour porpoises from a large scale offshore wind farm in the Baltic—evidence of slow recovery. *Environmental Research Letters* 7 (4): 045101. <https://doi.org/10.1088/1748-9326/7/4/045101>

Tennessen, J.B. and Parks, S.E., 2016. Acoustic propagation modeling indicates vocal compensation in noise improves communication range for North Atlantic right whales. *Endangered Species Research* 30: 225-237. <https://doi.org/10.3354/esr00738>

Tetra Tech (Tetra Tech, Inc.). 2012. Appendix N-1, Block Island Wind Farm and Block Island Transmission System Underwater Acoustic Report.

Thode, A.M., J. Bonnel, M. Thieury, A. Fagan, C. Verlinden, D., D. Wright, C. Berchok, and J.L. Crance. 2017. Using nonlinear time warping to estimate North Pacific right whale calling depths in the Bering Sea. May 2017. *The Journal of the Acoustical Society of America*, 141(5):3059-3069. <https://doi.org/10.1121/1.4982200>

Thode, A.M., S. B. Blackwell, A.S. Conrad, K.H. Kim, T. Marques, L. Thomas, C.S. Oedekoven, D. Harris, and K. Bröker. 2020. Roaring and repetition: How bowhead whales adjust their call density and source level (Lombard effect) in the presence of natural and seismic airgun survey noise. *The Journal of the Acoustical Society of America* 147 (3): 2061-2080. <https://doi.org/10.1121/10.0000935>

Thompson, P.M., G.D. Hastie, J. Nedwell, R. Barham, K.L. Brookes, L.S. Cordes, H. Bailey, and N. McLean. 2013. Framework for assessing impacts of pile-driving noise from offshore wind farm construction on a harbour seal population. *Environmental Impact Assessment Review* 43: pp.73-85. <https://doi.org/10.1016/j.eiar.2013.06.005>

Thomsen, F., K. Lüdemann, R. Kafemann, and W. Piper. 2006. Effects of offshore wind farm noise on marine mammals and fish, biola, Hamburg, Germany on behalf of COWRIE Ltd. https://tethys.pnnl.gov/sites/default/files/publications/Effects_of_offshore_wind_farm_noise_on_marine-mammals_and_fish-1-.pdf

Tougaard, J., J. Carstensen, J. Teilmann, H. Skov, and P. Rasmussen. 2009. Pile driving zone of responsiveness extends beyond 20 km for harbor porpoises (*Phocoena phocoena* (L.)). *The Journal of the Acoustical Society of America* 126(1):11-14. <https://doi.org/10.1121/1.3132523>

Tougaard, J., O.D. Henriksen, and L.A. Miller. 2009. Underwater noise from three types of offshore wind turbines: Estimation of impact zones for harbor porpoises and harbor seals. *The Journal of the Acoustical Society of America* 125 (6): 3766-3773. <https://doi.org/10.1121/1.3117444>

Tougaard, J., L. Hermannsen, and P.T. Madsen. 2020. How loud is the underwater noise from operating offshore wind turbines? *The Journal of the Acoustical Society of America* 148(5): 2885-2893. <https://doi.org/10.1121/10.0002453>

Trabue, S.G., M.L. Rekdahl, C.D. King, S. Strindberg, S.K. Adamczak, and H.C. Rosenbaum. 2022. Spatiotemporal trends in bottlenose dolphin foraging behavior and relationship to environmental variables in a highly urbanized estuary. *Marine Ecology Progress Series* 690:219-235. <https://doi.org/10.3354/meps14041>

