
Priory Farm Solar Array
on behalf of Axis PED
Skylark Mitigation Strategy



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1 INTRODUCTION

1.1.1 This report has been prepared by Avian Ecology Ltd. and provides a Skylark Mitigation Strategy ('SMS') for the consented Priory Farm Solar Array (planning app: APP/X1925/V/23/3323321) at Great Wymondley, Hertfordshire ('the Site').

1.1.2 The report provides:

- Conservation objectives for SMS;
- An estimate of breeding skylark *Alauda arvensis* territories present onsite and in the proposed Mitigation Area;
- Details of proposed offsite mitigation (Skylark plots); and,
- Plans showing locations of the mitigation area.

1.2 Site Description

1.2.1 The Site is centred on grid reference TL 22483 28448 and measures 88 ha. The Site location is shown on **Figure 1**.

1.2.2 It is split into northern and southern parcels, bisected by Graveley Lane. Current land use of both parcels is cultivated arable land with fields often bounded by a mixture of defunct and intact, species rich and species poor hedgerows.

1.3 The Proposed Development

1.3.1 The 'Proposed Development' comprises the erection of a solar farm and associated works, including construction of substations, inverters, maintenance tracks, security fencing and cameras.

1.3.2 Existing ditches, hedgerows and trees located within the Site will be retained. The Proposed Development also includes ecological enhancements such as native tree and hedgerow planting that will deliver a substantial biodiversity net gain (BNG) which exceeded local planning policies (as were in place at the time and prior to the advent of mandatory BNG).

1.3.3 Mammal gates or mammal gaps will be implemented within perimeter fencing, as well as the deployment of bat boxes and owl boxes. Species-diverse meadow grassland will be seeded throughout the Site, encouraging a more diverse grassland plant community than is currently present. Overall, the Site will be significantly enhanced for biodiversity. However, the installation of solar panels is considered likely to displace breeding skylarks, which rely on open ground for nesting locations.

1.4 Proposed Mitigation Area Description

1.4.1 The proposed mitigation area ('the Mitigation Area') comprises a series of six arable fields, within the same landownership as the main application Site.

1.4.2 The Mitigation Area totals 54.2ha, located immediately west of the Site, centred on grid reference TL 22098 28442. The Mitigation Area location is also shown on **Figure 1**.

1.4.3 The field use within the Mitigation Area is currently unknown, however they are arable fields, likely farmed on a rotational basis.

2 SKYLARK MITIGATION STRATEGY (SMS)

2.1 Purpose and Conservation Objectives

- 2.1.1 Skylark is 'red-listed' on Birds of Conservation Concern¹ and is listed on Section 41 of the Natural Environment and Rural Communities Act (2006), which defines habitats and species which are of principal importance for the conservation of biodiversity in England.
- 2.1.2 The Proposed Development is anticipated to displace nesting skylarks from within the Site boundary and mitigation for nesting skylarks is subsequently proposed.
- 2.1.3 As skylarks are frequently observed in and around solar farms (e.g., Fox, 2022²), impacts from solar developments are considered to relate to loss of breeding sites only; the Site will remain available as a foraging resource for nearby breeding skylark pairs.
- 2.1.4 The purpose of the SMS is to ensure adequate mitigation is provided for skylarks which currently breed within the Site.
- 2.1.5 Subsequently, the conservation objective of the SMS is to ensure the conservation status of local skylark population is maintained.

2.2 Basis for Mitigation

- 2.2.1 To provide an appropriate level of mitigation, it is first necessary to determine the number of skylark territories using the Site and then also the Mitigation Area (as this area may already be used by nesting skylarks).
- 2.2.2 Surveys of the Site in 2021 identified 15 skylark territories which are assumed to be displaced by the Proposed Development, resulting in a density of 0.17 territories/ ha (15 territories/88ha Site). Subsequently mitigation is provided for 15 pairs.
- 2.2.3 The number of skylark pairs already nesting within the Mitigation Area is not established through survey; however, numbers will vary annually based on the crop type in any given year and the species is very well studied.
- 2.2.4 It is possible to estimate the potential breeding skylark territories within the Mitigation Area based on published 'average density' data, for different habitat types. It is considered that use of this data is reliable, and indeed may be preferable to field data, as the latter provides a limited 'snapshot' of territory numbers in any one year and is therefore based on a limited survey effort.
- 2.2.5 Donald (2004³) provides average skylark territory densities per crop type based on extensive research. This reference states an average density of 0.28 skylark territories / ha in arable farmland, i.e., habitat comparable to the Site. Territory densities in cereal crops are stated to vary between approximately 0.1 and 0.4 territories/ha, increasing up to 0.8 territories/ha with skylark plots.
- 2.2.6 It is therefore apparent that use of skylark plots can provide a significant increase in the carrying capacity of arable farmland for breeding skylarks.

