

REFERENCES

- ANSI S1.1-2013. 2013. *American National Standard Acoustical Terminology*. American National Standards Institute, NY, USA.
- ANSI S1.1-2013. 2013. *American National Standard Acoustical Terminology*. American National Standards Institute, NY, USA.
- Archer, F.I., S.L. Mesnick, and A.C. Allen. 2010. Variation and predictors of vessel response behavior in a tropical dolphin community. NOAA Technical Memorandum NMFS-SWFSC-457, National Marine Fisheries Service: 60.
- Au, W.W., P. W. Moore, D. A. and Pawloski, 1988. Detection of complex echoes in noise by an echolocating dolphin. *The Journal of the Acoustical Society of America*, 83(2): 662-668.
- Au, W.W.L. and M.C. Hastings. 2008. *Principles of Marine Bioacoustics*. Springer, New York
- Bain, D.E. and R. Williams. 2006. Long-range effects of airgun noise on marine mammals: responses as a function of received sound level and distance. IWC Scientific Committee, St. Kitts and Nevis, West Indies.
- Barlow J. 1988. Harbor porpoise, *Phocoena phocoena*, abundance estimation for California, Oregon, and Washington. I. Ship surveys. *Fish. Bull.*, 86: 417-432.
- 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.
- 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.
- 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.
- Bettridge, S., C.S. Baker, J. Barlow, P.J. Clapham, M. Ford, D. Gouveia, D.K. Mattila, R.M. Pace III, P.E. Rosel, G.K. Silber and P.R. Wade. 2015. Status review of the humpback whale (*Megaptera novaeangliae*) under the Endangered Species Act. NOAA Tech. Memo. NMFS-SWFSC-540. 263 pp.
- Blackwell, S.B., J.W. Lawson, and M.T. Williams. 2004. 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.

- Blecha, F. 2000. Immune system response to stress. Pages 111-122 in G.P. Moberg and J.A. Mench, eds. *The Biology of Animal Stress: Basic Principles and Implications for Animal Welfare*. CABI Publishing, Oxon, United Kingdom. Bonnell, M.L., M.O. Pierson, and G.D. Farrens. 1983. Pinnipeds and sea otters of central and northern California, 1980-1983: Status, abundance and distribution. Prepared by Center for Marine Studies, University of California for Minerals Management Service: 220.
- [BOEM] Bureau of Ocean Energy Management. 2014a. *Atlantic OCS Proposed Geological and Geophysical Activities Mid-Atlantic and South Atlantic Planning Area Final Programmatic Environmental Impact Statement* (webpage). <http://www.boem.gov/BOEM-2014-001-v1/>.
- [BOEM] Bureau of Ocean Energy Management. 2014b. *Atlantic OCS Proposed Geological and Geophysical Activities: Mid-Atlantic and South Atlantic Planning Area Final Programmatic Environmental Impact Statement*. Volume Volume I: Chapters 1-8, Figures, Tables, and Keyword Index. OCS EIS/EA BOEM 2014-001. U.S. Department of the Interior, Bureau of Ocean Energy Management, Gulf of Mexico OCS Region. <https://www.boem.gov/sites/default/files/oil-and-gas-energy-program/GOMR/BOEM-2014-001-v1.pdf>
- 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.
- Bradshaw, C.J.A., S. Boutin, and D.M. Hebert. 1998. Energetic implications of disturbance caused by petroleum exploration to woodland caribou. *Canadian Journal of Zoology*, 76(7): 1319-1324.
- Branstetter, B.K., J.S. Trickey, K. Bakhtiari, A. Black, H. Aihara, and J.J. Finneran. 2013. Auditory masking patterns in bottlenose dolphins (*Tursiops truncatus*) with natural, anthropogenic, and synthesized noise. *Journal of the Acoustical Society of America*, 133(3): 1811-1818
- Brown, D. M., J. Robbins, P. L. Sieswerda, R. Schoelkopf, and E. C. M. Parsons. 2017. Humpback whale (*Megaptera novaeangliae*) sightings in the New York-New Jersey harbor estuary. *Marine Mammal Science*, 34:250-257.
- Brownell Jr, R.L., K. Ralls, S. Baumann-Pickering, M.M. and Poole. 2009. Behavior of melon-headed whales, *Peponocephala electra*, near oceanic islands. *Marine Mammal Science*, 25(3): 639-658.
- CETAP. 1982. A characterization of marine mammals and turtles in the mid- and North Atlantic areas of the U.S. outer continental shelf, final report, Cetacean and Turtle Assessment Program, University of Rhode Island. Bureau of Land Management, Washington, DC. #AA551-CT8-48. 576 pp.
- Clark, C.W. and G.C. Gagnon. 2002. Low-frequency vocal behaviors of baleen whales in the

