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Norfolk Projects Offshore Wind Farms

Lesser black-backed gull Implementation and Monitoring Plan

Developer: Norfolk Boreas Limited and
Norfolk Vanguard Limited
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28/10/2022	1F	Final version for SoS approval	MT/DT	VR	JL

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Glossary of Acronyms

AOE	Alde-Ore Estuary
BEIS	Department for Business, Energy & Industrial Strategy
LBBG	Lesser Black-Backed Gull
LBBSG	Lesser Black-Backed Gull Steering Group
LBBGIMP	Lesser Black-Backed Gull Implementation and Monitoring Plan
DCO	Development Consent Order
DEFRA	Department of Environment Food and Rural Affairs
DML	Deemed Marine Licence
EIA	Environmental Impact Assessment
MMO	Marine Management Organisation
NE	Natural England
RSPB	Royal Society for the Protection of Birds
SoS	Secretary of State
SPA	Special Protection Area

1 Introduction

1. This document sets out the Lesser Black-Backed Gull Implementation and Monitoring Plan (LBBGIMP) for the Norfolk Projects Lesser Black-Backed Gull compensation. The LBBGIMP has been developed by the Lesser Black-Backed Gull Steering Group (LBBGSG).

2. The Norfolk Boreas and Norfolk Vanguard offshore wind farm projects are both being developed by Vattenfall Wind Power Ltd. They are two separate projects with separate offshore sites; however, they share an offshore cable corridor and an onshore cable route. Norfolk Vanguard and Norfolk Boreas (collectively 'the Norfolk Projects') are being developed together in a strategic manner in order to maximise efficiencies and ultimately reduce the cost to the consumer of green energy.

3. Norfolk Boreas was given consent in December 2021 followed by Norfolk Vanguard in February 2022. Due to the potential effects of the Norfolk Projects on lesser black-backed gulls from the Alde-Ore Estuary (AOE) Special Protection Area (SPA) both projects are required to provide compensation.

4. This LBBGIMP has been prepared pursuant to paragraph 15 of Schedule 19, Part 2 of the Norfolk Boreas Offshore Wind Farm Order 2021 (Norfolk Boreas DCO) and paragraph 15 of Schedule 17, Part 2 of the Norfolk Vanguard Offshore Wind Farm Order 2022 (Norfolk Vanguard DCO) (together referred to here as the "compensation schedules") and this document serves to discharge the condition for both projects. The conditions stipulate:

   The LBBGIMP must include measures to increase the number of adult lesser black-backed gulls available to recruit to the AOE in accordance with the principles contained in the lesser black-backed gull compensation plan, must contain the relevant matters identified in section 4.6.2 of the lesser black-backed gull compensation plan and must include in particular:

   a) details of the location where the compensation measures will be delivered and the suitability of the site to deliver the measures (including why the location is appropriate ecologically and likely to support successful compensation) [provided in section 3];
   b) details of landowner agreements demonstrating how the land will be bought or leased and assurances that the land management will deliver the ecology objectives of the LBBGIMP [provided in section 4]*;*
   c) details of the design of the predator control fencing including the type of fencing, the area and location of enclosure, and details of any other habitat management measures [provided in section 5]*;*
   d) an implementation timetable for the delivery of the predator control fencing and any other habitat management measures that ensures all compensation measures are in place to allow four full lesser black-backed gull breeding seasons

prior to the operation of any turbine forming part of the authorised development [provided in section 6]*;*

e) a fencing maintenance schedule [provided in section 7]*;*

f) details of the proposed ongoing monitoring and reporting on the effectiveness of the measures, including: survey methods; success criteria; adaptive management measures; timescales for the monitoring and monitoring reports to be delivered; and details of the factors used to trigger alternative compensation measures and/or adaptive management measures [provided in sections 8 and 9]; and

g) minutes from all consultations with LBBGSG [provided in section 11 and Appendix 5 of Annex 1].

5. This LBBGIMP address all of the above DCO conditions as well as the relevant matters identified in section 4.6.2 of the lesser black-backed gull compensation plan which are included Annex 3 of this document.

6. As the intention is to deliver the compensation for the Norfolk Projects together a single LBBGIMP has been drafted to discharge the relevant conditions of the compensation schedules for both DCOs.

1.1 Consultation

7. The LBBGSG is comprised of representatives of the Norfolk Projects, Natural England the Marine Management Organisation (MMO), East Suffolk Council and the Royal Society for the Protection of Birds (RSPB). A chairperson, who is independent from the members organisations, has been appointed to oversee proceedings.

8. A consultation report is provided in Annex 1. This has been prepared as a record of all engagement with the LBBGSG to demonstrate that a full and open consultation process has occurred and that input from all members of the LBBGSG has been considered and acted upon where appropriate. An agreement log is being kept by the LBBGSG and updated prior to and following each meeting, the agreement log, at time of submission of the LBBGIMP is provided as Appendix 2 to the LBBG consultation report (Annex 2). The intention is that the agreement log is maintained and submitted as part of the annual reporting required under condition 18 of the compensation schedules.

9. Further information on how LBBGSG members have contributed towards developing the compensation is provided in section 5 and Annex 1 of this document.

1.2 Document Development

10. This document has been written in consultation with the LBBGSG who have shaped and informed the scope and delivery of the LBBGIMP.

11. A “skeleton” draft of the LBBGIMP was circulated on 30th March 2022 prior to the first steering group meeting on 13th April 2022. The skeleton draft LBBGIMP was

produced to inform preliminary discussions with the LBBGSG. It included an outline of the document structure together with notes on the proposed content. This was then discussed as the first LBBGSG meeting, and the comments received influenced the first full draft of the LBBGIMP.

12. The first full draft (Draft 1.0) of the LBBGIMP was circulated to the LBBGSG on 15th June 2022 for discussion at the second LBBGSG meeting on 29th June 2022. In response to comments made at the first LBBGSG meeting draft 1.0 included further detail on maintenance, monitoring and predator eradication (including a predator removal protocol).

13. Following the third LBBGSG meeting (12th August 2022) the document was again updated, and further detail added to form version 2. A further review period by the LBBGSG was then completed and comments addressed prior to issue of version 3 being circulated in preparation for the fourth LBBGSG meeting (5th October 2022; see section 6 and Annex 1 for further detail). Further comments were then provided at the fourth meeting which allowed the finalisation of the document for submission to the Secretary of State (SoS).

