



# Appendix D: Biodiversity Management Plan (“BMP”)

Gortnalug 110kV substation and Grid Connection

20/03/2026



**Disclaimer**

*While every reasonable effort is made to ensure that the information provided in this report is accurate, Neo Environmental Limited makes no warranty as to the accuracy or completeness of material supplied. Neo Environmental Limited shall have no liability for any loss, damage, injury, claim, expense, cost or other consequence arising as a result of use or reliance upon any information contained in or omitted from this document.*

**Copyright © 2026**

*The material presented in this report is confidential. This report has been prepared for the exclusive use of Ballydonagh Solar Limited. The report shall not be distributed or made available to any other company or person without the knowledge and written consent of Ballydonagh Solar Limited or Neo Environmental Ltd.*

Neo Environmental Ltd	
<p><b>Head Office - Glasgow:</b> Wright Business Centre, 1 Lonmay Road, Glasgow G33 4EL T 0141 773 6262 E: <a href="mailto:info@neo-environmental.co.uk">info@neo-environmental.co.uk</a></p>	<p><b>Bristol Office</b> Spaces 8th Floor The Programme Building Bristol BS1 2NB T: 01174 571 610 E: <a href="mailto:info@neo-environmental.ie">info@neo-environmental.ie</a></p>
<p><b>Warrington Office:</b> Lakeview 600, Lakeside Drive Centre Park Square Warrington WA1 1RW T: 01925 661 716 E: <a href="mailto:info@neo-environmental.co.uk">info@neo-environmental.co.uk</a></p>	<p><b>Rugby Office:</b> Valiant Suites, Lumonics House, Valley Drive, Swift Valley, Rugby Warwickshire CV21 1TQ T: 01788 297012 E: <a href="mailto:info@neo-environmental.co.uk">info@neo-environmental.co.uk</a></p>
<p><b>Ireland Office:</b> C/O Origin Enterprises PLC, 4-6 Riverwalk, Citywest Business Campus Dublin 24, D24 DCW0 T: 00 353 (1) 5634900 E: <a href="mailto:info@neo-environmental.ie">info@neo-environmental.ie</a></p>	<p><b>Northern Ireland Office:</b> 83-85 Bridge Street Ballymena, Co. Antrim BT43 5EN T: 0282 565 04 13 E: <a href="mailto:info@neo-environmental.co.uk">info@neo-environmental.co.uk</a></p>



**Prepared For:**

Ballydonagh Solar Limited



**Prepared By:**

Rhona Coghlan BSc (Hons)



	Name	Date
Edited By:	Rhona Coghlan	20/03/2026
Checked By:	Dara Dunlop	20/03/2026
	Name	Signature
Approved By	Paul Neary	

## Contents

1. Executive summary .....	5
2. Introduction .....	6
3. Guidance .....	8
Objective of the biodiversity management plan .....	9
4. Current conservation & biodiversity.....	10
National Conservation.....	10
Local Conservation .....	13
5. Habitats & species present.....	14
Recorded Species .....	14
Fauna.....	15
6. Potential impacts.....	18
Potential Habitat Loss And Fragmentation.....	18
Disturbance During Construction .....	19
7. Habitat creation & management.....	21
New and Bolstered Hedgerow .....	22
Wildlife Shelters .....	23
Recommended Management.....	26
8. General considerations.....	29
9. Indicative management schedule.....	30
10. Decommissioning .....	31
Appendices .....	32
Appendix A - Hibernaculum Construction .....	32
Appendix B-Indicative management schedule .....	33

# 1. EXECUTIVE SUMMARY

- 1.1. Neo Environmental Ltd has been appointed by Renewable Energy Systems on behalf of Ballydonagh Solar Limited (the “Applicant”) to undertake a Biodiversity Management Plan (“BMP”) for a new 110kV Air insulated substation (AIS) and grid connection with associated infrastructure to facilitate the connection of Ballydonagh (PA Ref: 23/61049 as amended under PA Ref: 2561903) and Ballydonagh Extension (PA Ref: 24/61749 as amended under 26/60009) solar farms to national grid (the “Proposed Development”) on lands at Ballydonagh, Kiltormer, Co. Galway, Ireland (the “Application Site”).
- 1.2. Actions have been formulated within this document to enable the objectives to be met and to maximise the Application Site’s potential for supporting local wildlife. Protected species which have been given priority within this management plan include farmland birds, mammals, invertebrates and herptile species.
- 1.3. These actions include planting of hedgerows to provide a plentiful source of food and shelter, as well as migratory corridors for mammals, birds and insects. Other enhancement will include bolstering of existing hedgerow, installation of wildlife shelters such as bird boxes, bat boxes, hibernacula, and invertebrate hotels.
- 1.4. A total of 10 habitat types were noted during the Fossitt habitat and extended species scoping survey undertaken in October and November 2025. During the site visits the habitats were assessed for their potential to support protected and notable species present within the local area. The main impacts during the construction phase include the direct loss of habitat under the Proposed Development footprint and indirect loss of habitat due to disturbance and pollution. The loss of improved agricultural grassland is considered to be negligible to nature conservation within the local area.
- 1.5. The enhancements and management measures set out in this document have been developed in accordance with the findings of the above habitat survey. This will enable the Proposed Development to deliver a net biodiversity gain.

