

Revolution Wind

Final Rulemaking Reference List

- AIS-Inc. 2019. A.I.S Inc. Protected Species Observer Final Report 2018/2019 BOEM Lease OCS-A 0486.
- Allen, A.N., Schanze, J.J., Solow, A.R. and Tyack, P.L., 2014. Analysis of a Blainville's beaked whale's movement response to playback of killer whale vocalizations. *Marine Mammal Science*, 30(1), pp.154-168.
- André, M., Solé, M., Lenoir, M., Durfort, M., Quero, C., Mas, A., Lombarte, A., Van Der Schaar, M., López-Bejar, M., Morell, M. and Zaugg, S., 2011. Low-frequency sounds induce acoustic trauma in cephalopods. *Frontiers in Ecology and the Environment*, 9(9), pp.489-493.
- Andriquetto-Filho, J.M., Ostrensky, A., Pie, M.R., Silva, U.A. and Boeger, W.A., 2005. Evaluating the impact of seismic prospecting on artisanal shrimp fisheries. *Continental Shelf Research*, 25(14), pp.1720-1727.
- 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.
- ANSI. (American National Standards Institute). 1986. Methods of Measurement for Impulse Noise 3 (ANSI S12.7-1986). Acoustical Society of America, Woodbury, NY.
- Aschettino, J.M., Engelhaupt, D.T., Engelhaupt, A.G., DiMatteo, A., Pusser, T., Richlen, M.F. and Bell, J.T., 2020. Satellite telemetry reveals spatial overlap between vessel high-traffic areas and humpback whales (*Megaptera novaeangliae*) near the mouth of the Chesapeake Bay. *Frontiers in Marine Science*, p.121.
- Astrup, J. 1999. Ultrasound detection in fish - a parallel to the sonar-mediated detection of bats by ultrasound sensitive insects? *Comparative Biochemistry and Physiology, Part A*, 124, 19–27.
- Astrup, J., & B. Mohl. 1993. Detection of Intense Ultrasound by the Cod *Gadus Morhua*. *Journal of Experimental Biology*, 182, 71–80.
- Au, D. W. K., & W. L. Perryman. 1985. Dolphin habitats in the eastern tropical Pacific. *Fishery Bulletin*, 83, 623– 643.
- Au, W. W. L. 1993. *The Sonar of Dolphins*. New York: Springer-Verlag.

- Au, W. W. L., R. W. Floyd, R. H. Penner, & A. E. Murchison. 1974. Measurement of echolocation signals of the Atlantic bottlenose dolphin, *Tursiops truncatus* Montagu, in open waters. *Journal of the Acoustical Society of America*, 56(4), 1280–1290.
- Au, W.W.L. and M.C. Hastings. 2008. *Principles of Marine Bioacoustics*. Springer, New York.
- Austin, M. E., Denes, S. L., MacDonnell, J. T., & Warner, G. A. 2016. Hydroacoustic Monitoring Report: Anchorage Port Modernization Project Test Pile Program. Version 3.0. Technical report by JASCO Applied Sciences for Anchorage Port Modernization Project Test Pile Program. Anchorage, AK.
- Bailey, H., Senior, B., Simmons, D., Rusin, J., Picken, G. and Thompson, P.M., 2010. Assessing underwater noise levels during pile-driving at an offshore windfarm and its potential effects on marine mammals. *Marine pollution bulletin*, 60(6), pp.888 -897.
- Baird, R.W., Webster, D.L., Schorr, G.S., McSweeney, D.J. and Barlow, J., 2008. Diel variation in beaked whale diving behavior. *Marine Mammal Science*, 24(3), pp.630-642.
- Barber, J.R., Crooks, K.R. and Fristrup, K.M., 2010. The costs of chronic noise exposure for terrestrial organisms. *Trends in ecology & evolution*, 25(3), pp.180-189.
- Barco, S., McLellan, W., Allen, J., Asmutis-Silvia, R., Mallon-Day, R., Fougères, E., Pabst, D., Robbins, J., Seton, R., Swingle, M., Weinrich, M. and Clapham, P. 2002. Population identity of humpback whales. *Journal of Cetacean Research and Management*, 4, 135-141.
- Barkaszi, M.J., and C.J. Kelly. 2019. Seismic survey mitigation measures and protected species observer reports: synthesis report. U.S. Department of the Interior, Bureau Ocean Energy Management, Gulf of Mexico OCS Region, New Orleans, LA. Contract No.: M17PD00004. OCS Study BOEM 2019 012. 220 pp.
- 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 pp.
- Barlow, J., Schorr, G.S., Falcone, E.A. and Moretti, D., 2020. Variation in dive behavior of Cuvier's beaked whales with seafloor depth, time-of-day, and lunar illumination. *Marine Ecology Progress Series*, 644, pp.199-214.
- Barlow, J., Taulor, J.L. 2005. Estimates of sperm whale abundance in the northeastern temperate Pacific from a combined acoustic and visual survey. *Marine Mammal Science*, 21(3), 429-455.
- 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.
- Bednekoff, P. A., and S. L. Lima. 1998. Randomness, chaos and confusion in the study of antipredator vigilance. *Trends in Ecology & Evolution*, 13(7), 284-287.

- 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.
- Bellmann, M.A., 2014. Overview of existing Noise Mitigation Systems for reducing Pile-Driving Noise. Inter-Noise 2014, Melbourne, Australia. 11 pp.
- Bellmann, M.A., and K. Betke. 2021. Expert opinion report regarding underwater noise emissions during UXOclearance activity and possible options for noise mitigation. ITAP GmbH, Unpublished report.
- Bellmann M. A., Brinkmann J., May A., Wendt T., Gerlach S. & Remmers P. 2020. Unterwasserschall während des Impulsrammverfahrens: Einflussfaktoren auf Rammerschall und technische Möglichkeiten zur Einhaltung von Lärmschutzwerten.“ Gefördert durch das Bundesministerium für Umwelt, Naturschutz und nukleare Sicherheit (BMU), FKZ UM16 881500. Beauftragt und geleitet durch das Bundesamt für Seeschifffahrt und Hydrographie (BSH), Auftrags-Nr. 10036866. Editiert durch die itap GmbH.
- Bennett, B. 2021. Protected Species Observer Technical Report Revolution Wind (REV) BOEM Lease OCS-0486 (M/V Deep Helder and R/V Dolphin).
- Betke, K. 2008. Measurement of Wind Turbine Construction Noise at Horns Rev II (1256-08-aKB)(Technical report by Institut für technische und angewandte Physik GmbH (ITAP) for BioConsultSH. Husun, Germany.
- Bettridge, S., C.S. Baker, J. Barlow, P.J. Clapham, M. Ford, D. Gouveia, et al. (2015). Status review of the humpback whale (*Megaptera novaeangliae*) under the Endangered Species Act. NOAA Technical Memorandum NMFS-SWFSC-540, National Marine Fisheries Service, 263 pp.
- Bickel, S. L., J. D. Malloy Hammond, and K. W. Tang. 2011. Boat-generated turbulence as a potential source of mortality among copepods. *Journal of Experimental Marine Biology and Ecology*, 401(1–2), 105–109.
- Bishop, M. J. 2008. Displacement of epifauna from seagrass blades by boat wake. *Journal of Experimental Marine Biology and Ecology*, 354(1), 111–118.
- Blackwell, S. B., C. S. Nations, T. L. McDonald, A. M. Thode, D. Mathias, K. H. Kim, C. R. Greene, Jr., & A. M. Macrander. 2015. Effects of airgun sounds on bowhead whale calling rates: evidence for two behavioral thresholds. *PLoS ONE*, 10(6), e0125720.

- 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. In G. P. Moberg & J. A. Mench (Eds.), *The Biology of Animal Stress* (pp. 111-122): CABI Publishing.
- Booth, C., Donovan, C., Plunkett, R., & Harwood, J. 2016. Using an interim PCoD protocol to assess the effects of disturbance associated with US Navy exercises on marine mammal populations Final Report (SMRUC-ONR-2016-004).
- Booth, C., Harwood, J., Plunkett, R., Mendes, S., & Walker, R. 2017. Using the Interim PCoD framework to assess the potential impacts of offshore wind developments in Eastern English Waters on harbour porpoises in the North Sea (Natural England Joint Publication JP024).
- Borcuk, J.R., Mitchell, G.H., Watwood, S.L., Moll, T.E., Oliveira, E.M., Robinson, E.R. and NAVAL UNDERSEA WARFARE CENTER DIV NEWPORT RI NEWPORT United States, 2017. Dive Distribution and Group Size Parameters for Marine Species Occurring in the US Navy's Atlantic and Hawaii-Southern California Training and Testing Study Areas. NUWC-NPT Technical Report.
- Boudreau M, Courtenay SC, Lee K. 2009. Proceedings of a workshop held 23 January at the Gulf Fisheries Center potential impacts of seismic energy on snow crab: an update to the September review. In: Boudreau M, Courtenay SC, Lee K (eds) Canadian Technical Report of Fisheries and Aquatic Sciences 2836, pp vii–31
- Bowles, A. E., M. Smultea, B. Würsig, D. P. DeMaster, & D. Palka. 1994. Relative abundance and behavior of marine mammals exposed to transmissions from the Heard Island Feasibility Test. *The Journal of Acoustical Society of America*, 96, 2469–2484.
- Boyd, I., D. Claridge, C. Clark, & B. Southall. 2008. BRS 2008 Preliminary Report. U.S. Navy NAVSEA PEO IWS 5, ONR, U.S. Navy Environmental Readiness Division, NOAA, SERDP.
- Bradshaw, C. J., 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.
- Brandt, M.J., Diederichs, A., Betke, K. and G. Nehls. 2011. Responses of harbour porpoises to pile driving at the Horns Rev II offshore wind farm in the Danish North Sea. *Marine Ecology Progress Series*, 421, 205-216.
- Brandt, M.J., Diederichs, A., Betke, K. and Nehls, G., 2012. Effects of offshore pile driving on harbor porpoises (*Phocoena phocoena*). In *The effects of noise on aquatic life* (pp. 281- 284). Springer, New York, NY.

- Brandt, M.J., Dragon, A.C., Diederichs, A., Bellmann, M.A., Wahl, V., Piper, W., Nabe-Nielsen, J. and Nehls, G., 2018. Disturbance of harbour porpoises during construction of the first seven offshore wind farms in Germany. *Marine Ecology Progress Series*, 596, pp.213-232.
- Brandt, M.J., Dragon, A.C., Diederichs, A., Schubert, A., Kosarev, V., Nehls, G., Wahl, V., Michalik, A., Braasch, A., Hinz, C. and Ketzer, C., 2016. Effects of offshore pile driving on harbour porpoise abundance in the German Bight. *Assessment of noise effects. Report by BioConsult SH, IBL Umweltplanung GmbH, and Institute of Applied Ecology (IfAO)*.
- Brandt, M.J., Hansen, S., Diederichs, A. and Nehls, G., 2014. Do man-made structures and water depth affect the diel rhythms in click recordings of harbor porpoises (*Phocoena phocoena*)?. *Marine Mammal Science*, 30(3), pp.1109-1121.
- Branstetter, B. K., and J. J. Finneran. 2008. Comodulation masking release in bottlenose dolphins (*Tursiops truncatus*). *The Journal of the Acoustical Society of America*, 1, 625– 633.
- Branstetter, B.K., J.S. Trickey, and 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.
- Brasseur, S.M.J.M., Aarts, G., Meesters, E., van Polanen Petel, T., Dijkman, E., Cremer, J. and Reijnders, P., 2012. Habitat preferences of harbour seals in the Dutch coastal area: analysis and estimate of effects of offshore wind farms. *Report C043-10*.
- Braun, C. B., & T. Grande. 2008. Evolution of Peripheral Mechanisms for the Enhancement of Sound Reception. *ResearchGate*, 46.
- Brenowitz, E.A. 1982. The active space of red-winged blackbird song. *Journal of Comparative Physiology*, 147:511–522
- Brenowitz, E.A. 2004. Plasticity of the adult avian song control system. *Annals of the New York Academy of Science* 1016, 560–585.
- Brown, D.M., Robbins, J., Sieswerda, P.L., Ackerman, C., Aschettino, J.M., Barco, S., Boye, T., DiGiovanni, R.A., Durham, K., Engelhaupt, A. and Hill, A., 2022. Site fidelity, population identity and demographic characteristics of humpback whales in the New York Bight apex. *Journal of the Marine Biological Association of the United Kingdom*, pp.1-9.

- Bruintjes, R., J. Purser, K. A. Everley, S. Mangan, S. D. Simpson, & A. N. Radford. 2016. Rapid recovery following short-term acoustic disturbance in two fish species. *Royal Society - Open Science*, 3(1), 150686.
- Brumm, H. 2004. Causes and consequences of song amplitude adjustment in a territorial bird: a case study in nightingales. *Anais da Academia Brasileira de Ciências*, 76(2), 289-295.
- Budelmann, B. U. 1992. Hearing in nonarthropod invertebrates. In D. B. Webster, R. R. Fay, and A. N. Popper (Eds.), *Evolutionary Biology of Hearing* (pp. 141–155). New York, NY: Springer-Verlag.
- Budelmann, B. U., & Williamson, R. O. D. D. Y. 1994. Directional sensitivity of hair cell afferents in the Octopus statocyst. *Journal of Experimental Biology*, 187(1), 245-259.
- Bureau of Ocean Energy Management (BOEM). 2012. Commercial Wind Lease Issuance and Site Assessment Activities on the Atlantic Outer Continental Shelf Offshore New Jersey, Delaware, Maryland, and Virginia: Final Environmental Assessment. U.S. Department of the Interior, Bureau of Ocean Energy Management, Office of Renewable Energy Programs. OCS EIS/EA BOEM 2012-003. Available at: <https://www.boem.gov/sites/default/files/documents/renewable-energy/stateactivities/Mid-Atlantic-Final-EA-2012.pdf>
- Bureau of Ocean Energy Management (BOEM). 2019. Guidelines for Providing Information on Fisheries for Renewable Energy Development on the Atlantic Outer Continental Shelf Pursuant to 30 CFR Part 585. Bureau of Ocean Energy Management Office of Renewable Energy Programs. Accessed 15 September 2022. <https://www.boem.gov/sites/default/files/renewable-energy-program/BOEM-FisheryGuidelines.pdf>
- Bureau of Ocean Energy Management (BOEM). 2022. Draft Environmental Impact Statement for the Ocean Wind 1 Offshore Wind Farm. Bureau of Ocean Energy Management Office of Renewable Energy Programs. Accessed 15 September 2022. <https://www.boem.gov/sites/default/files/documents/renewable-energy/state-activities/OceanWind1-DEIS-Vol1and2.pdf>
- Caltrans (California Department of Transportation). 2020. Technical guidance for for the assessment of hydroacoustic effects of pile driving on fish. California Department of Transportation, 533 pp.
- Carroll, A. G., R. Przeslawski, A. Duncan, M. Gunning, & B. Bruce. 2017. A Critical Review of the Potential Impacts of Marine Seismic Surveys on Fish & Invertebrates. *Marine Pollution Bulletin*, 114, 16.
- Carroll, B., Cooper, B., Dewey, N., Whitehead, P., Dolphin, T., Rees, J., Judd, A., Whitehouse, R. and Harris, J., 2010. A further review of sediment monitoring data. Cowrie ScourSed-09, Southampton, UK, 106.

