

## References

- 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.
- André, M., M. Solé, M. Lenoir, M. Durfort, C. Quero, A. Mas, et al. 2011. Low-frequency sounds induce acoustic trauma in cephalopods. *Frontiers in Ecology and the Environment* 9 (9):489-493.
- American National Standards Institute (ANSI). 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). New York: Acoustical Society of America.
- 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.
- Barber, JR, Crooks, K.R., Fistrup, K.M. 2010. The costs of chronic noise exposure for terrestrial organisms. *Trends Ecol Evol.* 2010 Mar;25(3):180-9.
- 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.
- Barkaszi, M.J. and Kelly, C.J., 2018. Seismic survey mitigation measures and protected species observer reports: synthesis report. US Dept. of the Interior, Bureau of Ocean Energy Management, Gulf of Mexico OCS Region, New Orleans, LA. *Contract*, (M17PD00004), pp.2019-012.
- Best, P.B. 1982. Whales: Why do they strand? *African Wildlife* 36 (3):96-99.
- Beauchamp, Guy & Livoreil, Barbara. 1997. The effect of group size on vigilance and feeding rate in spice finches (*Lonchura punctata*). *Canadian Journal of Zoology.* 75. 1526-1531.
- Bejder L, Samuels A, Whitehead H, Gales N, Mann J, Connor R, Heithaus M, Watson-Capps J, Flaherty C, Krützen M. 2006. Decline in relative abundance of bottlenose dolphins exposed to long-term disturbance. *Conserv Biol.* 20(6):1791-8.
- Bejder, L., A. Samuels, H. Whitehead, H. Finn, 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 (2009), pp. 177-185.

- Betancourt, L., A. Herrera-Moreno, and K. Beddall. 2012. Spatial distribution of humpback whales (*Megaptera novaeangliae*) in Samaná Bay, Dominican Republic. IWC document SC/64/O12.
- 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. Nat. Mar. Fish. Service, Southwest Fish. Sci. Center, La Jolla, CA. 240 p.
- Blackwell, S.B., C.S. Nations, T.L. McDonald, C.R. Greene, Jr., A.M. Thode, M. Guerra, and A.M. Macrander. 2013. Effects of airgun sounds on bowhead whale calling rates in the Alaskan Beaufort Sea. Mar. Mamm. Sci.
- 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.
- Blaxter, J.H.S., J.A.B. Gray, and E.J. Denton. 1981. Sound and startle responses in herring shoals. Journal of the Marine Biological Association of the United Kingdom 61: 851-870.
- 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.
- Boeger, W.A., M.R. Pie, A. Ostrensky, and M.F. Cardoso. 2006. The effect of exposure to seismic prospecting on coral reef fishes. Brazilian Journal of Oceanography 54:235-239.
- Bolle, L.J., C.A. de Jong, S.M. Bierman, P.J. van Beek, O.A. van Keeken, P.W. Wessels, et al. 2012. Common sole larvae survive high levels of pile-driving sound in controlled exposure experiments. PLoS ONE 7 (3):e33052.
- Booman, C., J. Dalen, H. Leivestad, A. Levsen, T. van der Meeren, and K. Toklum. 1996. Effects of airgun shooting on eggs, larvae, and fry. Norwegian Institute of Marine Research. Fisk og Havet Nr. 3. (Norwegian with English summary.)
- Bowles, A.E., M. Smulcea, 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, 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.
- 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.

- Breitzke, M., O. Boebel, S. El Naggar, W. Jokat, and B. Werner. 2008. Broad-band calibration of marine seismic sources used by R/V Polarstern for academic research in polar regions. *Geophysical Journal International* 174 (2):505-524.
- Bröker, K., J. Durinck, C. Vanman, and B. Martin. 2013. Monitoring of marine mammals and the sound scape during a seismic survey in two license blocks in the Baffin Bay, West Greenland, in 2012. p. 32 In: Abstr. 20th Bienn. Conf. Biol. Mar. Mamm., 9–13 December 2013, Dunedin, New Zealand. 233 p.
- Caldwell J and Dragoset W 2000 A brief overview of seismic airgun arrays *Leading Edge* 19 898–902
- Carroll, A.G., R. Przeslawski, A. Duncan, M. Gunning, and B. Bruce. 2017. A critical review of the potential impacts of marine seismic surveys on fish and invertebrates. *Marine Pollution Bulletin* 114: 9-24.
- Castellote, M., C.W. Clark, and M.O. Lammers. 2012. Acoustic and behavioural changes by fin whales (*Balaenoptera physalus*) in response to shipping and airgun noise. *Biol. Conserv.* 147(1):115-122.
- Castellote, M. and C. Llorens. 2016. Review of the effects of offshore seismic surveys in cetaceans: Are mass strandings a possibility? p. 133-143 In: A.N. Popper and A. Hawkins (eds.), *The effects of noise on aquatic life II*. Springer, New York, NY. 1292 p.
- 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.
- Chapman, C.J., and A.D. Hawkins. 1969. The importance of sound in fish behaviour in relation to capture by trawls. *FAO Fisheries Reports* 62 (3):717-729.
- Christensen, I., T. Haug, and N. Øien. 1992. Seasonal distribution, exploitation and present abundance of stocks of large baleen whales (*Mysticeti*) and sperm whales (*Physeter macrocephalus*) in Norwegian and adjacent waters. *ICES. J. Mar. Sci.* 49:341-355.
- Chrousos GP. 2000. The role of stress and the hypothalamic-pituitary-adrenal axis in the pathogenesis of the metabolic syndrome: neuro-endocrine and target tissue-related causes. *Int J Obes Relat Metab Disord.* 24 Suppl 2:S50
- Clapham, P.J., L.S. Baraff, C.A. Carlson, M.A. Christian, D.K. Mattila, C.A. Mayo, M.A. Murphy, and S. Pittman. 1993. Seasonal occurrence and annual return of humpback whales, *Megaptera novaeangliae*, in the southern Gulf of Maine. *Can. J. Zool.* 71:440-443.
- Clark, C.W., W.T. Ellison, B.L. Southall, L. Hatch, S.M. Van Parijs, A. Frankel, and D. Ponirakis. 2009. Acoustic masking in marine ecosystems: intuitions, analysis, and implication. *Mar. Ecol. Prog. Ser.* 395:201-222.
- Clark, C.W. and G.C. Gagnon. 2006. Considering the temporal and spatial scales of noise exposures from seismic surveys on baleen whales. Working Pap. SC/58/E9. Int. Whal. Comm., Cambridge, UK. 9 p.

- Clyne, H., R. Leaper, and J. Kennedy. 1999. Computer simulation of interactions between the North Atlantic right whale (*Eubalaena glacialis*) and shipping. European Research on Cetaceans 13:458.
- Conn, P.B., and G.K. Silber. 2013. Vessel speed restrictions reduce risk of collision-related mortality for North Atlantic right whales. *Ecosphere* 4 (4): Article 43.
- 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.
- Cook, M.L.H., R. Varela, J. Goldstein, S.D. McCulloch, G.D. Bossart, J.J. Finneran, et al. 2006. Beaked whale auditory evoked potential hearing measurements. *Journal of Comparative Physiology A* 189:489-495.
- 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.
- 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.
- Creel, S.F. (2005) Dominance, aggression and glucocorticoid levels in social carnivores. *Journal of Mammalogy* 86, 255– 264.
- Croll, D.A., Clark, C.W., Calambokidis, J., Ellison, W.T., and Tershy, B.R. 2001. Effect of anthropogenic low-frequency noise on the foraging ecology of Balaenoptera whales. *Anim Conserv.* 4:13-27.
- Daan S, Deerenberg C, and Dijkstra C (1996) Increased daily work precipitates natural death in the Kestrel. *J Anim Ecol* 65:539-544.
- 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. *Aquatic Mammals* 35 (4):452-472.
- Dalen, J., and G.M. Knutsen. 1987. Scaring effects in fish and harmful effects on eggs, larvae and fry by offshore seismic explorations. Pages 93-102 in H. M. Merklinger, ed. *Progress in Underwater Acoustics*. Plenum Press, New York City.
- DeRuiter, S.L., P.L. Tyack, Y.-T. Lin, A.E. Newhall, J.F. Lynch, and P.J.O. Miller. 2006. Modeling acoustic propagation of airgun array pulses recorded on tagged sperm whales (*Physeter macrocephalus*). *Journal of the Acoustical Society of America* 120 (6):4100- 4114.
- DeVries, T. J., M. A. G. von Keyserlingk, D. M. Weary, and K. A. Beauchemin. 2003. Measuring the feeding behavior of lactating dairy cows in early to peak lactation. *J. Dairy Sci.* 86:3354–3361.
- Dias, L. and L.P. Garrison. 2016. Distribution and abundance of cetaceans in the northern Gulf of Mexico. Deepwater Horizon Natural Resource Damage Assessment Technical Report: 40.