- North Atlantic: Insights from IUSS detections, locations and tracking from 1992 to 1996. *J. Underwater Acoust. (US Navy)*, 52(3): 609-640.
- Connor, R.C. and MR. Heithaus. 1996. Approach by great white shark elicits flight response in bottlenose dolphins. *Marine Mammal Science*, 12(4): 602-606.
- 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.
- Cott, P.A., A.N. Popper, D.A. Mann, J.K. Jorgenson, and B.W. Hanna. 2012. Impacts of riverbased air gun seismic activity on northern fishes. *Advances in Experimental Medicine and Biology* 730:367-369
- Cox, T.M., T.J. Ragen, A.J. Read, E. Vos, R.W. Baird, K. Balcomb, et al. 2006. Understanding the impacts of anthropogenic sound on beaked whales. *Journal of Cetacean Research and Management* 7 (3):177-187
- 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. p. 266. <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.
- Daan, S., C. Deerenberg, and C. Dijkstra. 1996. Increased daily work precipitates natural death in the kestrel. *Journal of Animal Ecology* 65 (5):6.
- DeRuiter, S.L., Boyd, I.L., Claridge, D.E., Clark, C.W., Gagnon, C., Southall, B.L. and P.L. Tyack, P.L. 2013. Delphinid whistle production and call matching during playback of simulated military sonar. *Marine Mammal Science*, 29(2), pp.E46-E59.
- 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.
- 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*. Springer, New York. pp 265-271. https://dx.doi.org/10.1007/978-1-4939-2981-8_31.

- [ESA] Endangered Species Act of 1973 as Amended through the 108th Congress. 2002. United States Pub. L. No. 93–205, 87 Stat. 884, 16 U.S.C. 1531 (Dec 28, 1973) as amended by Pub. L. No. 107–136 (Jan 24, 2002). <http://www.fws.gov/endangered/esa-library/pdf/ESAall.pdf>.
- Evans, D.L. and G.R. England. 2001. Joint interim report: Bahamas marine mammal stranding event of 15-16 March 2000. U.S. Navy and National Marine Fisheries Service: 66.
- 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.
- 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: 984-993.
- Finneran, J.J. and A.K. Jenkins. 2012. Criteria and thresholds for U.S. Navy acoustic and explosive effects analysis. Technical Report, Space and Naval Warfare Systems Center Pacific, U.S. Navy: 64.
- Finneran, J.J. and Schlundt, C.E., 2010. Frequency-dependent and longitudinal changes in noise-induced hearing loss in a bottlenose dolphin (*Tursiops truncatus*). *The Journal of the Acoustical Society of America*, 128(2), pp.567-570.
- Finneran, J.J., 2015. Noise-induced hearing loss in marine mammals: A review of temporary threshold shift studies from 1996 to 2015. *The Journal of the Acoustical Society of America*, 138(3), pp.1702-1726.
- Foote, A.D., R.W. Osborne, and A.R. Hoelzel. 2004. Whale-call response to masking boat noise. *Nature* **428**:910
- Ford, J.K. and Reeves, R.R., 2008. Fight or flight: antipredator strategies of baleen whale. *Mammal Review*, 38(1), pp.50-86.
- 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.
- 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. *Journal of the Acoustical Society of America* **113** (6):3411-3424.
- 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 and Evolution* **14** (2):91-97.

