Written Representation

for the

Royal Society for the Protection of Birds

Annex A

Offshore Ornithology

Submitted for Deadline 2

29 March 2022

Planning Act 2008 (as amended)

In the matter of:

Application by Hornsea Project Four Limited for an Order

Granting Development Consent for the Hornsea Project Four Offshore Wind Farm

Planning Inspectorate Ref: EN010098

RSPB Registration Identification Ref: 20029909

Contents

1.. Introduction

Scope of submission

1.1. Below we have set out a series of species accounts for the four seabird species from the Flamborough and Filey Coast Special Protection Area of most concern, summarising the importance of the FFC SPA for the species, their feeding ecology, their vulnerability to offshore wind farms and what tracking studies have been able to tell us about the foraging behaviour of birds from the FFC SPA.

1.2. The species accounts are as follows:

- Northern Gannet
- Black-legged kittiwake
- Common Guillemot
- Razorbill

2.. Northern Gannet (Morus bassanus)

2.1. The RSPB's concern over the possible impacts to gannets is in part due to the proximity of the Hornsea 4 development to the only gannet colony in England, also a qualifying feature of the Flamborough and Filey Coast SPA. The last count in 2017 estimated that the colony at Bempton Cliffs supports 13,392 apparently occupied nests (AONs)[1], concentrated along a 5km stretch of cliff including the RSPB's Bempton Cliffs Reserve. This SPA population accounts for approximately 3.2% of the North Atlantic biogeographic population[2].

2.2. Gannets are typically long-lived seabirds, living to an average age of 17 years and not breeding until the age of 5 years. During the breeding season, adults will take it in turn to incubate the single egg for approximately 42-46 days with the chick fledging unaccompanied by its parents after approximately 90 days.

2.3. During the breeding season gannets are central-place foragers meaning they are constrained to return to the nest after foraging to maintain territories and raise their young. Foraging trip durations are dependent on colony size with birds from larger colonies making longer foraging trips (both in distance and duration)[3]. Foraging trips of gannets from Bempton Cliffs averaged (mean) 10.1 hours in 2018 during which they travelled (mean) 64 km from the colony[4].

2.4. The necessity to make repeated back and forth trips potentially puts breeding adults and birds maintaining territories at greater risk from collision mortality and displacement effects than birds on migration, if wind farms are sited within their forging range.

2.5. Tracking of gannets from the RSPB's Bempton Cliffs Reserve with Platform Transmitter Terminals (PTTs) and GPS, has taken place in 2010-2012 and in 2018.

2.6. Gannets had a strong tendency to head due east of the colony on foraging trips and entered the proposed site for Hornsea 4 during all 4 chick-rearing seasons (2010-2012 and 2018). Both PTT tracking in 2010-2012 and GPS tracking in 2018 show gannets are both commuting through and foraging within the footprint of Hornsea 4[5,6].

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[1] JNCC Accessed on 7/3/22 https://jncc.gov.uk/our-work/northern-gannet-morus-bassanus/#annual-abundance-and-productivity-by-geographical-area-england

[2] A biogeographic population is defined by JNCC as a group of birds which breed in a particular location (or group of locations), breed freely within the group and rarely breed or exchange individuals with other groups

[3] Wakefield, ED, Bodey, TW, Bearhop, S et al. (19 more authors) (2013) Space Partitioning Without Territoriality in Gannets. Science, 341 (6141). 68 - 70. ISSN 0036-8075

[4] Langston, R., Teuten, E. & Butler, A., 2013. Foraging ranges of northern gannets Morus bassanus in relation to proposed offshore wind farms in the North Sea: 2010-2012. RSPB Report to DECC, December 2013.

[5] Wischnewski, S., Adlard, S., McCluskie, A. & Wright, L.J. 2018. Seabirds and Wind Farms: Assessing the impacts of offshore wind turbines on seabirds from the Flamborough and Filey Coast SPA.

[6] Langston, R.H.W., Teuten, E. & Butler, A. 2013. Foraging ranges of northern gannets Morus bassanus in relation to proposed offshore wind farms in the UK: 2010-2012. RSPB Report to DECC.