- Diebold, J.B., M. Tolstoy, L. Doermann, S.L. Nooner, S.C. Webb, and T.J. Crone. 2010. R/V Marcus G. Langseth seismic source: modeling and calibration. *Geochem. Geophys. Geosyst.* 11(12):Q12012. doi:10.1029/2010GC003126. 20 p.
- Di Iorio, L. and C.W. Clark. 2010. Exposure to seismic survey alters blue whale acoustic communication. *Biol. Lett.* 6(1):51-54.
- DoN (Department of the Navy). 2002. Marine Resource Assessment for the Puerto Rico/St. Croix Operating Area, Final Report. Norfolk, VA.
- Dragoset, W.H. 1990. Airgun array specs: A tutorial. *Geophysics: The Leading Edge of Exploration.* January: 1-9.
- Dunlop, R.A. 2015. The effect of vessel noise on humpback whale, *Megaptera novaeangliae*, communication behaviour. *Animal Behav.* 111:13-21.
- Dyndo, M., D.M. Wisniewska, L. Rojano-Doñate, and P.T. Madsen. 2015. Harbour porpoises react to low levels of high frequency vessel noise. *Sci. Rep.* 5:11083.
- Eaton, R.L. 1979. Speculations on strandings as burial, suicide, and interspecies communication. *Carnivora* 2: 24.
- 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. *Conserv. Biol.* 26(1):21-28.
- Engås, A., S. Løkkeborg, E. Ona, and A.V. Soldal. 1996. Effects of seismic shooting on local abundance and catch rates of cod (*Gadus morhua*) and haddock (*Melanogrammus aeglefinus*). *Canadian Journal of Fisheries and Aquatic Sciences* 53:2238-2249.
- Engås, A., and S. Løkkeborg. 2002. Effects of seismic shooting and vessel-generated noise on fish behaviour and catch rates. *Bioacoustics* 12:313-315.
- 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.
- Erbe, C., C. Reichmuth, K. Cunningham, K. Lucke, and R. Dooling. 2016. Communication masking in marine mammals: a review and research strategy. *Mar. Poll. Bull.* 103:15-38.
- 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. & Becker, P. 2000. Review of stress in marine mammals. *Journal of Aquatic Ecosystem Stress and Recovery.* 7. 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.
- Fields, D.M., Handegard, N.O., Dalen, J., Eichner, C., Malde, K., Karlsen, Ø., Skiftesvik, A.B., Durif, C.M. and Browman, H.I., 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, 76(7), pp.2033- 2044.

Finneran, J.J., D.S. Houser, B. Mase-Guthrie, R.Y. Ewing, and R.G. Lingenfelser. 2009. Auditory evoked potentials in a stranded Gervais' beaked whale (*Mesoplodon europaeus*). Journal of the Acoustical Society of America 126 (1):484-490.

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 B.K. Branstetter. 2013. Effects of noise on sound perception in marine mammals. p. 273-308 In: H. Brumm (ed.), Animal communication and noise. Springer Berlin, Heidelberg, Germany. 453 p.

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) 1702.

Foley, J.A., Cole, M.T. 2001. Regime shifts in ecosystems and lakes in the Sahel: a review. Presented at the American Geophysical Union, Fall Meeting 2001.

Foote, A.D., R.W. Osborne, A.R. Hoelzel. 2004. Environment: whale-call response to masking boat noise Nature, 428: 910–910.

Ford, J.K.B. and R.R. Reeves. 2008. Fight or flight: Antipredator strategies of baleen whales. Mammal Review 38 (1):50-86.

Forney, K.A., B.L. Southall, E. Slooten, 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. Endang. Species Res. 32:391-413.

Francis, C & Barber, J. (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.

Frantzis, A. 1998. Does acoustic testing strand whales? Nature 392 (6671):29.

Frantzis, A., J.C. Goold, E.K. Skarsoulis, M.I. Taroudakis, and V. Kandia. 2002. Clicks from Cuvier's beaked whales, *Ziphius cavirostris* (L.). Journal of the Acoustical Society of America 112 (1):34-37.

Frid, A., and L.M. Dill. 2002. Human-caused disturbance stimuli as a form of predation risk. Conservation Ecology 6 (1):11

Fristrup, K.M., Hatch, L.T. & Clark, C.W. 2003. Variation in humpback whale (Megaptera novaengliae) song length in relation to low-frequency sound broadcasts. Journal of the Acoustical Society of America, 113, 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. Würsig, 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. *Environ. Monit. Assess.* 134(1-3):75-91.
- 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. *Endang. Species Res.* 30:53-71.
- Gedamke, J. 2011. Ocean basin scale loss of whale communication space: potential impacts of a distant seismic survey. p. 105-106 In: Abstr. 19th Bienn. Conf. Biol. Mar. Mamm., 27 Nov.-2 Dec. 2011, Tampa, FL. 344 p.
- Gende, S., N. Hendrix, K. Harris, B. Eichenlaub, J. Nelson, and S. Pyare. 2011. A Bayesian approach for understanding the role of ship speed in whale-ship encounters. *Ecological Applications* 21: 2233– 2240.
- Geraci, J.R., Tcstaverde, S.A., Staubin, D.S., and Loop, T.H., 1976, A mass stranding of the Atlantic white sided dolphin (*Lagenorhynchus acutus*): A study into pathobiology and life history, U.S. Marine Mammal Commission, Report Number MMC 75/12, Washington, D.C., PB-289, 361.
- Geraci, J.R., J. Harwood, and V.J. Lounsbury. 1999. Marine mammal die-offs: Causes, investigations, and issues. Pages 367-395 in J. Twiss and R. Reeves, eds. *Conservation and Management of Marine Mammals*. Smithsonian Institution Press, Washington, DC.
- Geraci, J. R., & Lounsbury, V. J. (Eds.). 2005. *Marine mammals ashore: A field guide for strandings* (2nd ed.). College Station: Texas A&M University Sea Grant College Program.
- 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.
- 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.
- 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.
- Goold 1996. Acoustic Assessment Of Populations Of Common Dolphin *Delphinus Delphis* In Conjunction With Seismic Surveying. *J. mar. biol. Ass. U.K.* (1996), 76, 811-820.
- Gordon, J., D. Gillespie, J. Potter, A. Frantzis, M.P. Simmonds, R. Swift, and D. Thompson. 2004. A review of the effects of seismic surveys on marine mammals. *Marine Technology Society Journal* 37 (4):16-34.