2 Summary of Proposed Compensation Measures

14. The general approach to compensation was set out in *Alde-Ore Estuary SPA In Principle Compensation* (Referred to as the lesser black-backed gull compensation plan in the compensation schedules). This confirmed that measures to control nest predation within the SPA, and hence increase productivity within the SPA population, would be the most effective means of compensating for in-combination effects on LBBG populations.

15. Numbers of lesser black-backed gulls breeding at the AOE SPA have declined dramatically since 2000. Although part of that decline could be related to reductions in the availability of fisheries discards (Sherley et al. 2020), the primary cause of decline has been attributed to impacts of predation by foxes in the colony. At Orford Ness, in 2000, 75% of nests (in a colony of 23,000 pairs), failed due to fox predation (Mavor et al. 2001). Breeding numbers at Orford Ness fell from 24,000 pairs in 2001 to 6,500 pairs in 2002 due to fox activity at the colony because fox control was not carried out there in 2002 (Mavor et al. 2003). Numbers of lesser black-backed gulls breeding at Orford Ness dropped to a few tens of pairs, with, until recently, all of these nesting on the rooftops of buildings there, which further supports the hypothesis that this species has become unwilling to nest on the ground at Orford Ness because of the impact of mammal predators (notably foxes) on breeding success. The birds have started to nest at the southern end of Orford Ness in recent years, with approximately 200 pairs now present, although this colony is understood to be subject to human disturbance. These birds appear to have expanded from the

adjacent Havergate Island colony, managed by the RSPB, which has averaged around 1,700 pairs over the last ten years. This colonisation began during the Covid-19 lockdown and the associated lack of human disturbance. This and reduced fox numbers at the southern end of Orford Ness is thought to have made colonisation a viable option. It may also be likely that non-predatory but disturbing species such as Chinese water deer are present in much lower numbers in this area owing to the much less suitable habitat (although this has not been confirmed).

16. Reduction in predation and disturbance from non-predatory mammals will be achieved through the creation of six hectares of fenced enclosure at Orford Ness. A predator exclusion fence will be installed to achieve effective exclusion of foxes, other mammalian predators and non-predatory but disturbance causing species (e.g. deer and hare). The predicted magnitude of collision mortality for which compensation is required by the projects is small (the combined annual mortality will be in the order of 2.1 for Norfolk Boreas and 2.6 for Norfolk Vanguard). To address the concerns of Natural England and the RSPB, regarding the scale of compensation appropriate for this mortality, a compensation ratio of 3:1 was proposed (reflecting the ratio adopted for habitat compensation examples) which indicates that the compensation would need to be capable of delivering a minimum of 14.1 adult birds into the population each year. While it is acknowledged that Natural England and the RSPB consider the application of this multiplication approach to be somewhat simplistic, in reality the proposed area which will be protected from mammals (6ha) will be capable of supporting a breeding colony which could produce many times more adult birds than this minimum (as will be detailed below), hence these concerns are not considered to be at odds with the proposals. It is anticipated that a large number of LBBG pairs (potentially several hundred) could nest in the enclosure.

17. Lesser black-backed gull compensation is also required for two ScottishPower Renewables (SPR) offshore windfarm sites (East Anglia ONE North and East Anglia TWO). In the event that the SPR projects proceed, the proposed area would provide sufficient compensation capacity for the SPR wind farms (for losses of 0.3 and 1.6 adult birds for East Anglia ONE North and East Anglia TWO respectively) in addition to the capacity required for the Norfolk Projects. However, LBBG compensation for the SPR projects (including any related monitoring and adaptive management measures) would be approved separately from and does not form part of this LBBGIMP.

3 Location of Compensation Measures

18. Potential location(s) for the proposed predator proof enclosure were presented at the first steering group meeting, to enable discussion and input to final site selection.

19. Following this, a site visit was conducted with the landowner and representatives of Natural England to discuss the proposed sites. It was agreed that the proposed location appeared to be appropriate but that a site suitability survey should be conducted, focussed primarily on the physical structure of the vegetation, to confirm this. The survey scope was reviewed by Natural England and the RSPB and refined in line with the comments received. The survey was subsequently conducted in June 2022 and identified areas within the proposed site that are suitable for LBBG nesting with no intervention required, as well as areas where simple vegetation management would create suitable nesting conditions. To estimate possible nesting numbers a nest density of 0.04/m^2 has been used (Ross-Smith et al. 2015). Allowance has also been made for the fact that not all of the area within each suitability classification would be expected to be utilised. The survey report, including assumptions for estimating nest densities, is included in Annex 2 and the conclusions are summarised here:

- The habitat at the site was reported to be very similar to that used by breeding LBBG when the population was at its peak (in the early 2000s), comprising tall grass which was a preferred habitat;
- Proximity of LBBG breeding on the roof of nearby buildings was noted and considered to be an important feature for rapid colonisation following fence installation;
- Approximately 0.7ha was estimated to be suitable for nesting with no modifications (which could accommodate up to 165 pairs);
- Approximately 1ha would require minimal management (cutting back small patches of grass to create short sward which could accommodate up to 230-340 pairs); and,
- Approximately 4ha would require moderate management (i.e., denser sward requiring more cutting to create short sward patches which could accommodate up to 1,000-1,500 pairs).

20. The minimal management areas are estimated to require no more than 2 days of grass cutting per year, using handheld strimmers. The moderate management areas are estimated to require up to approximately 20 days per year using handheld strimmers, which will include removal of cut material.

21. To improve the understanding of LBBG preferred nesting conditions it is proposed that in the first year of vegetation will be cut in one minimal management area (Figure 2, compartment 7) and one moderate management area (Figure 2, compartment 11)to inform better understanding of LBBG preferred nesting conditions and future management. Compartment 7 would be strimmed to obtain a patchwork of short (target <=10cm height) and longer sward heights to complement the existing suitable adjacent compartment 10 (it is suggested that this should result

in approximately equal areas of short and long sward). Area 11 would be divided into two approximately equal sections, with one half cut to around 20cm throughout and the other half strimmed to create a patchwork of short and long sward heights equivalent to those in compartment 7 (i.e., <=10cm height). The areas to be cut would be marked out in advance for the contractor, to ensure an appropriate combination of sward heights is obtained, providing adults with opportunities to nest against features (objects or patch edges) and for chicks to have stands of grass with a longer sward height to take cover in. A site visit in autumn 2022 will be used to mark out management areas.