- Casper, B. M., Halvorsen, M. B., Matthews, F., Carlson, T. J., & Popper, A. N. 2013. Recovery of barotrauma injuries resulting from exposure to pile driving sound in two sizes of hybrid striped bass. *PloS one*, 8(9), e73844.
- Cerchio, S., S. Strindberg, T. Collins, C. Bennett, & H. Rosenbaum. 2014. Seismic surveys negatively affect humpback whale singing activity off northern Angola. *PLoS ONE*, 9(3), e86464.
- Cetacean and Turtle Assessment Program (CeTAP). 1982. A characterization of marine mammals and turtles in the mid- and North Atlantic areas of the U.S. outer continental shelf. Cetacean and Turtle Page 137/156 Assessment Program, University of Rhode Island. Final Report #AA551-CT8-48 to the Bureau of Land Management, Washington, DC.
- Chen, X., Liu, Y., Wang, Q., Lv, J., Wen, J., Chen, X., Kang, C., Cheng, S. and McElroy, M.B., 2021. Pathway toward carbon-neutral electrical systems in China by mid-century with negative CO₂ abatement costs informed by high-resolution modeling. *Joule*, 5(10), pp.2715-2741.
- Cholewiak, D., C.W. Clark, D. Ponirakis, A. Frankel, L.T. Hatch, D. Risch, J.E. Stanistreet, M. Thompson, E. Vu, S.M. Van Parijs. 2018. Communicating amidst the noise: modeling the aggregate influence of ambient and vessel noise on baleen whale communication space in a national marine sanctuary. *Endang. Species Res.* 36:59-75.
- Christiansen N., Daewel U., Djath B., Schrum C. 2022. Emergence of large-scale hydrodynamic structures due to atmospheric offshore wind farm wakes. *Front. Mar. Sci.* 9. doi: 10.3389/fmars.2022.818501
- Christiansen, F., & Lusseau, D. 2015. Linking behavior to vital rates to measure the effects of non-lethal disturbance on wildlife. *Conservation Letters*, 8(6), 424–431.
- Christiansen, F., Dawson, S.M., Durban, J.W., Fearnbach, H., Miller, C.A., Bejder, L., Uhart, M., Sironi, M., Corkeron, P., Rayment, W. and Leunissen, E., 2020. Population comparison of right whale body condition reveals poor state of the North Atlantic right whale. *Marine Ecology Progress Series*, 640, pp.1-16.
- Christiansen, N., Daewel, U., Djath, B. and Schrum, C., 2022. Emergence of large-scale hydrodynamic structures due to atmospheric offshore wind farm wakes. *Frontiers in Marine Science*, p.64.
- Clark, C.W., Brown, M.W., Corkeron, P. 2010. Visual and acoustic surveys for North Atlantic right whales, *Eubalaena glacialis*, in Cape Cod Bay, Massachusetts, 2001-2005: Management implications, 26(4), 837-854.
- Clark C.W. and G.C. Gagnon. 2002. Insights from IUSS detections, locations and tracking from 1992 to 1996. *J. Underwater Acoustics*. 52: 609–640.

- Clark, C.W., W.T. Ellison, B.L. Southall, L. Hatch, S.M. Van Parijs, A. Frankel, and D. Ponirakis. 2009. Acoustic masking in marine ecosystems: Intuitions, analysis, and implication. *Marine Ecology Progress Series*, 395, 201-222.
- Clyne H. 1999. Computer simulations of interactions between the North Atlantic right whale (*Eubalaena glacialis*) and shipping. Masters thesis in Software Technology, Napier University, Edinburgh.
- Cody, A.R. and Johnstone, B.M., 1981. Acoustic trauma: Single neuron basis for the "half-octave shift". *The Journal of the Acoustical Society of America*, 70(3), pp.707-711.
- Committee on Taxonomy. 2022. List of marine mammal species and subspecies. Society for Marine Mammalogy, www.marinemammalscience.org, consulted on September 15, 2022.
- 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).
- Connor, R. C., & Heithaus, M. R. 1996. Approach by great white shark elicits flight response in bottlenose dolphins. *Marine Mammal Science*, 12(4), 602-606.
- Constantine, R., and D. Brunton. 2001. Boats and bottlenose dolphins in the Bay of Islands, New Zealand. Fourteenth Biennial Conference on the Biology of Marine Mammals, Vancouver, Canada.
- Corkeron, P., Rolland, R.M., Hunt, K.E. and Kraus, S.D., 2017. A right whale pootree: classification trees of faecal hormones identify reproductive states in North Atlantic right whales (*Eubalaena glacialis*). *Conservation Physiology*, 5(1), p.cox006.
- Costa, D. P., D. E. Crocker, J. Gedamke, P. M. Webb, D. S. Houser, S. B. Blackwell, D. Waples, S. A. Hayes, & B. J. Le Boeuf. 2003. The effect of a low-frequency sound source (acoustic thermometry of the ocean climate) on the diving behavior of juvenile northern elephant seals, *Mirounga angustirostris*. *The Journal of Acoustical Society of America*, 113(2), 1155–1165
- Cowlishaw, G., M. J. Lawes, M. Lightbody, A. Martin, R. Pettifor, and J. M. Rowcliffe. (2004). A simple rule for the costs of vigilance: empirical evidence from a social forager. *Proceedings of the Royal Society of London. Series B: Biological Sciences*, 271(1534), 27- 33.
- Cox, T. M., T. J. Ragen, A. J. Read, E. Vox, R. W. Baird, K. Balcomb, J. Barlow, J. Caldwell, T. Cranford, L. Crum, A. D'Amico, G. D'Spain, A. Fernandez, J. Finneran, R. Gentry, W. Gerth, F. Gulland, J. Hildebrand, D. Houser, T. Hullar, P. D. Jepson, D. Ketten, C. D. MacLeod, P. Miller, S. Moore, D. C. Mountain, D. Palka, P. Ponganis, S. Rommel, T. Rowles, B. Taylor, P. Tyack, D. Wartzok, R. Gisiner, J. Mead, & L. Benner. 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. NUWC-NPT Technical Report 12,203, Naval Undersea Warfare Center Division: 265.
- Croll, D. A., C. W. Clark, J. Calambokidis, W. T. Ellison, & B. R. Tershy. 2001. Effect of anthropogenic low-frequency noise on the foraging ecology of Balaenoptera whales. *Animal Conservation*, 4, 13–27.
- Crum, N., Gowan, T., Kryzystan, A., Martin, J., 2019. Quantifying risk of whale-vessel collisions across space, time, and management policies. *Ecosphere*, 10(4), e02713.
- Cummings WC, Thompson PO. 1971. Gray whales, *Eschrich tius robustus*, avoid the underwater sounds of killer whales, *Orcinus orca*. *Fish Bull* 69: 525–530.
- Cunningham, K.A., Southall, B.L. and Reichmuth, C., 2014. Auditory sensitivity of seals and sea lions in complex listening scenarios. *The Journal of the Acoustical Society of America*, 136(6), pp.3410-3421.
- Curé C, Sivle LD, Visser F, Wensveen PJ and others. 2015. Predator sound playbacks reveal strong avoidance responses in a fight strategist baleen whale. *Mar Ecol Prog Ser* 526: 267–282.
- Curé, C., Isojunno, S., Visser, F., Wensveen, P.J., Sivle, L.D., Kvadsheim, P.H., Lam, F.P.A. and Miller, P.J., 2016. Biological significance of sperm whale responses to sonar: comparison with anti-predator responses. *Endangered Species Research*, 31, pp.89-102.
- Daan, S., C. Deerenberg, and C. Dijkstra. 1996. Increased daily work precipitates natural death in the kestrel. *Journal of Animal Ecology*, 539-544.
- Dähne, M., Gilles, A., Lucke, K., Peschko, V., Adler, S., Krügel, K., Sundermeyer, J. and Siebert, U., 2013. Effects of pile-driving on harbour porpoises (*Phocoena phocoena*) at the first offshore wind farm in Germany. *Environmental Research Letters*, 8(2), p.025002.
- Dähne, M., Tougaard, J., Carstensen, J., Rose, A. and Nabe-Nielsen, J., 2017. Bubble curtains attenuate noise from offshore wind farm construction and reduce temporary habitat loss for harbour porpoises. *Marine Ecology Progress Series*, 580, pp.221-237.
- D'Amico, A., Gisiner, R.C., Ketten, D.R., Hammock, J.A., Johnson, C., Tyack, P.L. and Mead, J., 2009. *Beaked whale strandings and naval exercises*. SPACE AND NAVAL WARFARE SYSTEMS CENTER SAN DIEGO CA.
- David, J.A., 2006. Likely sensitivity of bottlenose dolphins to pile-driving noise. *Water and Environment Journal*, 20(1), pp.48-54.
- Davis, G.E., Baumgartner, M.F., Corkeron, P.J., Bell, J., Berchok, C., Bonnell, J.M., Bort Thornton, J., Brault, S., Buchanan, G.A., Cholewiak, D.M. and Clark, C.W., 2020. Exploring movement patterns and changing distributions of baleen whales in the western

- North Atlantic using a decade of passive acoustic data. *Global change biology*, 26(9), pp.4812-4840.
- Day, R.D., McCauley, R.D., Fitzgibbon, Q.P., Hartmann, K. and Semmens, J.M., 2017. Exposure to seismic air gun signals causes physiological harm and alters behavior in the scallop *Pecten fumatus*. *Proceedings of the National Academy of Sciences*, 114(40), pp.E8537-E8546.
- de Soto, N. A. 2016. Peer-Reviewed Studies on the Effects of Anthropogenic Noise on Marine Invertebrates: From Scallop Larvae to Giant Squid. In A. N. Popper & A. Hawkins (Eds.), *The Effects of Noise on Aquatic Life II* (pp. 10). New York: Springer Science.
- Deecke, V. B., P. J. B. Slater, & J. K. B. Ford. 2002. Selective habituation shapes acoustic predator recognition in harbour seals. *Nature*, 420(14 November), 171–173.
- Department of the Navy (DoN). 2013b. Hawaii-Southern California Training and Testing Environmental Impact Statement/Overseas Environmental Impact Statement. Pearl Harbor, Hawaii: Naval Facilities Engineering Command.
- Department of the Navy (DoN). 2017. Criteria and Thresholds for U.S. Navy Acoustic and Explosive Effects Analysis (Phase III). Technical Report.
- DeRuiter, S. L., I. L. Boyd, D. E. Claridge, C. W. Clark, C. Gagon, B. L. Southall, & P. L. Tyack. (2013a). Delphinid whistle production and call matching during playback of simulated military sonar. *Marine Mammal Science*, 29(2), E46–59.
- DeRuiter, S. L., S. B. L., J. Calambokidis, W. M. X. Zimmer, D. Sadykova, E. A. Falcone, A. S. Friedlaender, J. E. Joseph, D. Moretti, G. S. Schorr, L. Thomas, & P. L. Tyack. 2013b. First direct measurements of behavioural responses by Cuvier's beaked whales to mid-frequency active sonar. *Biology Letters*, 9, 201– 223.
- DeRuiter, S.L. and Doukara, K.L., 2012. Loggerhead turtles dive in response to airgun sound exposure. *Endangered Species Research*, 16(1), pp.55-63.
- DeRuiter, S.L., Langrock, R., Skirbutas, T., Goldbogen, J.A., Calambokidis, J., Friedlaender, A.S. and Southall, B.L., 2017. A multivariate mixed hidden Markov model for blue whale behaviour and responses to sound exposure. *The Annals of Applied Statistics*, 11(1), pp.362-392.
- Di Iorio, L., & C. W. Clark. 2010. Exposure to seismic survey alters blue whale acoustic communication. *Biology Letters*, 6, 51–54.
- Doksaeter, L., N. O. Handegard, O. R. Godo, P. H. Kvadsheim, & N. Nordlund., 2012. Behavior of captive herring exposed to naval sonar transmissions (1.0–1.6 kHz) throughout yearly cycle. *The Journal of Acoustical Society of America*, 131(2), 1632–1642.
- Doksaeter, L., O. R. Godo, N. O. Handegard, P. H. Kvadsheim, F. P. A. Lam, C. Donovan, & P.

- J. O. Miller., 2009. Behavioral responses of herring (*Clupea harengus*) to 1-2 and 6-7 kHz sonar signals and killer whale feeding sounds. *The Journal of Acoustical Society of America*, 125(1), 554–564.
- Dooling, R.J., 2004. Audition: Can Birds Hear Everything They Sing? *Nature's Music: The Science of Birdsong*. P. Marler and H. Slabbekoorn, Eds.), pp 206-225. Elsevier-Academic Press, San Diego.
- Dorrell R. M., Lloyd C. J., Lincoln B. J., Rippeth T. P., Taylor J. R., Caulfield C. C.P., et al., 2022. Anthropogenic mixing in seasonally stratified shelf seas by offshore wind farm infrastructure *Front. Mar. Sci.* 9, 830927. doi: 10.3389/fmars.2022.830927/abstract
- Dukas, R., 2002. Behavioural and ecological consequences of limited attention. *Philosophical Transactions of the Royal Society of London. Series B: Biological Sciences*, 357(1427), 1539-1547.
- Dunlop, R. A., 2016. The effect of vessel noise on humpback whale, *Megaptera novaeangliae*, communication behaviour. *Animal Behaviour*, 111, 13–21.
- Dunlop, R. A., Cato, D. H., & Noad, M. J., 2014. Evidence of a Lombard response in migrating humpback whales (*Megaptera novaeangliae*). *The Journal of the Acoustical Society of America*, 136(1), 430–437.
- Dunlop, R.A., Braithwaite, J., Mortensen, L.O. and Harris, C.M., 2021. Assessing population-level effects of anthropogenic disturbance on a marine mammal population. *Frontiers in Marine Science*, 8, p.624981.
- Dunlop, R.A., Cato, D.H. and Noad, M.J., 2010. Your attention please: increasing ambient noise levels elicits a change in communication behaviour in humpback whales (*Megaptera novaeangliae*). *Proceedings of the Royal Society B: Biological Sciences*, 277(1693), pp.2521-2529.
- Dunlop, R.A., Noad, M.J., McCauley, R.D., Kniest, E., Slade, R., Paton, D. and Cato, D.H., 2017. The behavioural response of migrating humpback whales to a full seismic airgun array. *Proceedings of the Royal Society B: Biological Sciences*, 284(1869), p.20171901.
- Dunlop, R.A., Noad, M.J., McCauley, R.D., Kniest, E., Slade, R., Paton, D. and Cato, D.H., 2018. A behavioural dose-response model for migrating humpback whales and seismic air gun noise. *Marine pollution bulletin*, 133, pp.506-516.
- Dunlop, R.A., Noad, M.J., McCauley, R.D., Scott-Hayward, L., Kniest, E., Slade, R., Paton, D. and Cato, D.H., 2017. Determining the behavioural dose–response relationship of marine mammals to air gun noise and source proximity. *Journal of Experimental Biology*, 220(16), pp.2878-2886.
- Edds-Walton, P. L., & J. J. Finneran., 2006. Evaluation of Evidence for Altered Behavior and Auditory Deficits in Fishes Due to Human-Generated Noise Sources. (Technical Report 1939). San Diego, CA: SSC San Diego

- Edren, S.M., Andersen, S.M., Teilmann, J., Carstensen, J., Harders, P.B., Dietz, R. and Miller, A., 2010. The effect of a large Danish offshore wind farm on harbor and gray seal haul-out behavior. *Marine Mammal Science*, 26(3), pp.614-634.
- Edwards, E.F., C. Hall, T.J. Moore, C. Sheredy, and J.V. Redfern. 2015. Global distribution of fin whales *Balaenoptera physalus* in the post-whaling era (1980-2012). *Mammal Review* 45: 197-214.
- Ellison, W.T., R. Racca, C.W. Clark, B. Streever, A.S. Frankel, E. Fleishman, et al. 2016. Modeling the aggregated exposure and responses of bowhead whales *Balaena mysticetus* to multiple sources of anthropogenic underwater sound. *Endangered Species Research* 30: 95- 108.
- 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.
- Elzinga, J.; Mesu, A.; van Eekelen, E.; Wochner, M.; Jansen, E.; Nijhof, M., 2019. *Installing Offshore Wind Turbine Foundations Quieter: A Performance Overview of the First Full- Scale Demonstration of the AdBm Underwater Noise Abatement System*. Paper presented at Offshore Technology Conference (OTC) 2019, Houston, TX.
- 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., & Farmer, D. M., 2000. A software model to estimate zones of impact on marine mammals around anthropogenic noise. *The Journal of the Acoustical Society of America*, 108(3), 1327-1331.
- Erbe, C., Reichmuth, C., Cunningham, K., Lucke, K., & Dooling, R., 2016. Communication masking in marine mammals: a review and research strategy. *Marine pollution bulletin*, 103(1-2), 15-38.
- Eschmeyer, W. N., and J. D. Fong., 2016. *Species by Family/Subfamily in the Catalog of Fishes*. San Francisco, CA: California Academy of Sciences.
- ESRI. 2017. ArcGIS Desktop: Release 10.6.1. Environmental Systems Research Institute., Redlands, California.
- 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.
- Falcone, E. A., G. S. Schorr, S. L. Watwood, S. L. DeRuiter, A. N. Zerbini, R. D. Andrews, R. P. Morrissey, and D. J. Moretti, 2017. Diving behaviour of Cuvier's beaked whales exposed to two types of military sonar. *Royal Society Open Science*, 4(170629), 1–21.
- Farmer, N. A., Noren, D. P., Fougères, E. M., Machernis, A., & Baker, K. 2018. Resilience of the endangered sperm whale *Physeter macrocephalus* to foraging disturbance in the