- 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.
- Guan, S., J.F. Vignola, J.A. Judge, D. Turo, and T.J. Ryan. 2015. Inter-pulse noise field during an arctic shallow-water seismic survey. *J. Acoust. Soc. Am.* 137(4):2212.
- Guerra, M., A.M. Thode, S.B. Blackwell, and M. Macrander. 2011. Quantifying seismic survey reverberation off the Alaskan North Slope. *J. Acoust. Soc. Am.* 130(5):3046-3058.
- Guerra, M., P.J. Dugan, D.W. Ponirakis, M. Popescu, Y. Shiu, and C.W. Clark. 2016. High-resolution analysis of seismic airgun impulses and their reverberant field as contributors to an acoustic environment. p. 371-379 In: A.N. Popper and A. Hawkins (eds.), *The effects of noise on aquatic life II*. Springer, New York, NY. 1292 p.
- Gunnlaugsson, T. 1991. Effect of Beaufort on minke whale sightings rate in Icelandic whale observation surveys 1982-1986. *Rep. Int. Whal. Comm.* 41:445-448.
- Gunnlaugsson, T., D.G. Pike, and G.A. Víkingsson. 2004. Comparison of sighting rates from NASS and other dedicated cetacean vessel effort around Iceland during 1982 to 2003. Paper SC/56/O5 presented to the IWC Scientific Committee. 33 p.
- Gunnlaugsson, T., G.A. Víkingsson, and D.G. Pike. 2012. Aerial surveys off Iceland and minke whale distribution changes by season and over time. Paper SC/64/RMP4 presented to the IWC Scientific Committee. 14 p.
- Haley, B., and W.R. Koski. 2004. Marine Mammal Monitoring during Lamont-Doherty Earth Observatory's ADWBC Seismic Program in the Northwest Atlantic Ocean, July–August 2004. LGL Report TA2822-27. Prepared by LGL Ltd. environmental research associates, King City, ONT, for Lamont-Doherty Earth Observatory, Columbia University, Palisades, NY, and NMFS, Silver Spring, MD.
- Haley, B. and D. Ireland. 2006. Marine Mammal Monitoring during University of Alaska Fairbanks Marine Geophysical Survey across the Arctic Ocean, August–September 2005. LGL Report TA4122-3. Prepared by LGL Ltd. environmental research associates, King City, ONT, for University of Alaska-Fairbanks, Fairbanks, AK, and NMFS, Silver Spring, MD.
- Halvorsen, M.B., B.M. Casper, C.M. Woodley, T.J. Carlson, and A.N. Popper. 2012. Threshold for onset of injury in chinook salmon from exposure to impulsive pile driving sounds. *PLoS ONE* 7 (6).
- Hansen, R.G., T.K. Boye, R.S. Larsen, N.H. Nielsen, O. Tervo, R.D. Nielsen, M.H. Rasmussen, M.H.S. Sinding, and M.P. Heide-Jørgensen. 2018. Abundance of whales in West and East Greenland in summer 2015. NAMMCO Sci. Publ. 11. Accessed December 2023 at <https://doi.org/10.7557/3.4689>.
- 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.

- Harris, C.M. (ed.). 1998. Handbook of Acoustical Measurements and Noise Control. Acoustical Society of America, Woodbury, NY.
- Hassel, A., T. Knutsen, J. Dalen, K. Skaar, S. Lokkeborg, O. Misund, et al. 2004. Influence of seismic shooting on the lesser sandeel (*Ammodytes marinus*). ICES Journal of Marine Science 61 (7):1165-1173.
- Hastings, M.C., and A.N. Popper. 2005. Effects of sound on fish. Technical report for Jones and Stokes to California Department of Transportation.
- 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. Conserv. Biol. 26(6):983-994.
- Hauser, D., M. Holst, and V.D. Moulton. 2008. Marine Mammal and Sea Turtle Monitoring during Lamont-Doherty Earth Observatory's Marine Seismic Program in the Eastern Tropical Pacific, April–August 2008. LGL Report TA4656/7-1. Prepared by LGL Ltd. environmental research associates, St. John's, NF and King City, ONT, for Lamont Doherty Earth Observatory, Columbia University, Palisades, NY, and NMFS, Silver Spring, MD.
- Hawkins, A.D., A.E. Pembroke, and A.N. Popper. 2014. Information gaps in understanding the effects of noise on fishes and invertebrates. Reviews in Fish Biology and Fisheries: 1-26
- Hayes, S.A., E. Josephson, K. Maze-Foley, and P.E. Rosel (eds.). 2019. U.S. Atlantic and Gulf of Mexico marine mammal stock assessments: 2018. NOAA Technical Memorandum NMFSNE-264, National Marine Fisheries Service.
- 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.
- 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 NMFSNE-264, National Marine Fisheries Service.
- Heenehan, H., J.E. Stanistreet, P.J. Corkeron, L. Bouveret, J. Chalifour, G.E. Davis, A. Henriquez, J.J. Kiszka, L. Kline, C. Reed, and O. Shamir-Reynoso. 2019. Caribbean Sea soundscapes: Monitoring humpback whales, biological sounds, geological events, and anthropogenic impacts of vessel noise. Front. Mar. Sci. 6:347.
- Hermannsen, 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.
- Hermannsen, L., J. Tougaard, K. Beedholm, J. Nabe-Nielsen, and P.T. Madsen. 2015. Characteristics and propagation of airgun pulses in shallow water with implications for effects on small marine mammals. PLoS ONE 10 (7):e0133436.

- Hildebrand, JA. 2009. Anthropogenic and natural sources of ambient noise in the ocean. *Marine Ecology-Progress Series*. 395:5-20.
- Hildebrand, J., K. Merkens, K. Frasier, H. Bassett, S. Baumann-Pickering, A. Širović, et al. 2012. Passive acoustic monitoring of cetaceans in the northern Gulf of Mexico during 2010- 2011. Progress Report for Research Agreement #20105138; Deepwater Horizon Natural Resource Damage Assessment Technical Report: 35.
- 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.M., D.P. Noren, V. Veirs, C.K. Emmons, S. Veirs. 2009. Speaking up: Killer whales (*Orcinus orca*) increase their call amplitude in response to vessel noise *J. Acoust. Soc. Am.*, 125 (2009), pp. EL27-EL32
- Holt MM, Noren DP, Emmons CK. 2012. Does vessel noise affect the use of sound by foraging *Orcinus orca* (killer whales)? In: Popper AN, Hawkins A (eds). *The Effects of Noise on Aquatic Life. Advances in Experimental Medicine and Biology*, vol. 730. New York, NY: Springer; 327–330.
- Holst, M. 2004. Marine mammal monitoring during Lamont-Doherty Earth Observatory's TAG seismic study in the Mid-Atlantic Ocean, October–November 2003. LGL Report TA2822-21. Prepared by LGL Ltd. environmental research associates, King City, ONT, for Lamont-Doherty Earth Observatory, Columbia University, Palisades, NY, and NMFS, Silver Spring, MD.
- Holst, M., M.A. Smul tea, W.R. Koski, and B. Haley. 2005a. Marine Mammal and Sea Turtle Monitoring during Lamont-Doherty Earth Observatory’s Marine Seismic Program off the Northern Yucatán Peninsula in the Southern Gulf of Mexico, January–February 2005. LGL Report TA2822-31. Prepared by LGL Ltd. environmental research associates, King City, ONT, for Lamont-Doherty Earth Observatory, Columbia University, Palisades, NY, and NMFS, Silver Spring, MD. June.
- Holst, M. and M.A. Smul tea. 2008. Marine Mammal and Sea Turtle Monitoring during LamontDoherty Earth Observatory’s Marine Seismic Program off Central America, February– April 2006. LGL Report TA4342-3. Prepared by LGL Ltd. environmental research associates, King City, ONT, for Lamont-Doherty Earth Observatory, Columbia University, Palisades, NY, and NMFS, Silver Spring, MD.
- 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.
- Houghton, J., M.M. Holt, D.A. Giles, M.B. Hanson, C.K. Emmons, J.T. Hogan, T.A. Branch, and G.R. VanBlaricom. 2015. The relationship between vessel traffic and noise levels received by killer whales (*Orcinus orca*). *PLoS ONE* 10(12): e0140119.
- 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.