22. Following the first breeding season, and the results obtained, cutting management will be reviewed, and a cutting plan proposed for discussion with those members of the LBBGSG that wish to be included.

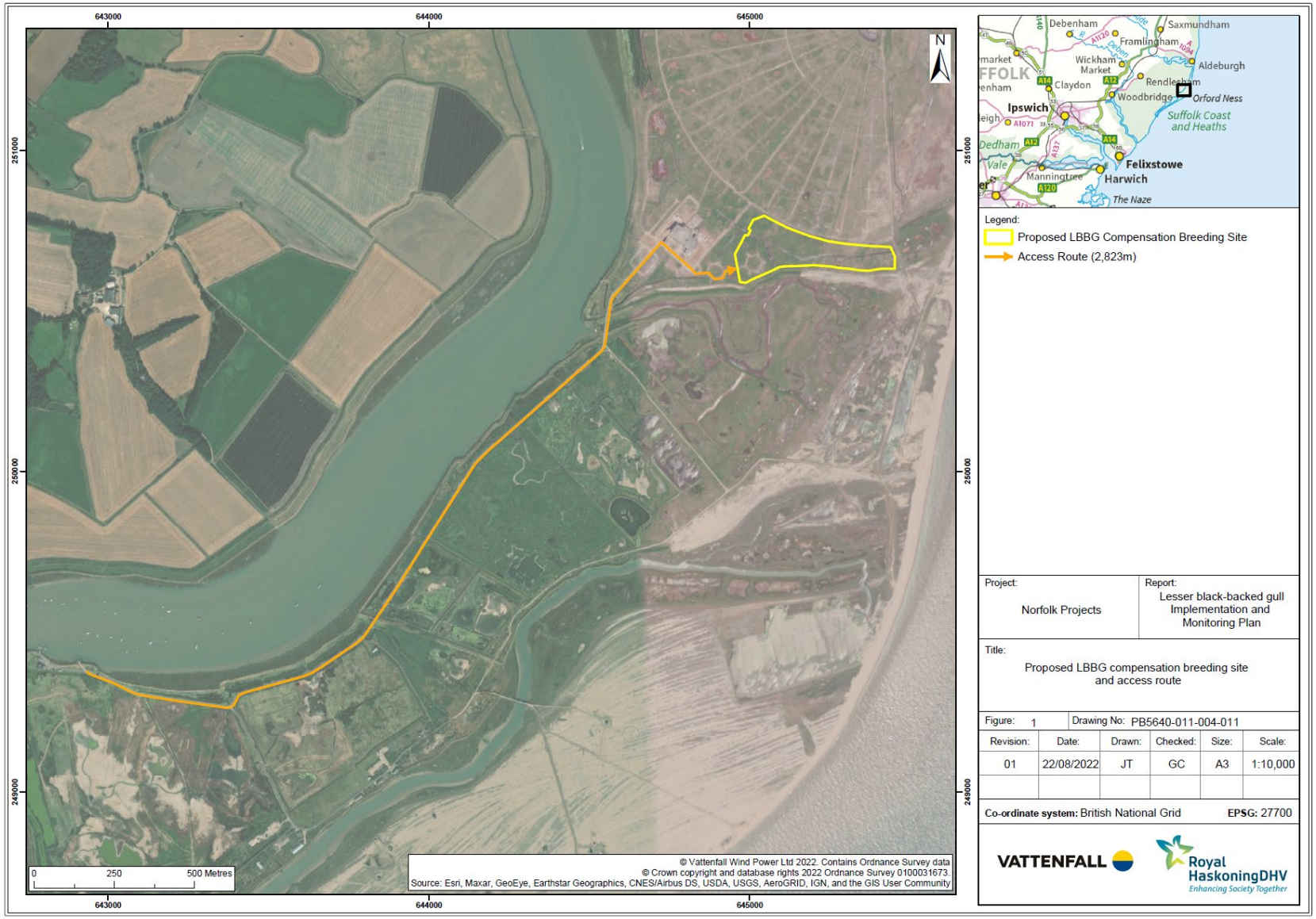

Figure 1 Proposed LBBG compensation breeding site (yellow boundary) and access route (orange line).