- 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.
- Gailey, G., O. Sychenko, T. McDonald, R. Racca, A. Rutenko, and K. Broker. 2016. Behavioural responses of western gray whales to a 4-D seismic survey off northeastern Sakhalin Island, Russia. *Endangered Species Research* 30: 53-71.
- 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 (2):90-100.
- Goldbogen, J.A., J. Calambokidis, A.S. Friedlaender, J. Francis, S.L. Deruiter, A.K. Stimpert, et al. 2013a. Underwater acrobatics by the world's largest predator: 360° rolling manoeuvres by lunge-feeding blue whales. *Biology Letters* 9 (1):Article 20120986.
- Gomez, C., Lawson, J.W., Wright, A.J., Buren, A.D., Tollit, D., and V. Lesage. 2016. A systematic review on the behavioural responses of wild marine mammals to noise: the disparity between science and policy. *Canadian Journal of Zoology*, vol. 94, pp. 801-819.
- Gong, Z., Jain, A.D., Tran, D., Yi, D.H., Wu, F., Zorn, A., Ratilal, P. and N. C. Makris. 2014. Ecosystem scale acoustic sensing reveals humpback whale behavior synchronous with herring spawning processes and re-evaluation finds no effect of sonar on humpback song occurrence in the Gulf of Maine in Fall 2006. *PloS one*, 9(10), p.e104733.
- Goold, J.C. 1996. Acoustic assessment of populations of common dolphin *Delphinus delphis* in conjunction with seismic surveying. *Journal of the Marine Biological Association of the United Kingdom* **76** (3):811-820.
- Greene, C.R. 1997. Physical acoustic measurements. In: Richardson, W.J. (ed). Northstar marine mammal monitoring program, 1996: Marine mammal and acoustical monitoring of a seismic program in the Alaskan Beaufort Sea. LGL Report TA2121-2, Prepared by LGL Ltd. And Greeneridge Sciences Inc. for BP Exploration (Alaska) Inc.: 245.
- 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. *Reports of the International Whaling Commission* 42: 653-669.
- Harrington, F.H. and A.M. Veitch. 1992. Calving success of woodland caribou exposed to low-level jet fighter overflights. *Arctic* **45** (3):213-218.
- 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 US. National Marine Sanctuary. *Conservation Biology* 26 (6):983-994.
- Hayes, S.A., E. Josephson, K. Maze-Foley, and P.E. Rosel (eds.). 2018. *U.S. Atlantic and Gulf of Mexico marine mammal stock assessments—2017*. U.S. Dep. Commer., NOAA Technical Memo NMFS-NE-245, Woods Hole, MA. 373 p.
- Hayes, S.A., E. Josephson, K. Maze-Foley, and P.E. Rosel. 2017. *U.S. Atlantic and Gulf of Mexico Marine Mammal Stock Assessments—2016*. U.S. Department of Commerce, NOAA, NMFS NFSC. NOAA Technical Memorandum NMFS-NE-241, Woods Hole, Massachusetts. <https://repository.library.noaa.gov/view/noaa/14864>. Hayes, S.A., E. Josephson, K. Maze-Foley, and P.E. Rosel. 2019. *U.S. Atlantic and Gulf of Mexico Marine Mammal Stock Assessments—2018*. NOAA Technical Memorandum NMFS-NE-258, Woods Hole, MA, USA. 298 p. <https://doi.org/10.25923/9rrd-tx13>.
- Hayes, S.A., E. Josephson, K. Maze-Foley, and P.E. Rosel. 2018. *U.S. Atlantic and Gulf of Mexico Marine Mammal Stock Assessments—2017 (second edition)*. NOAA Technical Memorandum NMFS-NE-245, Woods Hole, MA, USA. p. 371. <https://www.nefsc.noaa.gov/publications/tm/tm245/>.
- Hayes, S.A., E. Josephson, K. Maze-Foley, and P.E. Rosel. 2019. *U.S. Atlantic and Gulf of Mexico Marine Mammal Stock Assessments—2018*. NOAA Technical Memorandum NMFS-NE-258, Woods Hole, MA, USA. p. 298. <https://doi.org/10.25923/9rrd-tx13>.
- Hildebrand, J.A. 2009. Anthropogenic and natural sources of ambient noise in the ocean. *Marine Ecology Progress Series* 395:5-20.
- Holberton, R.L., B. Helmuth, and J.C. Wingfield. 1996. The corticosterone stress response in gentoo and king penguins during the non-fasting period. *Condor* **98** (4):850-854.
- Holt, M. 2008. *Sound Exposure and Southern Resident Killer Whales (Orcinus orca). A Review of Current Knowledge and Data Gaps*. In: NOAA (ed.). NOAA Technical Memorandum. Document Number NMFS-NWFSC-89. 59 p.
- Hood, L.C., P.D. Boersma, and J.C. Wingfield. 1998. The adrenocortical response to stress in incubating Magellanic penguins (*Spheniscus magellanicus*). *Auk* **115** (1):76-84.
- Jensen, A.S. and Silber, G.K., 2003. *Large Whale Ship Strike Database*. US Department of Commerce. National Oceanic and Atmospheric Administration. Technical Memorandum NMFS-OPR.
- 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.