2.7. Of the 10 individuals tracked in 2018, 8 were recorded within the Hornsea Project Four area (Figure 1).

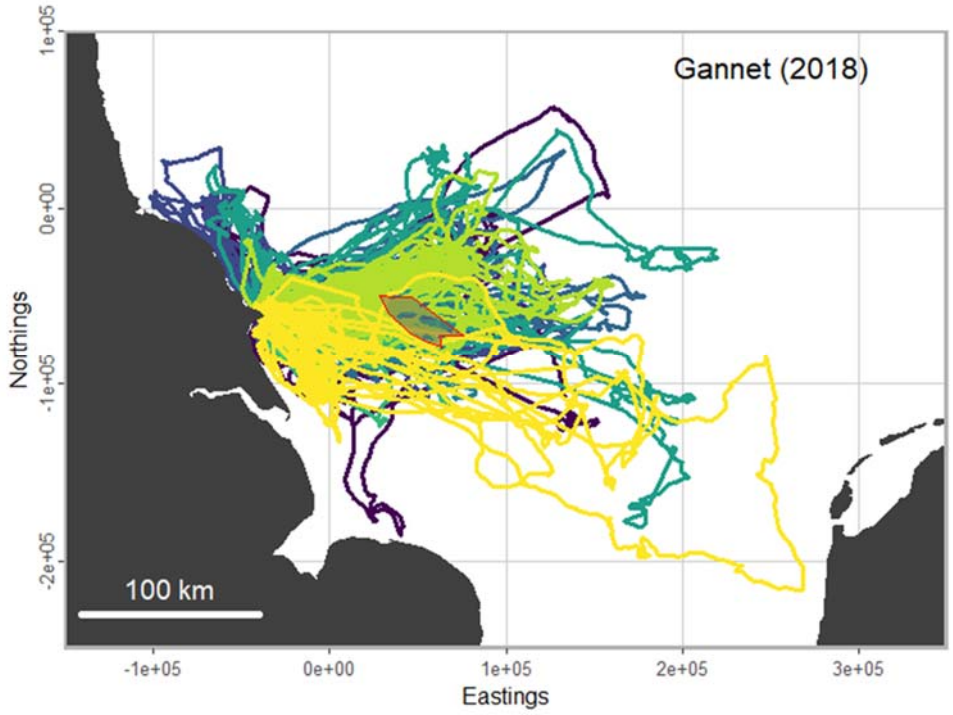

Figure 1. Tracks of breeding adult gannets (n = 10) tracked from Bempton Cliffs in 2018. The Hornsea Four project area is outlined in red. Each colour is a different bird.

2.8. Breeding gannets tracked with GPS from Helgoland in the eastern North Sea travelled around and through operational wind farms. However, it is unclear whether behaviour before and after construction differs[7].

2.9. There is a need to assess the possible impacts to gannets throughout the year as behavioural constraints change; starting when they arrive back at the colony for the breeding season until they leave on migration, and then throughout the winter. During autumn and winter potential interaction with turbines will not be limited to birds from the closest breeding colony but birds from across the breeding range as they disperse and travel south.

2.10. There is consistent evidence of wind farm avoidance by non-breeding gannets and gannets on migration. But little is known about the behavioural responses of breeding gannets to offshore turbines resulting from a lack of operational turbines within foraging range of breeding colonies.

[7] Peschko V, Mendel B, Mercker M, Dierschke J, Garthe S. 2021. Northern gannets (Morus bassanus) are strongly affected by operating offshore wind farms during the breeding season. J Environ Manage. 1; 279:111509. doi: 10.1016/j.jenvman.2020.111509

3.. Black-legged Kittiwake (Rissa tridactyla)

3.1. The Flamborough and [8] Coast SPA is the only English SPA supporting black-legged kittiwake in numbers of international importance. In 2017, the population was estimated at 45,504 pairs which represents 2% of the North Atlantic biogeographic population. However, this is a substantial decline on the population at time of site designation in 1987 when the population was estimated to be 83,700 pairs.

