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MEMORANDUM

DATE: 2 August 2018
OUR REFERENCE: 18-0397/18.06442/AbeGy
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STATUS: Final

Memorandum on workshop on 12 July 2018

The proposed development of Offshore Wind Energy in the Dutch North Sea areas through to 2030 could result in cumulative effects on seabird species in terms of estimated numbers of victims due to collision with the rotating blades of the wind turbines.

The predictions of cumulative effects on ecological values indicate that significant effects on the population level cannot be excluded for a number of seabird species. In addition to the wind farms that have been included, the 2030 Offshore Wind Energy Roadmap was published in March 2018, and it also includes plans for offshore wind farms in the period through to 2030.

In order to implement this further roll-out of offshore wind energy in accordance with the Energy Agenda, the Dutch government intends to update the KEC with the most recent knowledge. This will involve the application of new insights relating to the presence of birds in the Dutch North Sea and the flight behaviour of birds in offshore areas. For example, new wind farms have been defined in the 2030 Roadmap, namely IJmuiden Ver, Hollandse Kust (west) and Ten Noorden van de Waddeneilanden, which also have to be included in the cumulative calculations of bird victims.

In the KEC 2.1 (2015), the number of collision victims for wind farms built in the period through to 2015 was determined using the theoretical extended Band model (Band 2012). The basic input parameter for this model is the flux of birds flying through a given rotor swept area. This flux can be measured (for example with radar, cameras or visually) but it is usually calculated on the basis of the local density of a species as determined on the basis of data from ship and/or aircraft surveys.

The KEC calculations are based on distribution data from 1991 to 2014. Since these calculations were made in the KEC, new data have been collected in the MWTL surveys. These new MWTL data are being incorporated in the datasets to update the densities of seabird species.

Various datasets were used for different species in the previous version of the KEC because the first calculations with a combined ESAS/MWTL dataset for all species were followed by two iterative stages. The first iterative stage was based on the same dataset but it spread high concentrations of Northern Gannets, Black-legged Kittiwakes, Herring Gulls, Great Black-backed Gulls and Lesser Black-backed Gulls behind fishing vessels through space. In the

second iterative stage, density calculations of large gulls were based exclusively on the Dutch MWTL surveys. In addition, there have been major changes in population numbers and distribution over the last thirty years in the case of some species. Furthermore, human use patterns have also changed during this period. This workshop was therefore organised to look at which different periods can best be used to calculate population estimates for the DCS and the entire North Sea.

Agenda

- Determination of the population sizes to be used for the species:
  1. Great Black-backed Gull
  2. Lesser Black-backed Gull
  3. Herring Gull
  4. Black-legged Kittiwake
  5. Great Skua
  6. Razorbill
  7. Common Guillemot
  8. Red-throated Diver
  9. Northern Gannet
  10. Sandwich Tern
- Comparison of the population sizes calculated by WMR on the basis of ESAS and MWTL surveys (presentation completed) with published population estimates (presentation completed):
  - Poot *et al.* 2013;
  - MWTL surveys (2014-2017);
  - Wetlands International.
- Determination of which PBR numbers are used in the KEC update.

Outcome of the discussion

The population estimates in the literature proved to vary widely among each other and differ from the estimates based on the calculations made by WMR. The differences were found between different methods and/or bird species. This may be attributable to the short periods used as a basis for the population estimates in Poot *et al.* (2013) and the MWTL surveys of the last three years. In fact, sound estimates are not available internationally, partly because no systematic survey programmes have been carried out (in the United Kingdom, for example) or because the surveys that have been conducted have not been made available (this is the case for Germany and Denmark for example).

The above shows that it is very important to use a single method to estimate population sizes. In terms of the DCS and the North Sea as a whole, the WMR density maps were used to determine which period and survey programme would be most appropriate for the species in question.

Agreements

The following agreements were made for the calculation of population sizes:

International
International surveys of seabirds are not made public everywhere. It is known that Germany and Denmark do carry out surveys but do not make the data publicly available. This results in a very skewed picture if one looks at the entire North Sea (see attached presentation from WMR). It has therefore been decided that the ESAS and MWTL data for the entire period 1991-2017 will be included in the population calculations for the entire North Sea because the longer period provides more data and therefore enhances reliability. Rijkswaterstaat is also trying to obtain more data from abroad.

DCS
Based on the surveys made, it was decided to use the 2000-2017 data for both the ESAS surveys and the MWTL surveys for the DCS. During this period, counting activity has been fairly constant and, due to the more extensive MWTL surveys, higher than in previous years.

For species that can be linked to ships and which will therefore be 'over-counted' in ship-based surveys, it has been decided to include only the MWTL aircraft surveys and to 'spread' the large concentrations. See the second iteration in the KEC (van der Wal *et al.* 2015). The species in question are the following:

1. Great Black-backed Gull
2. Lesser Black-backed Gull
3. Herring Gull
4. Black-legged Kittiwake
5. Northern Gannet

For the other five species (Great Skua, Razorbill, Common Guillemot, Red-Throated Diver and Sandwich Tern), both the ESAS and the MWTL surveys have been included in the population estimates. This is because these species are not attracted by ships and so the probability of 'over-counting' is small.

PBR provisions
It was decided to base the PBR limits in the KEC update on the same population estimates adopted as a basis for the calculation of the number of victims. For both calculations (population size for determining the PBR limit as well as calculating the size of the effect), therefore, a clear decision was made to use the same basic datasets/queries listed above.
As a result, both exposure and the determination of the effect are based on the same underlying assumptions, which results in greater uniformity and prevents contradictions.

References

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