## 2. INTRODUCTION

### Background

- 2.1. Neo Environmental Ltd has been appointed by Renewable Energy Systems on behalf of Ballydonagh Solar Limited (the “Applicant”) to undertake a Natura Impact Statement (NIS) and Appropriate Assessment (AA) for a new 110k V Air insulated substation (AIS) and grid connection with associated infrastructure( the “Development”) on lands at Ballydonagh, Kiltormer, Co. Galway, Ireland (the “Application Site”).
- 2.2. The method of connection to the national grid will be a new 110 kV AIS Loop-in station (Gortnalug) with a ‘Loop-in/Loop out’ connection into the existing Ennis -Agannygal-Shannonbridge 110kV circuit. Ballydonagh Solar Limited accepted the Eirgrid Connection Offer (P602-CA-OL) in December 2025.
- 2.3. The Proposed Development comprises a 110kV AIS and associated grid connection infrastructure to facilitate the connection of the permitted Ballydonagh Solar Farm under Ref 2361049, as amended under Ref 25/61903 and Ballydonagh Solar Farm Extension under Ref 2461749, as amended under 26/60009, to the national grid. The applicant is seeking a ten-year permission from the date of consent of the 110kV Substation.
- 2.4. Please see **Figure 300101338-DR-100 Overall Site Layout, Volume 2** for the layout of the proposed Development.

### Development Description

- 2.5. The Proposed Development comprises a 110kV Air Insulated Substation and associated grid connection infrastructure to facilitate the connection of the permitted Ballydonagh Solar Farm under Ref 2361049, as amended under Ref 25/61903 and Ballydonagh Extension Solar Farm under Ref 2461749 , as amended under 26/60009, to the national grid, which revised the approved solar layout to accommodate the Gortnalug substation and grid connection infrastructure.
- 2.6. The Proposed Development comprises a 110kV Air Insulated loop in/ loop out electricity substation (11,300m<sup>2</sup>) consisting of EirGrid control building (25m x 18m), customer control building (23.1m x 10.8m),110kV bay arrangement, busbar infrastructure foundations, transformer, lightening masts, telecoms pole, CCTV, lighting columns, capacitor bank, reactor bank, harmonic filter, rural supply kiosk, house transformer, neutral earth resistor, resistor, stand by generator, compound roads, drainage, parking and hardstanding, palisade fence and gates.

- 2.7. The grid connection will consist of the removal of c.248m of the existing overhead line and poles from Ennis- Agannygal-Shannonbridge 110kV circuit and the erection of two new towers (16m height) and c.975m of double 110kV underground circuit and tracks into the proposed substation.
- 2.8. Remaining associated infrastructure consists of entrance; perimeter fencing, access tracks (1907m) (upgraded and localised widening) with water crossings, deposition areas (4,300m<sup>2</sup>), temporary construction compound; and all associated and ancillary site development, excavation, construction, landscaping and reinstatement works and the provision of site drainage.

## Site Description

- 2.9. The area of the proposed Development (the “Application Site”) lies at an elevation of approximately 76.51 – 96.56m AOD and covers a total area of c. 34.8 hectares. It is centred at approximate Irish National Grid Reference (NGR) E 183907 N 220547 and is located in lands north of the L4301.
- 2.10. Comprising of a 13 field parcels of agricultural land, the site is currently being used for pastoral farming. The Application Site is bound by a mixture of trees, hedgerows and post-and-wire fencing. Access will be gained from the south gate entrance from a private lane to an unnamed local road off the L4301 to the southeast of the site.
- 2.11. The surrounding context is predominately agriculture with pockets of forestry and peatland and punctuated by individual properties, farmsteads and ribbon development associated with the minor and regional road network. Fields are typically small to medium in scale and similar in character to the Application Site lands.

