

WREN launched a webinar series in September 2014 in support of WREN's goals:

- To facilitate international collaboration that advances global understanding of environmental effects of offshore and land-based wind energy development.
- To create a shared global knowledge base and community of practice around research, monitoring and management of the environmental effects of wind energy development.





WREN Webinars Held to Date

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Webinar #1, September 2014 covered best practices for assessing the impact of wind energy development on bats with a focus on the combination of operational minimization and deterrents as a possible strategy to minimize bat fatalities at wind turbines.

- Speakers: Cris Hein of Bat Conservation International and Oliver Behr of University of Erlangen in Germany

Webinar #2, December 2014 covered research efforts to measure seabird and marine mammal attraction and avoidance at offshore wind farms.

- Speakers: Debbie Russell, Research Fellow from the Sea Mammal Research Unit, University of St. Andrews and Ross McGregor, Senior Ornithologist from UK's Natural Power





Today's Webinar – Thursday April 2, 2015 from 3 to 4:30 pm UTC (8 am PT/11 am ET)

WEBINAR #3 is on Understanding Avian Collision Rate Modeling and Discussing what this Means in a Population Context as presented by Mark Collier from Bureau Waardenburg in the Netherlands; and Aonghais Cook from the British Trust for Ornithology in the UK.

See invitation for additional information or visit the WRENHub at:
<http://tethys.pnnl.gov/events/wren-3>





Webinar #3 Speaker Biographies

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- **MARK COLLIER** (MSc.) currently works as a bird ecologist at Bureau Waardenburg—a leading ecological consultancy in the Netherlands. Originally from Britain, Mark studied applied ecology and conservation at the University of East Anglia (UK) and worked for both the Royal Society for the Protection of Birds and the British Trust for Ornithology before moving to the Netherlands in 2008. Since being at Bureau Waardenburg, Mark has been involved with various ornithological projects including radar studies, satellite tracking, and wind farm studies, both on land and at sea. Mark has a particular interest in collision risk modeling and has carried out a range of studies including the appropriate assessments of more than 20 offshore wind farms in the North Sea, research into the first Dutch offshore wind farm, and the cumulative effects of multiple offshore wind farms. Mark has also used radar and observational data to calculate avoidance rates in an offshore wind farm.
- Recent experience also includes collision rate modeling for offshore wind farms in the UK (including a Round 3 site); Denmark and the Netherlands, comparisons of collision rate models; contributions to The Crown Estate's SOSS group as secretariat partner through review reports on methods to monitor collisions or micro-avoidance of birds with offshore wind turbines; and the use of GPS data to assess the movements of birds in relation to offshore wind farms.
- **AONGHAIS COOK** has worked for the British Trust for Ornithology (BTO) since completing his PhD at Newcastle University in November 2008. The interactions between birds and renewable energy have been a key focus of his work at the BTO and one of the first projects he worked on was investigating the impacts of a tidal barrage proposed for the Severn Estuary on waterbirds. Since then, offshore wind farms, and, in particular collision risk, has been a key focus of his work. This has included providing guidance to industry as well as to government advisors and regulators, and carrying out impact assessment work for the proposed Dogger Bank wind farm zone in the North Sea. Follow him on twitter: @AonghaisC



Some ideas being considered:

- Sensitivity maps (June/July 2015). e.g. recently released BirdWatch Ireland sensitivity mapping and other similar tools.
- Offshore mitigation techniques (September 2015). e.g., bubble curtains and other approaches.
- Sensors (December 2015). E.g. recognition software and other systems.

What would you be interested in learning more about and participating in deeper discussion?



Thank You!

- For WREN questions, contact Operating Agent:
 - Karin Sinclair karin.sinclair@nrel.gov
- For more information on WREN including the webinar series, visit the WRENHub at:
 - <http://tethys.pnnl.gov/>
- As well as the IEA Wind Task 34 (WREN) site:
 - www.ieawind.org

Notice: The IEA Wind agreement, also known as the Implementing Agreement for Co-operation in the Research, Development, and Deployment of Wind Energy Systems, functions within a framework created by the International Energy Agency (IEA). Views, findings and publications of IEA Wind do not necessarily represent the views or policies of the IEA Secretariat or of all its individual member countries.

