

Habitat Change Evidence Base

Compiled by Deborah Rose and Lenaïg Hemery (May-June 2020)

Reviewed by Andrea Copping and Lenaïg Hemery (July 2020)

Citation	Tethys Link
Alexander, K.; Meyjes, S.; Heymans, J. (2016). Spatial Ecosystem Modelling of Marine Renewable Energy Installations: Gauging the Utility of Ecospace. <i>Ecological Modeling</i> , 331, 115-128.	https://tethys.pnnl.gov/publications/spatial-ecosystem-modelling-marine-renewable-energy-installations-gauging-utility
Arena, P.; Jordan, L.; Spieler, R. (2007). Fish Assemblages on Sunken Vessels and Natural Reefs in Southeast Florida, USA. <i>Developments in Hydrobiology</i> , 193, 157-171.	https://tethys.pnnl.gov/publications/fish-assemblages-sunken-vessels-natural-reefs-southeast-florida-usa
Bicknell, A.; Sheehan, E.; Godley, B.; Doherty, P.; Witt, M. (2019). Assessing the impact of introduced infrastructure at sea with cameras: A case study for spatial scale, time and statistical power. <i>Marine Environmental Research</i> , 147, 126-137.	https://tethys.pnnl.gov/publications/assessing-impact-introduced-infrastructure-sea-cameras-case-study-spatial-scale-time
Broadhurst, M.; Orme, C. (2014). Spatial and Temporal Benthic Species Assemblage Responses with a Deployed Marine Tidal Energy Device: A Small Scaled Study. <i>Marine Environmental Research</i> , 99, 76-84.	https://tethys.pnnl.gov/publications/spatial-temporal-benthic-species-assemblage-responses-deployed-marine-tidal-energy
Broadhurst, M.; Barr, S.; Orme, D. (2014). In-Situ Ecological Interactions with a Deployed Tidal Energy Device; An Observational Pilot Study. <i>Ocean & Coastal Management</i> , 99, 31-38.	https://tethys.pnnl.gov/publications/situ-ecological-interactions-deployed-tidal-energy-device-observational-pilot-study
Causon, P.; Gill, A. (2018). Linking ecosystem services with epibenthic biodiversity change following installation of offshore wind farms. <i>Environmental Science & Policy</i> , 89, 340-347.	https://tethys.pnnl.gov/publications/linking-ecosystem-services-epibenthic-biodiversity-change-following-installation
Clynick, B.; Chapman, M.; Underwood, A. (2008). Fish Assemblages Associated with Urban Structures and Natural Reefs in Sydney, Australia. <i>Austral Ecology</i> , 33(2), 140-150.	https://tethys.pnnl.gov/publications/fish-assemblages-associated-urban-structures-natural-reefs-sydney-australia
Coates, D.; Deschutter, Y.; Vincx, M.; Vanaverbeke, J. (2014). Enrichment and Shifts in Macrobenthic Assemblages in an Offshore Wind Farm Area in the Belgian Part of the North Sea. <i>Marine Environmental Research</i> , 95, 1-12.	https://tethys.pnnl.gov/publications/enrichment-shifts-macrobenthic-assemblages-offshore-wind-farm-area-belgian-part-north