- Gulf of Mexico, USA: A bioenergetic approach. *Marine Ecology Progress Series*, 589, 241–261. doi:10.3354/meps12457
- Fay, R.R. 2009. Soundscapes and the sense of hearing of fishes. *Integrative Zoology*, 4, 26-32.
- Fay, R.R., A.N. Popper, and J.F. Webb. (2008). Introduction to fish bioacoustics. In: Webb, J.F., R.R. Fay, and A.N. Popper, eds. *Fish Bioacoustics*. Springer Handbook of Auditory Research 32, 1-15
- Feare, C. J. 1976. Desertion and abnormal development in a colony of Sooty Terns *Sterna fuscata* infested by virus-infected ticks. *Ibis*, 118(1), 112-115.
- Fewtrell, J. L., & R. D. McCauley. 2012. Impact of air gun noise on the behaviour of marine fish and squid. *Marine Pollution Bulletin*, 64(5), 984–993.
- Finneran, J. J., C.E. Schlundt, D. A. Carder, J. A. Clark, J. A. Young, J. B. Gaspin, and S. H. Ridgway. 2000. Auditory and behavioral responses of bottlenose dolphins (*Tursiops truncatus*) and a belugawhale (*Delphinapterus leucas*) to impulsive sounds resembling distant signatures of underwater explosions. *Journal of the Acoustical Society of America* 108:417-431.
- Finneran, J. J., R. Dear, D. A. Carder, & S. H. Ridgway. 2003. Auditory and behavioral responses of California sea lions (*Zalophus californianus*) to single underwater impulses from an arc-gap transducer. *The Journal of Acoustical Society of America*, 114(3), 1667–1677.
- Finneran, J. J., R. Dear, D. A. Carder, and S. H. Ridgway. 2002. Auditory and behavioral responses of California sea lions (*Zalophus californianus*) to single underwater impulses from an arc-gap transducer. *Journal of the Acoustical Society of America* 114(3):1667.
- Finneran, J.J. 2015. Noise-induced hearing loss in marine mammals: A review of temporary threshold shift studies from 1996 to 2015. *Journal of the Acoustical Society of America*, 138(3), 1702-1726.
- Finneran, J.J., 2018. Conditioned attenuation of auditory brainstem responses in dolphins warned of an intense noise exposure: Temporal and spectral patterns. *The Journal of the Acoustical Society of America*, 143(2), pp.795-810.
- Fish JF, Vania JS, 1971. Killer whale, *Orcinus orca*, sounds repel white whales, *Delphinapterus leucas*. *Fish Bull* 69: 531–536.
- Foote, A. D., R. W. Osborne, & A. R. Hoelzel. 2004. Whale-call response to masking boat noise. *Nature*, 428, 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. *Endangered Species Research*, 32, 391–413.
- Francis, C. and J. Barber. 2013. A framework for understanding noise impacts on wildlife: An urgent conservation priority. *Frontiers in Ecology and the Environment*, 11, 10.1890/120183.
- Frankel, A. S., & C. W. Clark. 2000. Behavioral responses of humpback whales (*Megaptera novaeangliae*) to full-scale ATOC signals. *The Journal of Acoustical Society of America*, 108(4), 1930–1937.
- Frid, A., 2003. Dall's sheep responses to overflights by helicopter and fixed-wing aircraft. *Biological Conservation*, 110(3), 387-399.
- Frid, A., & Dill, L. 2002. Human-caused disturbance stimuli as a form of predation risk. *Conservation Ecology*, 6(1).
- Friedlaender, A. S., E. L. Hazen, J. A. Goldbogen, A. K. Stimpert, J. Calambokidis, & B. L. Southall. (2016). Prey-mediated behavioral responses of feeding blue whales in controlled sound exposure experiments. *Ecological Applications*, 26(4), 1075–1085.
- Frings, H. and Frings, M., 1967. Underwater sound fields and behavior of marine invertebrates. *Marine bio-acoustics*, 2, pp.261-282.
- Fristrup, K. M., L. T. Hatch, & C. W. Clark. 2003. Variation in humpback whale (*Megaptera novaeangliae*) song length in relation to low-frequency sound broadcasts. *The Journal of Acoustical Society of America*, 113(6), 3411–3424.
- Fritz, H., M. Guillemain, and D. Durant. 2002. The cost of vigilance for intake rate in the mallard (*Anas platyrhynchos*): an approach through foraging experiments. *Ethology Ecology & Evolution*, 14(2), 91-97.
- Gailey, G., B. Würsig, & 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, 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. *Endangered Species Research*, 30, 53–71.
- Gallagher, C.A., Grimm, V., Kyhn, L.A., Kinze, C.C. and Nabe-Nielsen, J., 2021. Movement and seasonal energetics mediate vulnerability to disturbance in marine mammal populations. *The American Naturalist*, 197(3), pp.296-311.
- Gaspin, J. B., 1975. Experimental Investigations of the Effects of Underwater Explosions on Swimbladder Fish, I: 1973 Chesapeake Bay Tests. Naval Surface Weapons Center, White Oak Laboratory, Silver Spring, MD.

- Gaspin, J. B., G. B. Peters, & M. L. Wisely. 1976. Experimental investigations of the effects of underwater explosions on swimbladder fish. Naval Ordnance Lab, Silver Spring, MD.
- Gende, S. M., A. N. Hendrix, K. R. Harris, B. Eichenlaub, J. Nielsen, and S. Pyare. 2011. A Bayesian approach for understanding the role of ship speed in whale-ship encounters. *Ecological Applications*, 21(6), 2232–2240.
- Geo-Marine. 2010. Ocean/Wind Power Ecological Baseline Studies: January 2008–December 2009, Final Report. New Jersey Department of Environmental Protection.
- Gerrodette, T., Taylor, B.T., Swift, R., Rankin, R, Jaramillo-Legorreta, A.M., Rojas-Bracho, L. 2011. A combined visual and acoustic estimate of 2008 abundance, and change in abundance since 1997, for the vaquita, *Phocoena sinus*. *Marine Mammal Science*, 27(2), E79-E100.
- 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.
- Gilles A, Scheidat M, Siebert U., 2009. Seasonal distribution of harbour porpoises and possible interference of offshore windfarms in the German North Sea. *Marine Ecology Progress Series* 383:295–307. doi: 10.3354/meps08020.
- Glarou, M., Zrust, M. and Svendsen, J.C., 2020. Using artificial-reef knowledge to enhance the ecological function of offshore wind turbine foundations: Implications for fish abundance and diversity. *Journal of Marine Science and Engineering*, 8(5), p.332.
- Glenn, S., Arnone, R., Bergmann, T., Bissett, W.P., Crowley, M., Cullen, J., Gryzmski, J., Haidvogel, D., Kohut, J., Moline, M. and Oliver, M., 2004. Biogeochemical impact of summertime coastal upwelling on the New Jersey Shelf. *Journal of Geophysical Research: Oceans*, 109(C12).
- Goertner, J. F. 1982. Prediction of Underwater Explosion Safe Ranges for Sea Mammals. Dahlgren, VA: Naval Surface Weapons Center.
- Goertner, J. F., M. L. Wiley, G. A. Young, & W. W. McDonald. 1994. Effects of underwater explosions on fish without swimbladders. Silver Spring, MD: Naval Surface Warfare Center.
- Goldbogen, J. A., B. L. Southall, S. L. DeRuiter, J. Calambokidis, A. S. Friedlaender, E. L. Hazen, E. A. Falcone, G. S. Schorr, A. Douglas, D. J. Moretti, C. Kyburg, M. F. McKenna, & P. L. Tyack. 2013. Blue whales respond to simulated mid-frequency military sonar. *Proc Biol Sci*, 280(1765), 20130657.
- 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.
- Gomez, C., Lawson, J.W., Wright, A.J., Buren, A.D., Tollit, D. and V. Lesaged. 2016. A systematic review on the behavioural responses of wild marine mammals to noise: the disparity between science and policy. *Canadian Journal of Zoology*, 2016, 94(12): 801- 819, <https://doi.org/10.1139/cjz-2016-0098>.
- Gong, D., Kohut, J.T. and Glenn, S.M., 2010. Seasonal climatology of wind-driven circulation on the New Jersey Shelf. *Journal of Geophysical Research: Oceans*, 115(C4).
- Gong, Z., Jain, A.D., Tran, D., Yi, D.H., Wu, F., Zorn, A., Ratilal, P. and Makris, N.C., 2014. Ecosystem scale acoustic sensing reveals humpback whale behavior synchronous with herring spawning processes and re-evaluation finds no effect of sonar on humpback song occurrence in the Gulf of Maine in Fall 2006. *PloS one*, 9(10), p.e104733.
- Goold, J. C., 1996. Acoustic assessment of populations of common dolphin *Delphinus delphis* in conjunction with seismic surveying. *Journal of the Marine Biological Association of the United Kingdom*, 76(3), 811- 820.
- 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.
- Götz, T., G. Hastie, L.T. Hatch, O. Raustein, B.L. Southall, M. Tasker, and F. Thomsen. 2009. Overview of the impacts of anthropogenic underwater sound in the marine environment. *OSPAR Commission*, 134 pp.
- Graham, I.M., Merchant, N.D., Farcas, A., Barton, T.R., Cheney, B., Bono, S. and Thompson, P.M., 2019. Harbour porpoise responses to pile-driving diminish over time. *Royal Society open science*, 6(6), p.190335.
- Greene, C.H. and Pershing, A.J., 2004. Climate and the conservation biology of North Atlantic right whales: the right whale at the wrong time?. *Frontiers in Ecology and the Environment*, 2(1), pp.29-34.
- 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.
- Haelters, J., Dulière, V., Vigin, L. and Degraer, S., 2015. Towards a numerical model to simulate the observed displacement of harbour porpoises *Phocoena phocoena* due to pile driving in Belgian waters. *Hydrobiologia*, 756(1), pp.105-116.
- Hain, J.H.W., M.J. Ratnaswamy, R.D. Kenney, and H.E. Winn. 1992. The fin whale, *Balaenoptera physalus*, in waters of the northeastern United States continental shelf. *Reports of the International Whaling Commission* 42:653B669.

- Halvorsen, M. B., Casper, B. M., Matthews, F., Carlson, T. J., & Popper, A. N., 2012. Effects of exposure to piledriving sounds on the lake sturgeon, Nile tilapia and hogchoker. *Proceedings of the Royal Society of London B: Biological Sciences*, 279(1748), 4705-4714
- Halvorsen, M. B., Casper, B. M., Woodley, C. M., Carlson, T. J., & Popper, A. N., 2012. Threshold for onset of injury in Chinook salmon from exposure to impulsive pile driving sounds. *PLoS One*, 7(6), e38968.
- Halvorsen, M. B., W. T. Ellison, D. R. Choicoine, & A. N. Popper., 2012. Effects of mid-frequency active sonar on hearing in fish. *Journal of Acoustical Society of America*, 131(1), 599-607.
- Hamilton PK, Knowlton AR, Hagbloom MN, Howe KR, Marx MK, Pettis HM, Warren AM, Zani MA. 2021. Maintenance of the North Atlantic right whale catalog, whale scarring and visual health databases, anthropogenic injury case studies, and near real-time matching for biopsy efforts, entangled, injured, sick, or dead right whales. Woods Hole (MA): U.S. Department of Commerce, National Oceanic and Atmospheric Administration, National Marine Fisheries Service, Northeast Fisheries Science Center. 105 p.
- Hammond, P.S., Berggren, P., Benke, H., Borchers, D.L., Collet, A., Heide-Jørgensen, M.P., Heimlich, S., Hiby, A.R., Leopold, M.F. and Øien, N., 2002. Abundance of harbour porpoise and other cetaceans in the North Sea and adjacent waters. *Journal of Applied Ecology*, 39(2), pp.361-376.
- Hamre, L., Khankandi, S.F., Strøm, P.J. and Athanasiu, C., 2011. Lateral behaviour of large diameter monopiles at Sheringham Shoal Wind Farm. *Frontiers in offshore geotechnics II*, pp.575-580.
- Hannay, D., and M. Zykov. 2021. Underwater Acoustic Modeling of Detonations of Unexploded Ordnance (UXO) for Ørsted Wind Farm Construction, US East Coast. Document 02604, Version 1.1. Report by JASCO Applied Sciences for Ørsted.
- Harrington, F. H., and A. M. Veitch. 1992. Calving success of woodland caribou exposed to low-level jet fighter overflights. *Arctic*, 213-218.
- Harris, C. M., L.J. Wilson, C.G. Booth, and J. Harwood. (2017, October 21-28, 2017). Population consequences of disturbance: A decision framework to identify priority populations for PCoD modelling. Paper presented at the 22nd Biennial Conference on the Biology of Marine Mammals, Halifax, Nova Scotia, Canada.
- Harris, C.M., ed. (1998). *Handbook of Acoustical Measurements and Noise Control*. Acoustical Society of America, Woodbury, NY.
- Harris, D. E., B. Lelli and G. Jakush, 2002. Harp seal records from the southern Gulf of Maine: 1997-2001. *Northeast. Nat.* 9(3): 331-340.

- Harris, R. E., G. W. Miller, and W. J. Richardson. 2001. Seal responses to airgun sounds during summer seismic surveys in the Alaskan Beaufort Sea. *Marine Mammal Science*, 17: 795–812.
- Harwood, J., & Booth, C., 2016. The application of an interim PCoD (PCoD Lite) protocol and its extension to other marine mammal populations and sites Final Report (SMRUCONR-2016-004).
- Hastie, G.D., Russell, D.J., McConnell, B., Moss, S., Thompson, D. and Janik, V.M., 2015. Sound exposure in harbour seals during the installation of an offshore wind farm: predictions of auditory damage. *Journal of applied Ecology*, 52(3), pp.631-640.
- Hastings, M.C. and A.N. Popper. 2005. Effects of sound on fish. Prepared by Jones & Stokes for the California Department of Transportation: 82.
- Hatch, L.T., C.W. Clark, S.M. Van Parijs, A.S. Frankel, and D.W. Ponirakis. 2012. Quantifying loss of acoustic communication space for right whales in and around a U.S. National Marine Sanctuary. *Conserv. Biol.* 26(6):983- 994.
- Haviland-Howell, G., Frankel, A. S., Powell, C. M., Bocconcelli, A., Herman, R. L., & Sayigh, L. S., 2007. Recreational boating traffic: a chronic source of anthropogenic noise in the Wilmington, North Carolina Intracoastal Waterway. *The Journal of the Acoustical Society of America*, 122(1), 151-160.
- Hawkins, A. D., & A. D. F. Johnstone. 1978. The hearing of the Atlantic salmon, *Salmo salar*. *Journal of Fish Biology*, 13, 655–673.
- Hawkins, A.D., Pembroke, A.E. and Popper, A.N., 2015. Information gaps in understanding the effects of noise on fishes and invertebrates. *Reviews in fish biology and fisheries*, 25(1), pp.39-64.
- Hayes, S. A., E. Josephson, K. Maze-Foley, and P. E. Rosel, eds. 2018. US Atlantic and Gulf of Mexico marine mammal stock assessments - 2017. NOAA Tech. Memo. NMFS-NE-245, Woods Hole, MA.
- Hayes SA, Josephson E, Maze-Foley K, Rosel PE, McCordic J, Wallace J. 2023. US Atlantic and Gulf of Mexico Marine Mammal Stock Assessments 2022. U. S. Department of Commerce, National Oceanic and Atmospheric Administration, National Marine Fisheries Service, Northeast Fisheries Science Center, Woods Hole, Massachusetts. NOAA Technical Memorandum NMFS-NE-304, 262 pp.
- Hayes SA, Josephson E, Maze-Foley K, Rosel PE, Turek J. 2022. US Atlantic and Gulf of Mexico Marine Mammal Stock Assessments 2021. U.S. Department of Commerce, National Oceanic and Atmospheric Administration, National Marine Fisheries Service, Northeast Fisheries Science Center, Woods Hole, Massachusetts. NOAA Technical Memorandum NMFS-NE-271. 403 pp.