## 3. GUIDANCE

- 3.1. Biodiversity is declining across Ireland; however, recent agri-environment schemes indicate that through appropriate management of the land, biodiversity can significantly increase. Through appropriate management, SID developments have the potential to support wildlife and increase biodiversity when located on agricultural land.
- 3.2. No guidance directly relating to SID Developments and biodiversity is available for the UK or Ireland. The following guidance, while targeted toward solar developments, can be considered relevant due to similar objectives targeted for ecological conservation. Given the similarities between the species and habitats present in the UK and Ireland, it has been deemed that the adoption of the UK standard guidance is appropriate in the current absence of Irish guidance.
- 3.3. The purpose of a Biodiversity Management Plan (BMP) is to identify objectives for biodiversity and the means by which these objectives will be achieved. This can include the protection of existing species and habitats and the establishment of new habitats, as well as their maintenance and monitoring.
- 3.4. According to ‘Biodiversity Guidance for Solar Developments’<sup>1</sup>, the BMP should:
- *identify key elements of biodiversity on site, including legally protected species, species and habitats of high conservation value such as those listed on Section 41 of Natural Environmental and Rural Communities (NERC) Act 2006<sup>2</sup>, and designated areas in close proximity to the proposed site;*
  - *identify any potential impacts arising from the site’s development, and outline mitigations to address these;*
  - *detail specific objectives for the site to benefit key elements of biodiversity and the habitat enhancements that are planned to achieve these;*
  - *contribute to biodiversity in the wider landscape and local ecological network by improving connectivity between existing habitats;*
  - *identify species for planting and suitable sources for seed and plants;*

---

<sup>1</sup> BRE (2014) Biodiversity Guidance for Solar Developments. Eds G E Parker and L Greene

<sup>2</sup> Natural Environmental and Rural Communities Act (NERC) 2006, available at [www.legislation.gov.uk](http://www.legislation.gov.uk); broadly equivalent legislation exists in Ireland

- *consider wider enhancements such as nesting and roosting boxes;*
- *summarise a management regime for habitats for the entire life of the site;*
- *provide a plan for monitoring the site; and adapting management as appropriate to the findings of this monitoring; and,*
- *set out how the site will be decommissioned.”*

3.5. The BMP has also been informed by the Fossitt habitat survey of the Application Site undertaken on the 20th, 21st, 28th, 29th, 20th of October and the 3rd of November 2025 by Rhona Coghlan.

## OBJECTIVE OF THE BIODIVERSITY MANAGEMENT PLAN

3.6. The objective of this BMP is to minimise any potential negative impacts arising from the proposed development, while increasing the habitat diversity. The enhancement of the land within the development boundary will increase the site’s capability of supporting wildlife, through generation of renewable energy.

3.7. This will be achieved by:

- Enhancing and maintaining species-rich hedgerows;
- Creating and maintaining wildlife shelters for priority and locally important species;
- Ensuring no net loss of biodiversity on the site as a result of the habitat creation scheme, and
- Maximising the floral and faunal biodiversity of the created and retained habitats.

## 4. CURRENT CONSERVATION & BIODIVERSITY

### NATIONAL CONSERVATION

#### National Biodiversity Action Plan 2023-2030<sup>3</sup>

4.1. Ireland’s 4<sup>th</sup> National Biodiversity Action Plan (NBAP) sets the national biodiversity agenda for the period 2023-2030 and aims to deliver the transformative changes required to the ways in which we value and protect nature. The Plan has 5 Strategic Objectives:

- Objective 1: Adopt a Whole of Government, Whole of Society Approach to Biodiversity
- Objective 2: Meet Urgent Conservation and Restoration Needs
- Objective 3: Secure Nature’s Contribution to People
- Objective 4: Enhance the Evidence Base for Action on Biodiversity
- Objective 5: Strengthen Ireland’s Contribution to International Biodiversity Initiatives

4.2. This document outlines that special protection to sites of highest nature value and species most at risk, including designated sites, should be afforded. However, effective conservation and sustainable use of biodiversity should also occur within the wider countryside, as this is where much of the biodiversity lies.

4.3. The primary threat to biodiversity both within and outside protected areas is from habitat degradation, fragmentation and loss due to changes in agricultural practices (such as intensification), commercial forestry, fisheries over-exploitation, peat extraction, air and water pollution, invasive alien species, land clearance and development, tourism and recreational activities, and climate change.