- Jorgenson, J.K., and E.C. Gyselman. 2009. Hydroacoustic measurements of the behavioral response of arctic riverine fishes to seismic airguns. *Journal of the Acoustical Society of America* 126 (3):1598-1606
- 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.
- Kastelein, R.A., P.J. Wensveen, L. Hoek, W.C. Verboom, and J.M. Terhune. 2009. Underwater detection of tonal signals between 0.125 and 100 kHz by harbor seals (*Phoca vitulina*). *J Acoust Soc Am* 125(2): 1222-9. <http://www.ncbi.nlm.nih.gov/pubmed/19206895>.
- Kastelein, R.A., R. Gransier, L. Hoek, and J. Olthuis. 2012. Temporary threshold shifts and recovery in a harbor porpoise (*Phocoena phocoena*) after octave-band noise at 4 kHz. *Journal of the Acoustical Society of America* 132:3525-3537.
- Kastelein, R.A., Gransier, R., Schop, J. and L. Hoek. 2015. Effects of exposure to intermittent and continuous 6–7 kHz sonar sweeps on harbor porpoise (*Phocoena phocoena*) hearing. *The Journal of the Acoustical Society of America*, 137(4), pp.1623-1633.
- Katona, S.K., V. Rough and D.T. Richardson 1993. A field guide to whales, porpoises, and seals from Cape Cod to Newfoundland. Smithsonian Institution Press, Washington, DC. 316 pp.
- 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.
- Kraus, S.D., S. Leiter, K. Stone, B. Wikgren, C.A. Mayo, P. Hughes, R.D. Kenney, C.W. Clark, A.N. Rice, et al. 2016. *Northeast Large Pelagic Survey Collaborative Aerial and Acoustic Surveys for Large Whales and Sea Turtles*. US Department of the Interior, Bureau of Ocean Energy Management. OCS Study BOEM 2016-054, Sterling, Virginia. 117 + appendices p. <https://www.boem.gov/RI-MA-Whales-Turtles/>.
- 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.
- Kremser, U., Klemm, P. and KOeTZ, W.D., 2005. Estimating the risk of temporary acoustic threshold shift, caused by hydroacoustic devices, in whales in the Southern Ocean. *Antarctic Science*, 17(01), pp.3-10.
- Kryter, K.D. 1985. *The Effects of Noise on Man*. Academic Press, New York.