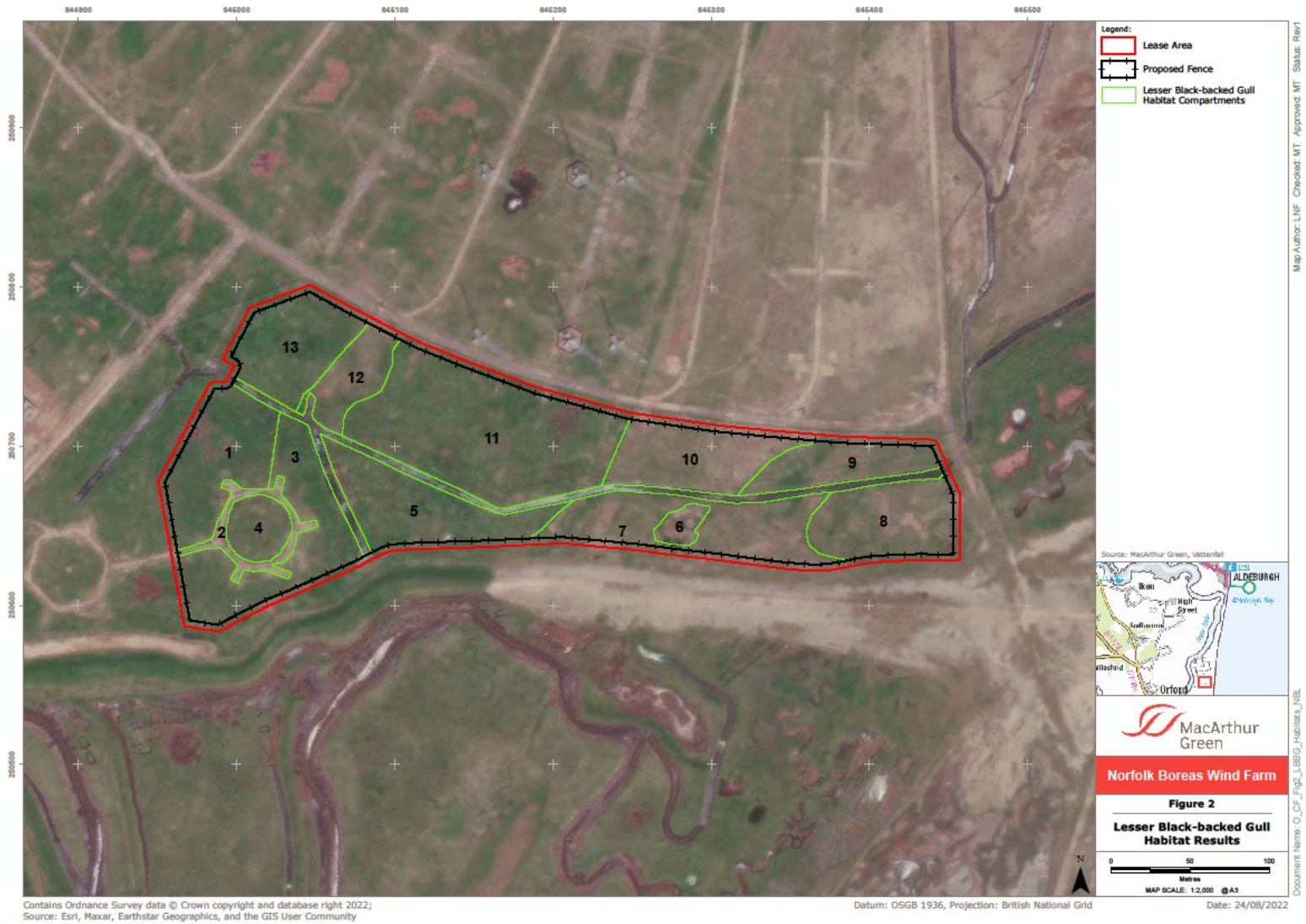

Figure 2 Proposed LBBG compensation breeding site (red boundary) with sub-compartments identified during site suitability survey. Compartments considered suitable with no management (2, 10), with minimal management (7, 12) and moderate management (1, 3, 4, 5, 6, 8, 9, 11, 13).

4 Landowner Agreements

23. On 29 July 2022 Norfolk Vanguard Limited and Norfolk Boreas Limited (along with East Anglia One North Limited and East Anglia Two Limited) entered into a lease with Cobra Mist Limited in relation to the land (within the red line shown in Figure 2) lying to the South and East of the River Ore, Orford and Orfordness (forming part of the property registered at HM Land Registry under title number SK170668) (the Property). The lease is for a term of 40 years beginning on, and including 1 August 2022 and ending on, and including 31 July 2062.

24. The Permitted Use of the Property is for and as LBBG nesting as well as the erection, use, repair, renewal, replacement and removal of the Installations (as defined below) and the works of construction, maintenance and repair of the Installations. It also includes other measures and strategies as may be required pursuant to the LBBG Compensation Measures. These are defined as the measures and strategies to compensate for the predicted loss of LBBG as a result of the Project DCOs and/or the LBBG implementation and monitoring plan or plans (including any modification, amendment or re submission thereof approved in writing by the Secretary of State).

25. The lease gives the Norfolk Projects the right to carry out the works of construction, maintenance and repair of the Installations on the Property, as well as to install, operate, maintain, repair, renew, remove, replace and use the Installations on the Property. Within the lease installations are defined as the installations, equipment or erections detailed in or compliant with the Installations Specification. The Installations Specification includes a predator exclusion fence, mammal monitoring equipment, playback equipment, dummy birds, ditch-crossing structures, a small shed and a ground mounted or roof mounted (on shed) solar array of a scale commensurate with providing power to the above mentioned equipment. It also includes any other installations, equipment or erections required or to be used for the purpose of or ancillary to the Permitted Use on the Property and approved by the Landlord.

26. The Norfolk Projects are also granted a right of way over the access forming part of the Landlord's Retained Land, namely the property registered at HM Land Registry under title number SK170668, conditional on locking the gates immediately following use.

27. The lease gives the Norfolk Projects the right to construct and use temporary lay down areas and construction compounds on the Property for the purposes of carrying out the works and also the right to carry out tests and surveys for the purposes of assessing the suitability of the Property for the use for and as LBBG nesting.

28. The Norfolk Projects are also granted the right to construct, install, lay, repair, maintain, renew, replace and connect into service media on the Landlord's Retained Land and to use any such service media subject to causing as little damage as possible and making good all damage caused.

29. The lease additionally gives the Norfolk Projects the right to install, maintain and operate photovoltaic solar panels and all ancillary equipment for the purposes of powering monitoring equipment installed on the Property, should this ever be required.

30. With regards to use of vehicles and access, the Norfolk Projects are granted navigation rights for boats and other water-based vehicles through and across the River Ore and the right to park a single motor vehicle for use as a pool car within 175 metres of the slipway in an agreed location. The lease also grants the Norfolk Projects the right to land boats and other water-based vehicles on the slipway forming part of the Landlord's Retained Land and to use the slipway for loading and unloading of vehicles, equipment, machinery and people together with rights to pass and repass at all times.

31. The lease grants the Norfolk Projects the right to install, operate and maintain security and monitoring systems, fencing and signage and the right of support, shelter and protection from the Landlord's Retained Land. The Norfolk Projects are also granted the right to alter, redirect or manipulate any existing drainage channel or water course on the Property subject to the Landlord's consent.

5 Compensation Measures

32. The fence design has been informed through discussions with the LBBGSG, and in particular, with reference to the RSPB guide on predator exclusion fencing (White and Hirons 2019). Furthermore, the appointed fencing contractor has undertaken fence installation for the same purposes (protection of ground nesting birds from mammalian predators) at other nature conservation reserves, including ones managed by the RSPB. Vattenfall therefore has very high confidence that the fence will be fit for purpose and installed with the necessary attention to detail required.

33. The key aspects of the fence design will include:

    a) A height between 1.8m and 2.0m;

    b) Wire mesh with vertical wires at 50mm spacing and horizontal wires at 100mm spacing, and a gauge of at least 1mm to prevent foxes chewing through it;

    c) The wire rolls will have a total height of 2.4m of which approximately 600mm will be buried horizontally at a depth of 100-150mm;

d) Material at the base will be scraped back using a digger to a depth of 100-150mm and a width of no more than 1m, into which the lower section of the fence will be laid, before being recovered with the scraped back material;

e) Water crossings will include mesh to the base of the drainage channels to prevent access by aquatic species (e.g. otter);

f) Incorporation of a 'floppy' overhanging top of 300-450mm angled at approximately 45° to the outside, comprising less tightly strained wire which offers unsecure footholds to prevent foxes climbing;

g) Metal strainer and support posts will be used, with a hollow cross-section which will be pushed (not hammered) into the ground using the arm of a digger, thereby reducing impact noise during installation and avoiding the need for excavation or use of concrete. The posts are resistant to salt-water corrosion in case of flooding events; and

h) Non-electrified (although this may be used as an adaptive measure if agreed with the LBBGSG).