3.2. The RSPB's concern over the possible impacts to kittiwake is in part due to the proximity of the Hornsea 4 development to the largest colony of kittiwake in the UK, and the additional threats this will pose to a species red listed in the UK[9].

3.3. During the breeding season kittiwakes are central-place foragers meaning they are constrained to return to the nest after foraging to maintain territories and raise their young. When not in attendance at the nest or away on a foraging trip, kittiwakes use the sea below the cliffs for maintenance behaviours such as loafing (spending time on the water to preen or rest, not related to feeding), preening and bathing. During the breeding season the highest densities of kittiwakes at sea are within 1km of the colony[10].

3.4. Kittiwakes breeding within the SPA have been tracked with Global Positioning System (GPS) loggers during 8 breeding seasons (2010-2015, 2017-2018). During 2017, kittiwakes from the SPA travelled up to 323.9 km from the colony[11].

3.5. Kittiwakes from the SPA travel north through to southeast on foraging trips with birds from Speeton travelling north and east, birds from Filey travelling to the east and birds from Flamborough travelling east and south east[4,12].

3.6. Tracked kittiwakes entered the Hornsea Project Four area in 2017 and 2018 (n= 7/18 in 2017 and 4/18 in 2018) [3] (Figure 2).

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[8]JNCC https://jncc.gov.uk/our-work/black-legged-kittiwake-rissa-tridactyla/#annual-abundance-and-productivity-by-geographical-area-overview-of-all-regions Accessed 7 March 2022

[9] Stanbury, A.J., Eaton, M.A., Aebischer, N.J., Balmer, D., Brown, A.F., Douse, A., Lindley, P., McCulloch, N., Noble, D.G. & Win, I. 2021. The status of our bird populations: the fifth Birds of Conservation Concern in the United Kingdom, Channel Islands and Isle of Man and second IUCN Red List assessment of extinction risk for Great Britain. British Birds, 114.

[10] McSorley C.A., Dean B.J., Webb A. & Reid, J.B. 2003. Seabird use of waters adjacent to colonies: Implications for seaward extensions to existing breeding seabird colony Special Protection Areas. JNCC Report No. 329, JNCC, Peterborough.

[11] Wischnewski, S., Fox, D.S., McCluskie, A. & Wright, L. 2017. Seabird tracking at the Flamborough & Filey Coast: Assessing the impacts of offshore wind turbines. RSPB Centre for Conservation Science Report to Ørsted.

[12] Wischnewski, S., Fox, D.S., McCluskie, A. & Wright, L.J , (2018) Seabird tracking at the Flamborough & Filey Coast: Assessing the impacts of offshore wind turbines ©The Royal Society for the Protection of Birds, The Lodge, Sandy, Bedfordshire, SG19 2DL ISBN 978-1-905601-30-1