- Kryter, K.D., Ward, W.D., Miller, J.D. and Eldredge, D.H., 1966. Hazardous exposure to intermittent and steady-state noise. *The Journal of the Acoustical Society of America*, 39(3), 451-464.
- LaBrecque, E., Curtice, C., Harrison, J., Van Parijs, S.M. and Halpin, P.N., 2015. 3. Biologically Important Areas for Cetaceans Within US Waters-Gulf of Mexico Region. *Aquatic Mammals*, 41(1), p.30.
- 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. *Lesage, V. and M.O. Hammill. 2001. The status of the grey seal, Halichoerus grypus, in the Northwest Atlantic. Can. Field-Nat.* 115(4): 653-662.
- Lankford, S.E., T.E. Adams, R.A. Miller, and J.J. Cech. 2005. The cost of chronic stress: Impacts of a nonhabituating stress response on metabolic variables and swimming performance in sturgeon. *Physiological and Biochemical Zoology* 78:599-609.
- Leatherwood, S., D.K. Caldwell, and H.E. Winn. 1976. Whales, dolphins, and porpoises of the western North Atlantic. A guide to their identification. U.S. Dept. of Commerce, NOAA Tech. Rep. NMFS Circ. 396, 176 pp.
- Leiter, SM & Stone, Kelsey & Thompson, JL & Accardo, CM & Hodge, Brooke & Zani, Monica & Cole, TVN & Kenney, RD & Mayo, CA & Kraus, Scott. 2017. North Atlantic right whale *Eubalaena glacialis* occurrence in offshore wind energy areas near Massachusetts and Rhode Island. *Endangered Species Research*. 34. 10.3354/esr00827.
- Lucke, K., U. Siebert, P.A. Lepper, and M. Blanchet. 2009. Temporary shift in masked hearing thresholds in a harbor porpoise (*Phocoena phocoena*) after exposure to seismic airgun stimuli. *Journal of the Acoustical Society of America* 125 (6):4060.
- 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* 201 (2-3):228-236.
- 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.
- Malme, C. I., Miles, P. R., Clark, C. W., Tyack, P., & Bird, J. E. 1984. Investigations of the potential effects of underwater noise from petroleum-industry activities on migrating gray-whale behavior. Phase 2: January 1984 migration (No. PB-86-218377/XAB; BBN-5586). Bolt, Beranek and Newman, Inc., Cambridge, MA (USA).

- McKenna, M.F., S.L. Katz, S.M. Wiggins, D. Ross, and J.A. Hildebrand. 2012. A quieting ocean: Unintended consequence of a fluctuating economy. *Journal of the Acoustical Society of America* 132 (3):EL169-EL175.
- Miller, J.D. 1974. Effects of noise on people. *Journal of the Acoustical Society of America* 56 (3):729-764.
- Miller, P.J.O., N. Biassoni, A. Samuels, and P.L. Tyack. 2000. Whale songs lengthen in response to sonar. *Nature* **405** (6789):903.
- Mitson, R.B (ed.). 1995. Underwater noise of research vessels: Review and recommendations. Cooperative Research Report No. 209, International Council for the Exploration of the Sea: 65.
- Moberg, G.P. 1987. Influence of the adrenal axis upon the gonads. Pages 456-496 in J. Clarke, ed. *Oxford Reviews in Reproductive Biology*. Oxford University Press, New York, New York.
- Moberg, G.P. 2000. Biological response to stress: Implications for animal welfare. Pages 1-21 in G.P. Moberg and J.A. Mench, eds. *The Biology of Animal Stress: Basic Principles and Implications for Animal Welfare*. CABI Publishing, Oxon, United Kingdom.
- Mooney, T.A., Nachtigall, P.E. and Vlachos, S., 2009a. Sonar-induced temporary hearing loss in dolphins. *Biology letters*, pp.rsbl-2009.
- Mooney, T.A., Nachtigall, P.E., Breese, M., Vlachos, S. and Au, W.W., 2009b. Predicting temporary threshold shifts in a bottlenose dolphin (*Tursiops truncatus*): The effects of noise level and duration. *The Journal of the Acoustical Society of America*, 125(3), pp.1816-1826.
- 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>.
- 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.
- Ng, S.L. and S. Leung. 2003. Behavioral response of Indo-Pacific humpback dolphin (*Sousa chinensis*) to vessel traffic. *Marine Environmental Research* **56** (5):555-567.
- Nichols, O.C., R.D. Kenney, and M.W. Brown. 2008. Spatial and Temporal Distribution of North Atlantic Right Whales (*Eubalaena glacialis*) in Cape Cod Bay, and Implications for Management. *Fish Bulletin* 106(3): 270–280.
<https://spo.nmfs.noaa.gov/sites/default/files/pdf-content/2008/1063/nichols.pdf>.
- NMFS. 2016. Technical Guidance for Assessing the Effects of Anthropogenic Sound on Marine