- Treves, A. 2000. Theory and method in studies of vigilance and aggregation. *Animal Behaviour* 60(6): 711-722. <https://doi.org/10.1006/anbe.2000.1528>
- Tyack, P.L., C. Clark, J. Bird, and V. Rowntree. 1983. Effects of underwater noise on migrating gray whales off the coast of California. *The Journal of the Acoustical Society of America* 74 S54; <https://doi.org/10.1121/1.2021028>.
- Tyack, P. L. 2000. Functional aspects of cetacean communication. In J. Mann, R. C. Connor, P. L. Tyack, and H. Whitehead (Eds.), *Cetacean societies: Field studies of dolphins and whales*. Chicago, IL: University of Chicago Press.
- Tyack, P.L., W.M.X. Zimmer, D. Moretti, B.L. Southall, D.E. Claridge, J.W. Durban, C.W. Clark, A. D'Amico, N. DiMarzio, S. Jarvis, E. McCarthy, R. Morrissey, J. Ward, and I.L. Boyd. 2011. Beaked whales respond to simulated and actual Navy sonar. *PLOS One* 6(3): e17009. <https://doi.org/10.1371/journal.pone.0017009>.
- Urick, R.J. 1983. *Principles of Underwater Sound*. 3rd Edition, McGraw-Hill, New York.
- Vallejo, G.C. et al. 2017. Responses of two marine top predators to an offshore wind farm. *Ecology and Evolution* 7(21):8969-8708.
- van der Hoop, J.M., A. Fahlman, T. Hurst, J. Rocho-Levine, K.A. Shorter, V. Petrov, M.J. Moore. 2014. Bottlenose dolphins modify behavior to reduce metabolic effect of tag attachment. *J Exp Biol* (2014) 217 (23): 4229–4236. <https://doi.org/10.1242/jeb.108225>
- Vanderlaan, A.S. and C.T. Taggart. 2007. Vessel collisions with whales: The probability of lethal injury based on vessel speed. *Marine Mammal Science* 23(1):144 - 156 <https://doi.org/10.1111/j.1748-7692.2006.00098.x>
- Van Parijs, S.M. 2015. Letter of introduction to Biologically Important Areas issue. *Aquatic Mammals* 41(1): 1. <http://dx.doi.org/10.1578/AM.41.1.2015.1>
- Van Parijs, S.M., K. Baker, J. Carduner, J. Daly, G.E. Davis, C. Esch, S. Guan, A. Scholik-Schlomer, N.B. Sisson, and E. Staaterman. 2021. NOAA and BOEM Minimum Recommendations for Use of Passive Acoustic Listening Systems in Offshore Wind Energy Development Monitoring and Mitigation Programs. *Frontiers in Marine Science* 8: 760840. <https://doi.org/10.3389/fmars.2021.760840>
- van Rij, N. G. 2007. *Implicit and explicit capture of attention: what it takes to be noticed*. Thesis. University of Canterbury.
- Vigness-Raposa, K.J., R.D. Kenney, M.L. Gonzalez, and P.V. August. 2010. Spatial patterns of humpback whale (*Megaptera novaeangliae*) sightings and survey effort: Insight into North Atlantic population structure. *Marine Mammal Science* 26, 1. <https://doi.org/10.1111/j.1748-7692.2009.00336.x>.

- Villegas-Amtmann, S., L.K., Schwarz, J.L. Sumich, and D.P. Costa. 2015. A bioenergetics model to evaluate demographic consequences of disturbance in marine mammals applied to gray whales. *Ecosphere* 6(10): <https://doi.org/10.1890/es15-00146>.
- Visser, F., C. Cure, P. H. Kvadsheim, F. P. Lam, P. L. Tyack, and P. J. Miller. 2016. Disturbance-specific social responses in long-finned pilot whales, *Globicephala melas*. *Scientific Reports* 6: 28641. <https://doi.org/10.1038/srep28641>
- Ward, W.D. 1997. Effects of high-intensity sound. Pages 1497-1507 in M.J. Crocker, ed. *Encyclopedia of Acoustics*, Volume III. John Wiley & Sons, New York.
- Waring, G.T., E. Josephson, K. Maze-Foley, and P.E. Rosel (eds.). 2016. U.S. Atlantic and Gulf of Mexico Marine Mammal Stock Assessments - 2015. NOAA Technical Memorandum. Available online at: http://www.nmfs.noaa.gov/pr/sars/pdf/atlantic2015_final.pdf.
- Wartzok, D. and D.R. Ketten. 1999. Marine Mammal Sensory Systems. (Chapter 4) In Reynolds, J. and S. Rommel (eds.). *Biology of Marine Mammals*. Smithsonian Institution Press, Washington, DC. pp. 117-175.
- Wartzok, D., A.N. Popper, J. Gordon, and J. Merrill. 2003. Factors affecting the responses of marine mammals to acoustic disturbance. *Marine Technology Society Journal* 37 (4): 6- 15. <https://doi.org/10.4031/002533203787537041>
- Watkins, W.A. 1986. Whale reactions to human activities in Cape Cod waters. *Marine Mammal Science* 2(4): 251–262. <https://doi.org/10.1111/j.1748-7692.1986.tb00134.x>
- Watkins, W.A., P.L. Tyack, K.E. Moore, and J.E. Bird. 1987. The 20-Hz signals of finback whales (*Balaenoptera physalus*). *Journal of the Acoustical Society of America* 82(6): 1901–1912. <https://doi.org/10.1121/1.395685>.
- Watwood, S. L., J. D. Iafate, E. A. Reyier, and W. E. Redfoot. 2016. Behavioral Response of Reef Fish and Green Sea Turtles to Mid-Frequency Sonar. In A. N. Popper & A. Hawkins (Eds.), *The Effects of Noise on Aquatic Life II* (pp. 1213–1221). New York, NY: Springer New York.
- Wensveen, P. J., P. H. Kvadsheim, F.-P. A. Lam, A. M. Von Benda-Beckmann, L. D. Sivle, F. Visser, C. Curé, P. Tyack, and P. J. O. Miller. 2017. Lack of behavioural responses of humpback whales (*Megaptera novaeangliae*) indicate limited effectiveness of sonar mitigation. *The Journal of Experimental Biology* 220: 1–12. <https://doi.org/10.1242/jeb.161232>
- Wensveen, P.J., S. Isojunno, R.R. Hansen, A.M. von Benda-Beckmann, L. Kleivane, S. van IJsselmuide, F.P.A. Lam, P.H. Kvadsheim, S.L. DeRuiter, C. Curé, and T. Narazaki. 2019. Northern bottlenose whales in a pristine environment respond strongly to close and distant navy sonar signals. *Proceedings of the Royal Society B* 286 (1899): 20182592. <https://doi.org/10.1098/rspb.2018.2592>