- 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.
- ICES (International Council for the Exploration of the Sea). 2005. Report of the ad-hoc group on the impacts of sonar on cetaceans and fish (AGISC). ICES CM 2005/ACE:06. 56 pp.
- International Organization for Standardization (ISO). 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.
- Jensen, A.S. and G.K. Silber. 2004. Large whale ship strike database. NOAA Technical Memorandum NMFS-OPR-25, National Marine Fisheries Service: 37.
- Jensen, F.H., L. Bejder, M. Wahlberg, N. Aguilar Soto, M. Johnson, and P.T. Madsen. 2009. Vessel noise effects on delphinid communication. Mar. Ecol. Prog. Ser. 395:161-175.
- 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.
- Johnson, M., P.T. Madsen, W.M.X. Zimmer, N. Aguilar Soto, and P.L. Tyack. 2004. Beaked whales echolocate on prey. Proceedings of the Royal Society of London Series B Biological Sciences 271 (Supplement 6):S383-S386.
- Johnson, M., P.T. Madsen, W.M.X. Zimmer, N. Aguilar Soto, P.L. Tyack. 2006. Foraging Blainville's beaked whales (*Mesoplodon densirostris*) produce distinct click types matched to different phases of echolocation. Journal of Experimental Biology 209:5038- 5050.
- Jones, E.L., G.D. Hastie, S. Smout, J. Onoufriou, N.D. Merchant, K.L. Brookes, and D. Thompson. 2017. Seals and shipping: quantifying population risk and individual exposure to vessel noise. J. Appl. Ecol. dx.doi.org/doi:10.1111/1365-2664.12911.
- 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.
- Kaifu, K., T. Akamatsu, and S. Segawa. 2008. Underwater sound detection by cephalopod statocyst. Fisheries Science 74:781-786.
- 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.
- Kasuya, T. 1986. Distribution and behavior of Baird's beaked whales off the Pacific coast of Japan. *Sci. Rep. Whales Res. Inst.* 37:61-83.
- Katona, S.K. and J.A. Beard. 1990. Population size, migrations and feeding aggregations of the humpback whale (*Megaptera novaeangliae*) in the western North Atlantic Ocean. *Rep. Int. Whal. Comm. (Spec. Iss. 12)*: 295-306.
- Kennedy, A. S., An. N. Zerbini, O. Vásquez, N. Gandilhon, P. J. Clapham, and O. Adam. 2013. Local and migratory movements of humpback whales (*Megaptera novaeangliae*) satellite-tracked in the North Atlantic Ocean. *Can. J. Zool.* 92:9–18.
- Kennedy, A.S., A.N. Zerbini, O.V. Vásquez, N. Gandilhon, P.J. Clapham, and O. Adam. 2014. Local and migratory movements of humpback whales (*Megaptera novaeangliae*) satellite-tracked in the North Atlantic Ocean. *Can. J. Zool.* 92:8-17.
- Klinck, H., S.L. Nieukirk, D.K. Mellinger, K. Klinck, H. Matsumoto, and R.P. Dziak. 2012. Seasonal presence of cetaceans and ambient noise levels in polar waters of the North Atlantic. *J. Acoust. Soc. Am.* 132(3):EL176-EL181.
- Knowlton, A.R., F.T. Korsmeyer, J.E. Kerwin, H.-Y. Wu, and B. Hynes. 1995. The hydrodynamic effects of large vessels on right whales. National Marine Fisheries Service: 81.
- 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.
- Knowlton, A.R., B.R. Jennifer, and B. Russell. 2002. Right Whale Sightings and Survey Effort in the Mid-Atlantic Region: Migratory Corridor, Time Frame, and Proximity to Port Entrances. A report submitted to the NMFS ship strike working group. Jul 2002. Available online at: <https://www.researchgate.net/publication/237485805>.
- Kostyuchenko, L.P. 1973. Effects of elastic waves generated in marine seismic prospecting on fish eggs in the Black Sea. *Hydrobiological Journal* 9 (5):45-48.
- 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.
- Kryter, K. 1985. The effects of noise on man. Academic Press, Incorporated.
- 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* 39:451-464.
- Lillis, Ashlee & Bohnenstiehl, D & B. Eggleston, David. 2014. Soundscape manipulation enhances larval recruitment of a reef-building mollusk. *PeerJ*. 3. 10.7717/peerj.999.

- Pijanowski, B., Villanueva-Rivera, L., Dumyahn, S., Farina, A., Krause, B., Napoletano, B., Pieretti, N. 2011. Soundscape Ecology: The Science of Sound in the Landscape. BioScience, 61(3), 203-216. doi:10.1525/bio.2011.61.3.6
- 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.
- Lankford, S.E., T.E. Adams, R.A. Miller, and J.J. Cech. 2005. The cost of chronic stress: Impacts of a nonhabituated stress response on metabolic variables and swimming performance in sturgeon. Physiological and Biochemical Zoology 78:599-609.
- Lusseau, D. and L. Bejder. 2007. The long-term consequences of short-term responses to disturbance experience from whale watching impact assessment. Int. J. Comp. Psych. 20(2-3):228-236.
- MacGillivray, A.O., R. Racca, and Z. Li. 2014. Marine mammal audibility of selected shallow-water survey sources. J. Acoust. Soc. Am. 135(1):EL35-EL40.
- MacKay, M.M. and C.E. Bacon. 2019. Rare and antagonistic interactions between short-finned pilot whales (*Globicephala macrorhynchus*) and fasting humpback whales (*Megaptera novaeangliae*) off western Puerto Rico. Latin Am. J. Aquat. Mamm. 14(1):34-40.
- MacKay, M.M., B. Würsig, C.E. Bacon, and J.D. Selwyn. 2016. North Atlantic humpback whale (*Megaptera novaeangliae*) hotspots defined by bathymetric features off western Puerto Rico. Can. J. Zool. 94(7):517-527.
- Madsen, P. T., Wahlberg, M., Tougaard, J., Lucke, K., and Tyack, P. L. 2006. "Wind turbine underwater noise and marine mammals: Implications of current knowledge and data needs," Mar. Ecol.: Prog. Ser. 309,279–295
- Malme, C.I., P.R. Miles, C.W. Clark, P. 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. BBN Rep. 5586. Rep. from Bolt Beranek & Newman Inc., Cambridge, MA, for MMS, Alaska OCS Region, Anchorage, AK. NTIS PB86-218377.
- Mannocci, L., J.J. Roberts, D.L. Miller, and P.N. Halpin. 2017. Extrapolating cetacean densities to quantitatively assess human impacts on populations in the high seas. Conserv. Biol. 31(3):601–614. Models for all species available at: <http://seamap.env.duke.edu/models/AFTT-2015/>.
- Mattila, D.K. and P.J. Clapham. 1989. Humpback whales (*Megaptera novaeangliae*) and other cetaceans on Virgin Bank and in the northern Leeward Islands, 1985 and 1986. Can. J. Zool. 67:2201-2211.
- Mattila, D.K., P.J. Clapham, O. Vásquez, and R.S. Bowman. 1994. Occurrence, population composition, and habitat use of humpback whales in Samana Bay, Dominican Republic. Can. J. Zool. 72(11):1898-1907.
- Mattila, D.K., P.J. Clapham, S.K. Katona, and G.S. Stone. 1989. Population composition of humpback whales (*Megaptera novaeangliae*) on Silver bank, 1984. Can. Zool. 67:281-285.