Citation	Tethys Link
Coates, D.; Kapasakali, D.; Vincx, M.; Vanaverbeke, J. (2016). Short-term effects of fishery exclusion in offshore wind farms on macrofaunal communities in the Belgian part of the North Sea. <i>Fisheries Research</i> , 179, 131-138.	https://tethys.pnnl.gov/publications/short-term-effects-fishery-exclusion-offshore-wind-farms-macrofaunal-communities
Coolen, J.; van der Weide, B.; Cuperus, J.; Blomberg, M.; Van Moorsel, G.; Faasse, M.; Bos, O.; Degraer, S.; Lindeboom, H.; Norkko, J. (2018). Benthic biodiversity on old platforms, young wind farms, and rocky reefs. <i>ICES Journal of Marine Science</i> , fsy092, 1-16.	https://tethys.pnnl.gov/publications/benthic-biodiversity-old-platforms-young-wind-farms-rocky-reefs
Coolen, J.; Lengkeek, W.; Degraer, S.; Kerckhof, F.; Kirkwood, R.; Lindeboom, H. (2016). Distribution of the invasive <i>Caprella mutica</i> Schurin, 1935 and native <i>Caprella linearis</i> (Linnaeus, 1767) on artificial hard substrates in the North Sea: separation by habitat. <i>Aquatic Invasions</i> , 11(4), 437-449.	https://tethys.pnnl.gov/publications/distribution-invasive-caprella-mutica-schurin-1935-native-caprella-linearis-linnaeus
Dannheim, J.; Bergström, L.; Birchenough, S.; Brzana, R.; Boon, A.; Coolen, J.; Dauvin, J.; De Mesel, I.; Derweduwén, J.; Gill, A.; Hutchison, Z.; Jackson, A.; Janas, U.; Martin, G.; Raoux, A.; Reubens, L.; Rostin, L.; Vanaverbeke, J.; Wilding, T.; Wilhelmsson, D.; Degraer, S. (2019). Benthic effects of offshore renewables: identification of knowledge gaps and urgently needed research. <i>ICES Journal of Marine Science</i> , fsz018, 1-17.	https://tethys.pnnl.gov/publications/benthic-effects-offshore-renewables-identification-knowledge-gaps-urgently-needed
De Backer, A.; Van Hoey, G.; Coates, D.; Vanaverbeke, J.; Hostens, K. (2014). Similar Diversity-Disturbance Responses to Different Physical Impacts: Three Cases of Small-Scale Biodiversity Increase in the Belgian Part of the North Sea. <i>Marine Pollution Bulletin</i> , 84, 251-262.	https://tethys.pnnl.gov/publications/similar-diversity-disturbance-responses-different-physical-impacts-three-cases-small
du Feu, R.; Funke, S.; Kramer, S.; Hill, J.; Piggott, M. (2019). The trade-off between tidal-turbine array yield and environmental impact: A habitat suitability modelling approach. <i>Renewable Energy</i> , 143, 390-403.	https://tethys.pnnl.gov/publications/trade-between-tidal-turbine-array-yield-environmental-impact-habitat-suitability
Dunham, A.; Pegg, J.; Carolsfeld, W.; Davies, S.; Murfitt, I.; Boutillier, J. (2015). Effects of submarine power transmission cables on a glass sponge reef and associated megafaunal community. <i>Marine Environmental Research</i> , 107, 50-60.	https://tethys.pnnl.gov/publications/effects-submarine-power-transmission-cables-glass-sponge-reef-associated-megafaunal

Citation	Tethys Link
<p>Floeter, J.; Floeter, J.; van Beusekom, J.; van Beusekom, J.; Auch, D.; Auch, D.; Callies, U.; Carpenter, J.; Dudeck, T.; Dudeck, T.; Eberle, S.; Eberle, S.; Eckhardt, A.; Eckhardt, A.; Gloe, D.; Gloe, D.; Hanselmann, K.; Hanselmann, K.; Hufnagl, M.; Hufnagl, M.; Janssen, S.; Janssen, S.; Lenhart, H.; Moller, K.; Moller, K.; North, R.; North, R.; Pohlmann, T.; Pohlmann, T.; Riethmuller, R.; Riethmuller, R.; Schulz, S.; Schulz, S.; Spreizenbarth, S.; Spreizenbarth, S.; Temming, A.; Temming, A.; Walter, B.; Walter, B.; Zielinski, O.; Mollmann, C.; Mollmann, C. (2017). Pelagic effects of offshore wind farm foundations in the stratified North Sea. <i>Progress in Oceanography</i>, 156, 154-173.</p>	<p>https://tethys.pnnl.gov/publications/pelagic-effects-offshore-wind-farm-foundations-stratified-north-sea</p>
<p>Fowler, A.; Jørgensen, A.; Svendsen, J.; Macreadie, P.; Jones, D.; Boon, A.; Booth, D.; Brabant, R.; Callahan, E.; Claisse, J.; Dahlgren, T.; Degraer, S.; Dokken, Q.; Gill, A.; Johns, D.; Leewis, R.; Lindeboom, H.; Linden, O.; May, R.; Murk, A.; Ottersen, G.; Schroeder, D.; Shastri, S.; Teilmann, J.; Todd, V.; Van Hoey, G.; Vanaverbeke, J.; Coolen, J. (2018). Environmental benefits of leaving offshore infrastructure in the ocean. <i>Frontiers in Ecology and Environment</i>, 16(10), 571-578.</p>	<p>https://tethys.pnnl.gov/publications/environmental-benefits-leaving-offshore-infrastructure-ocean</p>
<p>Fraser, S.; Williamson, B.; Nikora, V.; Scott, B. (2018). Fish Distributions in a Tidal Channel Indicate the Behavioural Impact of a Marine Renewable Energy Installation. <i>Energy Reports</i>, 4, 65-69.</p>	<p>https://tethys.pnnl.gov/publications/fish-distributions-tidal-channel-indicate-behavioural-impact-marine-renewable-energy</p>
<p>Henkel, S. (2016). Assessment of Benthic Effects of Anchor Presence and Removal. Report by Northwest National Marine Renewable Energy Center (NNMREC). Report for Oregon Wave Energy Trust (OWET).</p>	<p>https://tethys.pnnl.gov/publications/assessment-benthic-effects-anchor-presence-removal</p>
<p>Keenan, G.; Sparling, C.; Williams, H.; Fortune, F. (2011). SeaGen Environmental Monitoring Programme: Final Report. Report by Royal Haskoning. Report for Marine Current Turbines (MCT).</p>	<p>https://tethys.pnnl.gov/publications/seagen-environmental-monitoring-programme-final-report</p>