34. A photograph of a similar fence specification is provided below (Plate 1).

Plate 1. Example of fence installation with the same specification as that to be installed at AOE SPA. Note that the vegetation along the outside edge has fully recovered following replacement over the buried skirt.

6 Delivery Timetable

35. The projected delivery timetable for the LBBG compensation measures is set out in Figure 3.

36. The compensation schedules state that "*no operation of any turbine forming part of the authorised development may begin until four full breeding seasons following the implementation of the measures set out in the LBBGIMP have elapsed. For the purposes of this paragraph each breeding season is assumed to have commenced on 1 March in each year and ended on 30 September.*" This requirement to implement

the LBBG compensation in advance of the operation of turbines largely dictates the timetable for delivery.

37. Installation of the predator fence is scheduled for completion prior to the commencement of the typical LBBG breeding season on the 1 March according to the DCO and in April according to Waggitt et al., 2019. Once installation is complete the compensation measures will have been implemented for the purposes of the DCO. Installation of the fence prior to the start of the 2023 breeding season allows for a minimum of four breeding seasons (defined as 1 March-30 September, as per the DCO) before the proposed first operation of turbines within the Norfolk Projects in 2027.

38. Planning permission under the Town and Country Planning Act 1990 for the installation and maintenance of the fence was granted on 21 October 2022. The application was not considered to constitute an 'EIA development' under the Infrastructure Planning (Environmental Impact Assessment) Regulations 2017 (as amended) or the Town and Country Planning (Environmental Impact Assessment) Regulations 2017 (hereafter referred to as the EIA Regulations). The Planning Application and planning decision can be found on the East Suffolk Council (planning reference DC/22/3447/FUL). The Planning Application and planning decision can be found on the East Suffolk Council website[1].

39. SSSI assent from Natural England (NE) for the installation and maintenance of the fence was granted on the 4 October 2022. This assent also covers the proposed vegetation management. A separate SSSI assent for survey activities required to monitor the breeding birds will be sought once the precise nature of the survey activities has been confirmed with the SoS and the LBBGSG. Further SSSI Assents from Natural England may also be sought for site management proposals which differ from 'normal' site management activities should these arise in future.

40. Key milestones for the delivery of the proposed compensation measures included:

- Consultation with the LBBGSG between April and August 2022 to agree the location and design.
- Planning Application submitted to ESC on 31 August 2022.
- SSSI Assent sought for fence installation, fence maintenance and vegetation control on 6 September 2022.
- SSSI Assent granted on 4 October 2022.
- Planning permission granted on 21 October 2022.
- SSSI Assent for monitoring of nesting birds expected to be sought on 21 November 2022.

[1] https://publicaccess.eastsuffolk.gov.uk/online-applications

- Fence installation expected to be undertaken between December 2022 – January 2023.
- Implementation for the purposes of the DCO complete by end of February 2022 (with the fenced area available for LBBG to nest within); and
- Post installation consultation with the LBBGSG to discuss any unforeseen aspects which occur as a result of installation and how these may be factored into any adaptive management required; and
- Annual ongoing reporting to the LBBGSG and SoS.

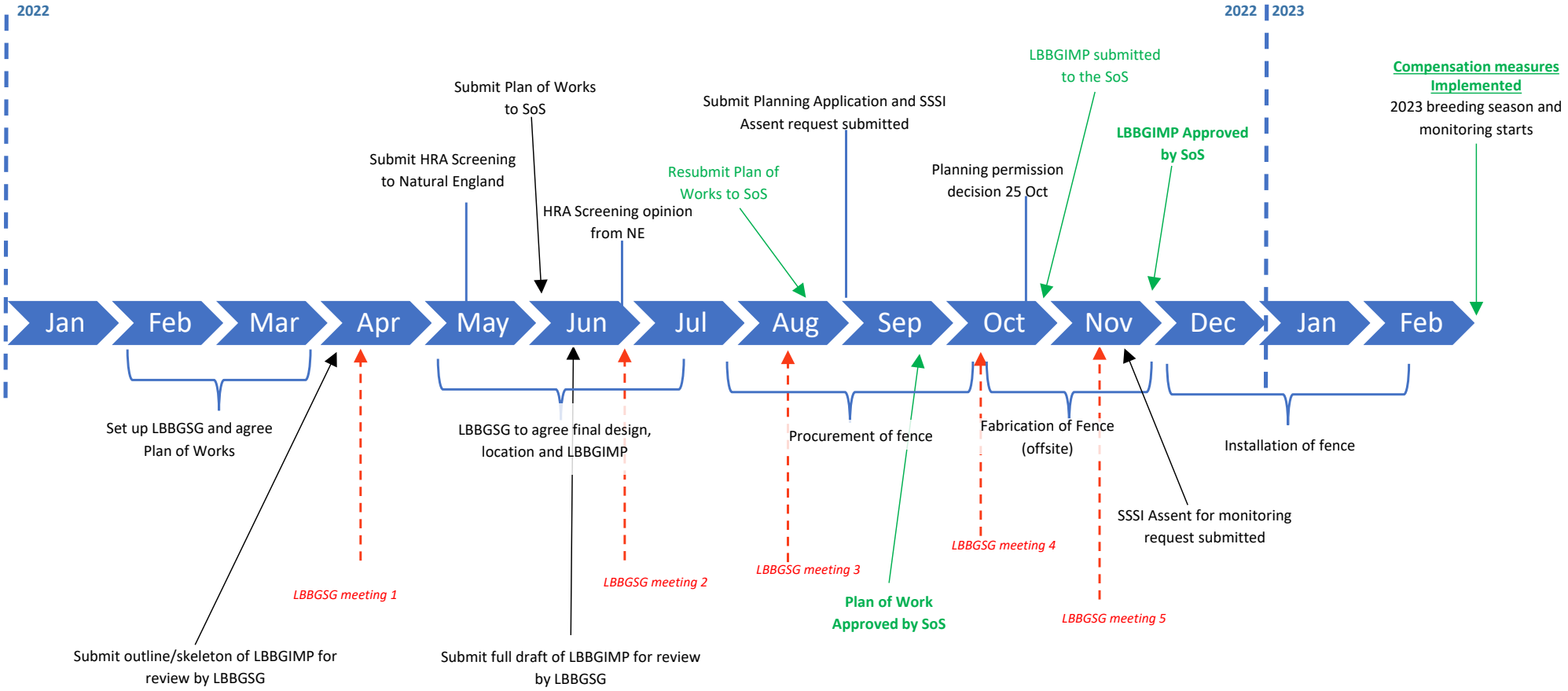

Figure 3 Projected implementation timetable for the delivery of predator proof fencing