#### National Biodiversity Action Strategy 2022-2026<sup>4</sup>

4.4. The National Biodiversity Action Strategy was created by the Office of Public Works to identify strategic actions to help government delivery of the National Biodiversity Action Plan. The Plan outlines 48 strategic actions, each with an expected outcome and key performance indicators defined. These actions are divided into five strategic themes;

<sup>3</sup> gov - Ireland’s 4th National Biodiversity Action Plan 2023–2030 ([www.gov.ie](http://www.gov.ie))

<sup>4</sup> OPW (2022) Biodiversity Action Strategy 2022-2027

- Strategic Theme 1: Planning for Nature
- Strategic Theme 2: Natural Leaders
- Strategic Theme 3: Working with Water and Wildlife
- Strategic Theme 4: Diversity by Design
- Strategic Theme 5: Natural Knowledge

## Galway County Development Plan 2022-2028<sup>5</sup>

4.5. The main aim of this development plan is to provide a framework with which to guide further development sustainably and in the most environmentally sensitive manner.

4.6. Chapter 10 of the plan refers directly to Natural Heritage, Biodiversity and Green/Blue Infrastructure, with section 10.2 outlining strategic aims that will increase awareness and enjoyment of natural heritage and biodiversity in Galway, as well as promoting participation in its conservation, management and protection. These aims are as follows:

- *“Conserve, manage, protect and enhance the special character of the County as defined by its natural heritage, biodiversity and green infrastructure;*
- *To ensure compliance with the requirements of relevant International, European Directives and National Legislation in relation to Natural Heritage, Biodiversity, Green/Blue Infrastructure and Climate Change;*
- *Ensure climate change considerations are taken into account in the Natural Heritage, Biodiversity and Green/Blue Infrastructure;*
- *Continue to implement actions of the National Heritage Plan and the National Biodiversity Plan and the current Galway County Heritage and Biodiversity Plan 2017-2022 in partnership with all relevant stakeholders and any successor to these documents;*
- *To promote the creation of an integrated and coherent green infrastructure network throughout County Galway in order to enhance connectivity, social inclusion, sense of place and the creation of wildlife corridors.”*

---

<sup>5</sup> Galway County Council (2021) Galway County Development Plan 2022-2028. Available at: <https://consult.galway.ie/en/consultation/adopted-galway-county-development-plan-2022-2028/chapter/chapter-1-introduction>.

- 4.7. All Ireland Pollinator Plan 2021-2025<sup>6</sup>An All-Ireland Pollinator Plan has not yet been produced for 2026; however, the objectives of this Plan will likely reflect those included within the previous Plan, which is described below.
- 4.8. On the 17th of September 2015, Ireland joined a small number of countries in Europe who have developed a strategy to address pollinator decline and protect pollination services. In March 2021, a new Plan was released.
- 4.9. This new Plan has six objectives and has identified 186 actions in order to achieve its objectives. The six objectives are as follows:
- **Making farmland pollinator friendly.** Working together with the farming community, increase awareness of pollinators and the resources they need in order to survive on farmland.
  - **Making public land pollinator friendly.** Working with Councils, Transport Authorities, Local Communities and others, to strengthen links between this plan and other initiatives and to increase shelter and food resources for pollinators.
  - **Making private plan pollinator friendly.** Work together with the public and community groups to create networks of biodiversity-friendly habitat across the landscape.
  - **All-Ireland honeybee strategy.** Working with beekeepers, achieve healthy, sustainable populations, and for honeybees to be part of a cohesive pollinator message that balances managed and wild pollinator populations.
  - **Conserving rare pollinators.** Improving our knowledge on rare pollinators, and raising awareness through dedicated initiatives, achieve a Plan that protects as much wild pollinator diversity as possible.
  - **Strategic coordination of the Plan.** Continually raising awareness; addressing gaps in knowledge through research, tracking where pollinators occur and how populations are changing, work from an evidence base that enables us to coordinate a dynamic plan that is targeted and effective.

---

<sup>6</sup> Available at: <https://pollinators.ie/aipp-2021-2025/>.

## LOCAL CONSERVATION

- 4.10. Within the 15km ZoI of the Application Site boundary there are four Special Area of Conservation (SACs); River Shannon Callows SAC, Redwood Bog SAC, Ardgraique Bog SAC, Glenloughaun Esker SAC, and three Special Protection Areas (SPAs); Middle Shannon Callows SPA, River Little Brosna Callows SPA, and River Suck Callows SPA. Within the 5km of ZoI of the Application Site, there are two Natural Heritage Areas (NHAs); Moorfield Bog NHA and Cloonoolish Bog NHA. Within 2km of the Application Site, three wetland sites were located; Kiltormer Gortnamona Bog, Moaty Killcloonineen Bog, and Belview Craughwell Bog.
- 4.11. Please refer to the supporting Natura Impact Statement and Ecological Impact Assessment for details of all these European designated sites and their potential for connectivity with the Application Site.

