

## **Submission Confirmation**

Thank you for your interest in IAIA12! Your paper or poster submission has been received. Your submission is below; please save and/or print this message for your reference.

You will receive an e-mail from a Program Committee representative regarding acceptance status by 15 February 2012.

Please reference your submission number and provide your name if you need to contact IAIA about your submission; this will help Headquarters staff and the Program Committee respond to you most quickly. Inquiries may be sent to Headquarters in care of Jennifer Howell (jen@iaia.org).

Please note that the identified presenting authors of accepted papers and posters are required to register and pay fees by 29 February 2012. At that time, your poster or paper may be dropped from the program if you are not yet registered with fees paid in full. Substitutions for presenting authors may be made online until 29 February 2012 (the substitute must be registered for the conference and be an original co-author). You are responsible for arranging your own funding; unless noted in the preliminary program, IAIA does not have funds available to pay registration or travel expenses.

Please ensure that all contact information and your summary are complete and correct, as they will be printed as you have submitted them. You will need your submission number and password if you wish to make any changes to your submission; updates will be accepted until 31 January 2012.

Upon acceptance of your paper or poster abstract, you may be asked by the Program Committee representative to prepare a 5-page paper, which will be posted online prior to the conference to begin discussion. The paper would be due 15 March 2012, followed by review and possible revision in conjunction with your session chair, with the final paper due 15 April 2012.

Conference proceedings will be published on the IAIA Web site following the conference.

The preliminary program with registration materials will be posted online in PDF and mailed to IAIA members in December 2011. If you are not an IAIA member and would like to receive a hard copy by mail, please contact info@iaia.org with your request and full mailing address.

We look forward to seeing you in Porto!

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## **Submission Summary**

ID: 614 | Type: Paper | Topic: Cumulative Effects from Renewable Energy Planning

# Cumulative effects of wind farms on bird populations

In order to assess the potential impacts of multiple wind farms within the Dutch North Sea on bird populations, a two-step modeling approach was applied: Step one involved constructing matrix-based population models for bird species occurring within the Dutch North Sea. Step two involved assessing the effects of increased mortality on these populations.

The bird populations assessed included both seabirds and coastal species breeding around the North Sea region, as well as key passage migrants from a wider area.

Two wind farm scenarios were modeled in order to provide estimates of the potential impact of mortality due to collisions (which was considered to have a far greater influence on mortality than disturbance or barrier effects in the specific Dutch situation). Field data collected with radar and visual observations at the OWEZ wind farm helped to inform these models. The additional mortality was then applied to the population models. An additional assessment of the level of mortality sustainable by a population was made using a Potential Biological Removal approach.

For those species that are currently stable or increasing, the influence of this additional mortality was very limited. Also for the species currently in decline, like Bewick's swan and herring gull, the additional mortality contributed little to these trends. For both species, the level of additional wind farm associated mortality was within the limit of Potential Biological Removal.

#### Summary

Cumulative effects of wind farms in the Dutch North Sea on bird populations. This study was commissioned by 'Noordzeewind' (a joint venture of Nuon and Shell Wind Energy).

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