# TETHYS BLAST

June 10, 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.

# New Tethys Story

Tethys Stories are an opportunity to learn more about organizations, events, ideas, and news from the perspective of someone closely involved with the topic. If you are interested in submitting a Tethys Story, reply to tethys@pnnl.gov. Check out our most recent story:

**Are Fish Attracted to Marine Renewable Energy Devices?**

> Most people who spend time around the marine environment know that many species of fish are attracted to structures and hard surfaces in the ocean. Imagine tropical fish flocking to coral reefs, salmon hiding out under piers, and fish attracted to navigation buoys. The question has been posed as to whether fish will be attracted to marine energy devices placed in the ocean as well. And if they are attracted, could tidal and wave devices pose a threat to these fish or their prey?

# International Organizations on Tethys

Did you know that Tethys provides information on almost 1200 organizations involved in the environmental effects of wind and marine renewable energy? You can find some basic information, along with a list of all publications associated with the organization that are available on Tethys. You can explore this list here on Tethys at: http://tethys.pnnl.gov/organizations-involved. If you don't see an organization that you think should be included, please let us know by emailing back.

# New Documents on Tethys

A total of 45 new documents have been added to Tethys in the last two weeks! These documents have been 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:

**Avoidance of Wind Farms by Harbour Seals is Limited to Pile Driving Activities - Russell et al. 2016**

> As part of global efforts to reduce dependence on carbon-based energy sources there has been a rapid increase in the installation of renewable energy devices. The installation and operation of these devices can result in conflicts with wildlife. In the marine environment, mammals may avoid wind farms that are under construction or operating. Such avoidance may lead to more time spent travelling or displacement from key habitats. A paucity of data on at-sea movements of marine mammals around wind farms limits our understanding of the nature of their potential impacts.

**Mitigating Wind Energy Impacts on Wildlife: Approaches for Multiple Taxa - Arnett and May 2016**

> Mitigating impacts of wind energy development on wildlife is important for conservation and public acceptance of this energy source. We provide an overview of approaches to mitigate impacts of onshore wind energy development on wildlife, following steps in the mitigation hierarchy, including avoidance, minimization, and compensatory mitigation. Planning and avoiding predicted high-risk areas is fundamental to reduce impacts on birds and bats.

**Expected Effects of Offshore Wind Farms on Mediterranean Marine Life - Bray et al. 2016**

> Current climate policy and issues of energy security mean wind farms are being built at an increasing rate to meet energy demand. As wind farm development is very likely in the Mediterranean Sea, we provide an assessment of the offshore wind potential and identify expected biological effects of such developments in the region. We break new ground here by identifying potential offshore wind farm (OWF) “hotspots” in the Mediterranean.

**Incorporating Data Uncertainty when Estimating Potential Vulnerability of Scottish Seabirds to Marine Renewable Energy Developments - Wade et al. 2016**

> The effects of marine renewable energy developments (MREDs) on seabirds are uncertain because of the relative infancy of the industry. This uncertainty can delay the consenting process as regulators adopt a precautionary approach. This study uses novel methods to demonstrate uncertainty in two indices that ranked the vulnerability of seabird populations to MREDs. The study also consolidates recently available data with

information from the two indices to consider developments in our understanding of how seabirds respond to MREDs and to present up-to-date vulnerability predictions.

**Environmental Impact Assessment: Gathering Experiences from Wave Energy Test Centres in Europe - Greaves et al. 2016**

The wave energy industry is an emerging sector and a new user of maritime space that has potential to contribute significantly to the EU renewable energy goals. International and national regulatory frameworks necessitate Environmental Impact Assessments (EIA) that provide important data to inform development consent decisions. Here we have evaluated experience related to the assessment programmes at EU wave energy test centres combined with knowledge gained from EIA produced for other similar renewable energy developments.

**Impact of Wind-Energy Generation on Climate: A Rising Spectre - Abbasi et al. 2016**

Several theoretical studies have been reported in recent years which have indicated that large-scale wind farms can have an impact on local and regional meteorology, possibly on climate. Now evidence of it based on field observations has also begun to emerge. The present paper traces the evolution of this knowledge.

# Current News

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

**New agreement to bolster offshore wind energy projects**

The Government is to sign an agreement on Monday with nine northern European countries to further offshore wind-energy development. Industry lobby group, the National Offshore Wind Energy Association of Ireland (NOW), has urged politicians to back this with firm policies, saying Ireland is in a “parlous” state over meeting renewable energy targets.

**Australian wave energy project sets a new world record with 14,000 operating hours**

Surfers at Sydney’s Bondi Beach aren’t the only Australians catching waves. The Perth-based Carnegie Wave Energy Project just set a world record by completing 14,000 cumulative operating hours. Located off Garden Island, Western Australia, the CETO 5 marine energy system has for the past year been generating clean, renewable electricity and potable desalinated water for Australia’s largest naval base, HMAS Stirling, on Garden Island.

## Dairyland Power contracts for 98-megawatt wind farm

Dairyland Power Cooperative has announced plans to purchase 98 megawatts of electricity from a wind farm to be built near Platteville, Wis., nearly tripling the La Crosse-based utility's wind capacity. Construction of the Quilt Block wind farm is expected to begin next year pending regulatory approval. The 49 turbines are expected to begin generation by the end of 2017.

## Porpoises could derail world's biggest offshore wind farm

Plans for the world's biggest offshore wind farm have been thrown into doubt over fears the noise of building it will disturb porpoises. A decision on planning permission for Dong Energy's 1.8 gigawatt Hornsea Two project, which would see up to 300 giant turbines built 55 miles off the coast of Yorkshire, had been due from the Department of Energy and Climate Change by next week.

## Wave energy feasible option for Pacific

A new Pacific study indicates wave energy could work as an alternative to fossil fuels for some countries. The study looked at wave energy as another option as the Pacific tries to move away from its reliance on diesel. A Coastal oceanographer at the Pacific Community, Cyprien Bosserelle, led the study.