Citation	Tethys Link
Kramer, S.; Hamilton, C.; Spencer, G.; Ogston, H. (2015). Evaluating the Potential for Marine and Hydrokinetic Devices to Act as Artificial Reefs or Fish Aggregating Devices, Based on Analysis of Surrogates in Tropical, Subtropical, and Temperate U.S. West Coast and Hawaiian Coastal Waters (Report No. OCS Study BOEM 2015-021). Report by H.T. Harvey & Associates. Report for Office of Energy Efficiency and Renewable Energy (EERE).	https://tethys.pnnl.gov/publications/evaluating-potential-marine-hydrokinetic-devices-act-artificial-reefs-or-fish
Kraus, C.; Carter, L. (2018). Seabed recovery following protective burial of subsea cables - Observations from the continental margin. <i>Ocean Engineering</i> , 157, 151-161.	https://tethys.pnnl.gov/publications/seabed-recovery-following-protective-burial-subsea-cables-observations-continental
Kregting, L.; Elsaesser, B.; Kennedy, R.; Smyth, D.; O'Carroll, J.; Savidge, G. (2016). Do Changes in Current Flow as a Result of Arrays of Tidal Turbines Have an Effect on Benthic Communities?. <i>Plos One</i> , 11(8), e0161279.	https://tethys.pnnl.gov/publications/do-changes-current-flow-result-arrays-tidal-turbines-have-effect-benthic-communities
Krone, R.; Dederer, G.; Kanstinger, P.; Krämer, P.; Schneider, C.; Schmalenbach, I. (2017). Mobile Demersal Megafauna at Common Offshore Wind Turbine Foundations in the German Bight (North Sea) Two Years after Deployment - Increased Production Rate of Cancer pagurus. <i>Marine Environmental Research</i> , 123, 53-61.	https://tethys.pnnl.gov/publications/mobile-demersal-megafauna-common-offshore-wind-turbine-foundations-german-bight-north
Krone, R.; Gutow, L.; Brey, T.; Dannheim, J.; Schröder, A. (2013). Mobile Demersal Megafauna at Artificial Structures in the German Bight - Likely Effects of Offshore Wind Farm Development. <i>Estuarine, Coastal and Shelf Science</i> , 125, 1-9.	https://tethys.pnnl.gov/publications/mobile-demersal-megafauna-artificial-structures-german-bight-likely-effects-offshore
Krone, R.; Gutow, L.; Joschko, T.; Schröder, A. (2013). Epifauna Dynamics at an Offshore Foundation - Implications of Future Wind Power Farming in the North Sea. <i>Marine Environmental Research</i> , 85, 1-12.	https://tethys.pnnl.gov/publications/epifauna-dynamics-offshore-foundation-implications-future-wind-power-farming-north-sea
Langhamer, O. (2010). Effects Of Wave Energy Converters On The Surrounding Soft-bottom Macrofauna (west Coast Of Sweden). <i>Marine Environmental Resources</i> , 69(5), 374-381.	https://tethys.pnnl.gov/publications/effects-wave-energy-converters-surrounding-soft-bottom-macrofauna-west-coast-sweden
Langhamer, O. (2012). Artificial Reef Effect in Relation to Offshore Renewable Energy Conversion: State of the Art. <i>The Scientific World Journal</i> , 2012, 386713.	https://tethys.pnnl.gov/publications/artificial-reef-effect-relation-offshore-renewable-energy-conversion-state-art

