TETHYS BLAST

September 30, 2016

Welcome to the latest bi-weekly Tethys Blast, which will update you with new information available on Tethys, new features of Tethys, and current news articles of international interest on wind and marine renewable energy. We hope that this becomes a valuable tool to help you stay connected to your colleagues and to introduce you to new research, new contacts, and ongoing milestones in wind and marine renewable energy development.

Wind Wildlife Operational Minimization RFI

The Department of Energy's (DOE) Office of Energy Efficiency and Renewable Energy (EERE) invites input from the public regarding a potential funding opportunity to 1) refine and improve wind turbine operational strategies for reducing impacts to bats and 2) refine and validate tools designed to compensate for eagle take in circumstances where risk to eagles cannot be reduced to zero after all practicable measures are taken to minimize impacts.

Responses to this RFI must be submitted by October 10, 2016 (12:00pm EDT). More information is available here.

New Documents on Tethys

New documents are added to Tethys every week, hand-selected for their relevance to the environmental effects of wind and marine renewable energy. The listings below are short introductions to several new or popular documents that can be accessed through the accompanying Tethys links:

Developing Benefit Schemes and Financial Compensation Measures for Fishermen Impacted by Marine Renewable Energy Projects - Reilly et al. 2016

> Commercial fishermen are arguably the stakeholder group most likely to be directly impacted by the expansion of the marine renewable energy (MRE) sector. The potential opposition of fishermen may hinder the development of MRE projects and the provision of benefit schemes could to enhance acceptance. Benefit schemes refer to additional voluntary measures that are provided by a developer to local stakeholders. The aim of

this study is to explore the issue of the provision of benefit packages to local fishing communities and financial compensation measures for fishermen who may be impacted by MRE projects.

Offshore Wind Turbines: An Overview of the Effects on the Marine Environment - Riefolo et al. 2016

The wind energy industry is growing worldwide. Recently, a number of physical and numerical modeling studies have been carried out in Europe to implement the offshore wind turbine technology, as well as the wind resource. Accordingly, the consideration of the possible environmental impacts of this technology on the marine environment, already affected by several anthropogenic pressures (e.g. fishery, maritime traffic) becomes increasingly important.

Atlantic Sturgeon Spatial and Temporal Distribution in Minas Passage, Nova Scotia, Canada, a Region of Future Tidal Energy Extraction - Stokesbury et al. 2016

In the Bay of Fundy, Atlantic sturgeon from endangered and threatened populations in the USA and Canada migrate through Minas Passage to enter and leave Minas Basin. A total of 132 sub-adult and adult Atlantic sturgeon were tagged in Minas Basin during the summers of 2010–2014 using pressure measuring, uniquely coded, acoustic transmitters with a four or eight year life span. This information is important as tidal energy extraction using in-stream, hydrokinetic turbines is planned for only the northern portion of Minas Passage.

Bird Migration Monitoring in the Saint Nikola Wind Farm, Kaliakra Region, in Autumn 2015, and an Analysis of Potential Impact after Six Years of Operation - Zehtindjiev & Whitfield 2016

This report presents the results of 90 consecutive days of monitoring and mitigation at Saint Nikola Wind Farm (SNWF) in 2015, its 6th operational year. The continued purpose is to investigate the possible impacts on migrating birds. Spatial and temporal dynamics in the numbers of different species passing through the wind farm territory during autumn migration 2015 (15 August to 31 October) are presented. The data from the autumn monitoring in the years 2008 to 2015 are used to investigate the potential change in species composition, numbers, altitude or the flight direction of birds observed in these eight years at SNWF.

Hydrodynamic Trail-Following in Harbor Seals (*Phoca vitulina*) - Dehnhardt et al. 2001

Marine mammals often forage in dark or turbid waters. Whereas dolphins use echolocation under such conditions, pinnipeds apparently lack this sensory ability. For seals hunting in the dark, one source of sensory information may consist of fish-generated water movements, which seals can detect with their highly sensitive whiskers. Water movements in the wake of fishes persist for several minutes.

Current News

Current news articles of international interest on win and marine renewable energy include:

Energy Secretary Moniz and Interior Secretary Jewell Announce New National Offshore Wind Strategy to Drive Deployment

> U.S. Secretary of Energy Ernest Moniz and U.S. Secretary of the Interior Sally Jewell today announced the publication of a collaborative strategic plan to continue accelerating the development of offshore wind energy in the United States, the *National Offshore Wind Strategy: Facilitating the Development of the Offshore Wind Industry in the United States*, which could help enable 86 gigawatts of offshore wind in the United States by 2050.

Sound blasts could keep whales away from wind farm construction

> Warning signals that deter minke whales from wind farm construction sites are being tested in Iceland. It's the first time such acoustic deterrent devices, or ADDs, have been used for this purpose. The deterrents, a series of amplified electronic pulses projected into the water, were originally developed to stop seals from stealing farmed fish. This trial will see if they might also help ward off whales during noisy pile-driving activity in the North Sea.

Perth company Carnegie Wave Energy awarded $2.5m for world first combined wave and solar project

> PERTH inventor Carnegie Wave Energy has been awarded $2.5 million for its "world first" solar, battery and wave integrated project in Western Australia. The Australian Renewable Energy Agency has donated the extra funding, which will go towards its $7.5 million Garden Island microgrid project, deployed off the coast of Kwinana Beach.

Study Shows Shocking Scope of Wind Turbine Bird Deaths

> Wind turbines have a bit of a reputation due to their role in killing local birds. But new research from Purdue University and the U.S. Geological Survey suggests that wind turbines could have contributed to the deaths of eagles that had flown hundreds of miles to meet their deaths. The researchers looked at DNA from feathers of golden eagles killed at the Altamont Pass Wind Resource (APWRA) in northern California.

Update: More rough water for Bay of Fundy tidal energy project

> Two enormous turbines of 1,000 tonnes each are set to be lowered in the Minas Passage, a five kilometre area at the top of the Bay of Fundy where the massive tides are funneled through a narrow passage and so the speed and force of the tides are increased. But the projects have met with considerable resistance from fishermen in the area who are deeply concerned about the underwater turbines possible effect on marine life.

Dutch offshore wind farm to be decommissioned after 22 yrs of service

Dutch utility Nuon, which is part of Sweden's Vattenfall AB, will decommission the turbines at the Lely offshore wind farm after 22 years of service. The park, comprising four two-bladed wind turbines with a combined capacity of 2 MW, was built in 1992 in the IJsselmeer artificial lake. In 2014 the park lost one of its turbines after the rotor head and blades fell down as a result of metal fatigue.