Mammal Hearing—Underwater Acoustic Thresholds for Onset of Permanent and Temporary Threshold Shifts. National Marine Fisheries Service, Silver Spring, MD.

Northridge, S., Tasker, M., Webb, A., Camphuysen, K. and Leopold, M., 1997. White-beaked Lagenorhynchus albirostris and Atlantic white-sided dolphin L. acutus distributions in northwest European and US North Atlantic waters. *Rep. int. Whal. Commn*, 47, pp.797-805.

Nowacek, D.P., Johnson, M.P. and Tyack, P.L. 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), pp.227-231.

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.

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

NRC. 2005. Marine mammal populations and ocean noise: Determining when noise causes biologically significant effects. National Academy of Sciences: 142.

Oleson, E.M., Baker, J., Barlow, J., Moore, J.E., and Wade, P., “North Atlantic right whale monitoring and surveillance: Report and recommendations of the National Marine Fisheries Service’s Expert Working Group,” NOAA Technical Memorandum NMFS-OPR, p. 64. Available at: <https://repository.library.noaa.gov/view/noaa/25910>.

Pace RM. 2021. Revisions and further evaluations of the right whale abundance model: improvements for hypothesis testing. NOAA Technical Memorandum NMFS-NE-269, National Marine Fisheries Service: 54.

Pace RM, Corkeron, PJ, and Kraus, SD. 2017. State space estimates reveal a recent decline in abundance of North Atlantic right whales. *Ecol Evol* 7: 8730–8741

Paquet, D., C. Haycock and H. Whitehead. 1997. Numbers and seasonal occurrence of humpback whales (*Megaptera novaeangliae*) off Brier Island, Nova Scotia. *Can. Field-Nat.* 111:548–552.

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>.

Paxton, A.B., J.C. Taylor, D.P. Nowacek, J. Dale, E. Cole, C.M. Voss, and C.H. Peterson. 2017. Seismic survey noise disrupted fish use of a temperate reef. *Marine Policy* 78: 68-73.

Payne, M. and D. W. Heinemann 1990. A distributional assessment of cetaceans in the shelf and shelf edge waters of the northeastern United States based on aerial and shipboard surveys, 1978–1988. Report to NMFS