- McCauley, R.D., J. Fewtrell, A.J. Duncan, C. Jenner, M.-N. Jenner, J.D. Penrose, R.I.T. Prince, A. Adhitya, J. Murdoch, and K. McCabe. 2000a. Marine seismic surveys: analysis of airgun signals; and effects of air gun exposure on humpback whales, sea turtles, fishes and squid. Rep. from Centre for Marine Science and Technology, Curtin Univ., Perth, W.A., for Austral. Petrol. Prod. Assoc., Sydney, N.S.W. 188 p.
- McCauley, R.D., Fewtrell, J., Duncan, A.J., Jenner, C., Jenner, M.N., Penrose, J.D., PriFnce, R.I.T., Adhitya, A., Murdoch, J. and McCabe, K., 2000b. Marine seismic surveys—a study of environmental implications. *The APPEA Journal*, 40(1), pp.692-708.
- McCauley, R.D., J. Fewtrell, and A.N. Popper. 2003. High intensity anthropogenic sound damages fish ears. *Journal of the Acoustical Society of America* 113 (1):638-642.
- McCauley, Robert & Day, Ryan & Swadling, Kerrie & Fitzgibbon, Quinn & Watson, Reg & Semmens, Jayson. (2017). Widely used marine seismic survey air gun operations negatively impact zooplankton. *Nature Ecology and Evolution*. 1. 10.1038/s41559-017-0195. 0.1186/1746-6148-8-20
- McDonald, M.A., J.A. Hildebrand, and S.C. Webb. 1995. Blue and fin whales observed on a seafloor array in the northeast Pacific. *J. Acoust. Soc. Am.* 98(2, Pt.1):712-721.
- Mellinger, D.K., C.D. Carson, and C.W. Clark. 2000. Characteristics of minke whale (*Balaenoptera acutorostrata*) pulse trains recorded near Puerto Rico. *Mar. Mamm. Sci.* 16(4):739-756.
- Mignucci-Giannoni, A.A. 1998. Zoogeography of cetaceans off Puerto Rico and the Virgin Islands. *Caribb. J. Sci.* 34(3-4):173-190.
- Miller, J.D. 1974. Effects of noise on people. *Journal of the Acoustical Society of America* 56:729-764.
- Miller, P.J.O., N. Biassoni, A. Samuels, and P.L. Tyack. 2000. Whale songs lengthen in response to sonar. *Nature* 405 (6789): 903.
- 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 Res. I* 56(7):1168-1181.
- Miller, P.J.O., P.H. Kvadsheim, F.P.A. Lam, P.J. Wensveen, R. Antunes, A.C. Alves, F. Visser, L. Kleivane, P.L. Tyack, and L.D. Sivle. 2012. The severity of behavioral changes observed during experimental exposures of killer (*Orcinus orca*), long-finned pilot (*Globicephala melas*), and sperm whales (*Physeter macrocephalus*) to naval sonar. *Aquat. Mamm.* 38(4):362-401.
- Miller, I., and E. Cripps. 2013. Three dimensional marine seismic survey has no measurable effect on species richness or abundance of a coral reef associated fish community. *Marine Pollution Bulletin* 77 (1-2):63-70.
- Mitson, R. B. 1995. Underwater noise of research vessels: review and recommendations. ICES Cooperative Research Reports (CRR). Report.

- Moberg GP. 1987. Problems in defining stress and distress in animals. J Am Vet Med Assoc. 191(10):1207–1211. [PubMed]
- 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., R.T. Hanlon, J. Christensen-Dalsgaard, P.T. Madsen, D. 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* 213:3748-3759.
- Morton, A. B., and Symonds, H. K. 2002. Displacement of *Orcinus orca* (L.) by high amplitude sound in British Columbia, Canada. *ICES Journal of Marine Science: Journal du Conseil*, 59: 71–80.
- Mullin, K.D., and G.L. Fulling. 2004. Abundance of cetaceans in the oceanic northern Gulf of Mexico, 1996-2001. *Marine Mammal Science* 20 (4):787-807.
- Mullin, K.D. 2007. Abundance of cetaceans in the oceanic northern Gulf of Mexico from 2003 and 2004 ship surveys. National Marine Fisheries Service: 27.
- Nachtigall, P.E. and A.Y. Supin. 2013. A false killer whale reduces its hearing sensitivity when a loud sound is preceded by a warning. *J. Exp. Biol.* 216:3062-3070.
- 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): 160-165.
- 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 Services (NMFS). 2007. Conservation plan for the Eastern Pacific stock of northern fur seal (*Callorhinus ursinus*). National Marine Fisheries Service, Juneau, AK. 137 p.
- NMFS. 2016a. Technical guidance for assessing the effects of anthropogenic sound on marine mammal hearing: underwater acoustic thresholds for onset of permanent and temporary threshold shifts. U.S. Depart. Commerce, National Oceanic and Atmospheric Administration. 178 p.
- NMFS. 2016c. Endangered and threatened species; identification of 14 distinct population segments of the humpback whale (*Megaptera novaeangliae*) and revision of species-wide listing. Final Rule. Fed. Reg. 81(174, 8 Sept.): 62260-62320.
- NMFS. 2018. 2018 revision to: 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. Office of Protected Resources Nat. Mar. Fish. Serv., Silver Spring, MD. 167 p.
- National Research Council (NRC). 2005. Marine mammal populations and ocean noise/Determining when noise causes biologically significant effects. U.S. Nat. Res. Counc., Ocean Studies Board,

Committee on characterizing biologically significant marine mammal behavior (Wartzok, D.W., J. Altmann, W. Au, K. Ralls, A. Starfield, and P.L. Tyack). Nat. Acad. Press, Washington, DC. 126 p.

NRC (National Research Council). 2003. *Ocean Noise and Marine Mammals*. Washington, DC: The National Academies Press.

National Science Foundation and U.S. Geological Survey (NSF and USGS). 2011. Final programmatic environmental impact statement/Overseas environmental impact statement for marine seismic research funded by the National Science Foundation or conducted by the U.S. Geological Survey.

North Atlantic Marine Mammal Commission (NAMMCO). 2023. Marine mammals. Accessed November 2023 at <https://nammco.no/marine-mammals/>

Ng S.L, Leung S (2003) Behavioral response of Indo-Pacific humpback dolphin (*Sousa chinensis*) to vessel traffic. Mar Environ Res 56:555-567

Nieuirkirk, S.L., D.K. Mellinger, S.E. Moore, K. Klinck, R.P. Dziak, and J. Goslin. 2012. Sounds from airguns and fin whales recorded in the mid-Atlantic Ocean, 1999–2009. J. Acoust. Soc. Am. 131(2):1102-1112.

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.

Nowacek, D.P., L.H. Thorne, D.W. Johnston, and P.L. Tyack. 2007. Responses of cetaceans to anthropogenic noise. Mamm. Rev. 37(2):81-115.

Ocean Biogeographic Information System (OBIS). 2023. Data from the Ocean Biogeographic Information System. Intergovernmental Oceanographic Commission of UNESCO. Accessed November 2023 at <http://www.iobis.org>.

Odell, D.K., Asper, E., Baucom, J., and Cornell, L., 1980, A recurrent mass stranding of false killer whales, *Pseudorca crassidens*, in Florida, Fish. Bull., 78: 171-177.

Pace, R.M. and G.K. Silber. 2005. Simple analyses of ship and large whale collisions: Does speed kill? Paper presented at the Sixteenth Biennial Conference on the Biology of Marine Mammals, San Diego, California. Pages 215-216 in Proceedings of the Sixteenth Biennial Conference on the Biology of Marine Mammals.

Pacini, A.F., P.E. Nachtigall, C.T. Quintos, T.D. Schofield, D.A. Look, G.A. Levine, and J.P. Turner. 2011. Audiogram of a stranded Blainville's beaked whale (*Mesoplodon densirostris*) measured using auditory evoked potentials. Journal of Experimental Biology 214 (14):2409-2415.

Palsbøll, P.J., Allen, J., Berube, M., Clapham, P.J., Feddersen, T.P., Hammond, P.S., Hudson, R.R., Jørgensen, H., Katona, S., Larsen, A.H. and Larsen, F. 1997. Genetic tagging of humpback whales. *Nature*, 388(6644), pp.767-769.