- Hayes, S.A., E. Josephson, K. Maze-Foley, and P.E. Rosel. 2020. U.S. Atlantic and Gulf of Mexico Marine Mammal Stock Assessments – 2019. NOAA Tech Memo NMFS-NE 264. Northeast Fisheries Science Center, Woods Hole, MA.
- Heenehan, H. L., J. A. Tyne, L. Bejder, S. M. Van Parijs, and D. W. Johnston. 2016. Passive acoustic monitoring of coastally associated Hawaiian spinner dolphins, *Stenella longirostris*, ground-truthed through visual surveys. *The Journal of the Acoustical Society of America*, 140(1), 206.
- 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. *Journal of the Acoustical Society of America* 120 (6): 3463-3466.
- Henderson, D., Hu, B. and Bielefeld, E., 2008. Patterns and mechanisms of noise-induced cochlear pathology. In *Auditory trauma, protection, and repair* (pp. 195-217). Springer, Boston, MA.
- Henderson, E.E., Martin, S.W., Manzano-Roth, R. and Matsuyama, B.M., 2016. Occurrence and habitat use of foraging Blainville's beaked whales (*Mesoplodon densirostris*) on a US Navy range in Hawaii. *Aquatic Mammals*, 42(4), p.549.
- Hermanssen, L., J. Tougaard, K. Beedholm, J. Nabe-Nielsen, and P.T. Madsen. 2014. High frequency components of ship noise in shallow water with a discussion of implications for harbor porpoises (*Phocoena phocoena*). *J. Acoust. Soc. Am.* 136(4):1640-1653.
- Hildebrand, J. A., 2009. Anthropogenic and natural sources of ambient noise in the ocean. *Marine Ecology Progress Series*, 395, 5–20.
- Hill, S.H. 1978. A guide to the effects of underwater shock waves on Arctic marine mammals and fish. Institute of Marine Sciences, Patricia Bay, Sidney, B.C. Pacific Marine Science Report 78-26. 50 pp.
- Holberton, R. L., Helmuth, B., & Wingfield, J. C., 1996. The corticosterone stress response in gentoo and king penguins during the non-fasting period. *The Condor*, 98(4), 850-854.
- Holt, M. M., D. P. Noren, and C. K. Emmons., 2011. Effects of noise levels and call types on the source levels of killer whale calls. *The Journal of the Acoustical Society of America*, 130(5), 3100–3106.
- Holt, M. M., D. P. Noren, V. Veirs, C. K. Emmons, and S. Veirs. 2008. Speaking up: Killer whales (*Orcinus orca*) increase their call amplitude in response to vessel noise. *The Journal of the Acoustical Society of America*, 125(1), EL27–EL32.
- Holt, M. M., Noren, D. P., Veirs, V., Emmons, C. K., & Veirs, S., 2009. Speaking up: Killer whales (*Orcinus orca*) increase their call amplitude in response to vessel noise. *The Journal of the Acoustical Society of America*, 125(1), EL27-EL32.

- Holt, M.M., Noren, D.P., Dunkin, R.C. and Williams, T.M., 2015. Vocal performance affects metabolic rate in dolphins: implications for animals communicating in noisy environments. *The Journal of Experimental Biology*, 218(11), pp.1647-1654.
- Hood, L. C., Boersma, P. D., & Wingfield, J. C., 1998. The adrenocortical response to stress in incubating Magellanic penguins (*Spheniscus magellanicus*). *The Auk*, 76-84.
- Houser, D.S. 2006. A method for modeling marine mammal movement and behavior for environmental impact assessment. 2006. *IEEE Journal of Oceanic Engineering*, 31(1), 76-81.
- Houser, D. S., S.W. Martin, and J.J. Finneran. 2013a. Behavioral responses of California sea lions to mid-frequency (3250-3450 Hz) sonar signals. *Marine Environmental Research* 92: 268- 278.
- Houser, D. S., S.W. Martin, and J.J. Finneran. 2013b. Exposure amplitude and repetition affect bottlenose dolphin behavioral responses to simulated mid-frequency sonar signals. *Journal of Experimental Marine Biology and Ecology* 443: 123-133.
- Houser, D.S. and P.W. Moore. (2014). Report on the current and future status of underwater hearing research. Report NMMF-001-14, National Marine Mammal Foundation: 46 pp
- Hu, M., H. Y. Yan, W. S. Chung, J. C. Shiao, and P. P. Hwang. 2009. Acoustical evoked potentials in two cephalopods inferred using the auditory brainstem response (ABR) approach. *Comparative Biochemistry and Physiology Part A: Molecular and Integrative Physiology*, 153, 278-283.
- ICES. 1995. Underwater noise of research vessels: review and recommendations. ICES Cooperative Research Report No. 209. pp. 61. <https://doi.org/10.17895/ices.pub.5317>.
- Illingworth, and Rodkin. 2017. Pile-Driving Noise Measurements at Atlantic Fleet Naval Installations: 28 May 2013-28 April 2016. HDR Environmental for NAVFAC.
- ISO (International Organization for Standardization). 2003. Acoustics – Description, Measurement and Assessment of Environmental Noise – Part 1: Basic Quantities and Assessment Procedures (ISO 1996-1:2003(E)). International Organization for Standardization, Geneva.
- ISO (International Organization for Standardization). 2017. Underwater Acoustics-Terminology, ISO 18405. Geneva, Switzerland: International Organization for Standardization.
- ISO (International Organization for Standardization). 2017. Underwater acoustics– Measurement of radiated underwater sound from percussive pile driving, ISO 18406. Geneva, Switzerland: International Organization for Standardization.
- Isojunno, S., Curé, C., Kvadsheim, P.H., Lam, F.P.A., Tyack, P.L., Wensveen, P.J. and Miller, P.J.O.M., 2016. Sperm whales reduce foraging effort during exposure to 1–2 kHz z sonar and killer whale sounds. *Ecological Applications*, 26(1), pp.77-93.

- Jacobs, S.R. and Terhune, J.M., 2002. The effectiveness of acoustic harassment devices in the Bay of Fundy, Canada: seal reactions and a noise exposure model. *Aquatic Mammals*, 28(2), pp.147-158.
- Janik, V.M., 2000. Food-related bray calls in wild bottlenose dolphins (*Tursiops truncatus*). *Proceedings of the Royal Society of London. Series B: Biological Sciences*, 267(1446), pp.923-927.
- Jansen, E., 2016, August. Underwater noise measurements in the North Sea in and near the Princess Amalia Wind Farm in operation. In *INTER-NOISE and NOISE-CON Congress and Conference Proceedings* (Vol. 253, No. 5, pp. 3028-3039). Institute of Noise Control Engineering.
- Jansen, E., and C. de Jong. 2016. Underwater noise measurements in the North Sea in and near the Princess Amalia Wind Farm in operation. 45th International Congress and Exposition on Noise Control Engineering: Towards a Quieter Future, INTER-NOISE 2016. 21 August 2016 through 24 August 2016, 7846–7857.
- JASCO Applied Sciences Inc. (JASCO). 2021. Distance to behavioral threshold for vibratory pile driving of sheet piles. Technical Memorandum by JASCO Applied Sciences for Ocean Wind LLC. 13 September 2021.
- Jensen, A. S., and G. K. Silber. (2003). Large Whale Ship Strike Database. Retrieved from: <http://www.nmfs.noaa.gov/pr/overview/publicat.html>
- Jessop, T. S., Tucker, A. D., Limpus, C. J., & Whittier, J. M. (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 TL, van Berkel JJ, Mortensen LO, Bell MA, Tiong I, Hernandez, B, Snyder, DB, Thomsen, F, Svenstrup Petersen, O: 2021. Hydrodynamic modeling, particle tracking and agent-based modeling of larvae in the U.S. mid-Atlantic bight. Lakewood (CO): US Department of the Interior, Bureau of Ocean Energy Management. OCS Study BOEM 2021-049. 232 p. https://epis.boem.gov/final%20reports/BOEM_2021-049.pdf
- Johnson, S.R., W.J. Richardson, S.B. Yazvenko, S.A. Blokhin, G. Gailey, M.R. Jenkerson, S.K. Meier, H.R. Melton, M.W. Newcomer, A.S. Perlov, S.A. Rutenko, B. Würsig, C.R. Martin, and D.E. Egging. 2007. A western gray whale mitigation and monitoring program for a 3-D seismic survey, Sakhalin Island, Russia. *Environ. Monit. Assess.* 134(1-3):1-19.
- Jones, I.T., Stanley, J.A. and Mooney, T.A., 2020. Impulsive pile driving noise elicits alarm responses in squid (*Doryteuthis pealeii*). *Marine pollution bulletin*, 150, p.110792.
- Jørgensen, R., K. K. Olsen, I. B. Falk-Petersen, & P. Kanapthippilai. 2005. Investigations of Potential Effects of Low Frequency Sonar Signals on Survival, Development and Behaviour of Fish Larvae and Juveniles. Tromsø, Norway: University of Tromsø.

- Juanes, F., K. Cox, & L. Brennan. 2017. The effect of anthropogenic and biological noise on fish behavior and physiology: A meta-analysis. *Journal of the Acoustic Society of America*, 141(3862).
- Kaifu K, Akamatsu T, and Segawa S. 2008. Underwater sound detection by cephalopod statocyst. *Fisheries Sci* 74: 781–86.
- Kane, A. S., J. Song, M. B. Halvorsen, D. L. Miller, J. D. Salierno, L. E. Wysocki, D. Zeddies, & A. N. Popper., 2010. Exposure of fish to high intensity sonar does not induce acute pathology. *Journal of Fish Biology*, 76(7), 1825–1840.
- Kaschner, K., R. Watson, A.W. Trites, and D. Pauly. 2006c. Mapping world-wide distributions of marine mammal species using a relative environmental suitability (RES) model. *Marine Ecology Progress Series* 316:285-310.
- Kastelein, R. A., de Haan, D., Vaughan, N., Staal, C., & Schooneman, N. M., 2001. The influence of three acoustic alarms on the behaviour of harbour porpoises (*Phocoena phocoena*) in a floating pen. *Marine Environmental Research*, 52, 351-371.
- Kastelein, R. A., L. Hoek, R. Gransier, C. A.F. de Jong, J.M. Terhune, N. Jennings, 2015. Hearing thresholds of a harbor porpoise (*Phocoena phocoena*) for playbacks of seal scarer signals, and effects of the signals on behavior. *Hydrobiologia*, 756:89-103.
- Kastelein, R.A., Gransier, R., Hoek, L. and Olthuis, J., 2012. Temporary threshold shifts and recovery in a harbor porpoise (*Phocoena phocoena*) after octave-band noise at 4 kHz. *The Journal of the Acoustical Society of America*, 132(5), pp.3525-3537.
- Kastelein, R. A., Jennings, N., Verboom, W. C., De Haan, D., & Schooneman, N. M., 2006a. Differences in the response of a striped dolphin (*Stenella coeruleoalba*) and a harbour porpoise (*Phocoena phocoena*) to an acoustic alarm. *Marine Environmental Research*, 61(3), 363-378.
- Kastelein, R. A., W. C. Verboom, M. Muijsers, N. V. Jennings, & S. van der Heul. 2005. Influence of acoustic emissions for underwater data transmission on the behaviour of harbour porpoises (*Phocoena phocoena*) in a floating pen. *Marine Environmental Research*, 59, 287–307.
- Kastelein, R.A., Van de Voorde, S. and Jennings, N., 2018. Swimming Speed of a Harbor Porpoise (*Phocoena phocoena*) During Playbacks of Offshore Pile Driving Sounds. *Aquatic Mammals*, 44(1).
- 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.
- Keen, K.A., Beltran, R.S., Pirota, R., Costa, D.P. 2021. Emerging themes in population consequences of disturbance models. *Proceedings of the Royal Society Biological Sciences*, 288 (1957).

- Keevin, T. M., & G. L. Hempen. 1997. *The Environmental Effects of Underwater Explosions with Methods to Mitigate Impacts*. St. Louis, MO: U.S. Army Corps of Engineers.
- 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*. RICRMC (Rhode Island Coastal Resources Management Council) Ocean Special Area Management Plan (SAMP), Volume 2. Appendix, Chapter 10. (Rhode Island Coastal Resources Management Council) Ocean Special Area Management Plan (SAMP), Volume 2. Appendix, Chapter 10.
- Ketten, D. R., 1995. Estimates of blast injury and acoustic trauma zones for marine mammals from underwater explosions. Pages 391-407 In R. A. Kastelein, J. A. Thomas, and P. E. Nachtigall, editors. *Sensory Systems of Aquatic Mammals*. De Spil Publishers, Woerden.
- Ketten, D. R., 2000. Cetacean Ears. In W. Au, A. N. Popper & R. R. Fay (Eds.), *Hearing by Whales and Dolphins* (1st ed., pp. 43–108). New York, NY: Springer-Verlag.
- King, S. L., Schick, R. S., Donovan, C., Booth, C. G., Burgman, M., Thomas, L., . . . Kurle, C. 2015. An interim framework for assessing the population consequences of disturbance. *Methods in Ecology and Evolution*, 6(10), 1150–1158. doi:10.1111/2041-210x.12411
- Knowlton, A. R., F. T. Korsmeyer, J. E. Kerwin, H. Wu, and B. Hynes. 1995. The hydrodynamic effects of large vessels on right whales. Pages 62 in Eleventh Biennial Conference on the Biology of Marine Mammals, Orlando, Florida.
- Knowlton, A.R. and S.D. Kraus. 2001. Mortality and serious injury of northern right whales (*Eubalaena glacialis*) in the western North Atlantic Ocean. *Journal of Cetacean Research and Management Special Issue 2*:193-208.
- Koschinski, S., & Lüdemann, K. 2013. *Development of Noise Mitigation Measures in Offshore Wind Farm Construction*. Commissioned by the Federal Agency for Nature Conservation (Bundesamt für Naturschutz, BfN). Original report (in German) published Jul 2011, updated Feb 2013. Nehnten and Hamburg, Germany.
- Kraus, S.D., Hamilton, P.K., Kenney, R.D., KNOWLTON, A.R. and Slay, C.K., 2020. Reproductive parameters of the North Atlantic right whale. *J. Cetacean Res. Manage.*, pp.231-236.
- Kraus, S.D., Kenney, R.D. and Thomas, L., 2019. A framework for studying the effects of offshore wind development on marine mammals and turtles. *Report prepared for the Massachusetts Clean Energy Center, Boston, MA, 2110*.
- Kraus, S.D., S. Leiter, K. Stone, B. Wikgren, C. Mayo, P. Hughes, R. D. Kenney, C. W. Clark, A.N. Rice, B. Estabrook and J. Tielens. 2016. *Northeast Large Pelagic Survey Collaborative Aerial and Acoustic Surveys for Large Whales and Sea Turtles*. US Department of the Interior, Bureau of Ocean Energy Management, Sterling, Virginia. OCS Study BOEM 2016-054. 117 pp. + appendices.

- 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.
- Krumpel, A., Rice, A., Frasier, K.E., Reese, F., Trickey, J.S., Simonis, A.E., Ryan, J.P., Wiggins, S.M., Denzinger, A., Schnitzler, H.U. and Baumann-Pickering, S., 2021. Long-Term Patterns of Noise From Underwater Explosions and Their Relation to Fisheries in Southern California. *Frontiers in Marine Science*, 8.
- Kryter, K.D., W.D. Ward, J.D. Miller, and D.H. Eldredge. (1966). Hazardous exposure to intermittent and steady-state noise. *Journal of the Acoustical Society of America*, 39(3), 451-464.
- Küsel, E.T., M.J. Weirathmueller, K.E. Zammit, M.L. Reeve, S.G. Dufault,, K.E. Limpert, M.E. Clapsaddle, and D.G. Zeddies. 2023. *Underwater Acoustic Analysis and Exposure Modeling, Revolution Wind: Impact Pile Driving during Foundation Installation*. Document 01935. Revision 8 v5. Technical report by JASCO Applied Sciences for Revolution Wind.
- Küsel, E.T., M.J. Weirathmueller, K.E. Zammit, S.J. Welch, K.E. Limpert, and D.G. Zeddies. 2021. Underwater Acoustic and Exposure Modeling. Document 02109, Version 1.0 DRAFT. Technical report by JASCO Applied Sciences for Ocean Wind LLC.
- Küsel, E.T., M.J. Weirathmueller, K.E. Zammit, S.J. Welch, K.E. Limpert, and D.G. Zeddies. 2022. Underwater Acoustic and Exposure Modeling. Document 02109, Version 1.0 DRAFT. Technical report by JASCO Applied Sciences for Ocean Wind LLC.
- Kvadsheim, P. H., & E. M. Sevaldsen. 2005. The potential impact of 1-8 kHz active sonar on stocks of juvenile fish during sonar exercises. Forsvarets Forskningsinstitutt, Norwegian Defence Research Establishment, P.O. Box 25, NO-2027 Kjeller, Norway.
- LaBrecque, E., Curtice, C., Harrison, J., Van Parijs, S.M. and Halpin, P.N., 2015. 2. Biologically Important Areas for Cetaceans Within US Waters-East Coast Region. *Aquatic Mammals*, 41(1), p.17.
- Ladich, F., & A. N. Popper. 2004. Parallel Evolution in Fish Hearing Organs. In G. A. Manley, A. N. Popper & R. R. Fay (Eds.), *Evolution of the Vertebrate Auditory System*, Springer Handbook of Auditory Research. New York, NY: Springer-Verlag
- Ladich, F., & R. R. Fay. 2013. Auditory evoked potential audiometry in fish. *Reviews in Fish Biology and Fisheries*, 23(3), 317–364.
- Ladich, F., & T. Schulz-Mirbach. 2016. Diversity in Fish Auditory Systems: One of the Riddles of Sensory Biology. *Frontiers in Ecology and Evolution*, 4, 26.
- 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.