- Payne, P.M. and D.W. Heinemann. 1993. The distribution of pilot whales (*Globicephala* spp.) in shelf/shelf edge and slope waters of the north-eastern United States, 1978-1988. *Report of the International Whaling Commission* 14(Special Issue): 51-68.
- Payne, P.M., J.R. Nicholas, L. O'Brien and K.D. Powers. 1986. The distribution of the humpback whale, *Megaptera novaeangliae*, on Georges Bank and in the Gulf of Maine in relation to densities of the sand eel, *Ammodytes americanus*. *Fish. Bull.* 84:271-277.
- Payne, P.M., L.A. Selzer and A.R. Knowlton. 1984. Distribution and density of cetaceans, marine turtles and seabirds in the shelf waters of the northeast U.S., June 1980 - Dec. 1983, based on shipboard observations. *National Marine Fisheries Service, Woods Hole.* NA81FAC00023: 245.
- 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.
- Pena, H., N.O. Handegard, and E. Ona. 2013. Feeding herring schools do not react to seismic air gun surveys. *ICES Journal of Marine Science* 70 (6):1174-1180.
- Pettis, H.M., Pace, R.M.I. and Hamilton, P.K., 2020. North Atlantic right whale consortium 2020 annual report card. Report to the North Atlantic Right Whale Consortium.
- 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.
- Reeves, R.R., C. Smeenk, C.C. Kinze, R. L. Brownell Jr., and J. Lien. 1999. White-beaked dolphin (*Lagenorhynchus albirostris* (Gray 1846)). Pp. 1-30. In: S.H. Ridgway and R. Harrison (eds.) *Handbook of marine mammals*, Vol 6. Academic Press, San Diego, CA.
- Reeves, R.R., B.S. Stewart, P.J. Clapham and Powell, J.A. (2002). *National Audubon Society Guide to Marine Mammals of the World*. Alfred A. Knopf: New York.
- Rice et al., 1989. Sperm Whale in *Handbook of marine animals* Vol 4. S.H Ridgeway and R Harrison (eds)
- Richardson, W.J., C.R. Greene, C.I. Malme, and D.H. Thomson. 1995. *Marine Mammals and Noise*. Academic Press, Inc., San Diego, California.
- Ridgway, S., D. Carder, J. Finneran, M. Keogh, T. Kamolnick, M. Todd, and A. Goldblatt. 2006. Dolphin continuous auditory vigilance for five days. *Journal of Experimental Biology* 209 (18):3621-3628.
- 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.

Roberts, J.J., Best, B.D., Mannocci, L., Fujioka, E.I., Halpin, P.N., Palka, D.L., Garrison, L.P., Mullin, K.D., Cole, T.V., Khan, C.B. and McLellan, W.A., 2016. Habitat-based cetacean density models for the US Atlantic and Gulf of Mexico. *Scientific reports*, 6(1), pp.1-12.

Roberts JJ, 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). Document version 1.4. Report prepared for Naval Facilities Engineering Command, Atlantic by the Duke University Marine Geospatial Ecology Lab, Durham, NC.

Roberts JJ, 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). Document version 1.2. 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. 2020. Final Project Report: Marine Species Density Data Gap Assessments and Update for the AFTT Study Area, 2018-2020 (Option Year 3). Document version 1.4. Report prepared for Naval Facilities Engineering Command, Atlantic by the Duke University Marine Geospatial Ecology Lab, Durham, NC.

Rolland, R.M., S.E. Parks, K.E. Hunt, M. Castellote, P.J. Corkeron, D.P. Nowacek, et al. 2012. Evidence that ship noise increases stress in right whales. *Proceedings of the Royal Society of London Series B Biological Sciences* **279** (1737):2363-2368.

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., D.L. Felten, S.Y. Stevens, J.A. Olschowka, V. Quaranta, and S.H. Ridgway. 2002b. Immune response, stress, and environment: Implications for cetaceans. Pages 253-279 in C.J. Pfeiffer, ed. *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.

Santulli, A., A. Modica, C. Messina, L. Ceffa, A. Curatolo, G. Rivas, et al. 1999. Biochemical responses of European sea bass (*Dicentrarchus labrax* L.) to the stress induced by offshore experimental seismic prospecting. *Marine Pollution Bulletin* 38 (12):1105-1114.