- Palsbøll J.P, Allen J, Andersen TH, Bérubé M and others. 2001. Stock structure and composition of the North Atlantic humpback whale, *Megaptera novaeangliae*. Rep Int Whal Comm SC/53/NAH11, p 29.
- Parks, S.E., Clark, C.W., and Tyack, P.L. 2007. Short- and long-term changes in right whale calling behavior: The potential effects of noise on acoustic communication. *J. Acoust. Soc. Am.* 122, 3725.
- 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. *Mar. Policy* 78:68-73.
- Paxton, C.G.M., M.L. Burt, S.L. Hedley, G.A. Víkingsson, T. Gunnlaugsson, and G. Desportes. 2009. Density surface fitting to estimate the abundance of humpback whales based on the NASS-95 and NASS-2001 aerial and shipboard surveys. *NAMMCO Sci. Publ.* 7:143-159.
- Payne, J.F. 2004. Potential effect of seismic surveys on fish eggs, larvae and zooplankton. Research Document 2004/125, Fisheries and Oceans Canada: 16.
- 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.
- Pearson, W., J. Skalski, S. Sulkin, and C. Malme. 1994. Effects of seismic energy releases on the survival and development of zoeal larvae of Dungeness crab (*Cancer magister*). *Mar. Env. Res.* 38:93-113.
- Peña, H., N.O. Handegard, and E. Ona. 2013. Feeding herring schools do not react to seismic air gun surveys. *ICES J. Mar. Sci.* 70(6):1174-1180.
- Perrin, W. F., & Geraci, J. R. 2002. Stranding. In W. F. Perrin, B. Wursig & J. G. M. Thewissen (Eds.), *Encyclopedia of Marine Mammals* (pp. 1192-1197). San Diego: Academic Press.
- Pike, D.G., T. Gunnlaugsson, and G.A. Víkingsson. 2002. Estimates of humpback whale (*Megaptera novaeangliae*) abundance in the North Atlantic, from NASS-95 shipboard survey data. Paper SC/54/H10 presented to the IWC Scientific Committee.
- Pike, D.G., T. Gunnlaugsson, and G.A. Víkingsson. 2004. Density and abundance of fin whales (*Balaenoptera physalus*) southwest of Iceland in 2003, and comparisons with earlier surveys. Paper SC/56/PFI2 presented to the IWC Scientific Committee. 8 p.
- Pike, D., T. Gunnlaugsson, N. Øien, G. Desportes, G.A. Víkingsson, C.G.M. Paxton, and D. Bloch. 2005. Distribution, abundance and trends in abundance of fin and humpback whales in the North Atlantic. Paper CM 2005/R:12 presented to ICES.
- Pike, D.G., T. Gunnlaugsson, G.A. Víkingsson, and B. Mikkelsen. 2008a. Estimates of the abundance of fin whales (*Balaenoptera physalus*) from the T-NASS Icelandic and Faroese ship surveys conducted in 2007. Paper SC/60/PFI13-revised presented to the IWC Scientific Committee.

- Pike, D.G., T. Gunnlaugsson, and G.A. Víkingsson. 2008b. T-NASS Icelandic aerial survey: survey report and a preliminary abundance estimate for minke whales. Paper SC/60/PFI12 presented to the IWC Scientific Committee.
- Pike, D.G., C.G.M. Paxton, T. Gunnlaugsson, and G.A. Víkingsson. 2009a. Trends in the distribution and abundance of cetaceans from aerial surveys in Icelandic coastal waters, 1986-2001. NAMMCO Sci. Publ. 7:117-142.
- Pike, D.G., T. Gunnlaugsson, G.A. Víkingsson, G.A. Desportes, and D. Bloch. 2009b. Estimates of the abundance of minke whales (*Balaenoptera acutorostrata*) from Faroese and Icelandic NASS shipboard surveys. NAMMCO Sci. Publ. 7:81-93.
- Pike, D.G., T. Gunnlaugsson, and G.D. Víkingsson. 2010a. Distribution and abundance of humpback whales in Icelandic coastal waters in summer 2007. Paper SC/62/O14 presented to the IWC Scientific Committee. 17 p.
- Pike, D.G., T. Gunnlaugsson, G.A. Víkingsson, and B. Mikkelsen. 2010b. Estimates of the abundance of minke whales (*Balaenoptera acutorostrata*) from the T-NASS Icelandic and Faroese ship surveys conducted in 2007. Paper SC/62/RMP5 presented to the IWC Scientific Committee.
- Pike, D.G., T. Gunnlaugsson, B. Mikkelsen, S.D. Halldorsson, and G.A. Víkingsson. 2019a. Estimates of the abundance of cetaceans in the central North Atlantic based on the NASS Icelandic and Faroese shipboard surveys conducted in 2015. NAMMCO Sci. Publ. 11. Accessed December 2023 at <https://doi.org/10.7557/3.4941>.
- Pike, D.G., T. Gunnlaugsson, G.A. Víkingsson, and J. Sigurjónsson. 2019b. Distribution and abundance of cetaceans in Icelandic waters over 30 years of aerial surveys. NAMMCO Sci. Publ. 11. Accessed December 2023 at <https://doi.org/10.7557/3.4805>.
- Pike, D.G., T. Gunnlaugsson, G. Desportes, B. Mikkelsen, G.A. Víkingsson, and D. Bloch. 2019c. Estimates of the relative abundance of long-finned pilot whales (*Globicephala melas*) in the Northeast Atlantic from 1987 to 2015 indicate no long-term trends. NAMMCO Sci. Publ. 11. Accessed in December 2023 at <https://doi.org/10.7557/3.4643>.
- Pirotta, E., N.D. Merchant, P.M. Thompson, T.R. Barton, and D. Lusseau. 2015. Quantifying the effect of boat disturbance on bottlenose dolphin foraging activity. Biol. Conserv. 181:82–98.
- Popper, A.N., M.E. Smith, P.A. Cott, B.W. Hanna, A.O. MacGillivray, M.E. Austin, and D.A. Mann. 2005. Effects of exposure to seismic airgun use on hearing of three fish species. Journal of the Acoustical Society of America 117 (6):3958.
- Popov, V., A. Supin, D. Nechaev, E.V. Sysueva, and V. Rozhnov. 2016. Temporary threshold shifts in naïve and experienced belugas: Can dampening of the effects of fatiguing sounds be learned? p. 853-859 In: A.N. Popper and A. Hawkins (eds.), The effects of noise on aquatic life II. Springer, New York, NY. 1292 p.
- Punt, A.E. and P.R. Wade. 2009. Population status of the eastern North Pacific stock of gray whales in 2009. J. Cetacean Res. Manage. 12(1):15-28.

- Purser J. and Radford A.N. 2011. Acoustic Noise Induces Attention Shifts and Reduces Foraging Performance in Three-Spined Sticklebacks (*Gasterosteus aculeatus*). PLoS ONE 6(2): e17478.
- Putland, R.L., N.D. Merchant, A. Farcas, and C.A. Radford. 2017. Vessel noise cuts down communication space for vocalizing fish and marine mammals. Glob. Change Biol.
- Relyea RA. 2005a. The impact of insecticides and herbicides on the biodiversity and productivity of aquatic communities. Ecol. Appl. 15(2): 618–627.
- Relyea RA. 2005b. The lethal impact of Roundup on aquatic and terrestrial amphibians. Ecol. Appl. 15(4): 1118–1124.
- Rice, A.N., J.T. Tielens, B.J. Estabrook, C.A. Muirhead, A. Rahaman, M. Guerra, and C.W. Clark. 2014. Variation of ocean acoustic environments along the western North Atlantic coast: a case study in context of the right whale migration route. Ecol. Inform. 21:89-99.
- Richardson, W.J., C.R. Greene, Jr., C.I. Malme, and D.H. Thomson. 1995. Marine mammals and noise. Academic Press, San Diego. 576 p.
- Richardson, A.J., R.J. Matear, and A. Lenton. 2017. Potential impacts on zooplankton of seismic surveys. Commonwealth Scientific and Industrial Research Organisation, Australia: 34.
- 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.; Carter, D.A.; Smith, R.R.; Kamolnick, T.; Schlundt, C.E. 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 μPa*; Naval Command, Control, and Ocean Surveillance Center, RDT&E Division: San Diego, CA, USA.
- Risch, D., Siebert, U., & Van Parijs, S. 2014. Individual calling behaviour and movements of North Atlantic minke whales (*Balaenoptera acutorostrata*), Behaviour, 151(9), 1335-1360.
- Roberts JJ, Yack TM, Halpin PN (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.
- Roden, C.L. and K.D. Mullin. 2000. Sightings of cetaceans in the northern Caribbean Sea and adjacent waters, winter 1995. Caribb. J. Sci. 36(3-4):280-288.
- Rodriguez-Ferrer, G., R. Reyes, N.M. Hammerman, and J.E. García-Hernández. 2018. Cetacean sightings in Puerto Rican waters: including the first underwater photographic documentation of a minke whale (*Balaenoptera acutorostrata*). Latin Am. J. Aquatic Mamm. 13(1-2):26-36.
- Rolland, R.M., S.E. Parks, K.E. Hunt, M. Castellote, P.J. Corkeron, D.P. Nowacek, S.K. Water, and S.D. Kraus. 2012. Evidence that ship noise increases stress in right whales. Proc. R. Soc. B 279:2363-2368.

