

References

- ANSI (American National Standards Institute). 1986. Methods of measurement for impulse noise 3 (ANSI S12.7-1986). 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. 1995. Bioacoustical Terminology (ANSI S3.20-1995). Acoustical Society of America, Woodbury, NY.
- Au, W.W.L. and M.C. Hastings. 2008. Principles of Marine Bioacoustics. Springer, New York.
- Barkaszi, M.J., M. Butler, R. Compton, A. Unietis, and B. Bennet. 2012. Seismic survey mitigation measures and marine mammal observer reports. OCS Study BOEM 2012-015, Bureau of Ocean Energy Management: 51.
- Barkaszi, M.J., and C.J. Kelly. 2018. Seismic survey mitigation measures and protected species observer reports: Synthesis report. OCS Study BOEM 2019-012, Bureau of Ocean Energy Management: 220.
- Barlow, J. 1995. Abundance of cetaceans in California waters. Part I: Ship surveys in summer and fall of 1991. Fishery Bulletin 93 (1):1-14.
- Barlow, J., and B.L. Taylor. 2005. Estimates of sperm whale abundance in the northeastern temperate Pacific from a combined acoustic and visual survey. Marine Mammal Science 21 (3):429-445.
- Barlow, J. 2016. Cetacean abundance in the California Current estimated from ship-based line-transect surveys in 1991-2014. NOAA Admin. Rep. LJ-16-01. 31 p. + appendix.
- 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.
- BOEM. 2016. Notice to Lessees and Operators (NTL) of federal oil, gas, and sulphur leases in the OCS, Gulf of Mexico OCS Region: Implementation of seismic survey mitigation measures and protected species observer program. NTL No. 2016-G02, Bureau of Ocean Energy Management: 10.
- Caldwell, J. and W. Dragoset. 2000. A brief overview of seismic air-gun arrays. The Leading Edge, August: 898-902.
- Carretta, J.V., K.A. Forney, E.M. Oleson, D.W. Weller, A.R. Lang, J. Baker, et al. 2020. U.S. Pacific marine mammal stock assessments: 2019. U.S. Dept. of Commerce, NOAA Tech. Memo. NMFS-SWFSC-629. 385 p.
- Compton, R., L. Goodwin, R. Handy, and V. Abbott. 2008. A critical examination of worldwide guidelines for minimising the disturbance to marine mammals during seismic surveys. Marine Policy 32 (3):255-262.
- Costa, D.P., and T.M. Williams. 1999. Marine mammal energetics. Pages 176-217 in J. E. Reynolds III and S. A. Rommel, eds. Biology of Marine Mammals. Smithsonian Press, City.
- Crone, T.J., Tolstoy, M. and Carton, H., 2014. Estimating shallow water sound power levels and mitigation radii for the R/V Marcus G. Langseth using an 8 km long MCS streamer. *Geochemistry, Geophysics, Geosystems*, 15(10), pp. 3793-3807.