Citation	Tethys Link
Langhamer, O.; Wilhelmsson, D.; Engström, J. (2009). Artificial Reef Effect and Fouling Impacts on Offshore Wave Power Foundations and Buoys - A Pilot Study. <i>Estuarine, Coastal and Shelf Science</i> , 82(2), 426-432.	https://tethys.pnnl.gov/publications/artificial-reef-effect-fouling-impacts-offshore-wave-power-foundations-buoys-pilot
Langhamer, O.; Wilhelmsson, D. (2009). Colonisation of Fish and Crabs of Wave Energy Foundations and the Effects of Manufactured Holes - A Field Experiment. <i>Marine Environmental Research</i> , 68(4), 151-157.	https://tethys.pnnl.gov/publications/colonisation-fish-crabs-wave-energy-foundations-effects-manufactured-holes-field
Langhamer, O.; Dahlgren, T.; Rosenqvist, G. (2018). Effect of an Offshore Wind Farm on the Viviparous Eelpout: Biometrics, Brood Development and Population Studies in Lillgrund, Sweden. <i>Ecological Indicators</i> , 84, 1-6.	https://tethys.pnnl.gov/publications/effect-offshore-wind-farm-viviparous-eelpout-biometrics-brood-development-population
Langhamer, O. (2016). The location of offshore wave power devices structures epifaunal assemblages. <i>International Journal of Marine Energy</i> , 16, 174-180.	https://tethys.pnnl.gov/publications/location-offshore-wave-power-devices-structures-epifaunal-assemblages
Lindeboom, H.; Kouwenhoven, H.; Bergman, M.; Bouma, S.; Bresseur, S.; Daan, R.; Fijn, R.; de Haan, D.; Dirksen, S.; van Hal, R.; Lambers, R.; ter Hofstede, R.; Krijgsveld, K.; Leopold, M.; Scheidat, M. (2011). Short-Term Ecological Effects of an Offshore Wind Farm in the Dutch Coastal Zone: A Compilation. <i>Environmental Research Letters</i> , 6(3), 035101.	https://tethys.pnnl.gov/publications/short-term-ecological-effects-offshore-wind-farm-dutch-coastal-zone-compilation
Lindeboom, H.; Degraer, S.; Dannheim, J.; Gill, A.; Wilhelmsson, D. (2015). Offshore Wind Park Monitoring Programmes, Lessons Learned and Recommendations for the Future. <i>Hydrobiologia</i> , 756(1), 169-180.	https://tethys.pnnl.gov/publications/offshore-wind-park-monitoring-programmes-lessons-learned-recommendations-future
Maar, M.; Bolding, K.; Petersen, J.; Hansen, J.; Timmermann, K. (2009). Local Effects of Blue Mussels Around Turbine Foundations in an Ecosystem Model of Nysted Off-Shore Wind Farm, Denmark. <i>Journal of Sea Research</i> , 62(2-3), 159-174.	https://tethys.pnnl.gov/publications/local-effects-blue-mussels-around-turbine-foundations-ecosystem-model-nysted-shore
Macleod, A.; Stanley, M.; Day, J.; Cook, E. (2016). Biofouling Community Composition across a Range of Environmental Conditions and Geographical Locations Suitable for Floating Marine Renewable Energy Generation. <i>Biofouling: The Journal of Bioadhesion and Biofilm Research</i> , 32(3), 261-276.	https://tethys.pnnl.gov/publications/biofouling-community-composition-across-range-environmental-conditions-geographical