## 5. HABITATS & SPECIES PRESENT

5.1. A Fossitt habitat survey was undertaken on the 20th, 21st, 28th, 29th, 20th of October and the 3rd of November 2025 by Rhona Coghlan. This survey identified 10 habitat types within the Development Boundary and 50m ESA:

- Buildings and Artificial Surfaces (BL3);
- Improved Agricultural Grassland (GA1);
- (Mixed) Broadleaved Woodland (WD1);
- (Mixed) Broadleaved/Conifer Woodland (WD2);
- Tilled Land (BC3);
- Amenity Grassland Improvement (GA2);
- Hedgerows (WL1);
- Scrub (WS1);
- Drainage Ditches (FW4);
- and Treelines (WL2).

### RECORDED SPECIES

5.2. The Fossitt habitat survey covered all land within the Application Site and a 50m ESA around the entire site, where access allowed.

5.3. A list of flora species present onsite was compiled as part of the habitat survey, details of species observed can be found in **Table 5-1** below.

**Table 5-1 Flora identified within the Study area**

Scientific Name	Common Name
Ash	<i>Fraxinus excelsior</i>

Blackthorn	<i>Prunus spinosa</i>
Bramble	<i>Rubus fruticosus</i>
Broadleaved dock	<i>Rumex obtusifolius</i>
Creeping buttercup	<i>Ranunculus repens</i>
Creeping thistle	<i>Cirsium arvense</i>
Dandelion	<i>Taraxacum sp.</i>
Gorse	<i>Ulex europaeus</i>
Hawthorn	<i>Crataegus monogyna</i>
Nettle	<i>Urtica dioica</i>
Oak	<i>Quercus robur</i>
Perennial rye grass	<i>Lolium perenne</i>
Red clover	<i>Trifolium pratense</i>
Sitka spruce	<i>Picea sitchensis</i>
Spear thistle	<i>Cirsium vulgare</i>
White clover	<i>Trifolium repens</i>
Willow	<i>Salix sp.</i>

## FAUNA

- 5.4. The potential presence of protected species within the study area was assessed through a data search conducted via the NBDC database. This identified records of invasive, rare, scarce and protected species within 2 km of the Application Site. All records greater than ten years old are considered to be no longer relevant and were thus discounted.
- 5.5. Additional information on the suitability of habitat in the surrounding area for bats was also obtained from NBDC in the form of a bat suitability map. This map provides enhanced information on the recorded distribution of bats and broad-scale geographic patterns of occurrence and local roosting habitat requirements of the relevant species. The site was split between two suitability indexes, as a precautionary method, information is provided for the highest suitability area, with an overall bat suitability index of 27.

- 5.6. In addition, the Fossitt habitat survey included a species scoping survey in order to assess the potential of the Application Site to support protected species. Fossitt Habitat and Species Scoping surveys were also carried out in May of 2023.
- 5.7. A potential badger sett was identified within the Application Site, which suggests that badger may utilise this site during breeding season. Two other badger setts were identified within the Application Site during previous Fossitt Habitat and Species Scoping surveys carried out in May of 2023. Other signs of activity, including snuffling and mammal push-throughs, were also observed within the Application Site which further suggests that badgers utilise the Application Site for foraging and migrating.
- 5.8. Common farmland bird species were identified on site during the Fossitt Habitat Survey and dedicated Wintering Bird Surveys which took place in January, February and March of 2026. Some amber and red-listed species were also recorded within the Application Site, with hedgerows, treelines and scrub on site offering nesting and foraging opportunities for many of these species. Agricultural grassland, which makes up majority of the Application Site is also important for certain ground-nesting species. The Proposed Development has potential to enhance bird habitats with the implementation of measures outlined in this report.
- 5.9. Records of hedgehogs were recorded during the 2km desktop search. Hedgehogs utilise hedgerows, scrub and woodland edges when breeding and foraging, with their diet consisting of mostly invertebrates. The Application Site supports various hedgerows and treelines, as well as area of scrub and woodland, offering suitable habitat for hedgehogs.
- 5.10. Several species of bat were identified within the 2km desktop search. The majority of the Application Site comprise fields of agricultural grassland, which offer few opportunities for foraging bats. Field boundaries within the Application Site are primarily comprised of treelines, hedgerows and drainage ditches running through the site. Mature trees offer commuting pathways to the wider landscape and roosting locations while drainage ditches and offer suitable locations for foraging. Additionally, a number of trees within the Application Site offer roosting potential for bats. These include abandoned structures and large mature trees with potential roost features including cracks, knot holes and ivy.
- 5.11. Habitats identified on site, such as drainage ditches, offer potential habitat for supporting herptile species, particularly common frog (*Rana temporaria*). These also offer potential foraging and commuting pathways for otter (*Lutra lutra*).
- 5.12. Wintering Bird surveys were conducted within the Application Site in January, February and March 2026 and observed an assemblage of common farmland species. Four amber-listed species, Goldcrest, Skylark, House Sparrow and Teal, were recorded as well as two red-listed species, Redwing and Snipe, which is an Annex II species. One Annex I species, Peregrine Falcon, was sighted flying above the Application Site but was not seen directly interacting with the Application Site. Mitigation measures have been proposed in the Ecological Impact