- Crone, T.J., M. Tolstoy, J.C. Gibson, and G. Mountain. 2017. Utilizing the R/V Marcus G. Langseth's streamer to measure the acoustic radiation of its seismic source in the shallow waters of New Jersey's continental shelf. *PloS one* 12 (8):e0183096.
- DEWHA (Australian Department of the Environment, Water, Heritage, and the Arts). 2008. EPBC Act Policy Statement 2.1 – Interaction between offshore seismic exploration and whales. Australian Department of the Environment, Water, Heritage, and the Arts: 14.
- DFO (Fisheries and Oceans Canada). 2008. Statement of Canadian practice with respect to the mitigation of seismic sound in the marine environment. Fisheries and Oceans Canada: 5.
- 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.
- DOC (Department of Conservation, New Zealand). 2013. 2013 Code of conduct for minimising acoustic disturbance to marine mammals from seismic survey operations. DOC: 30.
- DoN. 2014. Commander Task Force 3rd and 7th Fleet Navy Marine Species Density Database. NAVFAC Pacific Technical Report. Naval Facilities Engineering Command Pacific, Pearl Harbor, HI. 486 p.
- 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.
- Ferguson, M.C., C. Curtice, and J. Harrison. 2015a. Biologically important areas for cetaceans within U.S. waters – Gulf of Alaska region. *Aquatic Mammals* 41 (1):65-78.
- Ferguson, M.C., J.M. Waite, C. Curtice, J.T. Clarke, and J. Harrison. 2015b. Biologically important areas for cetaceans within U.S. waters – Aleutian Islands and Bering Sea region. *Aquatic Mammals* 41 (1):79-93.
- Friday, N.A., A.N. Zerbini, J.M. Waite, S.E. Moore, and P.J. Clapham. 2013. Cetacean distribution and abundance in relation to oceanographic domains on the eastern Bering Sea shelf, June and July of 2002, 2008, and 2010. *Deep Sea Research Part II: Topical Studies in Oceanography* 94:244-256.
- GHFS (Green Heritage Fund Suriname). 2015. A review of seismic mitigation measures used along the coast of northern South America, from north Brazil up to Colombia. *Marine Mammal Conservation Corridor for Northern South America Project*: 76.
- Goldbogen, J.A., Southall, B.L., DeRuiter, S.L., Calambokidis, J., Friedlaender, A.S., Hazen, E.L., Falcone, E.A., Schorr, G.S., Douglas, A., Moretti, D.J. and Kyburg, C., 2013. Blue whales respond to simulated mid-frequency military sonar. *Proceedings of the Royal Society B: Biological Sciences*, 280(1765), p.20130657.
- Greene, C.R., and W.J. Richardson. 1988. Characteristics of marine seismic survey sounds in the Beaufort Sea. *Journal of the Acoustical Society of America* 83 (6):2246-2254.
- Harris, C.M. (ed.). 1998. *Handbook of Acoustical Measurements and Noise Control*. Acoustical Society of America, Woodbury, NY.
- Hastings, M.C., and A.N. Popper. 2005. Effects of sound on fish. Technical report for Jones and Stokes to California Department of Transportation.
- Hemila, S., S. Nummela, A. Berta, and T. Reuter. 2006. High-frequency hearing in phocid and otariid pinnipeds: An interpretation based on inertial and cochlear constraints. *Journal of the Acoustical Society of America* 120 (6):3463-3466.
- HESS (High Energy Seismic Survey Team). 1999. High energy seismic survey review process and interim operational guidelines for marine surveys offshore southern California.

- Prepared by HESS Team for California State Lands Commission and Minerals Management Service: 98.
- Hobbs, R.C., and J.M. Waite. 2010. Abundance of harbor porpoise (*Phocoena phocoena*) in three Alaskan regions, corrected for observer errors due to perception bias and species misidentification, and corrected for animals submerged from view. *Fishery Bulletin* 108 (3):251-267.
- IBAMA. 2018. Guidelines: Marine biota monitoring in seismic surveys. Brazilian Institute of the Environment and Renewable Natural Resources: 32.
- ISO (International Organization for Standardization). 2003. Acoustics – Description, measurement and assessment of environmental noise – Part 1: Basic quantities and assessment procedures (ISO 1996-1:2003(E)). International Organization for Standardization, Geneva.
- JNCC (Joint Nature Conservation Committee). 2017. JNCC guidelines for minimising the risk of injury to marine mammals from geophysical surveys. Joint Nature Conservation Committee: 28.
- Kaschner, K., N.J. Quick, R. Jewell, R. Williams, and C.M. Harris. 2012. Global coverage of cetacean line-transect surveys: Status quo, data gaps and future challenges. *PloS one* 7 (9):e44075.
- Kastelein, R.A., P. Wensveen, L. Hoek, and J.M. Terhune. 2009. Underwater hearing sensitivity of harbor seals (*Phoca vitulina*) for narrow noise bands between 0.2 and 80 kHz. *Journal of the Acoustical Society of America* 126 (1):476-483.
- Kato, H., and T. Miyashita. 1998. Current status of the North Pacific sperm whales and its preliminary abundance estimates. Paper SC/50/CAWS2 submitted to Scientific Committee of the International Whaling Commission: 6.
- Kyhn, L.A., D. Boertmann, J. Tougaard, K. Johansen, and A. Mosbech. 2011. Guidelines to environmental impact assessment of seismic activities in Greenland waters. Danish Center for Environment and Energy.
- Lurton, X. 2002. An introduction to underwater acoustics: Principles and applications. Springer Science & Business Media.
- MacGillivray, A.O. 2006. Acoustic modelling study of seismic airgun noise in Queen Charlotte Basin. M.S. thesis, University of Victoria: 109.
- 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.
- MMOA (Marine Mammal Observer Association). 2016. Position statements: The key issues that should be addressed when developing mitigation plans to minimise the effects of anthropogenic sound on species of concern. Version 2. Marine Mammal Observer Association: 38.
- Morin, P.A., C.S. Baker, R.S. Brewer, A.M. Burdin, M.L. Dalebout, J.P. Dines, et al. 2017. Genetic structure of the beaked whale genus *Berardius* in the North Pacific, with genetic evidence for a new species. *Marine Mammal Science* 33(1): 96-111.
- Muto, M.M., V.T. Helker, R.P. Angliss, B.A. Allen, P.L. Boveng, J.M. Breiwick, et al. 2017. Alaska marine mammal stock assessments, 2016. NOAA Technical Memorandum NMFS-AFSC-355, National Marine Fisheries Service: 375.
- Muto, M.M., V. T. Helker, R.P. Angliss, P.L. Boveng, J.M. Breiwick, M.F. Cameron, P.J. Clapham, S.P. Dahle, M.E. Dahlheim, B.S. Fadely, M.C. Ferguson, L.W. Fritz, R.C.