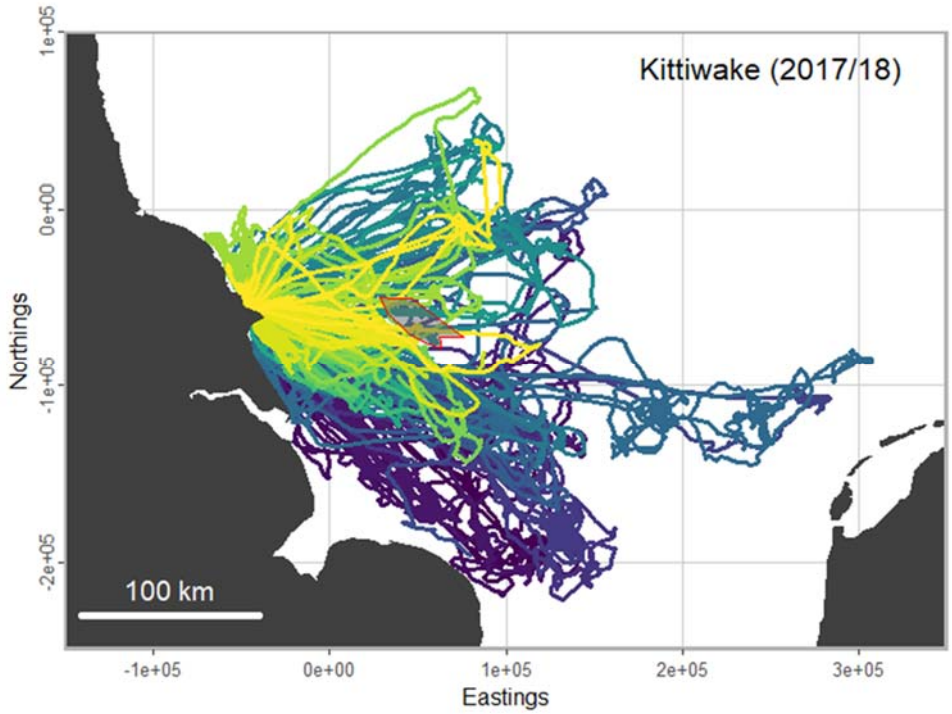

Figure 2. Tracks of breeding adult kittiwakes (n = 33) tracked from the FFC SPA in 2017 and 2018. The Hornsea Four project area is outlined in red. Each colour is a different bird.

4.. Common Guillemot (Uria aalge)

4.1. Common guillemot are a qualifying feature of the Flamborough and Filey Coast SPA, the colony being the largest in the UK and the southernmost colony on the east coast that comprises over 10,000 individuals.

4.2. At the last count in 2017 the population was estimated at 84,647 individuals, an increase of 81% from the count of 46,685 in 2000[13] and more than 15% of the biogeographic population[14]. This growth has not occurred elsewhere with declines occurring across the Scottish SPA network.

4.3. Guillemots are typically long-lived seabirds, living to an average age of 23 years and not breeding until the age of 5 years. Nesting in tightly packed colonies, they often lay their single egg directly on the cliff without any nest material. Breeding success is highest where birds are most tightly packed. Adults will incubate the egg for 28-37 days, fledging then taking place when the chick is ~3 weeks old. The chick will then complete its growth at sea accompanied by its male parent.

4.4. Common guillemots are polymorphic with two variants of head plumage, the most common is the fully chocolate brown head but approximately 20% of the UK population have a white eye-ring streak that extends towards the top of the neck (pictured). The birds with 'white spectacles' are known as bridled guillemots but are the same species as those without the spectacles.

4.5. RSPB's concern over the possible impacts to guillemot is in part due to the proximity of the Hornsea 4 development to the largest guillemot colony in the UK at the Flamborough and Filey Coast SPA., of which they are a qualifying feature. Given declines across the Scottish SPA network the importance of this population is even more pronounced.

4.6. The response of guillemots to offshore wind farms is mixed although there is a paucity of data for breeding birds. Non-breeding birds have been shown to avoid offshore wind farms[15,16,17] as have breeding birds in the southern North Sea[18] whereas in the Irish Sea, guillemots have

[13] JNCC https://jncc.gov.uk/our-work/guillemot-uria-aalge/ Accessed on 23 March 2022

[14] A biogeographic population is defined by JNCC as a group of birds which breed in a particular location (or group of locations), breed freely within the group and rarely breed or exchange individuals with other groups

[15] Leopold, M.F., van Bemmelen, R.S.A., Zuur, A.F. 2013. Responses of Local Birds to the Offshore Wind Farms PAWP and OWEZ off the Dutch mainland coast, Imares, Wageningen, Report C151/12.