Assessment and Wintering Bird Report, which accompanies this Biodiversity Management Plan, which will prevent any adverse effects on the above species, as well as any other bird species within the Application Site.

- 5.13. No non-native invasive species (“INNS”) were observed within the Application Site during survey.

## 6. POTENTIAL IMPACTS

6.1. Potential impacts which could arise from the Proposed Development include:

- Potential habitat loss and fragmentation,
- Disturbance during construction , and
- Potential contamination of surface waters.

6.2. Each of these potential impacts have been considered below in relation to the Proposed Development.

### POTENTIAL HABITAT LOSS AND FRAGMENTATION

6.3. The Proposed Development consists of a substation and associated infrastructure, the total Application Site area is 34.8 hectares. The Proposed Development takes up a relatively small percentage of the Application Site. The total ground disturbance for the Proposed Development is 29,079.6m<sup>2</sup> or 8.36% of the Application Site.

6.4. The main habitat present under the Proposed Development footprint is improved agricultural grassland which currently offers limited potential to support local wildlife, and therefore the loss of these areas is not considered significant. Also, as the surrounding landscape is of a similar nature, the alteration of this habitat will not result in significant fragmentation or loss of foraging/breeding habitat.

6.5. Existing habitats, such as hedgerows, treelines and woodland, are to be maintained and enhanced, and local species of importance will be protected. 481.3m<sup>2</sup> m of hedgerows are scheduled for removal, and a further 230m m is scheduled for trimming. 14 trees are also scheduled to be felled. 23m of hedgerow is also scheduled for removal to facilitate swept paths, alongside 3 trees. When considering the surrounding landscape and the available alternative habitat, it is not predicted that this will have a significant negative impact on the local wildlife. It is therefore demonstrated that the Proposed Development will have no significant adverse impact on local habitats and will indeed deliver biodiversity enhancements to the benefit of the Application Site and wider area.

6.6. There is proposed circa 481.3m<sup>2</sup> of hedgerow removal and 230m of hedgerow trimming outlined within Landscape and Ecological Management Plan. 23m of hedgerow is also scheduled for removal to facilitate swept paths, alongside 3 trees. It is considered that this loss will be more than compensated for through the creation of hedgerow buffer planting

proposed across the site, which will effectively double the area of hedgerows supported on site. The LEMP also includes the creation and enhancement of existing hedgerows, creation of new habitats and sensitive management, the site’s potential for supporting local wildlife can be greatly increased post-construction.

## DISTURBANCE DURING CONSTRUCTION

- 6.7. The construction phase of a development have the potential to impact upon local wildlife.
- 6.8. Measures will be implemented prior to construction work taking place to minimise any potential disturbance to wildlife. Mitigation measures recommended within the supporting **Ecological Impact Assessment** written by Neo Environmental in January 2026 include:
- Pre-construction badger surveys;
  - If badger sett is discovered within the Application site, no construction activities within 30m of any badger sett entrance (50m if the works occur during the badger breeding season (February to June inclusive));
  - Pre-commencement nesting bird survey on hedgerow or treeline to be removed (only if works are undertaken between March and August inclusive);
  - Potential Roost Feature (PRF) survey of any mature trees to be removed;
  - Securely covering all excavations at the end of each working day to prevent accidental trapping of badger, otter or other small mammals; and
  - Mammal fences to be installed within security fencing at locations determined during the pre-commencement check. Gates will be installed across current mammal pathways to allow the unrestricted movement of wildlife across the local area.
- 6.9. During the operational phase, the disturbance to local wildlife will not be significantly greater than the levels of disturbance that the land is currently subject to from current farming practice.
- 6.10. Exclusion zones will be implemented around all important linear features and ecological receptors within the Application Site. These include:
- Trees (1m from crown)
  - Hedgerows (5m)