- 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.
- Romero, L.M. (2004) Physiological stress in ecology: lessons from biomedical research. Trends in Ecology and Evolution, 19, 249–255.
- Sætre, R., and E. Ona. 1996. Seismic investigations and damage to fish eggs and larvae: an assessment of possible stock-level effects. Norwegian Institute of Marine Research. Fisk og Havet Nr. 8. (Norwegian with English summary.)
- Samson, J.E., T.A. Mooney, S.W. Gussekloo, and R.T. Hanlon. 2014. Graded behavioral responses and habituation to sound in the common cuttlefish *Sepia officinalis*. Journal of Experimental Biology 217 (Pt 24):4347-4355.
- Sanders, I.M., J.C. Barrios-Santiago, and R.S. Appeldoorn. 2005. Distribution and relative abundance of humpback whales off western Puerto Rico during 1995-1997. Caribb. J. Sci. 41(1):101-107.
- 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
- Sarà, G., J.M. Dean, D. D'Amato, G. Buscaino, A. Oliveri, S. Genovese, et al. 2007. Effect of boat noise on the behaviour of Bluefin tuna *Thunnus thynnus* in the Mediterranean Sea. Marine Ecological Progress Series 331: 243-253.
- Sciacca, V., S. Viola, S. Pulvirenti, G. Riccobene, F. Caruso, E. De Domenico, and G. Pavan. 2016. Shipping noise and seismic airgun surveys in the Ionian Sea: potential impact on Mediterranean fin whale. Proceedings of Meetings on Acoustics 4ENAL 27(1):040010.
- Seyle, H. 1950. Stress and the general adaptation syndrome. British Medical Journal June 17:1383-1392.
- Sigurjónsson, J.T. 1985. Sightings survey in the Irminger Sea and off Iceland in 1983. Rep. Int. Whal. Comm. 35:499-503.
- Sigurjónsson, J. T. Gunnlaugsson, and M. Payne. 1989. NASS-87: Shipboard sightings survey in Icelandic and adjacent waters June-July 1987. Rep. Int. Whal. Comm. 39:395-408.

- Sigurnjónsson, J. and T. Gunnlaugsson 1990. Recent trends in abundance of blue (*Balaenoptera musculus*) and humpback whales (*Megaptera novaeanglia*) off west and southwest Iceland, with a note on occurrence of other cetacean species. Rep. Int. Whal. Comm. 40:537-551.
- Sigurjónsson, J. T. Gunnlaugsson, P. Ensor, M. Newcomer, and G. Víkingsson. 1991. North Atlantic sightings survey 1989 (NASS-89): Shipboard surveys in Icelandic and adjacent waters July-August 1989. Rep. Int. Whal. Comm. 41:559-572.
- Sigurjónsson, J.T. and G. Víkingsson. 1997. Seasonal abundance of and estimated food consumption by cetaceans in Icelandic and adjacent waters. J. Northw. Atl. Fish. Sci. 22:271-287.
- Sih, A., A.M. Bell, and J.L. Kerby. 2004. Two stressors are far deadlier than one. Trends in Ecology and Evolution 19 (6):274-276.
- Silber, G.K., J. Slutsky, and S. Bettridge. 2010. Hydrodynamics of a ship/whale collision. Journal of Experimental Marine Biology and Ecology 391 (1-2):10-19.
- Sills, J.M., B.L. Southall, and C. Reichmuth. 2017. The influence of temporally varying noise from seismic air guns on the detection of underwater sounds by seals. J. Acoust. Soc. Am. 141(2):996-1008.
- Simard, Y., F. Samaran, and N. Roy. 2005. Measurement of whale and seismic sounds in the Scotian Gully and adjacent canyons in July 2003. p. 97-115 In: K. Lee, H. Bain, and C.V. Hurley (eds.), Acoustic monitoring and marine mammal surveys in The Gully and outer Scotian Shelf before and during active seismic surveys. Environ. Stud. Res. Funds Rep. 151. 154 p. (Published 2007).
- SIO and NSF (Scripps Institute of Oceanography and National Science Foundation). 2006b. Environmental Assessment of a Planned Low-Energy Marine Seismic Survey by the Scripps Institution of Oceanography in the Northeast Indian Ocean, MayJuly 2007. LGL Report TA4410-1. Prepared by LGL Ltd. environmental research associates, King City, ONT. 21 December.
- 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.
- Smith, T.D., J. Allen, P.J. Clapham, P.S. Hammond, S. Katona, F. Larsen, J. Lien, D. Mattila, P. Palsbøll, J. Sigurjónsson, 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):1-32.
- Smith, T.D. and D.G. Pike. 2009. The enigmatic whale: the North Atlantic humpback. NAMMCO Sci. Publ. 7:161 178.
- Smultea, M.A. and M. Holst. 2003. Marine mammal monitoring during Lamont-Doherty Earth Observatory's seismic study in the Hess Deep area of the Eastern Equatorial Tropical Pacific, July 2003. LGL Report TA2822-16. Prepared by LGL Ltd. environmental research associates,

King City, ONT, for L-DEO, Columbia University, Palisades, NY, and NMFS, Silver Spring, MD.

Smultea, M.A., M. Holst, W.R. Koski, and S. Stoltz. 2004. Marine mammal monitoring during Lamont-Doherty Earth Observatory's seismic program in the Southeast Caribbean Sea and adjacent Atlantic Ocean, April-June 2004. LGL Report TA2822-26. Prepared by LGL Ltd. environmental research associates, King City, ONT, for L-DEO, Columbia University, Palisades, NY, and NMFS, Silver Spring, MD.

Solé, M., M. Lenoir, M. Durfort, M. López-Bejar, A. Lombarte, M. van der Schaaer, and M. André. 2013a. Does exposure to noise from human activities compromise sensory information from cephalopod statocysts? Deep-Sea Res. II 95:160-181.

Solé, M., M. Lenoir, M. Durfort, M. López-Bejar, A. Lombarte, and M. André. 2013b. Ultrastructural damage of *Loligo vulgaris* and *Illex coindetii* statocysts after low frequency sound exposure. PLoS One 8(10):e78825.

Song, J., D.A. Mann, P.A. Cott, B.W. Hanna, and A.N. Popper. 2008. The inner ears of northern Canadian freshwater fishes following exposure to seismic air gun sounds. Journal of the Acoustical Society of America 124 (2):1360-1366.

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, P.E. Nachtigall, W.J. Richardson, J.A. Thomas, and P.L. Tyack. 2007. Marine mammal noise exposure criteria: initial scientific recommendations. Aquat. Mamm. 33(4):411-522.

Southall, B.L., T. Rowles, F. Gulland, R.W. Baird, and P.D. Jepson. 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. Independent Scientific Review Panel: 75.

Southall, B. L., Finneran, J. J., Reichmuth, C., Nachtigall, P. E., Ketten, D. R., Bowles, A. E., Ellison, W. T., Nowacek, D. P., and Tyack, P.L 2019. Marine mammal noise exposure criteria: Updated scientific recommendations for residual hearing effects. Aquatic Mammals 45, 125-232.

Stanley, J.A., C.A. Radford, and A.G. Jeffs. 2011. Behavioural response thresholds in New Zealand crab megalopae to ambient underwater sound. PLoS ONE 6(12):e28572.

Stevick, P., N. Øien and D.K. Mattila. 1998. Migration of a humpback whale between Norway and the West Indies. Mar. Mamm. Sci. 14: 162-166.