- Hobbs, Y.V. Ivashchenko, A.S. Kennedy, J.M. London, S.A. Mizroch, R.R. Ream, E.L. Richmond, K.E.W. Shelden, K.L. Sweeney, R.G. Towell, P.R. Wade, J.M. Waite, and A.N. Zerbini. 2019. Alaska marine mammal stock assessments, 2018. U.S. Dept. of Commerce, NOAA Tech. Memo. NMFS-AFSC-393. 390 p.
- Muto, M.M., V.T. Helker, B.J. Delean, R.P. Angliss, P.L. Boveng, J.M. Breiwick, et al. 2020. Alaska marine mammal stock assessments, 2019. U.S. Dept. of Commerce, NOAA Tech. Memo. NMFS-AFSC-404. 404 p.
- 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.
- NIOSH (National Institute for Occupational Safety and Health). 1998. Criteria for a recommended standard: Occupational noise exposure. United States Department of Health and Human Services, Cincinnati, OH.
- NMFS. 2018. 2018 revision to: Technical guidance for assessing the effects of anthropogenic sound on marine mammal hearing (Version 2.0). NOAA Technical Memorandum NMFS-OPR-59, National Marine Fisheries Service: 178.
- Nowacek, D.P., K. Broker, G. Donovan, G. Gailey, R. Racca, R.R. Reeves, *et al.* 2013. Responsible practices for minimizing and monitoring environmental impacts of marine seismic surveys with an emphasis on marine mammals. *Aquatic Mammals* 39 (4): 356-377.
- Nowacek, D.P., and B.L. Southall. 2016. Effective planning strategies for managing environmental risk associated with geophysical and other imaging surveys. *International Union for Conservation of Nature and Natural Resources*: 45.
- Ohsumi, S., and S. Wada. 1974. Status of whale stocks in the North Pacific, 1972. Report of the International Whaling Commission 24:114-126.
- Parsons, E.C.M., S.J. Dolman, M. Jasny, N.A. Rose, M.P. Simmonds, and A.J. Wright. 2009. A critique of the UK's JNCC seismic survey guidelines for minimising acoustic disturbance to marine mammals: Best practise? *Marine pollution bulletin* 58 (5):643-651.
- 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.
- 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.
- Rone, B.K., A.B. Douglas, A.N. Zerbini, L. Morse, A. Martinez, P.J. Clapham, and J. Calambokidis. 2010. Results of the April 2009 Gulf of Alaska Line-Transect Survey (GOALS) in the Navy Training Exercise Area. NOAA Tech. Memo. NMFS-AFSC-209. 39 p.
- Rone, B.K., A.B. Douglas, T.M. Yack, A.N. Zerbini, T.N. Norris, E. Ferguson, and J. Calambokidis. 2014. Report for the Gulf of Alaska Line-transect Survey (GOALS) II: marine mammal occurrence in the Temporary Maritime Activities Area (TMAA). Submitted to Naval Facilities Engineering Command (NAVFAC) Pacific, Honolulu, Hawaii under Contract No. N62470-10-D-3011, Task Order 0022, issued to HDR Inc., San Diego, Calif. Prepared by Cascadia Research Collective, Olympia, Wash.; Alaska Fish. Sci. Cent., Seattle, Wash.; and Bio-Waves, Inc., Encinitas, Calif.. April 2014. 82 p. + App.