- Dry Ditches (2m)
- Wet Ditches (5m)

## Potential Contamination of Surface Waters

6.11. The construction phase of a development has the potential for contamination of surface waters, if appropriate measures are not implemented. As part of the integral design of the Proposed Development, appropriate buffers have been implemented to achieve protection of aquatic habitats within the Application Site; 2m when dry, 5m when wet. During the construction phase all contractors working onsite will follow current best practice measures, which include the appropriate use and storage of fuels, oils and chemicals as required.

## 7. HABITAT CREATION & MANAGEMENT

- 7.1. Currently the improved agricultural grassland which make up the majority of habitats on site offer limited benefit to wildlife. The existing habitats will be replaced by a mix of native species rich grass seeding and new and bolstered native hedgerow vegetation.
- 7.2. The potential of the site to support wildlife will be significantly increased by the habitat creation measures set out in **Table 7-1**. These habitats will remain in place and be managed for the duration of the Proposed Development.
- 7.3. Various options exist to enhance the biodiversity value of the Application Site. These include the creation of different habitats, such as hedgerows.
- 7.4. Habitats that will be created as part of the Proposed Development will include:
- Species rich hedgerows;
  - Hibernacula;
  - Bird boxes;
  - Bat boxes; and
  - Invertebrate hotels.
- 7.5. These habitats individually offer shelter and a food source for supporting a variety of wildlife. The mosaic of these new habitats, combined with the existing hedgerows and treelines, will support the existing wildlife within the site. They also have excellent potential to allow the biodiversity of the site to increase, by offering a wider range of habitats that benefit local wildlife.
- 7.6. The invertebrate hotels will not only support a wide variety of wildlife but will also contribute towards the All-Ireland Pollinator Plan. This will be achieved by creating refuges that will support important pollinator species such as bees and flies and creating corridors for commuting and foraging.

## NEW AND BOLSTERED HEDGEROW

- 7.7. The new and bolstered hedgerow, as shown within the **Landscape and Ecological Management Plan - Figure 3.1 to 3.4**, is a species-rich mix composed of native tree and shrub species. This will create an insect-rich habitat and support a range of birds, mammals and invertebrates.
- 7.8. The proposed planting will consist of species such as those listed in **Table 7-2** below.

**Table 7-2: Native Hedgerow Species mix**

SCIENTIFIC NAME	COMMON NAME	SIZE	PERCENTAGE OF SEED MIX (%)
Primary Structure			
<i>Crataegus monogyna</i>	Hawthorn	90-120cm / 8-10cm girth 3m br standard trees	60%
Secondary Structure			
<i>Prunus spinosa</i>	Blackthorn	90-120cm	15%
<i>Ilex aquifolium</i>	Holly	90-120cm	15%
Shrub Species Structure			
<i>Viburnum opulus</i>	Guelder rose	60-90cm	2.5%
<i>Corylus avellana</i>	Hazel	60-90cm	2.5%
<i>Rosa canina</i>	Dog-rose	60-90cm	2.5%
<i>Euonymus europaeus</i>	Spindle	60-90cm	2.5%

### Management

- 7.9. Compensatory hedgerow creation and other planting should be undertaken within the first planting season (November to March) before construction of the proposed development starts. Regular weeding will be undertaken for three years following planting, until trees have become well established.

- 7.10. Planting guards will also be put in place and remain for a period of here years until trees are well established and matured.
- 7.11. Within the first two to three years of planting, hedgerows will be regularly cut and trimmed using mechanical means. Any cutting will be done outside bird breeding season. Hedgerows bolstering existing trees and defunct hedgerow should be maintained at this height unless stated otherwise.

## WILDLIFE SHELTERS

- 7.12. The creation of wildlife shelters, placed strategically throughout the Proposed Development Site, will provide shelter to a wide range of species.