- Seyle, H. 1950. Stress and the general adaptation syndrome. *British Medical Journal* June 17:1383-1392.
- Skalski, J.R., W.H. Pearson, and C.I. Malme. 1992. Effects of sounds from a geophysical survey device on catch-per-unit-effort in a hook-and-line fishery for rockfish (*Sebastes* spp.). *Canadian Journal of Fisheries and Aquatic Sciences* 49:1357-1365.
- Southall, B.L., A.E. Bowles, W.T. Ellison, J.J. Finneran, R.L. Gentry, C.R. Greene, et al. 2007. Marine mammal noise exposure criteria: initial scientific recommendations. *Aquatic Mammals* **33** (4):411-521.
- Stewart, J.D., Durban, J.W., Knowlton, A.R., Lynn, M.S., Fearnback, H., Barbaro, J., Perryman, W.L., Miller, C.A., and Moore, M.J. 2021. Decreasing body lengths in North Atlantic right whales. *Current Biology*, published online (3 June 2021). Available at: [https://www.cell.com/current-biology/fulltext/S0960-9822\(21\)00614-X](https://www.cell.com/current-biology/fulltext/S0960-9822(21)00614-X).
- 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.
- 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: 1521-1529.
- 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.
- Thode, A.M., et al.. 2017. Towed array passive acoustic operations for bioacoustic applications: ASA/JNCC workshop summary, March 14-18, 2016, Scripps Institution of Oceanography, La Jolla, CA, USA. 77 p.
- Tyack, P.L., and Thomas, L. 2019. Using dose-response functions to improve calculations of the impact of anthropogenic noise, *Aquatic Conservation: Marine and Freshwater Ecosystems*, vol. 29, pp. 242-253.
- Urlick, R.J. (1975). A Statistical Model for the Fluctuation of Sound Transmission in the Sea (No. NSWC/WOL/TR-75-18). Naval Surface Weapons Center, White Oak Lab, Silver Spring, MD.
- U.S. Fish and Wildlife Service (USFWS). 2015. Monomoy National Wildlife Refuge :Final Comprehensive Conservation Plan and Environmental Impact Statement, Volume 1. Chatham, Massachusetts. 577 pp.
[http://www.fws.gov/uploadedFiles/10w_CCP_Entire_Document\(7207KB\).pdf](http://www.fws.gov/uploadedFiles/10w_CCP_Entire_Document(7207KB).pdf).

- Vanderlaan, A.S. and Taggart, C.T., 2007. Vessel collisions with whales: the probability of lethal injury based on vessel speed. *Marine mammal science*, 23(1), pp.144-156.
- 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.
- Wardle, C.S., T.J. Carter, G.G. Urquhart, A.D.F. Johnstone, A.M. Ziolkowski, G. Hampson, and D. Mackie. 2001. Effects of seismic air guns on marine fish. *Continental Shelf Research* 21:1005-1027.
- Waring, G., E. Josephson, K. Maze-Foley, and P.E. Rosel (eds.). 2017. U.S. Atlantic and Gulf of Mexico Marine Mammal Stock Assessments - 2016,
- Waring, G.T., E. Josephson, K. Maze-Foley, and P.E. Rosel (eds.). 2015. U.S. Atlantic and Gulf of Mexico Marine Mammal Stock Sssessments - 2014. NOAA Technical Memorandum. Available at: http://www.nmfs.noaa.gov/pr/sars/pdf/atl2014_final.pdf
- 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 at: http://www.nmfs.noaa.gov/pr/sars/pdf/atlantic2015_final.pdf
- Wartzok, D., & D.R. Ketten. 1999. Marine mammal sensory systems. *Biology of marine mammals*, 1, 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.
- 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>.
- Weilgart, L.S. 2007. A brief review of known effects of noise on marine mammals. *International Journal of Comparative Psychology* 201 (2-3):159-168.
- Westgate, A.J. and Read, A.J., 1998. Applications of new technology to the conservation of porpoises. *Marine Technology Society. Marine Technology Society Journal*, 32(1), p.70.
- Whitehead et al. 1991. Distribution and behavior of male sperm whales on the Scotian Shelf Canada. *Can J Zool* 70:912-918.
- 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.
- Yelverton, J.T., D.R. Richmond, E.R. Fletcher and R.K. Jones. 1973. Safe distances from underwater explosions for mammals and birds. Defense Nuclear Agency: 67.