

References

Data Transferability and Collection Consistency Regulator Workshop

Collision Risk

ORE Catapult. 2016. Tidal turbine collision detection – a review of the state-of-the-art sensors and imaging systems for detecting mammal collisions. Document PN000110-SRT-002.

<https://tethys.pnnl.gov/publications/tidal-turbine-collision-detection-review-state-art-sensors-and-imaging-systems>

SIMEC Atlantis Energy (@simecatlantis). “Always makes us happy to think about the Andritz turbine named in honour of our great friend and mentor Calum Davidson churning away on the bottom of the Pentland Firth generating clean power for Scotland”. January 16, 2018, 10:43pm. Tweet. <https://twitter.com/simecatlantis/status/953155676284641280>

Videos of Voith turbine at EMEC courtesy of Aquatera Ltd.

Videos of ORPC RivGen turbine courtesy of ORPC.

Video of AMP courtesy of Brian Polagye and PMEC partners.

Videos of multi-beam sonar courtesy of Brian Polagye and PMEC partners.

Underwater Noise

NOAA. 2018. 2018 Revisions to: Technical Guidance for Assessing the Effects of Anthropogenic Sound on Marine Mammal Hearing (Version 2.0): Underwater Thresholds for Onset of Permanent and Temporary Threshold Shifts. U.S. Dept. of Commer., NOAA. NOAA Technical Memorandum NMFS-OPR-59, 167 p.

<https://tethys.pnnl.gov/publications/2018-revisions-technical-guidance-assessing-effects-anthropogenic-sound-marine-mammal>

Tetra Tech. 2013. Appendix M-2: Underwater Acoustic Modeling Report: Virginia Offshore Wind Technology Advancement Project (VOWTAP).

<https://tethys.pnnl.gov/publications/underwater-acoustic-modeling-report-virginia-offshore-wind-technology-advancement>

OpenHydro figure and audio file courtesy of Brian Polagye, UW/PMEC, and partners.

Acoustic characteristics figures and audio files courtesy of Brian Polagye, UW/PMEC, and partners. <https://tethys.pnnl.gov/publications/underwater-acoustic-modeling-report-virginia-offshore-wind-technology-advancement>

Scholik-Schlomer, A. 2015. Where the Decibels Hit the Water: Perspectives on the Application of Science to Real-World Underwater Noise and Marine Protected Special Issues. *Acoustics Today*, 11(3): 36-44. <https://tethys.pnnl.gov/publications/where-decibels-hit-water-perspectives-application-science-real-world-underwater-noise>

Electromagnetic Fields

Normandeau Associates, Exponent, Tricas, T., Gill, A. 2011. Effects of EMFs from Undersea Power Cables on Elasmobranchs and Other Marine Species. U.S. Dept. of Interior, Bureau of Ocean Energy Management, Regulation, and Enforcement, Pacific OCS Region, Camarillo, CA. OCS Study BOEMRE 2011-09.

[https://tethys.pnnl.gov/sites/default/files/publications/EMF from Undersea Power Cables on Elasmobranchs.pdf](https://tethys.pnnl.gov/sites/default/files/publications/EMF_from_Undersea_Power_Cables_on_Elasmobranchs.pdf)

Schultz, I., Woodruff, D., Marshall, K., Pratt, W., Roesijadi, G. 2010. Effects of Electromagnetic Fields on Fish and Invertebrates – Fiscal Year 2010 Progress Report. PNNL-19883. [https://tethys.pnnl.gov/sites/default/files/publications/Schultz et al 2010 Progress Report.pdf](https://tethys.pnnl.gov/sites/default/files/publications/Schultz_et_al_2010_Progress_Report.pdf)

Woodruff, D., Cullinan, V., Copping, A., and Marshall, K. 2013. Effects of Electromagnetic Fields on Fish and Invertebrates – Fiscal Year 2012 Progress Report. PNNL-22154. [https://tethys.pnnl.gov/sites/default/files/publications/Woodruff et al 2013 Progress Report.pdf](https://tethys.pnnl.gov/sites/default/files/publications/Woodruff_et_al_2013_Progress_Report.pdf)

Gill, A., Huang, Y., Gloyne-Philips, I., Metcalfe, J., Quayle, V., Spencer, J., and Wearmouth, V. 2009. EMF-Sensitive Fish Response to EM Emissions from Sub-Sea Electricity Cables of the Type Used by the Offshore Renewable Energy Industry. Technical Report for COWRIE 2.0 Electromagnetic Fields (EMF) Phase 2 (Project Reference COWRIE-EMF-1-06): London, UK, March 2009.