7 Maintenance Schedule

41. The critical feature of the LBBG compensation is that the fence continues to prevent entry by mammalian predators. Thus, it is critically important that the full length of the fence is inspected on a regular basis and any damaged or weak areas are rapidly repaired. The breeding season maintenance schedule will be:

- Inspected on a two-weekly basis (March to August) as per the recommendation in White and Hirons (2019); and,
- Any damaged or weak areas will be rapidly repaired if essential to maintain integrity or if possible, to do so with minimal disturbance.

42. During the non-breeding season, the following maintenance schedule is proposed:

- Less regular inspections (e.g., 2-3 times per winter), but inspections will also take place following periods of severe weather;
- More substantive maintenance, such as replacing rusted sections of wire or weak posts will be undertaken at this time to avoid undue disturbance to the breeding birds; and,
- Routine inspections will take place at such times to allow sufficient time for any substantive repairs to be completed prior to the return of LBBG to the SPA (i.e., before the end of February).

43. At any time, if a breach in the fence is found, careful monitoring will be conducted to check for the presence of mammals within the fenced area.

44. While the primary concern is predatory mammals, specifically fox, otter and badger, the presence of non-predatory species such as deer (Chinese water deer are present in large numbers in the SPA) and hare may also reduce the productivity of the LBBG through disturbance, which may offer opportunities for avian predators (other species of gull and corvids) to steal eggs and chicks. There are also potential welfare issues from trapping such species within the fence. Hence inspection will also consider signs of the presence of these species.

8 Mammal Monitoring

45. Immediately prior to completion of the fence installation, a thorough inspection of the enclosure area will be undertaken to attempt as far as possible to ensure there are no large mammals present inside. This is expected to take the form of a group of personnel, walking a line across the site, in a manner which flushes any mammals in front and out through the last unfenced section of the enclosure. Several passes will be conducted (e.g. over the course of a day) to increase confidence that all larger mammals have been flushed out.

46. Although there are no historical records of otter holts on the site and the ground conditions are considered unsuitable, if there are any holts within the enclosure the mammal flushing method may be ineffective. Therefore, as a precaution a survey for the presence of holts will be conducted prior to fence installation, with appropriate follow up actions to be taken if any are found

47. Once the fence is fully installed, as well as regular fence inspections it is important that the presence of predators inside the fence, should they manage to penetrate, is detected rapidly. Monitoring for predators during the breeding season will be combined with fence inspections. A combination of monitoring options will be used:

- Sand traps will be placed at intervals around the inside of the fence to help the detection of footprints. These may also be placed on the outside of the fence to record the presence of foxes patrolling the fence;
- Camera traps located at corners and/or gateways, checked at least weekly, possibly twice per week;
- Weekly night vision surveys from suitable vantage points;

48. During the nonbreeding season, monitoring for predators will use the same methods as above, but at a reduced frequency of once per month (September to January). During February a concerted effort to ensure the enclosure is predator free will be undertaken, with twice weekly checks and night-time visits until such time as monitoring staff are confident no predators are present within the fence.

8.1 Mammal Removal Protocols

49. Should the presence of predators be detected inside the fenced enclosure it will be necessary to take steps to ensure their rapid and safe removal. The nature of these steps will depend on the species in question. Following consultation with the LBBGSG, mammal removal protocols will be drafted and agreed. It has been agreed with the LBBGSG that these will not be included in the LBBGIMP but instead produced as a standalone guide for the monitoring staff.

50. Removal protocols will be developed for fox, otter, badger, mink, hare and Chinese water deer.

51. The time of year when a mammal is detected (or suspected) inside the enclosure will determine the speed of response required. If the detection is between September and January, then there will be a slightly lower urgency than if the detection is between February and August. In the case of the latter there would be an immediate and concerted effort to address the situation.

52. Irrespective of when the mammal is detected, or which species, the fence itself would be inspected in the first instance to determine the entry point and repairs quickly effected to prevent any further ingress.

53. Following first detection, or indication that mammals may have gained entry to the enclosure it will be necessary to:

    a) Determine the species of mammal(s) inside the enclosure, by way of camera traps, footprints and scats;

    b) Determine, as far as possible if the mammal(s) are still within the enclosure; and,

    c) Establish the remedial steps to be taken (if required) and refer to the appropriate mammal removal protocol(s).

54. The mammal removal protocols will take into account statutory considerations, such as any licensing requirements. Removal of species for which a licence is required will adhere to existing licensing requirements, such as those for removal of otters from fisheries[2]. If it is considered feasible, efforts will be made to flush out individuals from within the enclosure, rather than attempting to trap and release animals. However this course of action will only be attempted if it is permitted under relevant legislation (e.g., The Invasive Alien Species (Enforcement and Permitting) Order 2019[3]), there are no welfare concerns (e.g. causing additional stress or a risk the animal will harm themselves by running at the fence) and the level of disturbance to nesting LBBG is considered to be low.

55. It is not anticipated that smaller mammal species, such as rats, will require control measures (for example rats are present in the LBBG nesting areas on Havergate Island and are not considered to have a detrimental effect on reproductive success, J. Miller pers. comm.). However, should it become apparent that rats are causing reduced reproductive success in the compensation colony (e.g., through direct observation or monitoring camera footage of rat predation of eggs or chicks) it may be necessary to undertake control efforts. A rat control protocol will be developed should this occur, noting that it will not be appropriate to use rodenticides for this purpose as this could result in secondary poisoning of non-target species, including LBBG.

56. All cases of mammal entry to the enclosure will be noted, communicated to an agreed management group and included in the annual reporting.