- Rone, B.K., A.N. Zerbini, A.B. Douglas, D.W. Weller, and P.J. Clapham. 2017. Abundance and distribution of cetaceans in the Gulf of Alaska. *Mar. Biol.* 164(1):23. doi: 10.1007/s00227-016-3052-2.
- Shelden, K.E.W., S.E. Moore, J.M., Waite, P.R. Wade, and D.J. Rugh. 2005. Historic and current habitat use by North Pacific right whales *Eubalaena japonica* in the Bering Sea and Gulf of Alaska. *Mamm. Rev.* 35:129-155.
- Sivle, L.D., P.H. Kvadsheim, and M.A. Ainslie. 2014. Potential for population-level disturbance by active sonar in herring. *ICES Journal of Marine Science* 72 (2):558-567.
- 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., Nowacek, D.P., Miller, P.J. and Tyack, P.L., 2016. Experimental field studies to measure behavioral responses of cetaceans to sonar. *Endangered Species Research*, 31, pp.293-315.
- Stone, C.J. 2015. Marine mammal observations during seismic surveys from 1994–2010. JNCC Rep. No. 463a. 64 p.
- 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*. Peninsula Publishing, Los Altos, CA.
- Wade, P.R., J.W. Durban, J.M. Waite, A.N. Zerbini, and M.E. Dahlheim. 2003. Surveying killer whale abundance and distribution in the Gulf of Alaska and Aleutian Islands. NAFSC Quarterly Report 2003 (October-November):1-16.
- Wade, P.R., A. De Robertis, K.R. Hough, R. Booth, A. Kennedy, R.G. LeDuc, L. Munger, J. Napp, K.E.W. Shelden, S. Rankin, O. Vasquez, and C. Wilson. 2011. Rare detections of North Pacific right whales in the Gulf of Alaska, with observations of their potential prey. *Endang. Spec. Res.* 13(2):99-109.
- Wade, P.R. 2017. Estimates of abundance and migratory destination for North Pacific humpback whales in both summer feeding areas and winter mating and calving areas – revision of estimates in SC/66b/IA21. International Whaling Commission SC/A17/NP/11: 10.
- Waite, J. 2003. Cetacean assessment and ecology program: Cetacean survey. Quarterly report. Accessed January 2020 at <http://www.afsc.noaa.gov/Quarterly/jas2003/divrptsNMML2.htm>.
- 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.
- Wartzok, D. and D.R. Ketten. 1999. Marine mammal sensory systems. Pages 117-175 in J.E. Reynolds and S.A. Rommel, eds. *Biology of Marine Mammals*. Smithsonian Institution Press, Washington.
- Weir, C.R. and S.J. Dolman. 2007. Comparative review of the regional marine mammal mitigation guidelines implemented during industrial seismic surveys, and guidance towards a worldwide standard. *J. Int. Wildl. Law Policy* 10(1):1-27.
- Wright, A.J. and A.M. Consentino. 2015. JNCC guidelines for minimizing the risk of injury and disturbance to marine mammals from seismic surveys: we can do better. *Mar. Poll. Bull.* 100(1):231-239. <https://doi.org/10.1016/j.marpolbul.2015.08.045>.

- Yamada, T.K., S. Kitamura, S. Abe, Y. Tajima, A. Matsuda, J.G. Mead, and T.F. Matsuishi. 2019. Description of a new species of beaked whale (*Berardius*) found in the North Pacific. *Scientific Reports* **9**:12723. <https://doi.org/10.1038/s41598-019-46703-w>
- 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.
- Zerbini, A.N., J.M. Waite, J.L. Laake, and P.R. Wade. 2006. Abundance, trends and distribution of baleen whales off Western Alaska and the central Aleutian Islands. *Deep Sea Research Part I-Oceanographic Research Papers* **53** (11):1772-1790.
- 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.