Westgate, A.J., Read, T.M. Cox, T.D. Schofield, B.R. Whitaker, and K.E. Anderson. 1998. Monitoring a Rehabilitated Harbor Porpoise Using Satellite Telemetry. *Marine Mammal Science* 14 (3): 599-604. <https://doi.org/10.1111/j.1748-7692.1998.tb00746.x>

Williams, R., C.W. Clark, D. Ponirakis, and E. Ashe. 2013. Acoustic quality of critical habitats for three threatened whale populations. *Animal Conservation* 17(2): 174–185. <https://doi.org/10.1111/acv.12076>

Wilson, L.J., J. Harwood, C.G. Booth, R. Joy, and C.M. Harris. 2020. A decision framework to identify populations that are most vulnerable to the population level effects of disturbance. *Conservation Science and Practice* 2(2): .e149. <https://doi.org/10.1111/csp2.149>

Woo, K. L. and K. L. Biolsi. 2018. In Situ Observations of Pinnipeds in New York City, 2011-2017. *Aquatic Mammals* 44(3): 244-249. <http://dx.doi.org/10.1578/AM.44.3.2018.244>

Yazvenko, S.B., T.L. McDonald, S.A. Blokhin, S.R. Johnson, H.R. Melton, M.W. Newcomer, et al. 2007. Feeding of western gray whales during a seismic survey near Sakhalin Island, Russia. *Environmental Monitoring and Assessment* 134 (1-3): 93-106. <https://doi.org/10.1007/s10661-007-9810-3>

Zaitseva, K. A., V.P. Morozov, and A.I. Akopian. 1980. Comparative characteristics of spatial hearing in the dolphin *Tursiops truncatus* and man. *Neuroscience and behavioral physiology* 10(2): 180-182. <https://doi.org/10.1007/BF01148460>

Zelick, R., and D.A. Mann. 1999. Acoustic communication in fishes and frogs. In: Fay, R.R. and A.N. Popper, eds. *Comparative hearing: Fishes and amphibians*. Springer-Verlag, New York.

Zhang Jiaan, D. Liu, Z. Li, X. Han, H. Liu, C. Dong, J. Wang, C. Liu, and Y. Xia, 2021. Power prediction of a wind farm cluster based on spatiotemporal correlations. *Applied Energy*, Volume 302, 2021, 117568, ISSN 0306-2619, <https://doi.org/10.1016/j.apenergy.2021.117568>.

Zimmer, W.M.X. and P.L. Tyack. 2007. Repetitive shallow dives pose decompression risk in deep-diving beaked whales. *Marine Mammal Science* 23(4): 888-925. <https://doi.org/10.1111/j.1748-7692.2007.00152.x>

Zoidis, A., K.S. Lomac-MacNair, D.S. Ireland, M.E. Rickard, K.A. McKown, and M.D. Schlesinger. 2021. Distribution and density of six large whale species in the New York Bight from monthly aerial surveys 2017 to 2020. *Continental Shelf Research*, Volume 230. <https://doi.org/10.1016/j.csr.2021.104572>.