[2] https://www.gov.uk/government/publications/otters-licence-to-capture-and-transport-those-trapped-in-fisheries-to-prevent-damage
[3] https://www.legislation.gov.uk/uksi/2019/527/contents/made

9 Monitoring and Reporting

57. The LBBG compensation has been developed with the aim of enabling increased productivity in the SPA population to offset a combined loss of 4.7 adults per annum from the AOE SPA population (2.1 for Norfolk Boreas and 2.6 for Norfolk Vanguard).

58. The following activities will form the core requirements for monitoring, undertaken annually following installation of the fence (i.e., first monitoring activity undertaken in 2023) and continue for the period the compensation is required, and is derived from Gilbert et al. (1998):

- Counts of the number of pairs (and/or apparently occupied nests, AON) in the enclosure. In the first three years following fence installation these would be undertaken in March, April, May (x2), June (x2), July (x2) and August (9 in total). Subject to agreement from the LBBGSG, the count frequency and total (per year) may be reduced in later years on the understanding that the quality of data collection is not compromised (this would be informed by review of the data collected to date).

- Alongside the AON counts (as outlined above), productivity will be estimated (number of eggs, chicks and fledged young/pair), for mapped pairs that can be reliably observed, will be made until such time as chicks can no longer be associated with their nest. It is likely that not all nests will be observable so this will represent a minimum productivity estimate;

- Observations to obtain both counts and productivity will be made from outside the enclosure to minimise disturbance. Ideally observations will be made from within a vehicle as this will cause much less disturbance, although portable hides (e.g. fabric tent style) may also be useful for this. Vehicle observations will primarily be made from the access track which runs along the west and north of the site. If it is suitable, and access can be arranged, the shingle ridge that runs along the south of the site may also be used for vehicle based observations (it is not currently known if larger vehicles such as Land Rovers can use this track). Alternatively, hide based observations will be made from the shingle ridge.

- Because it is unlikely that all nests will be visible from any given location it will be necessary to map observed AON to cross-check between vantage points. This will also permit tracking of nest success over the course of the breeding season.

- Counts will be conducted during the daytime (0900-1600) and conditions of good visibility; poor weather (heavy rain, fog, high winds) will be avoided.

- Surveyors will also collect opportunistic observations, such as instances of predation by avian species (e.g., other large gull species and corvids), in particular if these appear to be related to disturbance events such as vehicle movements or animal activity outside the fenced area which may highlight the need for management changes or temporary movement restrictions.

- The above methods will be complemented with high resolution photography, to provide a permanent record of how the enclosure is being used. Consideration will be given to the use of drones to obtain aerial images across the site, but only if this is agreed with the landowner and can be done without causing disturbance (a review of best practice drone use indicates that nesting large gulls are highly intolerant of drones, so this option will be progressed with great caution and will only be undertaken if there is high degree of confidence that it will not have negative effects).

- If access is agreed with the owner, the roofs of the adjacent buildings will also be surveyed to collect the same data as above, although since the presence of people will cause disturbance to birds which nest on the buildings the number of visits will be minimised (no more than three per season) and combined with monitoring of these birds.

- Any observations of avian predation (or suspected avian predation), for example egg stealing by corvids or other large gulls, will also be noted and included in the annual report.

59. Further details of the monitoring methods outlined above can be found in Gilbert et al. (1998).

60. In the first three years following installation of the fence, and subject to any restrictions on work within bird colonies due to avian influenza, the following additional monitoring will be undertaken:

- Ringing of chicks (BTO metal and colour rings), linked with resighting efforts (for birds colour-ringed as chicks) commencing four years after the first season of colour-ringing at sites within the regional population (primarily the SPA);

- Diet studies, through collection of pellets and/or regurgitated material during handling of birds for ringing (note this aspect will be opportunistic and it is not proposed that efforts to force regurgitation will be made);

- Ringing (BTO and colour rings) of chicks produced at other regional populations may also be undertaken, at a sample of locations where such

work is considered feasible (e.g. Havergate). This will enable the origins of ringed birds which recruit to the compensation population to be determined;

61. Additional monitoring will be considered during the operation of the wind farm and thereafter whilst the fence remains in place, subject to discussions and agreement with the LBBGSG. This may include collection of blood and faecal samples (subject to appropriate licensing being obtained) to assist in monitoring of avian influenza.

62. All monitoring and bird handling will be undertaken by qualified and experienced ornithologists to ensure it is conducted to a high standard and causes the minimum of disturbance. In particular, all ringing efforts will be undertaken in a careful manner as disturbance in gull colonies can often result in chicks being predated. The Norfolk Projects will engage with other parties undertaking LBBG monitoring at the SPA in order to ensure consistency in methods and to avoid duplication of effort which would be both inefficient and also could result in unnecessary additional disturbance to breeding birds.

9.1 Timescales for Reporting

63. In accordance with paragraph 14 f) and paragraph 18 an annual report will be produced following the breeding season and provided to the LBBGSG and SoS as soon as is practical each year (with the aim of providing this by the end of November).

64. Following each year's monitoring at least one LBBGSG meeting will be organised to present the findings and discuss how these will be reported. The anticipated stages and the anticipated timing for producing the annual reports are provided in Figure 4 .