- Lambrechts, M. M., 1996. Organization of bird song and constraints on performance. - In: Kroodsma, D. E. and Miller, E. H. (eds). Ecology and evolution of acoustic communication in birds. Cornell Univ. Press, Ithaca and London, pp. 305-320.
- Landsberg, P.G. 2000. Underwater blast injuries. *Trauma and Emergency Medicine* 17(2). <http://www.scuba-doc.com>.
- Langhamer, O., 2012. Artificial reef effect in relation to offshore renewable energy conversion: state of the art. *The Scientific World Journal*, 2012.
- Lankford, S. E., Adams, T. E., Miller, R. A., & Cech Jr, J. J., 2005. The cost of chronic stress: impacts of a nonhabituating stress response on metabolic variables and swimming performance in sturgeon. *Physiological and Biochemical Zoology*, 78(4), 599-609.
- Lesage, V., Barrette, C., Kingsley, M.C. and Sjare, B., 1999. The effect of vessel noise on the vocal behavior of belugas in the St. Lawrence River estuary, Canada. *Marine Mammal Science*, 15(1), pp.65-84.
- Lillis, A., D. D. Bohnenstiehl, and D. Eggleston. 2014. Soundscape manipulation enhances larval recruitment of a reef-building mollusk. *PeerJ*, 3, 10.7717/peerj.999.
- Lindeboom, H.J., Kouwenhoven, H.J., Bergman, M.J.N., Bouma, S., Brasseur, S.M.J.M., Daan, R., Fijn, R.C., De Haan, D., Dirksen, S., Van Hal, R. and Lambers, R.H.R., 2011. Short- term ecological effects of an offshore wind farm in the Dutch coastal zone; a compilation. *Environmental Research Letters*, 6(3), p.035101.
- Lippert, S., M. Nijhof, T. Lippert, D. Walkes, A. Gavrilov, K. Heitmann, M. Ruhnu, O. von Estorff, A. Schafke, I. Schafer, J. Ehrlich, A. MacGillivray, J. Park, W. Seong, M.A. Ainslie, C. de Jong, M. Wood, L. Wang, and P. Theobald. 2016. COMPILE–A Generic Benchmark Case for Predictions of Marine Pile-Driving Noise. *IEEE Journal of Oceanic Engineering*, 41(4): 1061-1071.
- Lippert, T, M.A. Ainslie, O. von Estorff, 2018. Pile driving acoustics made simple: Damped cylindrical spreading model. *The Journal of the Acoustical Society of America*, 143(1), 310-317
- Liu, M., L. Dong, M. Lin, and S. Li., 2017. Broadband ship noise and its potential impacts on Indo-Pacific humpback dolphins: Implications for conservation and management. *The Journal of the Acoustical Society of America*, 142(5), 2766.
- Lohr, B., Wright, T. F., & Dooling, R. J., 2003. Detection and discrimination of natural calls in masking noise by birds: estimating the active space of a signal. *Animal Behaviour*, 65(4), 763-777.
- Lovell, J. M., Findlay, M. M., Moate, R. M., & Yan, H. Y., 2005. The hearing abilities of the prawn *Palaemon serratus*. *Comparative Biochemistry and Physiology Part A: Molecular & Integrative Physiology*, 140(1), 89-100.

- Lozano, E. and M. Hente. 2014. The Effects of Disturbances on Harbor Seals on a Haul-Out site Off Yellow Island, Washington. Ecology and Conservation of Marine Birds and Mammals. Friday Harbor Laboratories, University of Washington.
- Lucke, K., Dähne, M., Adler, S., Brandecker, A., Krügel, K., Sundermeyer, J.K. and Siebert, U., 2012. Evaluating the effects of offshore pile driving on *Phocoena phocoena* (harbor porpoises) by using passive acoustic monitoring. In *The Effects of Noise on Aquatic Life* (pp. 285-287). Springer, New York, NY.
- Lucke, K., Storch, S., Cooke, J. and Siebert, U., 2006. Literature Review of offshore wind farms with regard to marine mammals. *Ecological Research on Offshore Wind Farms: International Exchange of Experiences. Part B: Literature Review of Ecological impacts*, pp.199-284.
- Luick, B. R., J. A. Kitchens, R. G. White, and S. M. Murphy. 1996. Modeling energy and reproductive costs in caribou exposed to low flying military jet aircraft. *Rangifer*, 16(4), 209-212.
- Lusseau, D., and L. Bejder. 2007. The Long-term Consequences of Short-term Responses to Disturbance Experiences from Whalewatching Impact Assessment. *International Journal of Comparative Psychology*, 20, 228-236.
- Madsen, J., 1994. Impacts on disturbance on migratory waterfowl. *IBIS* 137, S67-S74.
- Madsen, P. T., M. Johnson, P. J. O. Miller, N. A. Soto, J. Lynch, & P. Tyack., 2006. Quantitative measures of airgun pulses recorded on sperm whales (*Physeter macrocephalus*) using acoustic tags during controlled exposure experiments. *The Journal of Acoustical Society of America*, 120(4), 2366–2379.
- Madsen, P.T., Wahlberg, M., Tougaard, J., Lucke, K. and Tyack, A.P., 2006. Wind turbine underwater noise and marine mammals: implications of current knowledge and data needs. *Marine ecology progress series*, 309, pp.279-295.
- Malme, C.I., Miles, P.R., Clark, C.W., Tyack, P. and Bird, J.E., 1983. *Investigations of the Potential Effects of Underwater Noise from Petroleum Industry Activities on Migrating Gray Whale Behaviour. Final Report for the Period of 7 June 1982-31 July 1983*. Bolt, Beranek and Newman Incorporated.
- 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 U.S. Minerals Manage. Serv., Anchorage, AK. NTIS PB86-218377
- Mann, D. A., 2016. Acoustic Communications in Fishes and Potential Effects of Noise. In A. N. Popper & A. D. Hawkins (Eds.), *The Effects of Noise on Aquatic Life II* (pp. 673–678). New York, NY: Springer.

- Mann, D. A., A. N. Popper, & B. Wilson. 2005. Pacific herring hearing does not include ultrasound. *Biology Letters*, 1, 158–161.
- Marine Mammal Commission. 2023. Marine Mammal Commission, Newsletter, Spring 2023. Available at: <https://myemail.constantcontact.com/MMC-Newsletter--Spring-2023.html?soid=1119223236081&aid=O91a23wASjQ>
- Marten, K., & Marler, P. (1977). Sound transmission and its significance for animal vocalization. *Behavioral ecology and sociobiology*, 2(3), 271-290.
- Martin, J., Sabatier, Q., Gowan, T.A., Giraud, C., Gurarie, E., Calleson, C.S., Ortega-Ortiz, J.G., Deutsch, C.J., Rycyk, A. and Koslovsky, S.M., 2016. A quantitative framework for investigating risk of deadly collisions between marine wildlife and boats. *Methods in Ecology and Evolution*, 7(1), pp.42-50.
- Matthews, L. 2017. Harbor seal (*Phoca vitulina*) reproductive advertisement behavior and the effects of vessel noise. Ph.D. Thesis, Syracuse University. 139 p.
- McCauley, R. D., J. Fewtrell, A. J. Duncan, C. Jenner, M. N. Jenner, J. D. Penrose, R. I. T. Prince, A. Adhitya, J. Murdoch, & K. McCabe. 2000a. Marine seismic surveys—A study 26 of environmental implications. *Australian Petroleum Production Exploration Association Journal*, 692–708.
- McDonald, M. A., J. A. Hildebrand, & S. C. Webb. 1995. Blue and fin whales observed on a seafloor array in the Northeast Pacific. *The Journal of Acoustical Society of America*, 98(2), 712–721.
- McDonald, M. A., J. A. Hildebrand, S. M. Wiggins, D. W. Johnston, and J. J. Polovina. 2009. An acoustic survey of beaked whales at Cross Seamount near Hawaii. *The Journal of the Acoustical Society of America*, 125(2), 624–627.
- McFadden D. 1986. The curious half-octave shift: evidence for a basalward migration of the traveling-wave envelope with increasing intensity. In: Salvi RJ, Henderson D, Hamernik RP, Coletti V (eds) *Basic and applied aspects of noise-induced hearing loss*, vol 111. Proceedings of a NATO advanced studies institute on applied and basic aspects of noise- induced hearing loss, held September 23–29, 1985, in Lucca. NATO ASI Series A, Life Sciences edn. Plenum, New York, pp 295–312.
- McHuron, E.A., Schwarz, L.K., Costa, D.P. and Mangel, M., 2018. A state-dependent model for assessing the population consequences of disturbance on income-breeding mammals. *Ecological Modelling*, 385, pp.133-144.
- McKenna, M.F., D. Ross. 2012. Underwater radiated noise from modern commercial shops. *Journal of Acoustic Society of America*, 131(1), 92-103.
- McQueen, A.D., Suedel, B.C., de Jong, C. and Thomsen, F., 2020. Ecological risk assessment of underwater sounds from dredging operations. *Integrated Environmental Assessment and Management*, 16(4), pp.481-493.

- Melcón, M. L., A. J. Cummins, S. M. Kerosky, L. K. Roche, S. M. Wiggins, & H. J. A., 2012. Blue whales respond to anthropogenic noise. *PLoS ONE*, 7(2).
- Meyer-Gutbrod, E.L., Davies, K.T., Johnson, C.L., Plourde, S., Sorochan, K.A., Kenney, R.D., Ramp, C., Gosselin, J.F., Lawson, J.W. and Greene, C.H., 2023. Redefining North Atlantic right whale habitat-use patterns under climate change. *Limnology and Oceanography*, 68, S71-S86.
- Meyer-Gutbrod, E.L., Greene, C.H., Davies, K.T. and Johns, D.G., 2021. Ocean regime shift is driving collapse of the North Atlantic right whale population. *Oceanography*, 34(3), pp.22-31.
- Miksis-Olds, J.L., 2006. Manatee Response to Environmental Noise. A Dissertation Submitted in Partial Fulfillment of the Requirements for the Degree of Doctor of Philosophy in Oceanography. University of Rhode Island, 2006
- Miksis-Olds, J. L., Donaghay, P. L., Miller, J. H., Tyack, P. L., & Nystuen, J. A., 2007. Noise level correlates with manatee use of foraging habitats. *The Journal of the Acoustical Society of America*, 121(5), 3011-3020.
- Miller, J.D., 1974. Effects of noise on people. *Journal of the Acoustical Society of America*, 56(3), 729- 764.
- Miller, P. J. O., M. P. Johnson, and P. L. Tyack. 2004. Sperm whale behaviour indicates the use of echolocation click buzzes 'creaks' in prey capture. *Proceedings of the Royal Society of London Series B Biological Sciences* 271(1554):2239-2247.
- Miller, P. J. O., M. P. Johnson, P. T. Madsen, N. Biassoni, M. Quero, & P. L. Tyack, 2009. Using at-sea experiments to study the effects of airguns on the foraging behavior of sperm whales in the Gulf of Mexico. *Deep Sea Research I*, 56(7), 1168–1181
- Miller, P. J. O., N. Biassoni, A. Samuels, & P. L. Tyack. 2000. Whale songs lengthen in response to sonar. *Nature*, 405(6789), 903.
- Moberg, G. P., 1987. A model for assessing the impact of behavioral stress on domestic animals. *Journal of Animal Science*, 65(5), 1228-1235.
- Moberg, G. P., & J. A. Mench. 2000. *The Biology of Animal Stress; Basic Principles and Implications for Animal Welfare*. London, UK: CAB International.
- Mooney, T. A., Hanlon, R. T., Christensen-Dalsgaard, J., Madsen, P. T., Ketten, D. R., & Nachtigall, P. E., 2010. Sound detection by the longfin squid (*Loligo pealeii*) studied with auditory evoked potentials: sensitivity to low-frequency particle motion and not pressure. *Journal of Experimental Biology*, 213(21), 3748-3759
- Moore, J.E. and Barlow, J.P., 2013. Declining abundance of beaked whales (Family Ziphiidae) in the California current large marine ecosystem. *PLoS One*, 8(1), p.e52770.

- Morano, J.L., D.P. Salisbury, A.N. Rice, K.L. Conklin, K.L. Falk, and C.W. Clark. 2012. Seasonal changes in fin whale song in the western North Atlantic Ocean. *Journal of the Acoustical Society of America* 132 (2): 1207-1212.
- Morete, M. E., T. L. Bisi, and S. Rosso. 2007. Mother and calf humpback whale responses to vessels around the Abrolhos Archipelago, Bahia, Brazil. *Journal of Cetacean Research Management*, 9(3), 241-248.
- Morton, A. B., & Symonds, H. K. 2002. Displacement of *Orcinus orca* (L.) by high amplitude sound in British Columbia, Canada. *ICES Journal of Marine Science*, 59(1), 71-80.
- Müllner, A., K. E. Linsenmair, and M. Wikelski. 2004. Exposure to ecotourism reduces survival and affects stress response in hoatzin chicks (*Opisthocomus hoazin*). *Biological Conservation*, 118(4), 549-558.
- Nachtigall, P.E. and Supin, A.Y., 2008. A false killer whale adjusts its hearing when it echolocates. *Journal of Experimental Biology*, 211(11), pp.1714-1718.
- Nachtigall PE, Supin AYa. 2013. False killer whales reduce their hearing sensitivity if a loud sound is preceded by a warning. *Journal of Experimental Biology* 216, 3062–70.
- Nachtigall PE, Supin AYa. 2015. Conditioned frequency dependent hearing sensitivity reduction in the bottlenose dolphin (*Tursiops truncatus*) *Journal of Experimental Biology*, 218, 999–1005.
- Nachtigall PE, Supin AYa., Esteban JA, Pacini AF. 2016a. Learning and extinction of conditioned hearing sensation change in the beluga whale (*Delphinapterus leucas*). *Journal of Comparative Physiology A* 202, 105–13.
- Nachtigall PE, Supin AYa., Smith AB, Pacini AF. 2016b. Expectancy and conditioned hearing sensation level in the bottlenose dolphin (*Tursiops truncatus*). *Journal of Experimental Biology* 219, 844–50.
- Nachtigall PE, Supin AYa., Pacini AH, Kastelein R. 2016c. Conditioned sensitivity change in the harbour porpoise (*Phocoena phocoena*) *Journal of the Acoustical Society of America* 140, 960–67
- Nachtigall, P.E., Supin, A.Y., Pacini, A.F. and Kastelein, R.A., 2018. Four odontocete species change hearing levels when warned of impending loud sound. *Integrative zoology*, 13(2), pp.160-165.
- Nachtsheim, D.A., Viquerat, S., Ramírez-Martínez, N.C., Unger, B., Siebert, U. and Gilles, A., 2021. Small cetacean in a human high-use area: trends in harbor porpoise abundance in the North Sea over two decades. *Frontiers in Marine Science*, 7, p.606609.
- NAS. 2017. Approaches to Understanding the Cumulative Effects of Stressors on Marine Mammals.