Stevick, P.T., J. Allen, M. Berube, P.J. Clapham, S.K. Katona, F. Larsen, J. Lien, D.K. Mattila, P.J. Palsbøll, J. Robbins, J. Sigurjónsson, T.D. Smith, Øien, and P.S. Hammond. 2003. Segregation of migration by feeding ground origin in North Atlantic humpback whales (*Megaptera novaeangliae*). J. Zool. Lond. 259:231-237.

Stevick, P.T., L. Bouveret, N. Gandilhon, C. Rinaldi, R. Rinaldi, F. Broms, C. Carlson, A.W. Kennedy, N. Ward, and F. Wenzel. 2018. Migratory destinations and timing of humpback whales in the

southeastern Caribbean differ from those off the Dominican Republic. *J. Cetac. Res. Manage.* 18:127-133.

Stewart, B.S. and S. Leatherwood. 1985. Minke whale *Balaenoptera acutorostrata* Lacépède, 1804. p. 91-136 In: S.H. Ridgway and R. Harrison (eds.), *Handbook of marine mammals*, Vol. 3: The sirenians and baleen whales. Academic Press, London, UK. 362 p.

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.

Streever, B., S.W. Raborn, K.H. Kim, A.D. Hawkins, and A.N. Popper. 2016. Changes in fish catch rates in the presence of air gun sounds in Prudhoe Bay, Alaska. *Arctic [Suppl. 1]* 69(4):346–358.

Swartz, S.L., A. Martinez, J. Stamates, C. Burks, and A.A. Mignucci-Giannoni. 2002. Acoustic and visual survey of cetaceans in the waters of Puerto Rico and the Virgin Islands: February–March 2001. NOAA Technical Memorandum NMFS-SEFSC-463.

Swartz, S.L., A. Martinez, T. Cole, P.J. Clapham, M.A. McDonald, J.A. Hildebrand, E.M. Oleson, C. Burks, and J. Barlow. 2001. Visual and acoustic survey of humpback whales (*Megaptera novaeangliae*) in the eastern and southern Caribbean Sea. NOAA Technical Memorandum NMFS-SEFSC-456.

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.

Tashmukhambetov, A.M., G.E. Ioup, J.W. Ioup, N.A. Sidorovskaya, and J.J. Newcomb. 2008. Three-dimensional seismic array characterization study: Experiment and modeling. *Journal of the Acoustical Society of America* 123 (6):4094-4108.

Teilmann J, Tougaard J, Miller LA, Kirketerp T, Hansen K, Brando S. 2006. Reactions of captive harbor porpoises (*Phocoena phocoena*) to pinger-like sounds. *Mar Mamm Sci* 22(2):240–260.

Thode, A.M., K.H. Kim, S.B. Blackwell, C.R. Greene, Jr., C.S. Nations, T.L. McDonald, and A.M. Macrander. 2012. Automated detection and localization of bowhead whale sounds in the presence of seismic airgun surveys. *J. Acoust. Soc. Am.* 131(5):3726-3747.

Tolstoy, M., J. Diebold, L. Doermann, S. Nooner, S.C. Webb, D.R. Bohnenstiehl, et al. 2009. Broadband calibration of the R/V Marcus G. Langseth four-string seismic sources. *Geochemistry Geophysics Geosystems* 10 (8).

Urick, R.J. 1983. *Principles of Underwater Sound*. 3rd Edition, McGraw-Hill, New York.

US Navy. 2017. Marine mammal strandings associated with U.S. Navy sonar activities. Space and Naval Warfare Systems Center Pacific, San Diego: 47.

- 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.
- 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. *Mar. Mamm. Sci.* 26(1):161-175.
- Víkingsson, G.A., T. Gunnlaugsson, S.D. Halldórsson, and D. Ólafsdóttir. 2002. NASS 2001 Icelandic Shipboard Survey Report. Paper SC/54/O10 presented to the IWC Scientific Committee.
- Vikingsson, G.A. and M.P. Heide-Jørgensen. 2015. First indications of autumn migration routes and destination of common minke whales tracked by satellite in the North Atlantic during 2001–2011. *Mar. Mamm. Sci.* 31(1):376-385.
- Ward, W. D. 1997. Effects of high-intensity sound. In M. J. Crocker (Ed.), *Encyclopedia of acoustics, Volume III* (pp. 1497-1507). New York: John Wiley & Sons.
- 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., L. Nøttestad, E. Olsen, H. Skov, and G. Víkingsson. 2008. Distribution and density estimates of cetaceans along the mid-Atlantic Ridge during summer 2004. *J. Cetacean Res. Manage.* 10:137–146.
- Wartzok, D., and D.R. Ketten. 1999. Marine mammal sensory systems. Pages 117-175 in J.E. Reynolds III and S.A. Rommel, eds. *Biology of Marine Mammals*. Washington, D.C.: Smithsonian Institution Press.
- 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.
- Weilgart, L.S. 2007. A brief review of known effects of noise on marine mammals. *Int. J. Comp. Psychol.* 20:159-168.
- Wenzel, F.W., J. Allen, S. Berrow, C.J. Hazevoet, B. Jann, R. E. Seton, L. Steiner, P. Stevick, P. López Suárez, and P. Whoooley. 2009. Current knowledge on the distribution and relative abundance of humpback whales (*Megaptera novaeangliae*) off the Cape Verde Islands, eastern North Atlantic. *Aquatic Mamm.* 35(4):502-510.
- Whitehead, H. and M.J. Moore. 1992. Distribution and movements of West Indian humpback whales in winter. *Can. J. Zool.* 60:2203-2211.
- Wittekind, D., J. Tougaard, P. Stilz, M. Dähne, K. Lucke, C.W. Clark, S. von Benda-Beckmann, M. Ainslie, and U. Siebert. 2016. Development of a model to assess masking potential for marine mammals by the use of airguns in Antarctic waters. p. 1243-1249 In: A.N. Popper and A. Hawkins (eds.), *The effects of noise on aquatic life II*. Springer, New York, NY. 1292 p.

- Whaley, A.R., E.C.M. Parsons, R. Sellares, and I.B. de Calventini. 2006. Dolphin ecology and behaviour in the southeastern waters of the Dominican Republic: preliminary observations. IWC Paper SC58/SM12 presented to the Scientific Committee at the 58th Meeting of the International Whaling Commission, St Kitts.
- Würsig, B., S.K. Lynn, T.A. Jefferson, and K.D. Mullin. 1998. Behaviour of cetaceans in the northern Gulf of Mexico relative to survey ships and aircraft. *Aquat. Mamm.* 24(1):41-50.
- Würsig, B., T.A. Jefferson, and D.J. Schmidly. 2000. The marine mammals of the Gulf of Mexico. Texas A&M University Press, College Station, TX. 232 p.
- 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., Richmond, D.R., Fletcher, E.R. and Jones, R.K., 1973. Safe distances from underwater explosions for mammals and birds. Lovelace Foundation For Medical Education and Research, Albuquerque, NM.
- Yoder, J.A. 2002. Declaration of James A. Yoder in opposition to plaintiff's motion for temporary restraining order, 28 October 2002. Civ. No. 02-05065-JL. U.S. District Court, Northern District of California, San Francisco Division.
- Zimmer, W.M.X., M.P. Johnson, P.T. Madsen, and P.L. Tyack. 2005. Echolocation clicks of free-ranging Cuvier's beaked whales (*Ziphius cavirostris*). *Journal of the Acoustical Society of America* 117 (6):3919-3927.
- 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.
- Zykov, M. and S. Carr. 2014. Acoustic Modeling Report: Atlantic G&G Programmatic EIS. Appendix D in Atlantic OCS proposed geological and geophysical activities, Mid-Atlantic and South Atlantic Planning Areas: Final Programmatic Environmental impact Statement. Prepared by JASCO Applied Sciences for CSA Ocean Sciences Inc. under contract to Bureau of Ocean Energy Management: 100 pp.