¹ Stanbury, A., Eaton, M., Aebischer, N., Balmer, D., Brown, A., Douse, A., Lindley, P., McCulloch, N., Noble, D., and 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: 723-747. Available online at <https://britishbirds.co.uk/content/status-our-bird-populations>.

² Fox, H. (2022). Blithe spirit: Are skylarks being overlooked in impact assessment? CIEEM – In Practice, 117: pp47-51.

³ Donald, P.F. (2004). The Skylark. Poyser, London

- 2.2.7 The total area of the Mitigation Area is 54.2ha, although not all of this comprises arable land (which is potentially suitable for nesting skylarks). Using the total land area provides a precautionary estimate of territory numbers, as the actual capacity will be reduced due to the presence of other habitat features such as hedgerows.
- 2.2.8 Table 1 from Fox (2022)² provides 'average density by hectare' for breeding skylarks in various crop-types, adapted from the Donald (2004). Following these figures, and based on the presumed typical arable farmland use of the 54.2 ha Mitigation Area, it can be reasonably assumed that current skylark nesting densities in the Mitigation Area are moderate, with indicative population as follows:
- Arable Farmland (@ 0.28 pairs / ha) x 54.2ha = Estimated number of pairs = 15.2
- 2.2.9 It should be noted that the above figures do not consider field size or the presence of boundary features, which will affect breeding densities. As such numbers are not to be considered as absolute and likely represent an over-estimation of numbers of territories in the Mitigation Area.
- 2.2.10 Fox (2022)² also notes that the creation of 'skylark plots' can double the density of breeding skylarks in arable land (from 0.4 pairs/ ha to 0.8 pairs/ha). Subsequently it is reasonable to assume that the skylark 'carrying capacity' of the Mitigation Area will be substantially increased with the implementation of skylark plots (which are not currently in place). It is acknowledged that skylark mitigation cannot increase breeding densities to more than 0.8 pairs/ ha (i.e., the maximum carrying capacity), and more likely no more than 0.56 pairs /ha (assumed doubling of numbers based on arable farmland @ 0.28 pairs / ha).
- 2.2.11 A maximum pre-development density of breeding pairs within the Mitigation Area prior is assumed to be 15.2 pairs (see paragraph 2.2.8); however, this is likely to be a substantial over-estimation, with the lowest estimation (based on intensive cereals at 0.17 territories/ha) of 9.2 pairs.
- 2.2.12 Subsequently, adopting a precautionary approach and to provide full mitigation for the Proposed Development, the Mitigation Area must have the capacity to accommodate a total of 30 pairs (15 pairs from the Site, plus an assumed maximum of 15 pairs from the Mitigation Site).
- 2.2.13 At an increased density of 0.56 pairs following the creation of skylark plots, the Mitigation Area has the capacity to support at least 30.35 pairs of nesting skylarks (i.e., 54.2 x 0.56).
- 2.2.14 The provision of annual mitigation measures over the lifetime of the Proposed Development will also enable a stable local population which is less affected by crop variation (and which itself cannot be accurately projected over the 40-year period).