- National Academies of Sciences, Engineering, and Medicine. 2017. *Approaches to Understanding the Cumulative Effects of Stressors on Marine Mammals*. Washington, DC: The National Academies Press. <https://doi.org/10.17226/23479>.
- 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. U.S. Department of Commerce, NOAA. NOAA Technical Memorandum NMFS-OPR-55.
- National Marine Fisheries Service (NMFS). 2018. Revision to Technical Guidance for Assessing Effects of Anthropogenic Sound on Marine Mammal Hearing. Office of Protected Resources, National Marine Fisheries Service, National Oceanic and Atmospheric Administration, U.S. Department of Commerce, Silver Spring, Maryland.
- National Marine Fisheries Service (NMFS). 2020. User Spreadsheet Tool (Version 2.1) for: 2018 Technical Guidance for Assessing the Effects of Anthropogenic Sound on Marine Mammal Hearing (Version 2.0): Underwater Thresholds for Onset of Permanent and Temporary Threshold Shifts. Silver Spring, Maryland: Office of Protected Resources, National Marine Fisheries Service.
- National Oceanic and Atmospheric Administration (NOAA). 2017. North Atlantic Right Whale (*Eubalaena glacialis*) 5-Year Review: Summary and Evaluation. National Marine Fisheries Service (NMFS) Greater Atlantic Regional Fisheries Office (GARFO), NOAA, U.S. Department of Commerce, Gloucester, Massachusetts. Available online at: <https://repository.library.noaa.gov/view/noaa/17809>.
- NRC (National Research Council). 2003. Ocean noise and marine mammals. Washington, DC: National Academies Press.
- National Research Council. 200). Marine Mammal Populations and Ocean Noise. Washington, DC: National Academies Press.
- Nedelec, S. L., Simpson, S. D., Morley, E. L., Nedelec, B., and Radford, A. N. 2015. Impacts of regular and random noise on the behaviour, growth and development of larval Atlantic cod (*Gadus morhua*). *Proceedings of the Royal Society B*, 282(1817), 20151943.
- Nedwell, J. R., B. Edwards, A. W. H. Turnpenney, & J. Gordon. (2004). Fish and marine mammal audiograms: A summary of available information (Subacoustech Report ref: 534R0214). Hampshire, UK.
- Nehls, G., A. Rose., A. Diederichs, M.A. Bellmann, and H. Pehlke. 2016. Noise mitigation during pile driving efficiently reduces disturbance of marine mammals. In A. N. Popper & A. D. Hawkins (Eds.), *The Effects of Noise on Aquatic Life II* (2015/11/28 ed., Vol. 875, pp. 755-762). New York: Springer.

- New, L. F., Clark, J. S., Costa, D. P., Fleishman, E., Hindell, M. A., Klanjscek, T., . . . Harwood, J. 2014. Using short-term measures of behaviour to estimate long-term fitness of southern elephant seals. *Marine Ecology Progress Series*, 496, 99–108.
- New, L. F., J. S. Clark, D. P. Costa, E. Fleishman, M. A. Hindell, T. Klanjšček, D. Lusseau, S. Kraus, C. R. McMahon, P. W. Robinson, R. S. Schick, L. K. Schwarz, S. E. Simmons, L. Thomas, P. Tyack, and J. Harwood. 2014. Using short-term measures of behaviour to estimate long-term fitness of southern elephant seals. *Marine Ecology Progress Series*, 496, 99–108.
- New, L., Lusseau, D., & Harcourt, R. 2020. Dolphins and Boats: When Is a Disturbance, Disturbing?. *Frontiers in Marine Science*, 7, 353
- Ng, S. L., & Leung, S., 2003. Behavioral response of Indo-Pacific humpback dolphin (*Sousa chinensis*) to vessel traffic. *Marine Environmental Research*, 56(5), 555-567.
- NIOSH (National Institute for Occupational Safety and Health). 1998. Criteria for a Recommended Standard: Occupational Noise Exposure. United States Department of Health and Human Services, Cincinnati, OH.
- Noren, D.P., Holt, M.M., Dunkin, R.C. and Williams, T.M., 2020. The metabolic cost of whistling is low but measurable in dolphins. *Journal of Experimental Biology*, 223(11), p.jeb224048.
- Noren, D.P., Holt, M.M., Dunkin, R.C., Thometz, N.M. and Williams, T.M., 2017, July. Comparative and cumulative energetic costs of odontocete responses to anthropogenic disturbance. In *Proceedings of Meetings on Acoustics 4ENAL* (Vol. 27, No. 1, p. 040011). Acoustical Society of America.
- Nowacek, D. P., M. P. Johnson, & P. L. Tyack. 2004. North Atlantic right whales (*Eubalaena glacialis*) ignore ships but respond to alerting stimuli. *Proceedings of the Royal Society of London*, 271(B), 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.
- O'Brien, O., Pendleton, D.E., Ganley, L.C., McKenna, K.R., Kenney, R.D., Quintana-Rizzo, E., Mayo, C.A., Kraus, S.D. and Redfern, J.V., 2022. Repatriation of a historical North Atlantic right whale habitat during an era of rapid climate change. *Scientific Reports*, 12(1), pp.1-10.
- Ocean Wind, LLC (Ocean Wind). 2022a. *Construction and Operations Plan, Ocean Wind Offshore Wind Farm*. Volumes I–III. May. Available at: <https://www.boem.gov/ocean-wind-construction-andoperations-plan/>.
- Ocean Wind, LLC (Ocean Wind). 2022b. Application for Marine Mammal Protection Act (MMPA) Rulemaking and Letter of Authorization: DRAFT. Prepared by HDR. February

- Oedekoven, C. and L. Thomas. 2022. Effectiveness of Navy lookout teams in detecting cetaceans. Report number CREEM-24289-1. Provided to HDR Inc, 22 March 2022 (unpublished).
- O'Keefe, D.J. and Young, G.A., 1984. *Handbook on the environmental effects of underwater explosions*. Naval Surface Weapons Center, Dahlgren and Silver Spring. NSWC TR 83-240.
- O'Keefe, D.J., 1984. *Guidelines for predicting the effects of underwater explosions on swimbladder fish*. NAVAL SURFACE WEAPONS CENTER DAHLGREN VA.
- Pace, R.M., P.J. Corkeron, and S.D. Kraus. 2017. State space estimates reveal a recent decline in abundance of North Atlantic right whales. *Ecol Evol* 7: 8730–8741.
- Pace, R., and G. Silber. 2005. Simple analyses of ship and large whale collisions: Does speed kill? Pages 1 In National Oceanic and Atmospheric Administration, National Marine Fisheries Service, Office of Protected Resources.
- Pace, R.M. 2021. Revisions and further evaluations of the right whale abundance model: improvements for hypothesis testing. National Marine Fisheries Service, Northeast Fisheries Science Center, Woods Hole, Massachusetts. NOAA Technical Memorandum NMFS-NE 269.
- Packard, A., Karlsen, H. E., & Sand, O. 1990. Low frequency hearing in cephalopods. *Journal of Comparative Physiology A*, 166(4), 501-505.
- Palka, D.L., S. Chavez-Rosales, E. Josephson, D. Cholewiak, H.L. Haas, L. Garrison, M. Jones, D. Sigourney, G. Waring (retired), M. Jech, E. Broughton, M. Soldevilla, G. Davis, A. DeAngelis, C.R. Sasso, M.V. Winton, R.J. Smolowitz, G. Fay, E. LaBrecque, J.B. Leiness, Dettloff, M. Warden, K. Murray, and C. Orphanides. 2017. Atlantic Marine Assessment Program for Protected Species: 2010-2014. US Dept. of the Interior, Bureau of Ocean Energy Management, Atlantic OCS Region, Washington, DC. OCS Study BOEM 2017-071. 211 pp.
- Papale, E., M. Gamba, M. Perez-Gil, V.M. Martin, and C. Giacomina. 2015. Dolphins adjust species-specific frequency parameters to compensate for increasing background noise. *PLoS ONE* 10(4):e0121711.
- Parks, S. E. 2009. Assessment of acoustic adaptations for noise compensation in marine mammals. Paper presented at the 2009 Office of Naval Research Marine Mammal Program Review. Alexandria, VA.
- Parks, S. E., C. W. Clark, & P. L. Tyack. 2007. Short- and long-term changes in right whale calling behavior: The potential effects of noise on acoustic communication. *The Journal of Acoustical Society of America*, 122(6), 3725–3731.
- Parks, S.E. M. Johnson, D. Nowacek, and P.L. Tyack. 2011. Individual right whales call louder in increased environmental noise. *Biol. Lett.* 7(1):33-35.

- Patricelli, G. L., & Blickley, J. L. 2006. Avian communication in urban noise: causes and consequences of vocal adjustment. *The Auk*, 123(3), 639-649.
- Paxton, A.B., J.C. Taylor, D.P. Nowacek, J. Dale, E. Cole, C.M. Voss, and C.H. Peterson. 2017. Seismic survey noise disrupted fish use of a temperate reef. *Marine Policy*, 78, 68-73.
- Payne, J. F., Andrews, C. D., Fancey, L. L., Guiney, J., Cook, A., and Christian, J. R. 2008. "Are seismic surveys an important risk factor for fish and shellfish?," *Bioacoustics* 17, 262-265.
- Payne, J.F., Andrews, C.A., Fancey, L.L., Cook, A.L. and Christian, J.R. 2007. Pilot Study on the Effect of Seismic Air Gun Noise on Lobster (*Homarus Americanus*) Environmental Studies Research Funds Report No. 171. St. John's, NL. 34 p.
- 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.
- Pettis, H.M., Pace III, R.M. and Hamilton, P.K., 2022. North Atlantic right whale consortium 2021 annual report card. Report to the North Atlantic Right Whale Consortium.
- Pettis, H.M., Pace, R.M. III, and Hamilton, P.K., 2023. North Atlantic Right Whale Consortium 2022 Annual Report Card. North Atlantic Right Whale Consortium, DOI: 10.1575/1912/66099, <https://hdl.handle.net/1912/66099>
- Phillips, G. E., and A. W. Alldredge. 2000. Reproductive Success of elk following disturbance by humans during calving season. *The Journal of Wildlife Management*, 521-530.
- Pijanowski, B., L. Villanueva-Rivera, S. Dumyahn, A. Farina, B. Krause, B. Napoletano, . . . N. Pieretti. (2011). Soundscape Ecology: The Science of Sound in the Landscape. *BioScience*, 61(3), 203-216. doi:10.1525/bio.2011.61.3.6
- Pirota, E., Booth, C.G., Cade, D.E., Calambokidis, J., Costa, D.P., Fahlbusch, J.A., Friedlaender, A.S., Goldbogen, J.A., Harwood, J., Hazen, E.L. and New, L., 2021. Context-dependent variability in the predicted daily energetic costs of disturbance for blue whales. *Conservation physiology*, 9(1), p.coaa137.
- Pirota, E., C. G. Booth, D. P. Costa, E. Fleishman, S. D. Kraus, D. Lusseau, D. Moretti, L. F. New, R. S. Schick, L. K. Schwarz, S. E. Simmons, L. Thomas, P. L. Tyack, M. J. Weise, R. S. Wells, and J. Harwood. (2018a). Understanding the population consequences of disturbance. *Ecology and Evolution*, 8(19), 9934–9946.
- Pirota, E., Mangel, M., Costa, D.P., Mate, B., Goldbogen, J.A., Palacios, D.M., Hückstädt, L.A., McHuron, E.A., Schwarz, L. and New, L., 2018. A dynamic state model of migratory behavior and physiology to assess the consequences of environmental variation and anthropogenic disturbance on marine vertebrates. *The American Naturalist*, 191(2), pp.E40-E56.

- Popper, A. N., J. Ramcharitar, & S. E. Campana. (2005). Why Otoliths? Insights from Inner Ear Physiology and Fisheries Biology. *Marine and Freshwater Research*, 56, 8.
- Popper, A. N., & M. C. Hastings. (2009a). The effects of anthropogenic sources of sound on fishes. *Journal of Fish Biology*, 75(3), 455–489.
- Popper, A. N., & M. C. Hastings. (2009a). The effects of anthropogenic sources of sound on fishes. *Journal of Fish Biology*, 75(3), 455–489.
- Popper, A. N., & M. C. Hastings. (2009b). The effects of human-generated sound on fish. *Integrative Zoology*, 4, 43–52.
- Popper, A. N., & R. R. Fay. (2011). Rethinking sound detection by fishes. *Hearing Research*, 273(1–2), 25–36
- Popper, A. N., A. D. Hawkins, R. R. Fay, D. A. Mann, S. M. Bartol, T. J. Carlson, S. Coombs, W. T. Ellison, R. L. Gentry, M. B. Halvorsen, S. Løkkeborg, P. H. Rogers, B. L. Southall, D. G. Zeddies, & W. N. Tavolga. (2014). Sound Exposure Guidelines for Fishes and Sea Turtles.
- Popper, A. N., J. A. Gross, T. J. Carlson, J. Skalski, J. V. Young, A. D. Hawkins, & D. G. Zeddies. 2016. Effects of exposure to the sound from seismic airguns on pallid sturgeon and paddlefish. *PLoS ONE*, 11(8), e0159486.
- Popper, A. N., M. B. Halvorsen, A. Kane, D. L. Miller, M. E. Smith, J. Song, P. Stein, & L. E. Wysocki. 2007. The effects of high-intensity, low-frequency active sonar on rainbow trout. *The Journal of Acoustical Society of America*, 122(1), 623–635.
- Popper, A. N., R. R. Fay, C. Platt, & O. Sand. 2003. Sound detection mechanisms and capabilities of teleost fishes. In S. P. Collin & N. J. Marshall (Eds.), *Sensory Processing in Aquatic Environment*. New York, NY: Springer-Verlag.
- Posner, M. I. 1994. Attention: the mechanisms of consciousness. *Proceedings of the National Academy of Sciences*, 91(16), 7398-7403.
- Pumphrey, R.J., 1950, January. Hearing. In *Symposia of the Society for Experimental Biology* (Vol. 4, pp. 3-18). UNIV CAMBRIDGE DEPT ZOOLOGY, DOWNING ST, CAMBRIDGE CB2 3EJ, CAMBS, ENGLAND: COMPANY BIOLOGISTS LTD.
- Purser, J. and A.N. Radford. 2011. Acoustic noise induces attention shifts and reduces foraging performance in three-spined sticklebacks (*Gasterosteus aculeatus*). *PLoS ONE*, 6, (2):e17478.
- Quintana-Rizzo, E., S. Leiter, T.V.N. Cole, M.N. Hagbloom, A.R. Knowlton, P. Nagelkirk, O. O'Brien, C.B. Khan, A.G. Henry, P.A. Duley, L.M. Crowe, C.A. Mayo, and S.D. Kraus. 2021. Residency, demographics, and movement patterns of North Atlantic right whales *Eubalaena glacialis* in an offshore wind energy development area in southern New England, USA. *Endangered Species Research* 45: 251-268.

