

REFERENCES

- 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.L. and M.C. Hastings. 2008. *Principles of Marine Bioacoustics*. Springer, New York
- Barco S. et al. 2002. Population identity of humpback whales . *Journal of Cetacean Research and Management*. 4. 135-141.
- Barco, S, and W. M. Swingle. 2014. Marine Mammal Species Likely to be Encountered in the Coastal Waters of Virginia from Analysis of Stranding Data. VAQF Scientific Report #2014-07a. Prepared for the Virginia Department of Mines, Minerals and Energy.
- 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.
- 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.
- 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.

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

Brownell Jr, R.L., Ralls, K., Baumann-Pickering, S. and Poole, M.M. (2009). Behavior of melon-headed whales, *Peponocephala electra*, near oceanic islands. *Marine Mammal Science*, **25**(3), pp.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.

Christal, J., Whitehead, H., Lettevall, E. 1998: Sperm whale social units: variation and change. *Can. J. Zool.* **76** , 1431— 1440.DOI: [10.1139/cjz-76-8-1431](https://doi.org/10.1139/cjz-76-8-1431)

Clark CW Ellison WT Southall BL Hatch L van Parijs SM Frankel A Ponirakis D . 2009. Acoustic masking in marine ecosystems: Intuitions, analysis, and implication. *Marine Ecology Progress Series* **395**: 201–222.

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.

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

Cotter, M. 2019. Protected Species Monitoring: Norfolk Canyon –2018 Aerial Surveys. Presentation prepared for US Navy, March 12, 2019

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.
- Curtice C., J. Cleary, E. Shumchenia, and P.N. Halpin. 2018. 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). Accessed at: <http://seamap.env.duke.edu/models/MDAT/MDAT-Technical-Report.pdf>
- Daan, S., C. Deerenberg, and C. Dijkstra. 1996. Increased daily work precipitates natural death in the kestrel. *Journal of Animal Ecology* **65** (5):6.
- Davis G. et al. 2017. Long-term passive acoustic recordings track the changing distribution of North Atlantic right whales (*Eubalaena glacialis*) from 2004 to 2014. *Scientific Reports*. 7. 10.1038/s41598-017-13359-3.
- Di Iorio L., Clark C. W. 2009. Exposure to seismic survey alters blue whale acoustic communication. *Biol. Lett* 651–54
- 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.
- 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.
- Fay, 2009 Soundscapes and the sense of hearing of fishes. *Integrative Zoology*. Volume 4, Issue 1

- 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., 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
- 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
- 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.
- Garrison, L.P., K. Barry and W. Hoggard. 2017a. The abundance of coastal morphotype bottlenose dolphins on the U.S. east coast: 2002-2016. Southeast Fisheries Science Center,

Protected Resources and Biodiversity Division, 75 Virginia Beach Dr., Miami, FL 33140.
PRBD Contribution # PRBD2017-01, XX pp.

Garrison, L.P., A.A. Hohn and L.J. Hansen. 2017b. Seasonal movements of Atlantic common bottlenose dolphin stocks based on tag telemetry data. Southeast Fisheries Science Center, Protected Resources and Biodiversity Division, 75 Virginia Beach Dr., Miami, FL 33140. PRBD Contribution # PRBD2017-02, XX

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.

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.

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.

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

Greene and Richardson, 1988 (1988). Characteristics of marine seismic survey sounds in the Beaufort Sea. *Journal of The Acoustical Society of America - J ACOUST SOC AMER.* 83. 2246-2254. 10.1121/1.396354.

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.

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>.
- Hemilä, 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 (L). *Journal of the Acoustical Society of America* 120(6):3463-3466.
- 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.
- Hodge, K.B., C.A. Muirhead, J.L. Morano, C.W. Clark, and A.N. Rice. 2015. North Atlantic right whale occurrence near wind energy areas along the Mid-Atlantic US coast: implications for management. *Endangered Species Research* 28(3):225-234.
- 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.
- 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.
- Jefferson, T.A., Webber, M.A. and Pitman, R.L. 2015. *Marine Mammals of the World: A Comprehensive Guide to their Identification*. Elsevier. 2nd edition.
- 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.
- Jones D.V., Rees, D.R., and Bartlett, B.A. 2018. Haul-out Counts and Photo-Identification of Pinnipeds in Chesapeake Bay and Eastern Shore, Virginia: 2017/2018 Annual Progress Report. Final Report. Prepared for U.S. Fleet Forces Command, Norfolk, Virginia. 21 December 2018.
- 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
- Kalapinski 2015. Hydroacoustic survey of geotechnical activities for the Virginia offshore wind technical advancement program. *The Journal of the Acoustical Society of America* **138**, 1929 (2015);
- 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., W. C. Verboom, M. Muijsers, N. V. Jennings, and S. Van der Heul. 2005. The influence of acoustic emissions for underwater data transmission on the behavior of harbour porpoises (*Phocoena phocoena*) in a floating pen. *Marine Environmental Research* **59**:287-307.
- Kastelein, R. A., N. Jennings, W. C. Verboom, D. de Haan, and N. M. Schooneman. 2006. 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.
- 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>.
- 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.
- Kenney, R.D. 1990. Bottlenose dolphins off the northeastern United States. Pages 369–386 in *The bottlenose dolphin* (S. Leatherwood and R. R. Reeves, eds.). Academic Press, San Diego, 653 pp.