2.3 Mitigation Methodology

- 2.3.1 Mitigation is proposed using skylark plots, which will be created within six arable fields in the Mitigation Area.
- 2.3.2 The provision of skylark plots at a ratio of two plots provided for each potential lost territory is a widely used mitigation strategy for developments that will result in the loss of skylark territories.
- 2.3.3 Up to 60 skylark plots will be provided as mitigation, based on two plots for each of the 15 pairs identified within the Site and two plots each for the 15 pairs estimated within the Mitigation Area. Plots will be created at a maximum of 2 per ha.
- 2.3.4 The Mitigation Area comprises 54.2ha of land. However, UKgov guidance² recommends that skylark plots are preferably located over 50m from field boundary features (e.g., hedgerows and trees), or other tall structures which impair lines of sight. Therefore, land >50m from such features will be prioritised for the provision of skylark plots to maximise their effectiveness (**Figure 2**).

- 2.3.5 Larger fields are generally recommended for skylark plots as this also reduces risks of predation. Fields of > 5ha are therefore preferred. Field sizes in the Mitigation Area where skylark plots are proposed will largely exceed 5ha in size, with exception of one field that measures 4.6ha.
- 2.3.6 Due to the scale of the Mitigation Area, there is further flexibility in where the skylark plots can be created allowing a rotational approach which can be adopted on an annual basis.

2.4 Creation of Skylark Plots

- 2.4.1 Skylark plots will be created in accordance with Countryside Stewardship management practices as set out in UK government guidance 'AB4: Skylark Plots'⁴.
- 2.4.2 Skylark plots are undrilled patches in arable fields, which have been proven to boost nesting densities of skylarks. RSPB guidance⁵ states that:

'Skylark plots increase the number of chicks that skylarks can rear in winter cereals.

Winter cereal fields with skylark plots hold more nesting skylarks throughout the breeding season than conventional cereal fields, especially late in the season when numbers in conventional fields tail off as the crop becomes taller and thicker.

On average, nests in fields containing skylark plots produce more chicks than those in conventional fields. Skylark chicks that fledged in fields with skylark plots are also heavier, suggesting that they are better fed and more likely to survive the winter.

Skylarks do not generally nest in the skylark plots, but instead use them for foraging. In a conventional winter cereal field, skylarks can forage easily in April but, by June, more than half of the foraging has to take place outside the field. If adjacent fields also contain winter crops, skylarks will struggle to find sufficient food'.

- 2.4.3 A skylark plot is a 16m² (typically 4m x 4m) area of arable field that is created by one of the following methods:
- Turning off the drill during sowing to leave an unsown plot; or
 - Sowing the crop as normal and spraying with herbicide to create the plot by 31st December.
- 2.4.4 After drilling, the skylark plots can be managed with the same treatments as the remainder of the field. There is no need to keep the plots weed-free but spot-treating with herbicide in April will help skylarks to access their nesting sites. Mechanical weeding of crops containing skylark plots will destroy any nests present and should be avoided.
- 2.4.5 Skylark plots should also be located away from tramlines and no closer than 50m to field margins, although RSPB guidance⁵ above indicates that a minimal of 24m from field boundaries is acceptable in some circumstances.
- 2.4.6 Indicative skylark plot locations are shown in **Figure 3**. Precise skylark plot locations can be varied and rotated to suit farming requirements; however, the parameters detailed in paragraphs above will apply.

⁴ <https://www.gov.uk/countryside-stewardship-grants/skylark-plots-ab4>

⁵ Available online at:

http://www.sdfarmbirds.com/app/resources/documents/www.sdfarmbirds.com/unused/rspb_skylark_plots.pdf [accessed January 2024].

- 2.4.7 The skylark plots will be maintained on an annual basis for the duration of the operational life of the Proposed Development.
- 2.4.8 Skylark plots are also likely to benefit other farmland bird species, for example lapwings, finches and buntings.