Citation	Tethys Link
Mendoza, M.; Henkel, S. (2017). Benthic effects of artificial structures deployed in a tidal estuary. <i>Plankton and Benthos Research</i> , 12(3), 179-189.	https://tethys.pnnl.gov/publications/benthic-effects-artificial-structures-deployed-tidal-estuary
Methratta, E.; Dardick, W. (2019). Meta-Analysis of Finfish Abundance at Offshore Wind Farms. <i>Reviews in Fisheries Science & Aquaculture</i> , 27(2), 242-260.	https://tethys.pnnl.gov/publications/meta-analysis-finfish-abundance-offshore-wind-farms
Miller, R.; Hutchison, Z.; Macleod, A.; Burrows, M.; Cook, E.; Last, K.; Wilson, B. (2013). Marine Renewable Energy Development: Assessing the Benthic Footprint at Multiple Scales. <i>Frontiers in Ecology and the Environment</i> , 11(8), 433-440.	https://tethys.pnnl.gov/publications/marine-renewable-energy-development-assessing-benthic-footprint-multiple-scales
O'Carroll, J.; Kennedy, R.; Savidge, G. (2017). Identifying Relevant Scales of Variability for Monitoring Epifaunal Reef Communities at a Tidal Energy Extraction Site. <i>Ecological Indicators</i> , 73, 388-397.	https://tethys.pnnl.gov/publications/identifying-relevant-scales-variability-monitoring-epifaunal-reef-communities-tidal
O'Carroll, J.; Kennedy, R.; Creech, A.; Savidge, G. (2017). Tidal Energy: The Benthic Effects of an Operational Tidal Stream Turbine. <i>Marine Environmental Research</i> , 129, 277-290.	https://tethys.pnnl.gov/publications/tidal-energy-benthic-effects-operational-tidal-stream-turbine
Raoux, A.; Lassalle, G.; Pezy, J.; Tecchio, S.; Safi, G.; Ernande, B.; Mazé, C.; Le Loch, F.; Lequesne, J.; Girardin, V.; Dauvin, J.; Niquil, N. (2019). Measuring sensitivity of two OSPAR indicators for a coastal food web model under offshore wind farm construction. <i>Ecological Indicators</i> , 96(1), 728-738.	https://tethys.pnnl.gov/publications/measuring-sensitivity-two-ospar-indicators-coastal-food-web-model-under-offshore-wind
Raoux, A.; Tecchio, S.; Pezy, J.; Lassalle, G.; Degraer, S.; Wilhelmsson, D.; Cachera, M.; Ernande, B.; Guen, C.; Haraldsson, M.; Grangeré, K.; Le Loc'h, F.; Dauvin, J.; Niquil, N. (2017). Benthic and Fish Aggregation Inside an Offshore Wind Farm: Which Effects on the Trophic Web Functioning?. <i>Ecological Indicators</i> , 72, 33-46.	https://tethys.pnnl.gov/publications/benthic-fish-aggregation-inside-offshore-wind-farm-which-effects-trophic-web
Schuchert, P.; Kregting, L.; Pritchard, D.; Savidge, G.; Elsässer, B. (2018). Using Coupled Hydrodynamic Biogeochemical Models to Predict the Effects of Tidal Turbine Arrays on Phytoplankton Dynamics. <i>Journal of Marine Science and Engineering</i> , 6(2), 58-76.	https://tethys.pnnl.gov/publications/using-coupled-hydrodynamic-biogeochemical-models-predict-effects-tidal-turbine-arrays