- Raposa, K. B. 2009. Aquatic birds, marine mammals, and sea turtles. Chapter 11 in Raposa, K.B., and M.L. Schwartz (eds.). 2009. An Ecological Profile of the Narragansett Bay National Estuarine Research Reserve. Rhode Island Sea Grant, Narragansett, RI.
- Reed, J., Harcourt, R., New, L., Bilgmann, K., 2020. Extreme Effects of Extreme Disturbances: A Simulation Approach to Assess Population Specific Responses. *Frontiers in Marine Science*. 7:519845. <https://doi.org/10.3389/fmars.2020.519845>
- Reeves, R., *Impacts of Sakhalin II phase 2 on Western North Pacific gray whales and related biodiversity : report of the independent scientific review panel*, IUCN: International Union for Conservation of Nature. IUCN. Retrieved from <https://policycommons.net/artifacts/1369061/impacts-of-sakhalin-ii-phase-2-on-western-north-pacific-gray-whales-and-related-biodiversity/1983233/> on 23 Oct 2022. CID: 20.500.12592/7mfhhg.
- 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., J.M. Sills, J. Mulsow, and A. Ghoul. 2019. Long-term evidence of noise- induced permanent threshold shift in a harbor seal (*Phoca vitulina*). *Journal of the Acoustical Society of America* 146:2552–2561.
- Reine, K.J., Clarke, D. and Dickerson, C., 2014. Characterization of underwater sounds produced by hydraulic and mechanical dredging operations. *The Journal of the Acoustical Society of America*, 135(6), pp.3280-3294. Richardson, W.J., Greene, C.R.G. jr., Malme, C.I. and Thomson, D.H. (1995). *Marine Mammals and Noise*. Academic Press, San Diego, 576 pp.
- Revolution Wind. 2022. Petition for Incidental Take Regulations for the Construction and Operation of the Revolution Wind Offshore Wind Farm. Prepared by LGL Ecological Research Associates, Inc., Submitted to National Marine Fisheries Service Office of Protected Resources, Silver Spring, MD. Available at: https://media.fisheries.noaa.gov/2022-03/RevWind_ITR_App_OPR1.pdf
- Revolution Wind. 2022. Updated Marine Mammal Density and Take Estimates for the Revolution Wind Offshore Wind Farm. Prepared by LGL Ecological Research Associates, Inc and JASCO Applied Sciences. Available at: https://media.fisheries.noaa.gov/2022-09/Revolution%20Wind%20Updated%20Densities%20Memo_508_OPR1.pdf
- Richardson, W.J., M.A. Fraker, B. Würsig, R.S. Wells. 1985. Behaviour of Bowhead Whales *Balaena mysticetus* summering in the Beaufort Sea: Reactions to industrial activities. *Biological Conservation*, 32(3), 195-230.
- 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 pp.
- Risch, D., P. J. Corkeron, W. T. Ellison, & S. M. Van Parijs. 2012. Changes in humpback whale song occurrence in response to an acoustic source 200 km away. *PLoS ONE*, 7(1), e29741.
- Risch, D., U. siebert, and S. M. Van Parijs. 2014. Individual calling behavior and movement of North Atlantic minke whales (*Balaenoptera acutorostrata*). *Behaviour* 157.
- Roberts, J.J., B. McKenna, L. Ganley, and C. Mayo. 2021b. Right Whale Abundance Estimates for Cape Cod Bay in December. Document version 3. Duke University Marine Geospatial Ecology Lab, Durham, NC.
- 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, et al. 2016a. Habitat-based cetacean density models for the U.S. Atlantic and Gulf of Mexico. *Scientific Reports* 6. <https://doi.org/10.1038/srep22615>.
- Roberts, J.J., Halpin, P.N. 2021. North Atlantic right whale v12 model overview. Duke University Marine Geospatial Ecology Lab, Durham, NC.
- Roberts, J.J., L. Mannocci, and P.N. Halpin. 2016b. Final Project Report: Marine Species Density Data Gap Assessments and Update for the AFTT Study Area, 2015-2016 (Base Year). Version 1.0. Report by the Duke University Marine Geospatial Ecology Lab for Naval Facilities Engineering Command, Atlantic Durham, NC, USA.
- Roberts, J.J., L. Mannocci, and P.N. Halpin. 2017. Final Project Report: Marine Species Density Data Gap Assessments and Update for the AFTT Study Area, 2016-2017 (Opt. Year 1). Version 1.4. Report by Duke University Marine Geospatial Ecology Lab for Naval Facilities Engineering Command, Atlantic, Durham, NC, USA.
- Roberts, J.J., L. Mannocci, R.S. Schick, and P.N. Halpin. 2018. Final Project Report: Marine Species Density Data Gap Assessments and Update for the AFTT Study Area, 2017-2018 (Opt. Year 2). Version 1.2. Report by the Duke University Marine Geospatial Ecology Lab for Naval Facilities Engineering Command, Atlantic Durham, NC, USA.
- Roberts, J.J., R.S. Schick, and P.N. Halpin. 2020. Final Project Report: Marine Species Density Data Gap Assessments and Update for the AFTT Study Area, 2018-2020 (Opt. Year 3). Version 1.4. Report by the Duke University Marine Geospatial Ecology Lab for Naval Facilities Engineering Command, Atlantic Durham, NC, USA.

- Roberts, J.J., R.S. Schick, and P.N. Halpin. 2021a. Final Project Report: Marine Species Density Data Gap Assessments and Update for the AFTT Study Area, 2020 (Option Year 4). Document version 1.0 (DRAFT). Report prepared for Naval Facilities Engineering Command, Atlantic by the Duke University Marine Geospatial Ecology Lab, Durham, NC.
- 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.
- Robinson, S.P., L. Wang, S Cheong, P.A. Lepper, J.P. Hartley, P.M. Thompson, E. Edwards, M. Bellman. 2022. Acoustic characterization of unexploded ordnance disposal in the North Sea using high order detonations. *Marine Pollution Bulletin*, 184 (114178).
- Rolland, R. M., S. E. Parks, K. E. Hunt, M. Castellote, P. J. Corkeron, D. P. Nowacek, S. K. Wasser, & S. D. Kraus. 2012. Evidence that ship noise increases stress in right whales. *Proc Biol Sci*, 279(1737), 2363–2368.
- Romano, T. A., M. J. Keogh, C. Kelly, P. Feng, L. Berk, C. E. Schlundt, D. A. Carder, & J. J. Finneran. (2004). Anthropogenic sound and marine mammal health: Measures of the nervous and immune systems before and after intense sound exposures. *Canadian Journal of Fisheries and Aquatic Sciences*, 61, 1124– 1134.
- Romano, T. A., Olschowka, J. A., Felten, S. Y., Quaranta, V., Ridgway, S. H., & Felten, D. L. (2002). Immune response, stress, and environment: Implications for cetaceans. Pages 253-279 In *Molecular and Cell Biology of Marine Mammals*. Krieger Publishing Co., Malabar, Florida.
- Rosen, G., and G. R. Lotufo. 2010. Fate and effects of composition B in multispecies marine exposures. *Environmental Toxicology and Chemistry*, 9999(12), 1–8.
- Russell, D.J., Hastie, G.D., Thompson, D., Janik, V.M., Hammond, P.S., Scott-Hayward, L.A., Matthiopoulos, J., Jones, E.L. and McConnell, B.J., 2016. Avoidance of wind farms by harbour seals is limited to pile driving activities. *Journal of Applied Ecology*, 53(6), pp.1642-1652.
- Saino, N. 1994. Time budget variation in relation to flock size in carrion crows, *Corvus corone corone*. *Animal Behaviour*, 47(5), 1189-1196.
- Samson, J.E., Mooney, T.A., Gussekloo, S.W. and Hanlon, R.T., 2014. Graded behavioral responses and habituation to sound in the common cuttlefish *Sepia officinalis*. *Journal of Experimental Biology*, 217(24), pp.4347-4355.
- 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.
- Scheidat, M., C. Castro, J. Gonzalez, and R. Williams. (2004). Behavioural responses of humpback whales (*Megaptera novaeangliae*) to whale watching boats near Isla de la Plata, Machalilla National Park, Ecuador. *Journal of Cetacean Research and Management*, 6(1), 63-68.
- Scheifele, P. M., Andrew, S., Cooper, R. A., Darre, M., Musiek, F. E., & Max, L. 2005. Indication of a Lombard vocal response in the St. Lawrence River beluga. *The Journal of the Acoustical Society of America*, 117(3), 1486-1492.
- Schlundt, C. E., J. J. Finneran, D. A. Carder, and S. H. Ridgway. 2000. Temporary shift in masked hearing thresholds of bottlenose dolphins, *Tursiops truncatus*, and white whales, *Delphinapterus leucas*, after exposure to intense tones. *Journal of the Acoustical Society of America* 107:3496-3508.
- Schorr, G.S., Falcone, E.A., Moretti, D.J. and Andrews, R.D., 2014. First long-term behavioral records from Cuvier's beaked whales (*Ziphius cavirostris*) reveal record-breaking dives. *PloS one*, 9(3), p.e92633.
- Schultze, L.K., Merckelbach, L.M. and Carpenter, J.R., 2020. Storm-induced turbulence alters shelf sea vertical fluxes. *Limnology and Oceanography Letters*, 5(3), pp.264-270.
- Schultze, L.K.P., Merckelbach, L.M., Horstmann, J., Raasch, S. and Carpenter, J.R., 2020. Increased mixing and turbulence in the wake of offshore wind farm foundations. *Journal of Geophysical Research: Oceans*, 125(8), p.e2019JC015858.
- Sergeant, D.E. 1977. Stocks of fine whales *Balaenoptera physalus* in the North Atlantic Ocean. Report of the International Whaling Commission, 27, 460-473.
- Seyle, H. (1950). *The Physiology and Pathology of Exposure to Stress*. Oxford, England: Acta, Inc. 203 pp.
- Silber, G. K., J. Slutsky, and S. Bettridge. (2010). Hydrodynamics of a ship/whale collision. *Journal of Experimental Marine Biology and Ecology*, 391, 10–19.
- Simpson S. D., J. Purser and A. N. Radford. (2014). Anthropogenic noise compromises antipredator behaviour in European eels. *Global Change Biology*, 21, 586– 593.
- Sivle, L. D., P. H. Kvadsheim, & M. A. Ainslie. (2014). Potential for population-level disturbance by active sonar in herring. *ICES Journal of Marine Science*, 72(2), 558–567.
- Sivle, L. D., P. H. Kvadsheim, C. Curé, S. Isojunno, P. J. Wensveen, F. A. Lam, F. Visser, L. Kleivane, P. L. Tyack, C. M. Harris, and P. J. O. Miller. (2015). Severity of expert-identified behavioural responses of humpback whale, minke whale, and northern bottlenose whale to naval sonar. *Aquatic Mammals*, 41(4), 469–502.

- Sivle, L. D., P. H. Kvalsheim, M. A. Ainslie, A. Solow, N. O. Handegard, N. Nordlund, and F.P. A. Lam. 2012. Impact of naval sonar signals on Atlantic herring (*Clupea harengus*) during summer feeding. *ICES Journal of Marine Science*, 69(6), 1078–1085.
- Sivle, L. D., P. J. Wensveen, P. H. Kvalsheim, F. P. A. Lam, F. Visser, C. Curé, C. M. Harris, P.L. Tyack, and P. J. O. Miller. 2016. Naval sonar disrupts foraging in humpback whales. *Marine Ecology Progress Series*, 562, 211–220.
- 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.
- Skeate, E.R., Perrow, M.R. and Gilroy, J.J., 2012. Likely effects of construction of Scroby Sands offshore wind farm on a mixed population of harbour Phoca vitulina and grey Halichoerus grypus seals. *Marine pollution bulletin*, 64(4), pp.872-881.
- Slabbekoorn, H., N. Bouton, I. van Opzeeland, A. Coers, C. ten Cate, and A. N. Popper, A. N. 2010. A noisy spring: the impact of globally rising underwater sound levels on fish. *Trends in Ecology & Evolution*, 25(7), 419-427
- Smith, M. E., 2016. Relationship Between Hair Cell Loss and Hearing Loss in Fishes. In A. N. Popper & A. Hawkins (Eds.), *The Effects of Noise on Aquatic Life II* (pp. 8). New York: Springer. Sole et al., 2013
- Smith, M. E., Coffin, A. B., Miller, D. L., & Popper, A. N., 2006. Anatomical and functional recovery of the goldfish (*Carassius auratus*) ear following noise exposure. *Journal of Experimental Biology*, 209(21), 4193-4202.
- Smith, T.D., J. Allen, P.J. Clapham, P.S. Hammond, S. Katona, F. Larsen, J. Lien, D. Mattila, P.J. Palsbøll, J. Sigurjónsson, and P.T. Stevick. 1999. An ocean-basin-wide mark-recapture study of the North Atlantic humpback whale (*Megaptera novaeangliae*). *Marine Mammal Science*, 15(1), 1-32.
- Smultea Environmental Sciences, LLC (Smultea Sciences). 2020. Protected Species Observer Technical Report for the Ørsted New England IHA, BOEM Lease Areas OCS-A 0486, OCS-A 0487, and OCS-A 0500; 2019–2020. Prepared by M.A. Smultea, P. Haase, K. Hartin, C. Reiser, C. Brewin, and E. Cranmer. Prepared for Ørsted, One International Place, Suite 400, 100 Oliver Street Boston, MA 02110. 25 December 2020.
- Smultea Environmental Sciences, LLC (Smultea Sciences). 2022. Protected Species Observer IHA Report for the Ørsted Ocean Wind 02 High Resolution Geophysical Survey 2022. Final Report. Prepared by M.A. Smultea, R.S. Snyder, C.M. Reiser, and R. Wachtendonk. Prepared for Ørsted Wind Power North America, LLC. 01 September 2022. 71 pp.
- Solé, M., Lenoir, M., Durfort, M., López-Bejar, M., Lombarte, A., Van Der Schaar, M. and André, M., 2013. Does exposure to noise from human activities compromise sensory information from cephalopod statocysts?. *Deep Sea Research Part II: Topical Studies in Oceanography*, 95, pp.160-181.

- Sole, M., P. Sigray, M. Lenoir, M. Van der Schaar, E. Lalander, and M. André. 2017b. Offshore exposure experiments on cuttlefish indicate received sound pressure and particle motion levels associated with acoustic trauma. *Scientific Reports*, 7(45899), 1–13.
- Southall, B. L., Moretti, D., Abraham, B., Calambokidis, J., DeRuiter, S. L., Tyack, P.L. 2012b. Marine Mammal Behavioral Response Studies in Southern California: Advances in Technology and Experimental Methods. *Marine Technology Society Journal* 46(4), 46-59.
- Southall, B., J. Calambokidis, P. Tyack, D. Moretti, J. Hildebrand, C. Kyburg, R. Carson, A. Friedlaender, E. Falcone, G. Schorr, A. Douglas, S. DeRuiter, J. Goldbogen, & J. Barlow. 2011. Biological and Behavioral Response Studies of Marine Mammals in Southern California, 2010 (“SOCAL-10”). Pearl Harbor, HI: U.S. Navy Pacific Fleet.
- Southall, B.L., 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., 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(2), pp.125-232.
- Southall, B.L., J.J. Finneran, C. Reichmuth, P.E. Nachtigall, D.R. Ketten, A.E. Bowles, W.T. Ellison, D.P. Nowacek, and P.L. Tyack. 2019a. Marine Mammal Noise Exposure Criteria: Updated Scientific Recommendations for Residual Hearing Effects. *Aquatic Mammals* 45(2):125-232.
- Southall, B.L., Nowacek, D.P., Bowles, A.E., Senigaglia, V., Bejder, L. and Tyack, P.L., 2021. Marine Mammal Noise Exposure Criteria: Assessing the Severity of Marine Mammal Behavioral Responses to Human Noise. *Aquatic Mammals*, 47(5), pp.421-464.
- Southall, B.L., S. L. DeRuiter, A. Friedlaender, A.K. Stimpert, J.A. Goldbogen, E. Hazen, C. Casey, S. Fregosi, D.E. Cade, A.N. Allen, and C.M. Harris. 2019b. Behavioral responses of individual blue whales (*Balaenoptera musculus*.)
- Southall, B.L., Scholik-Schlomer, A.R., Hatch, L., Bergmann, T., Jasny, M., Metcalf, K., Weilgart, L. and Wright, A.J., 2017. Underwater noise from large commercial ships—International Collaboration for Noise Reduction. *Encyclopedia of Maritime and Offshore Engineering*, pp.1-9.
- Stepanuk, J.E., Heywood, E.I., Lopez, J.F., DiGiovanni Jr, R.A. and Thorne, L.H., 2021. Age-specific behavior and habitat use in humpback whales: implications for vessel strike. *Marine Ecology Progress Series*, 663, pp.209-222.
- Stevens, A., D. Hrehorowicz, H. Bateman, J. Ellis, K. Hamilton, M. Plichta, M. Goulton, P. Batard, and P. Mills. 2021. Sunrise Wind Offshore Wind Farm 2020 and 2021 Geotechnical Survey.

- Stevens, A., and P. Mills. 2021. Sunrise Wind Offshore Wind Farm 2019-2020: Protected Species Observer Technical Summary
- Stevick, P.T., Allen, J., Bérubé, M., Clapham, P.J., Katona, S.K., Larsen, F., Lien, J., Mattila, D.K., Palsbøll, P.J., Robbins, J. and Sigurjónsson, J., 2003. Segregation of migration by feeding ground origin in North Atlantic humpback whales (*Megaptera novaeangliae*). *Journal of Zoology*, 259(3), pp.231-237.
- Stewart, J.D., Durban, J.W., Fearnbach, H., Hamilton, P.K., Knowlton, A.R., Lynn, M.S., Miller, C.A., Perryman, W.L., Tao, B.W. and Moore, M.J., 2022. Larger females have more calves: influence of maternal body length on fecundity in North Atlantic right whales. *Marine Ecology Progress Series*, 689, pp.179-189.
- Stewart, J.D., Durban, J.W., Knowlton, A.R., Lynn, M.S., Fearnbach, H., Barbaro, J., Perryman, W.L., Miller, C.A. and Moore, M.J., 2021. Decreasing body lengths in North Atlantic right whales. *Current Biology*, 31(14), pp.3174-3179.
- Stöber, U. and Thomsen, F., 2021. How could operational underwater sound from future offshore wind turbines impact marine life?. *The Journal of the Acoustical Society of America*, 149(3), pp.1791-1795.
- Stockwell, C. A., G. C. Bateman, and J. Berger. 1991. Conflicts in National Parks: a case study of helicopters and bighorn sheep time budgets at the Grand Canyon. *Biological Conservation*, 56, 317-328.
- Stone, C. J., 2015. Marine mammal observations during seismic surveys from 1994–2010. JNCC Rep. No. 463a. 64 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.
- Sutcliffe, W.H., Brodie, P.F. 1977. Whale distribution in Nova Scotia waters. Fisheries and Marine Service, Bedford Institute of Oceanography.
- Sutherland, W. J., and N. J. Crockford. (1993). Factors affecting the feeding distribution of redbreasted geese *Branta ruficollis* wintering in Romania. *Biological Conservation*, 63(1), 61- 65.
- Swingle, W.M., Barco, S.G., Pitchford, T.D., Mclellan, W.A. and Pabst, D.A., 1993. Appearance of juvenile humpback whales feeding in the nearshore waters of Virginia. *Marine Mammal Science*, 9(3), pp.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(3), 1521-1529.