2.5 Mitigation Management and Monitoring

- 2.5.1 AGR Solar 4 Limited will be responsible for the financial and practical delivery of the measures detailed within this Skylark Mitigation Strategy. AGR Solar 4 Limited have entered into a legal agreement with the landowner to ensure the SMS can be implemented for the full term of the development.
- 2.5.2 Plots will be initially installed by the landowner's farm contractor prior to the next available breeding season, either within year 0 or 1 of the solar development being installed on Site. Skylark plot locations can be varied to suit farming requirements year on year, but locations must adhere to the parameters described in Section 2.4, and it is the responsibility of AGR Solar 4 Limited (or any other subsequent owner of the development) to ensure this is adhered to.
- 2.5.3 The Mitigation Area will be monitored for a minimum period of five years from the date of the first export of electricity to the grid, with monitoring comprising of three breeding bird surveys per year. Details of the monitoring methodology are shown in **Appendix 1**.
- 2.5.4 Breeding bird surveys will be undertaken by suitably qualified ecologists, at the instruction of AGR Solar 4 Limited (or any other subsequent owner of the development), and who will also bear the corresponding costs. Monitoring results will be submitted to the Local Planning Authority via a monitoring report in years two and five of the plan, see Table 1 for the SMS timetable of delivery and **Appendix 1** for monitoring report requirements.

Table 1: Skylark Mitigation Strategy Timetable of Delivery

Management Activity	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
Year 0 / 1- Creation of Solar Scheme (and first export of electricity to the grid)												
Skylark Plot creation in Mitigation Area (assumed winter crop. Delayed planting due to e.g. wet conditions may require plots to be created in to the spring: plots ideally to be created at the time of crop sowing)	✓	✓						✓	✓	✓	✓	✓
Grassland creation on Site (*recommended)			✓*	✓*	✓	✓	✓	✓	✓			
Breeding Bird Surveys x 3 on Mitigation Area			✓	✓	✓							
Year 2												
Breeding Bird Surveys x 3 on Mitigation Area			✓	✓	✓							
Submit Mitigation Report to LPA (*recommended)									✓*			
Year 3												
Breeding Bird Surveys x 3 on Mitigation Area			✓	✓	✓							
Year 4												
Breeding Bird Surveys x 3 on Mitigation Area			✓	✓	✓							
Year 5												
Breeding Bird Surveys x 3 on Mitigation Area			✓	✓	✓							
Submit Mitigation Report to LPA (*recommended)									✓*			

2.6 Use of Alternative Mitigation Area(s)

- 2.6.1 In the event that the Skylark Mitigation Area (**Figure 1**) is either no longer available or suitable for Skylark mitigation over the operational lifetime of the Proposed Development, an alternative suitable location, or locations, will be provided. These will deliver at least an equivalent level of Skylark mitigation, including provision for Skylark populations on any alternative mitigation land proposed. Alternative locations and the mechanism for delivery of Skylark mitigation will follow the principles as set out in this document, and will be agreed in writing with the Local Planning Authority prior to implementation.

3 CONCLUSIONS

- 3.1.1 Full mitigation for the loss of nesting skylarks within the Site can be delivered within the 54.2ha Mitigation Area, of which 21.24ha is suitable for skylark plots. The Mitigation Area therefore has the capacity to support its estimated current breeding population and further accommodate the 15 pairs identified within the Site in 2021.
- 3.1.2 Subsequently the Conservation Objectives of the Mitigation Strategy will be met.