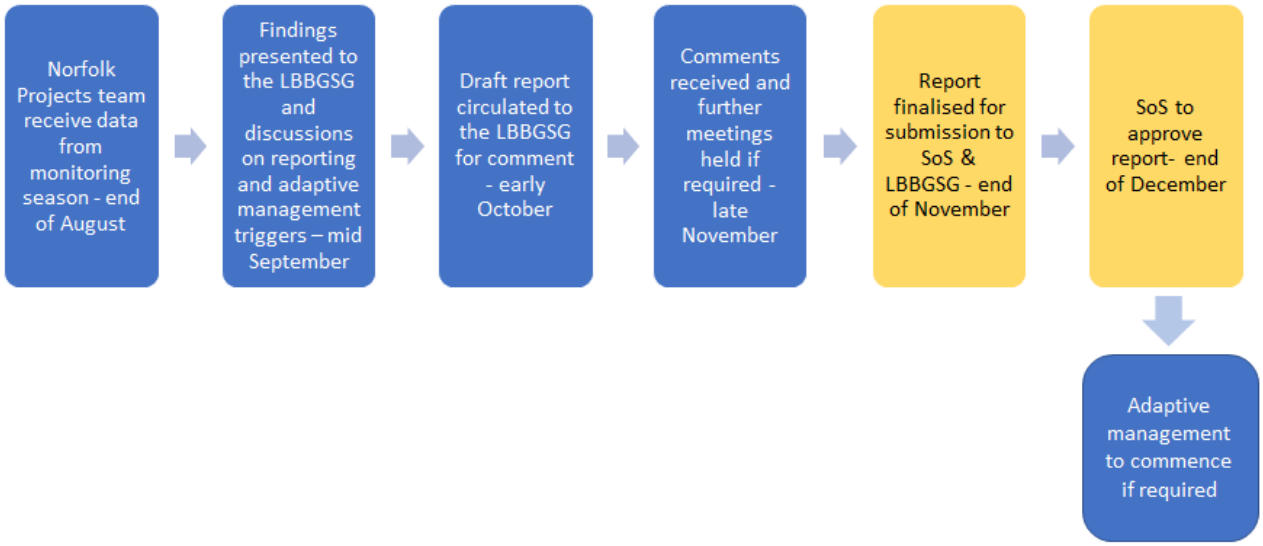

Figure 4 Anticipated annual reporting timescales to the LBBGSG and SoS

65. Once the population has become established, the extent of monitoring may be reduced, but only following discussion with the LBBGSG and agreement in writing with the SoS.

10 Compensation Performance - Monitoring and Adaptive Management

66. The compensation schedule states that the annual reporting:

must include details of any finding that the measures have been ineffective in securing an increase in the number of adult lesser black-backed gulls available to recruit to the AOE and, in such case, proposals to address this. Any proposals to address effectiveness must thereafter be implemented by the undertaker as approved in writing by the Secretary of State in consultation with the relevant statutory nature conservation body.

67. Productivity is considered to be the ultimate measure of success when reviewing the performance of the colony, however it will be critical that the reasons for any shortfall against expectations are recorded in order that appropriate remedial steps (if warranted) can be taken. Thus, while it is considered sensible to set targets for colony performance (the proposed target is: at least 20 chicks fledged per year in at least 3 out of 5 years, from year five of the scheme onwards), these metrics should be used as a framework for monitoring and it is just as important that consideration is given to an understanding of the status of LBBG colonies more widely, in order to determine the compensation colony's relative performance.

68. Thus, the performance of the new colony should not be viewed in isolation but should be seen in the wider context of LBBG breeding success locally (i.e. within the SPA) and regionally (e.g. southern North Sea). Hence, poor breeding success at the compensation colony in a year when this is also seen at most other LBBG colonies locally or regionally would be indicative of wider issues (e.g. reduced prey stocks, adverse weather conditions or disease) and would not automatically trigger remedial action at the compensation colony. However, under these circumstances the Norfolk Projects would look to understand the reasons for poor reproductive performance at the compensation colony, attempt to identify potential remedies and collaborate with relevant groups to understand the wider context in terms of other local or regional colony breeding success.

69. Conversely, if the compensation colony performs less well than other monitored sites, this would be a strong indicator that action is required to identify and address the causes.

70. During the initial years following installation of the fence (e.g. one to five), monitoring is expected to be focussed on understanding the mechanisms for colonisation. For example, there may evidence that birds are not prospecting within

the enclosure, or prospecting but not settling, or settling but abandoning during nest building, etc. and each of these would lead to a requirement for different remedial measures. Data will be collected with the aim of understanding the reasons for whichever of these may be occurring, such as the suitability of the vegetation or disturbance (e.g. mammal movements outside the fence or vehicle movements) and the most appropriate corresponding responses. Other factors which will be monitored if feasible (i.e. if focal nests can be identified and monitored without itself causing disturbance) will include nest attendance rates and foraging trip duration, as these will indicate the degree of effort required by the breeding adults and may indicate reasons for reproductive failure. As noted above, it will also be necessary to conduct similar monitoring at a sample of other locations to understand if any observed patterns are replicated elsewhere.

71. If colonisation does occur in the initial years (i.e. years one to five following fence construction)and initial recruits have good breeding success, but the rate of colony growth appears to be lower than would be needed for the colony to reach capacity (i.e. approx. 15 nests, allowing for approx. 1.5 fledglings/nest) within five years, then reasons for this will be investigated. This may highlight avoidance of particular areas of the enclosure (e.g. areas of less preferred vegetation, or the absence of sleepers, etc.), which could be targeted for modification or highlight that additional effort in attracting birds would be beneficial (e.g. use of decoys and broadcasting colony calls).

72. The monitoring and requirements for adaptive management will be conducted on an annual basis at least until such time as it is agreed that the colony is self-sustaining and performing at least as well as other local colonies.

73. As discussed above the adaptive management measures to be considered will depend on the circumstances, however actions may include:

- Additional habitat management, conducted over winter and prior to LBBG arrival in spring, to enhance the attractiveness for LBBG, e.g., through closer sward mowing, more careful patchwork strimming, creation of additional bare ground (e.g., removal of the top layer of material), placement of old sleepers (or similar) to provide structures for birds to nest against;
- If avian predation is identified as resulting in a significant loss of eggs (e.g. corvids or other gull species) then options for minimising this which are not detrimental either to other conservation objectives or have a risk to the LBBG themselves will be investigated;
- If initial recruitment to the enclosure is below the target level (as set out above) then colony call playback and placement of decoy birds within the

enclosure will be undertaken (although it should be noted that decoys may also be used to encourage birds to colonise the enclosure from the first breeding season year following fence installation, in which case this would represent an enhancement of the compensation measure already delivered);

- If productivity is lower than would be anticipated for the estimated number of AON, supplementary feeding of chicks will be considered. This would need to be done in a manner that achieved the aim of improving chick health, whilst not encouraging other species such as rats and foxes which could be detrimental (e.g. elevated 'bird tables', although as these would also attract corvids this would need careful consideration). Furthermore, this option would require careful consideration to rule out other more systemic causes, such as collapse of prey stocks, that short-term feeding would be unable to make up for;

- If it is considered that vegetation cutting is not creating suitable ground conditions for LBBG to nest successfully, the Norfolk Projects will enter in to discussions with the landowner to investigate the possibility of raising the water levels within the enclosure in order to modify the habitats (subject to all the agreements set out in the lease); and,

- In the event that the above methods are undertaken, and the enclosure remains under-utilised or unused then careful consideration will be given to the potential of alternative or additional locations.

11 LBBG Steering Group Minutes

74. Minutes of the LBBGSG meetings (where approved by the group for publication) are included within Annex 1 (LBBGSG Consultation report as Appendix 4) to this document.

12 References

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