[https://tethys.pnnl.gov/sites/default/files/publications/Sensitive Fish Response to EM Emissions from Offshore Renewable.pdf](https://tethys.pnnl.gov/sites/default/files/publications/Sensitive_Fish_Response_to_EM_Emissions_from_Offshore_Renewable.pdf)

Westerberg, H., Langenfelt, I. 2008. Sub-Sea Power Cables And The Migration Behaviour Of The European Eel. Fisheries Management and Ecology 15:369-375.

<https://tethys.pnnl.gov/publications/sub-sea-power-cables-and-migration-behaviour-european-eel>

Love, M., Nishimoto, M., Clark, S., Bull, A. 2016. Renewable Energy in situ Power Cable Observation. U.S. Department of the Interior, Bureau of Ocean Energy Management, Pacific OCS Region, Camarillo, CA. OCS Study 2016-008. 86 pp.

<https://tethys.pnnl.gov/sites/default/files/publications/BOEM-2016-008.pdf>

Thomsen, F., Gill, A., Kosecka, M., Andersson, M., Andre, M., Degraer, S., Folegot, T., Gabriel, J., Judd, A., Neumann, T., Norro, A., Risch, D., Sigray, P., Wood, D., Wilson, B. 2015. MaRVEN – Environmental Impacts of Noise, Vibrations and Electromagnetic Emissions from Marine Renewable Energy. Report RTD-KI-NA-27-737-EN-N.

<https://tethys.pnnl.gov/sites/default/files/publications/Marven-Report-2015.pdf>

Hutchison, Z., Sigray, P., He, H., Gill, A., King, J., Gibson, C. 2019. Electromagnetic Field (EMF) Impacts on Elasmobranch (shark, rays, and skates) and American Lobster Movement and Migration from Direct Current Cables. Sterling (VA): U.S. Department of the Interior, Bureau of Ocean Energy Management. OCS Study BOEM 2019-003.

<https://tethys.pnnl.gov/sites/default/files/publications/Electromagnetic%20Field%20Impacts%20on%20Elasmobranch%20and%20American%20Lobster.pdf>

Love, M., Nishimoto, M., Clark, S., McCrea, M., Bull, A. 2017. Assessing potential impacts of energized submarine power cables on crab harvests. Continental Shelf Research 151:23-

29. <https://tethys.pnnl.gov/publications/assessing-potential-impacts-energized-submarine-power-cables-crab-harvests>

Kavet, R., Wyman, M., Klimley, A., Vergara, X. 2016. Assessment of potential impacts of electromagnetic fields from undersea cable on migratory fish behavior. Report by Electric Power Research Institute.

https://tethys.pnnl.gov/sites/default/files/publications/Kavet_Electro%20Undersea%20Cable_09_28_16.pdf

Benthic Habitat

PacWave benthic habitat video courtesy of Sarah Henkel and OSU/PMEC.

Grays Harbor benthic habitat video courtesy of Sarah Henkel and OSU/PMEC.

Admiralty Inlet benthic habitat video courtesy of Brian Polagye and UW/PMEC.

Physical Systems

Yang, Z., Wang, T. 2016. Numerical models as enabling tools for tidal-stream energy extraction and environmental impact assessment. Paper presented at the 35th ASME International Conference on Ocean, Offshore and Arctic Engineering, Busan, South Korea.

<https://tethys.pnnl.gov/publications/numerical-models-enabling-tools-tidal-stream-energy-extraction-and-environmental-impact>