Figure 1: Site and Mitigation Area Locations

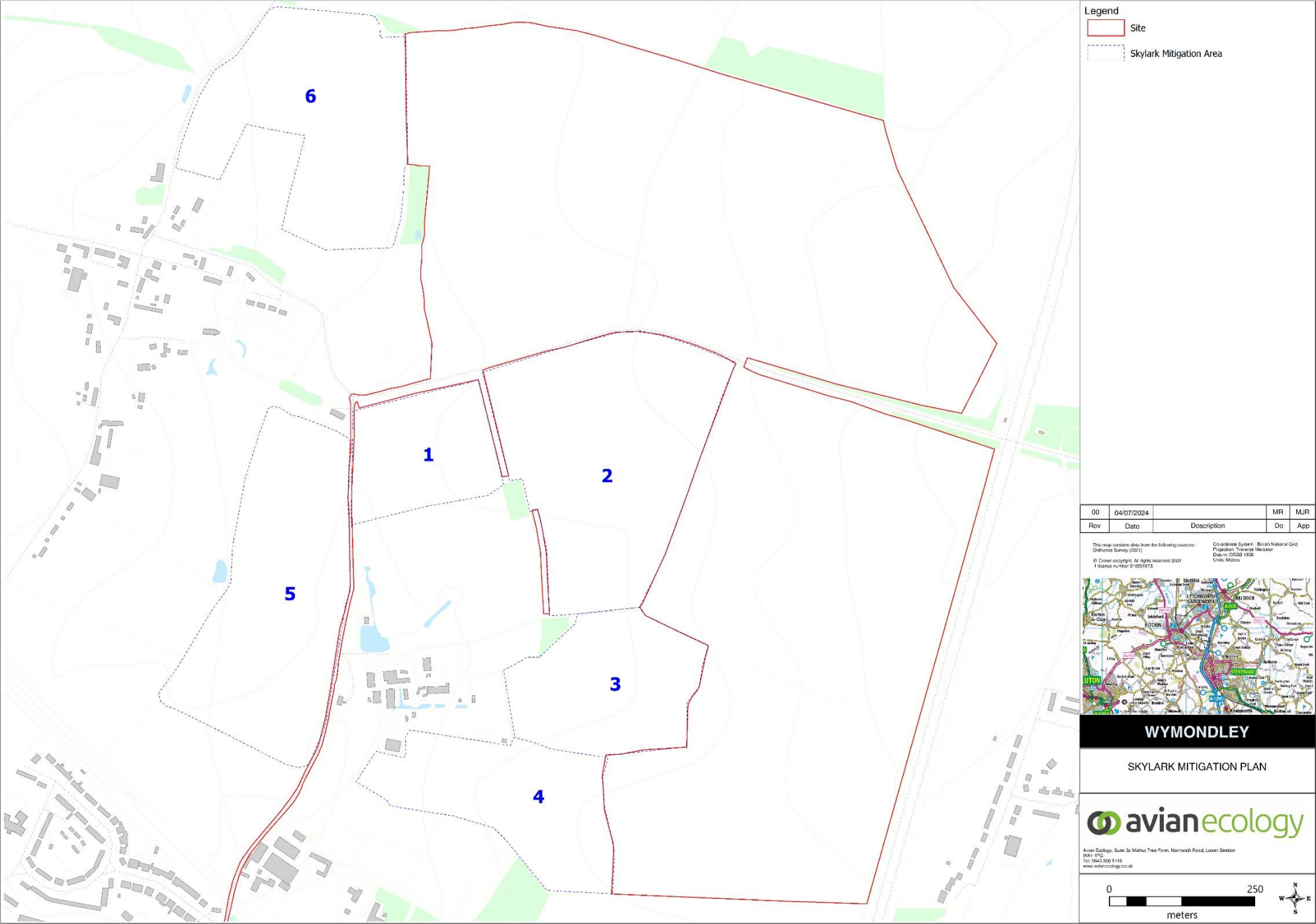


Figure 2: Skylark Mitigation Area



Figure 3: Indicative Skylark Plot Locations



APPENDIX 1: MONITORING METHODOLOGY AND REPORTING

Monitoring Methodology

The Mitigation Area will be monitored for a minimum period of five years from the date of the first export of electricity to the grid, with monitoring comprising of three breeding bird surveys per year. The breeding bird surveys will be undertaken in the months of March, April and May each year, in order to get a good understanding of the Mitigation Area use by skylark across the peak breeding season.

Breeding bird surveys will be based upon the 2023 'Bird Survey Guidelines'⁶ methodology, with visits undertaken in early mornings by an experienced ornithologist. The surveys will include the entire Mitigation Area and areas up to 100m from the red line boundary, part of which will include the Priory Farm Solar Array Site.

Surveys will concentrate primarily on ground-nesting species, with the target species being skylark, although all ground-nesting species will be noted.

Monitoring Report

Monitoring results will be submitted to the Local Planning Authority via a report in years two and five of the strategy, to be submitted in or around the September of each reporting year.

The monitoring report will include the minimum information as provided below:

1. Introduction.
2. Methodology- to include all survey dates and weather conditions.
3. Results- across all years of monitoring, to include territory analysis and mapping, as required.
4. Discussion- evaluating the use of the Mitigation Area over time.
5. Conclusion.

⁶ Bird Survey & Assessment Steering Group. (2023). Bird Survey Guidelines for assessing ecological impacts, v.1.1.1. <https://birdsurveyguidelines.org> [accessed 0207/24]