- Kenney, R.D. 2009. Right whales: *Eubalaena glacialis*, *E. japonica*, and *E. australis*. In *Encyclopedia of Marine Mammals*, pp. 962-972. Academic Press.
- 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*. Technical Report, May 31, 2009.
- Knowlton, A.R., J.B. Ring, B. Russell, and N.E. Aquarium. 2002. Right whale sightings and survey effort in the Mid Atlantic Region: Migratory corridor, time frame, and proximity to port entrances. Report submitted to the NMFS Ship Strike Working Group, Silver Spring, Maryland. PDF available from:
<https://www.greateratlantic.fisheries.noaa.gov/protected/shipstrike/projects/midatlanticreportrfinal.pdf>
- 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.
- 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.
- 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).
- 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.
- 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.
- National Institute for Occupational Safety and Health (NIOSH). 1998. Criteria for a recommended standard: Occupational noise exposure. United States Department of Health and Human Services, Cincinnati, OH.
- National Marine Fisheries Service (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.
- National Marine Fisheries Service (NMFS). 2018. 2018 Revisions to: Technical Guidance for Assessing the Effects of Anthropogenic Sound on Marine Mammal Hearing (Version 2.0): Underwater Acoustic Thresholds for Onset of Permanent and Temporary Threshold Shifts.

U.S. Department of Commerce, NOAA. NOAA Technical Memorandum NMFS-OPR-59, 169 pp.

- NMFS Fisheries. 2019. Interim recommendation for Sound Source Level and Propagation Analysis for High Resolution Geophysical Sources, 24 October 2019.
- 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.
- 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.
- 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.
- 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.
- 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.
- Rees, D.R., D.V. Jones, and B.A. Bartlett. 2016. Haul-out counts and photo-identification of pinnipeds in Chesapeake Bay, Virginia: 2015/2016 annual progress report. Final Report. Prepared for U.S. Fleet Forces Command, Norfolk, Virginia. 15 November 2016.

- 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.
- Reichmuth, C. and M. M. Holt. 2013. Comparative assessment of amphibious hearing in pinnipeds. *Journal of Comparative Physiology A: Neuroethology, Sensory, Neural and Behavioral Physiology* 199(6):491-507.
- Reichmuth, C., A. Ghaul, J.M. Sillis, A. Rouse, and B.L. Southall. 2016. Low-frequency temporary threshold shift not observed in spotted or ringed seals exposed to single air gun impulses. *Journal of the Acoustical Society of America* 140:2648-2658
- 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.
- Risch, D., T. Norris, M. Curnock, and A. Friedlaender. 2019. Common and Antarctic Minke Whales: Conservation Status and Future Research Directions. *Frontiers in Marine Science* 6:247.
- 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.M. McLellan, D.A. Pabst, and G.G. Lockhart. 2016. 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. 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, 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). Document version 1.0. Report prepared for Naval Facilities Engineering Command, Atlantic, by the Duke University Marine Geospatial Ecology Lab, Durham, NC.

- Roberts JJ, Schick RS, Halpin PN. 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.
- Salisbury, D.P., C.W. Clark, and A.N. Rice. 2016. Right whale occurrence in the coastal waters of Virginia, USA: Endangered species presence in a rapidly developing energy market. *Marine Mammal Science* 32(2):508-519.
- 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.
- Selzer, L.A. and Payne, M.P. (1988) The Distribution of White-Sided (*Lagenorhynchus acutus*) and Common Dolphins (*Delphinus delphis*) vs. Environmental Features of the Continental Shelf of the Northeastern United States. *Marine Mammal Science*, 4, 141-153.
- 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.
- Southall, B.L., Rowles, T., Gulland, F., Baird, R. W., and Jepson, P.D. 2013. Final report of the Independent Scientific Review Panel investigating potential contributing factors to a 2008 mass stranding of melon-headed whales (*Peponocephala electra*) in Antsohihy, Madagascar.
- 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.
- Swingle, W.M., S.G. Barco, T.D. Pitchford, W.A. McLellan, and D.A. Pabst. 1993. Appearance of juvenile humpback whales feeding in the nearshore waters of Virginia. *Marine Mammal Science* **9**:309–315.
- 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.
- (U.S. Navy n.d.). U.S. Navy. [no date.] Marine Species Monitoring. See: <https://www.navymarinespeciesmonitoring.us/>.
- 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.T., E. Josephson, K. Maze-Foley, and P.E. Rosel (eds.). 2015. U.S. Atlantic and Gulf of Mexico Marine Mammal Stock Assessments - 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.
- Wartzok et al. 2003. Factors Affecting the Responses of Marine Mammals to Acoustic Disturbance. *Marine Technology Society Journal* 37(4):6-15
- 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.
- Whitehead, H. 2003. Sperm whales: social evolution in the ocean. University of Chicago Press.
- Wiley, D.N. and R.A. Asmutis. 1995. Stranding and mortality of humpback whales, *Megaptera novaeangliae* in the Mid-Atlantic and southeast United States, 1985-1992. *Fishery Bulletin* 93:196-205.
- Wood, S., K. Murray, E. Josephson, and J. Gilbert. 2019. Rates of increase in gray seal (*Halichoerus grypus atlantica*) pupping at recolonized sites in the United States, 1988-2019. *Journal of Mammalogy*, Volume 101, Issue 1.
- 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.
- Zelick, R., Mann, D. and Popper, A. N. (1999). Acoustic communication in fishes and frogs. In *Comparative Hearing: Fish and Amphibians* (ed. R. R. Fay and A. N. Popper), pp. 363-411. New York: Springer-Verlag.
- Zimmer MX & Tyack, Peter. 2007. Repetitive shallow dives pose decompression risk in deep-diving beaked whales. *Marine Mammal Science*. 23. 888-925. 10.1111/j.1748-7692.2007.00152.x.