[16] Vanermen, N., Onkelinx, T., Courtens, W. et al. (2015). Seabird avoidance and attraction at an offshore wind farm in the Belgian part of the North Sea. Hydrobiologia 756, 51–61

[17] Vanermen, N. Courtens, W., Van de walle, M., Verstraete, H., Stienen, E.W.M. 2016. Seabird monitoring at offshore wind farms in the Belgian part of the North Sea. Updated results for the Bligh Bank & first results for the Thorntonbank. S. Degraer, R. Brabant, B. Rumes, L. Vigin (Eds.), Environmental Impacts of Offshore Wind Farms in the Belgian Part of the North Sea: Environmental Impact Monitoring Reloaded, Royal Belgian Institute of Natural Sciences, OD Natural Environment, Marine Ecology and Management Section. p. 287

[18] Peschko, V., Mercker, M. & Garthe, S. Telemetry reveals strong effects of offshore wind farms on behaviour and habitat use of common guillemots (*Uria aalge*) during the breeding season. *Mar Biol* 167, 118 (2020).

shown no changes in abundance post construction and at another site, increased in abundance [19,20,21]. More recent work has suggested that there may be some habituation over time to the presence of wind farms.[22]

[19] Peschko, V., Mercker, M. & Garthe, S. Telemetry reveals strong effects of offshore wind farms on behaviour and habitat use of common guillemots (*Uria aalge*) during the breeding season. *Mar Biol* 167, 118 (2020).
[20] G.C. Vallejo, K. Grellier, E.J. Nelson, R.M. McGregor, S.J. Canning, F.M. Caryl, N. McLean
Responses of two marine top predators to an offshore wind farm Ecology and Evolution, 7 https://10.1002/ece3.3389
[21] Project Management Support Services PMSS. 2007. North Hoyle Offshore Wind Farm. Annual FEPA Monitoring Report (2005–6)NWP Offshore Ltd.
[22] Vanermen, N.; Courtens, W.;.; Van de walle, M.; Verstraete, H.; Stienen, E. 2021. Macro-avoidance of GPS-tagged lesser black-backed gulls and potential habituation of auks and gannets. In Degraer, Brabant, Rumes & Vigin (eds) 2021. *Environmental Impacts of Offshore Wind Farms in the Belgian Part of the North Sea, avoidance and habitat use at various spatial scales.* Brussels: Royal Belgian Institute of Natural Sciences, OD Natural Environment, Marine Ecology and Management

5.. Razorbill (*Alca Torda*)

5.1. Razorbill are a qualifying feature of the Flamborough and Filey Coast SPA, the only site in England to support a colony of over 5,000 individuals. At the last count in 2017 the population was estimated at 27,967 individuals, an increase of 228% since 2000[23].

5.2. Razorbill numbers have increased on the east coast of the UK between the Seabird 2000 survey and the most recent counts; however, this growth has not occurred elsewhere with declines occurring in north and west Scotland.

5.3. Razorbill are counted as individuals (on suitable breeding ledges), rather than apparently occupied nests meaning that counts will include off-duty adults, non-breeders and immature birds, as well as brooding and incubating birds.

5.4. RSPB's concern over the possible impacts to razorbill is in part due to the proximity of the Hornsea 4 development to the largest razorbill colony in the UK, also a qualifying feature of the Flamborough and Filey Coast SPA.

5.5. The necessity to make repeated back and forth trips potentially puts breeding adults and birds maintaining territories at risk from displacement effects if wind farms are sited within their forging range.

5.6. Razorbills are typically long-lived seabirds, living to an average age of 13 years and not breeding until the age of 4 years. During the breeding season, adults will incubate the single egg for approximately 32 days with the chick fledging after approximately 21 days. The chick will then complete its growth at sea accompanied by its male parent.

5.7. Adult razorbill feed on 0-group sandeel, chick diet comprises of 0-group sandeel, 1+ group sandeel and sprat[24]. Maximum foraging trip ranges have been found to vary between colony. The maximum recorded foraging range is 312 km from Fair Isle, however, maximum distances recorded from 5 other colonies range between 36 – 92km[25].

[23] JNCC Accessed on 16/3/22 https://jncc.gov.uk/our-work/razorbill-alca-torda/

[24] Thaxter et al. 2013. Modelling the Effects of Prey Size and Distribution on Prey Capture Rates of Two Sympatric Marine Predators. PLoS One. [redacted]

[25] Woodward, I., Thaxter, C.B., Owen, E. & Cook, A.S.C.P. 2019. Desk-based revision of seabird foraging ranges used for HRA screening. BTO Research Report No. 724.