Citation	Tethys Link
Sheehan, E.; Cartwright, A.; Witt, M.; Attrill, M.; Vural, M.; Holmes, L. (2018). Development of epibenthic assemblages on artificial habitat associated with marine renewable infrastructure. <i>ICES Journal of Marine Science</i> , , 1-12.	https://tethys.pnnl.gov/publications/development-epibenthic-assemblages-artificial-habitat-associated-marine-renewable
Soldal, A.; Svellingen, I.; Jørgensen, T.; Løkkeborg, S. (2002). Rigs-to-Reefs in the North Sea: Hydroacoustic Quantification of Fish Associated with a 'Semi-Cold' Platform. <i>ICES Journal of Marine Science</i> , 59, S281-S287.	https://tethys.pnnl.gov/publications/rigs-reefs-north-sea-hydroacoustic-quantification-fish-associated-semi-cold-platform
Taormina, B.; Bald, J.; Want, A.; Thouzeau, G.; Lejart, M.; Desroy, N.; Carlier, A. (2018). A review of potential impacts of submarine power cables on the marine environment: Knowledge gaps, recommendations and future directions. <i>Renewable and Sustainable Energy Reviews</i> , 96, 380-391.	https://tethys.pnnl.gov/publications/review-potential-impacts-submarine-power-cables-marine-environment-knowledge-gaps
van der Molen, J.; Ruardij, P.; Greenwood, N. (2016). Potential Environmental Impact of Tidal Energy Extraction in the Pentland Firth at Large Spatial Scales: Results of a Biogeochemical Model. <i>Biogeosciences</i> , 13, 2593-2609.	https://tethys.pnnl.gov/publications/potential-environmental-impact-tidal-energy-extraction-pentland-firth-large-spatial
van Deurs, M.; Grome, T.; Kaspersen, M.; Jensen, H.; Stenberg, C.; Sørensen, J.; Støttrup, J.; Warnar, T.; Mosegaard, H. (2012). Short- and Long-Term Effects of an Offshore Wind Farm on Three Species of Sandeel and their Sand Habitat. <i>Marine Ecology Progress Series</i> , 458, 169-180.	https://tethys.pnnl.gov/publications/short-long-term-effects-offshore-wind-farm-three-species-sandeel-their-sand-habitat
van Hal, R.; Griffioen, A.; van Keeken, O. (2017). Changes in Fish Communities on a Small Spatial Scale, an Effect of Increased Habitat Complexity by an Offshore Wind Farm. <i>Marine Environmental Research</i> , 126, 26-36.	https://tethys.pnnl.gov/publications/changes-fish-communities-small-spatial-scale-effect-increased-habitat-complexity
Vaselli, S.; Bulleri, F.; Benedetti-Cecchi, L. (2008). Hard Coastal-Defence Structures as Habitats for Native and Exotic Rocky-Bottom Species. <i>Marine Environmental Research</i> , 66(4), 395-403.	https://tethys.pnnl.gov/publications/hard-coastal-defence-structures-habitats-native-exotic-rocky-bottom-species
Viola, S.; Page, H.; Zaleski, S.; Miller, R.; Doheny, B.; Dugan, J.; Schroeder, D.; Schroeter, S. (2018). Anthropogenic disturbance facilitates a non-native species on offshore oil platforms. <i>Journal of Applied Ecology</i> , 55(4), 1583-1593.	https://tethys.pnnl.gov/publications/anthropogenic-disturbance-facilitates-non-native-species-offshore-oil-platforms

Citation	Tethys Link
Vodopivec, M.; Peliz, Á.; Malej, A. (2017). Offshore marine constructions as propagators of moon jellyfish dispersal. <i>Environmental Research Letters</i> , 12, 084003.	https://tethys.pnnl.gov/publications/offshore-marine-constructions-propagators-moon-jellyfish-dispersal
Want, A.; Porter, J. (2018). BioFREE: An International Study of Biofouling Impacts on the Marine Renewable Energy Industry, paper presented at OCEANS'18 MTS/IEEE Kobe/Techno-Ocean2018 (OTO'18), Kobe, Japan.	https://tethys.pnnl.gov/publications/biofree-international-study-biofouling-impacts-marine-renewable-energy-industry
Want, A.; Crawford, R.; Kakkonen, J.; Kiddie, G.; Miller, S.; Harris, R.; Porter, J. (2017). Biodiversity Characterisation and Hydrodynamic Consequences of Marine Fouling Communities on Marine Renewable Energy Infrastructure in the Orkney Islands Archipelago, Scotland, UK. <i>Biofouling</i> , 2017, 1-13.	https://tethys.pnnl.gov/publications/biodiversity-characterisation-hydrodynamic-consequences-marine-fouling-communities
Wilhelmsson, D.; Malm, T. (2008). Fouling Assemblages on Offshore Wind Power Plants and Adjacent Substrata. <i>Estuarine, Coastal and Shelf Science</i> , 79(3), 459-466.	https://tethys.pnnl.gov/publications/fouling-assemblages-offshore-wind-power-plants-adjacent-substrata
Wilhelmsson, D.; Malm, T.; Öhman, M. (2006). The Influence Of Offshore Windpower On Demersal Fish. <i>ICES Journal of Marine Science</i> , 63(5), 775-784.	https://tethys.pnnl.gov/publications/influence-offshore-windpower-demersal-fish
Williamson, B.; Fraser, S.; Williamson, L.; Nikora, V.; Scott, B. (2019). Predictable changes in fish school characteristics due to a tidal turbine support structure. <i>Renewable Energy</i> , 141, 1092-1102.	https://tethys.pnnl.gov/publications/predictable-changes-fish-school-characteristics-due-tidal-turbine-support-structure