- Taylor, B.L., Baird, R., Barlow, J., Dawson, S.M., Ford, J., Mead, J.G., Notarbartolo di Sciara, G., Wade, P. & Pitman, R.L. 2019. *Physeter macrocephalus* (amended version of 2008 assessment). *The IUCN Red List of Threatened Species* 2019: e.T41755A160983555.
<https://dx.doi.org/10.2305/IUCN.UK.2008.RLTS.T41755A160983555.en>. Accessed on 31 October 2022.
- Techer, D., S. Milla, & D. Banas. (2017). Sublethal Effect Assessment of a Low-power and Dual-frequency Anticyanobacterial Ultrasound Device on the Common Carp (*Cyprinus carpio*): a Field Study. *Environmental Science and Pollution Research*, 24, 10.
- Teilmann, J. and Carstensen, J., 2012. Negative long term effects on harbour porpoises from a large scale offshore wind farm in the Baltic—evidence of slow recovery. *Environmental Research Letters*, 7(4), p.045101.
- 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.
- Tennessen, J.B. and Parks, S.E., 2016. Acoustic propagation modeling indicates vocal compensation in noise improves communication range for North Atlantic right whales. *Endangered Species Research*, 30, pp.225-237.
- Thode, A.M., Blackwell, S.B., Conrad, A.S., Kim, K.H., Marques, T., Thomas, L., Oedekoven, C.S., Harris, D. and Bröker, K., 2020. Roaring and repetition: How bowhead whales adjust their call density and source level (Lombard effect) in the presence of natural and seismic airgun survey noise. *The Journal of the Acoustical Society of America*, 147(3), pp.2061-2080.
- Thode, A.M., et al.. 2017. Towed array passive acoustic operations for bioacoustic applications: ASA/JNCC workshop summary, March 14-18, 2016, Scripps Institution of Oceanography, La Jolla, CA, USA. 77 p.
- Thompson, P.M., Hastie, G.D., Nedwell, J., Barham, R., Brookes, K.L., Cordes, L.S., Bailey, H. and McLean, N., 2013. Framework for assessing impacts of pile-driving noise from offshore wind farm construction on a harbour seal population. *Environmental Impact Assessment Review*, 43, pp.73-85.
- Thomsen, F., Lüdemann, K., Kafemann, R. and Piper, W., 2006. Effects of offshore wind farm noise on marine mammals and fish. *Biola, Hamburg, Germany on behalf of COWRIE Ltd*, 62, pp.1-62.
- Todd, V.L., Todd, I.B., Gardiner, J.C., Morrin, E.C., MacPherson, N.A., DiMarzio, N.A. and Thomsen, F., 2015. A review of impacts of marine dredging activities on marine mammals. *ICES Journal of Marine Science*, 72(2), pp.328-340.

- Toth, J. L., A. A. Hohn, K. W. Able and A. M. Gorgone. 2011. Patterns of seasonal occurrence, distribution and site fidelity of coastal bottlenose dolphins (*Tursiops truncatus*) in southern New Jersey, U.S.A. *Marine Mammal Science* 27:94–110.
- Toth, J.L., Hohn, A.A., Able, K.W. and Gorgone, A.M., 2011. Patterns of seasonal occurrence, distribution, and site fidelity of coastal bottlenose dolphins (*Tursiops truncatus*) in southern New Jersey, USA. *Marine Mammal Science*, 27(1), pp.94-110.
- Tougaard, J., Carstensen, J., Teilmann, J., Skov, H. and Rasmussen, P., 2009a. Pile driving zone of responsiveness extends beyond 20 km for harbor porpoises (*Phocoena phocoena* (L.)). *The Journal of the Acoustical Society of America*, 126(1), pp.11-14.
- Tougaard, J., Henriksen, O.D. and Miller, L.A., 2009. Underwater noise from three types of offshore wind turbines: Estimation of impact zones for harbor porpoises and harbor seals. *The Journal of the Acoustical Society of America*, 125(6), pp.3766-3773.
- Tougaard, J., Henriksen, O.D. and Miller, L.A., 2009b. Underwater noise from three types of offshore wind turbines: Estimation of impact zones for harbor porpoises and harbor seals. *The Journal of the Acoustical Society of America*, 125(6), pp.3766-3773.
- Tougaard, J., Hermanssen, L. and Madsen, P.T., 2020. How loud is the underwater noise from operating offshore wind turbines?. *The Journal of the Acoustical Society of America*, 148(5), pp.2885-2893.
- Treves, A. 2000. Theory and method in studies of vigilance and aggregation. *Animal Behaviour*, 60(6), 711-722.
- Tyack, P. L. 2000. Functional aspects of cetacean communication. In J. Mann, R. C. Connor, P. L. Tyack, and H. Whitehead (Eds.), *Cetacean societies: Field studies of dolphins and whales*. Chicago, IL: University of Chicago Press.
- Tyack, P.L., and C.W. Clark. 1998. Quick look: Playback of low frequency sound to gray whales migrating past the central California coast-January, 1998. Quick Look Report LFA Phase II Playbacks to Migrating Gray Whales 06/23/98. Woods Hole, Massachusetts: Woods Hole Oceanographic Institute.
- Tyack, P.L., C. Clark, J. Bird, and V. Rowntree. 1983. Effects of underwater noise on migrating gray whales off the coast of California. *The Journal of the Acoustical Society of America* 74 S54.
- Tyack, P.L. and Thomas, L., 2019. Using dose–response functions to improve calculations of the impact of anthropogenic noise. *Aquatic Conservation: Marine and Freshwater Ecosystems*, 29, 242-253.
- Tyack, P. L., W. M. X. Zimmer, D. Moretti, B. L. Southall, D. E. Claridge, J. W. Durban, C. W. Clark, A. D'Amico, N. DiMarzio, S. Jarvis, E. McCarthy, R. Morrissey, J. Ward, & I. L. Boyd. 2011. Beaked whales respond to simulated and actual Navy sonar. *PLoS ONE*, 6(3), 15

- Urick, R.J. (1983). Principles of Underwater Sound. Peninsula Publishing, Los Altos, CA.
- U.S. Fish & Wildlife Service (USFWS). 2022. West Indian manatee, Department of Interior, 03 February 2022. Internet Website: <https://ecos.fws.gov/ecp/species/4469>. Accessed 4 May 2022.
- Vallejo, G.C., Grellier, K., Nelson, E.J., McGregor, R.M., Canning, S.J., Caryl, F.M. and McLean, N., 2017. Responses of two marine top predators to an offshore wind farm. *Ecology and Evolution*, 7(21), pp.8698-8708.
- Valencia, A.C., H. McClennan, and A. Schweizer. 2021. Orsted North-East Cluster IHA, 2020-2021 BOEM Lease OCS-A 0486, 0487, 0500, and 0517 Protected Species Observer Technical Report. Prepared by Gardline, Project Number 11456.E01. Available at: https://media.fisheries.noaa.gov/2022-03/Orsted_NE_2020_2021_HRG_IHA_508MonRep_OPR1.pdf
- van der Hoop, J., Corkeron, P. and Moore, M., 2017. Entanglement is a costly life-history stage in large whales. *Ecology and evolution*, 7(1), pp.92-106.
- van der Hoop, J.M., Vanderlaan, A.S.M, Cole, T.V.N., Henry, A.G., Hall, L., Mase-Guthrie, B., Wimmer, T., Moore, M.J. 2015. Vessel strikes to large whales before and after the 2008 ship strike rule. *Conservation Letters*, 8(1), 24-32.
- Van Parijs, S.M., Baker, K., Carduner, J., Daly, J., Davis, G.E., Esch, C., Guan, S., Scholik-Schlomer, A., Sisson, N.B. and Staaterman, E., 2021. NOAA and BOEM Minimum Recommendations for Use of Passive Acoustic Listening Systems in Offshore Wind Energy Development Monitoring and Mitigation Programs. *Frontiers in Marine Science*, 8, p.760840.
- van Rij, N. G. (2007). Implicit and explicit capture of attention: what it takes to be noticed. Thesis. University of Canterbury.
- Vanderlaan, M. S. A., and T. C. Taggart. 2007. Vessel collisions with whales: the probability of lethal injury based on vessel speed. *Marine Mammal Science*, 23(1), 144–156.
- Verfuss, U.K., Sinclair, R.R. & Sparling, C.E. 2019. A review of noise abatement systems for offshore wind farm construction noise, and the potential for their application in Scottish waters. Scottish Natural Heritage Research Report No. 1070.
- Villegas-Amtmann, S., Schwarz, L. K., Sumich, J. L., & Costa, D. P. 2015. A bioenergetics model to evaluate demographic consequences of disturbance in marine mammals applied to gray whales. *Ecosphere*, 6(10). doi:10.1890/es15-00146.
- Visser, F., C. Cure, P. H. Kvadsheim, F. P. Lam, P. L. Tyack, & P. J. Miller. 2016. Disturbance-specific social responses in long-finned pilot whales, *Globicephala melas*. *Scientific Reports*, 6, 28641.
- Ward, W.D. 1997. Effects of high-intensity sound. Pages 1497-1507 in M.J. Crocker, ed. *Encyclopedia of Acoustics*, Volume III. John Wiley & Sons, New York.

- Waring, G.T., Pace, R.M., Quintal, J.M., Fairfield, C.P., and Maze-Foley, K., 2004. US Atlantic and Gulf of Mexico marine mammal stock assessments. NOAA Tech Memo NMFS-NE, 182, pp.1-300
- Waring, G.T., Josephson, E., Fairfield, C.P., Maze-Foley, K., eds. 2007a. U.S. Atlantic and Gulf of Mexico marine mammal stock assessments -- 2006. NOAA Tech Memo NMFS NE 201; 378 p.
- Waring, G.T., Josephson, E., Fairfield-Walsh, C.P., Maze-Foley, K., eds. 2007b. U.S. Atlantic and Gulf of Mexico marine mammal stock assessments -- 2007. NOAA Tech Memo NMFS NE 205; 415 p.
- 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, D. and Ketten, D.R., 1999. Marine mammal sensory systems. *Biology of marine mammals*, 1, pp.117-175.
- WaterProof Marine Consultancy & Services. 2020. Coastal Virginia Offshore Wind noise monitoring during monopile installation A01 and A02. Prepared for Dominion Energy. https://media.fisheries.noaa.gov/2021-01/Dominion_CVOW_2020IHA_MonRep_OPR1.pdf?null=
- Watkins, W. A. (1986). Whale reactions to human activities in Cape Cod waters. *Marine Mammal Science*, 2(4), 251–262.
- Watkins, W.A., P.L. Tyack, K.E. Moore, and J.E. Bird. 1987. The 20-Hz signals of finback whales (*Balaenoptera physalus*). *Journal of the Acoustical Society of America* 82 (6): 1901-1912.
- Watwood, S. L., J. D. Iafate, E. A. Reyier, & W. E. Redfoot. (2016). Behavioral Response of Reef Fish and Green Sea Turtles to Mid-Frequency Sonar. In A. N. Popper & A. Hawkins (Eds.), *The Effects of Noise on Aquatic Life II* (pp. 1213–1221). New York, NY: Springer New York.
- Weller, D.W., G.A. Tsidulko, Y.V. Ivashchenko, A.M. Burdin and R.L. Brownell Jr. 2006b. A re-evaluation of the influence of 2001 seismic surveys on western gray whales off Sakhalin Island, Russia. Paper SC/58/E5 presented to the IWC Scient. Commit., IWC Annu. Meet., 1-13 June, St. Kitts
- Weller, D.W., Ivashchenko, Y.V., Tsidulko, G.A., Burdin, A.M. and Brownell Jr, R.L., 2002. Influence of seismic surveys on western gray whales off Sakhalin Island, Russia in 2001.
- Weller, D.W., S.H. Rickards, A.L. Bradford, A.M. Burdin, and R.L. Brownell, Jr. 2006a. The influence of 1997 seismic surveys on the behavior of western gray whales off Sakhalin Island, Russia. Paper SC/58/E4 presented to the IWC Scient. Commit., IWC Annu. Meet., 1-13 June, St. Kitts.

- Wensveen, P.J., Isojunno, S., Hansen, R.R., von Benda-Beckmann, A.M., Kleivane, L., van IJsselmuide, S., Lam, F.P.A., Kvadsheim, P.H., DeRuiter, S.L., Curé, C. and Narazaki, T. (2019). Northern bottlenose whales in a pristine environment respond strongly to close and distant navy sonar signals. *Proceedings of the Royal Society B*, 286(1899), p.20182592.
- Wensveen, P.J., Kvadsheim, P.H., Lam, F.P.A., von Benda-Beckmann, A.M., Sivle, L.D., Visser, F., Curé, C., Tyack, P.L. and Miller, P.J., 2017. Lack of behavioural responses of humpback whales (*Megaptera novaeangliae*) indicate limited effectiveness of sonar mitigation. *Journal of Experimental Biology*, 220(22), pp.4150-4161.
- Westgate, A.J., Read, A.J. 1998. Applications of new technology to the conservation of porpoises. *Marine Technology Society Journal*, 32(1), 70-81.
- White Jr, D., K. C. Kendall, and H. D. Picton. (1999). Potential energetic effects of mountain climbers on foraging grizzly bears. *Wildlife Society Bulletin*, 146-151.
- Whitt, A.D., Dudzinski, K. and Laliberté, J.R., 2013. North Atlantic right whale distribution and seasonal occurrence in nearshore waters off New Jersey, USA, and implications for management. *Endangered Species Research*, 20(1), pp.59-69.
- Wiley, M. L., J. B. Gaspin, & J. F. Goertner. (1981). Effects of underwater explosions on fish with a dynamical model to predict fishkill. *Ocean Science and Engineering*, 6(2), 223– 284.
- Williams, R., C. W. Clark, D. Ponirakis, and E. Ashe. (2013). Acoustic quality of critical habitats for three threatened whale populations. *Animal Conservation*, 17(2), 174–185.
- Wilson, J.C. and Elliott, M., 2009. The habitat-creation potential of offshore wind farms. *Wind Energy: An International Journal for Progress and Applications in Wind Power Conversion Technology*, 12(2), pp.203-212.
- Wilson, L.J., Harwood, J., Booth, C.G., Joy, R. and Harris, C.M., 2020. A decision framework to identify populations that are most vulnerable to the population level effects of disturbance. *Conservation Science and Practice*, 2(2), p.e149.
- Wright, D. G. (1982). A discussion paper on the effects of explosives on fish and marine mammals in the waters of the Northwest Territories (Canadian Technical Report of Fisheries and Aquatic Sciences). Winnipeg, Manitoba: Western Region Department of Fisheries and Oceans.
- Yarmoloy, C., M. Bayer, and V. Geist. (1988). Behavior responses and reproduction of mule deer, *Odocoileus hemionus*, does following experimental harassment with an all-terrain vehicle. *Canadian field-naturalist*. Ottawa ON, 102(3), 425-429.
- Yazvenko, S. B., T. L. McDonald, S. A. Blokhin, S. R. Johnson, H. R. Melton, M. W. Newcomer, R. Nielson, & P. W. Wainwright. (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, W. Hicks, K. Saunders, & E. R. Fletcher. 1975. The relationship between fish size and their response to underwater blast. Washington, DC: Lovelace Foundation for Medical Education and Research.

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.

Zaitseva, K. A., Morozov, V. P., & Akopian, A. I. 1980. Comparative characteristics of spatial hearing in the dolphin *Tursiops truncatus* and man. *Neuroscience and behavioral physiology*, 10(2), 180-182.

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

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.