### Bat Boxes

- 7.13. Providing bat boxes will increase opportunities for roosting bats within the local area. At least eight bat boxes should be erected in suitable locations throughout the Application Site. However, it can take bats a long time to make use of artificial roosts. Therefore, a number of factors must be considered when installing a new bat box.
- 7.14. Microclimate within a new roost is a very important factor in terms of increasing the chance of successful uptake by bats. In line with Bat Conservation Trust guidelines<sup>7</sup> bat boxes should be draught-proof and made from a thermally stable material. They should be located 2m above the ground in locations where they will receive full/partial sunlight (southeastern or southwestern orientation). Access points should also be clear of any obstructions.
- 7.15. To allow a choice of roosting, bat boxes should be installed in more than one aspect. Bat boxes located on a shady side will be cooler and may be suitable as a hibernation roost or used by male bats throughout the entire year.
- 7.16. There is a wide range of bat boxes currently available, some which are more suitable for certain species. A variety of bat boxes are recommended in **Table 7-3** below. It is recommended that five in total from the boxes detailed below (or similar) be installed on site.

**Table 7-3: Details of Bat Boxes**

BAT BOX	DETAILS	IMAGE
---------	---------	-------

<sup>7</sup>Bat Conservation Trust – Bat Box Information Pack. Available at: [http://www.bats.org.uk/data/files/publications/Bat\\_Box\\_Information\\_Pack\\_FINAL.pdf](http://www.bats.org.uk/data/files/publications/Bat_Box_Information_Pack_FINAL.pdf)

Schwegler 2F <sup>8</sup>	Standard box and most popular. Simple entrance hole. Used as summer roosting space.	
Schwegler 1FD <sup>9</sup>	Specific for smaller bats such as common pipistrelle, Nathusius' pipistrelle, Daubenton's bat and brown long-eared.	

### Bird Boxes

- 7.17. In order to enhance the site for nesting birds, ten bird boxes shall be placed throughout the site. Several types of nest boxes will be installed at suitable locations to favour a variety of bird species.
- 7.18. Open-fronted boxes will provide enhanced nesting opportunities for species such as robins (*Erithacus rubecula*), pied wagtails (*Motacilla alba*) and blackcap (*Sylvia atricapilla*). Boxes with entrance holes are suitable for tits (*Paridae*), wren (*Troglodytidae*) and tree sparrow (*Passer montanus*).
- 7.19. Bird boxes should be mounted so that they face between the south-east and north to avoid direct sunlight. They should be tilted forwards so that rain is directed away from the entrance.
- 7.20. It is recommended that four in total of the above bird boxes (or similar) are installed on site.

<sup>8</sup> Full specification available at: <http://www.nhbs.com/title/158629>

<sup>9</sup> Full specification available at: <http://www.nhbs.com/title/177076/1fd-schwegler-bat-box>

Table 7-4: Details of Bird Boxes

BIRD BOX	DETAILS	IMAGE
<p>1B Schwegler Nest Box (32mm)<sup>10</sup></p>	<p>This nest box will attract a wide range of species and is available with different entrance hole sizes to prevent birds from competing with each other for the boxes.</p> <p>The 32mm entrance hole will attract great, blue, marsh, coal tit, redstart, nuthatch, flycatcher, wryneck, tree and house sparrow and bats.</p> <p>The 26mm entrance hole suits blue, marsh, coal tit and possibly wren. All other species are prevented from using the nest box due to the smaller entrance hole.</p>	
<p>2H Schwegler Robin Box<sup>11</sup></p>	<p>This traditional design has proved to be highly effective in attracting robins, as well as other small species such as black redstart, spotted flycatcher and wren.</p>	

### Hibernacula

7.21. Hibernacula comprise of log, rock and stone piles aimed at providing shelter for reptile and amphibians to hibernate. It may also be used by a variety of insects and small mammals. The hibernacula will follow the instructions laid out within Appendix A below. The creation of one hibernacula is proposed on site.

<sup>10</sup> Full specification available at: <http://www.nhbs.com/title/158587/1b-schwegler-nest-box>

<sup>11</sup> Full specification available at: <http://www.nhbs.com/title/161277/2h-schwegler-robin-box>

### Invertebrate Hotels

- 7.22. One invertebrate hotels will be erected close to the Application Site margins to provide nesting and sheltering habitat for invertebrates including pollinator species
- 7.23. For optimal warmth, the hotels will be erected in south- or southeast-facing areas not shaded by vegetation.

### Management in Years 1-3

- 7.24. The wildlife shelters can be installed at any stage within the first year. The final location and number of bird nest boxes and bat boxes will be determined on site by an ecologist.
- 7.25. Bird boxes should be cleaned annually to ensure that parasite build up doesn't occur. These boxes should be cleaned in October. This prevents the build-up of parasites and avoids the risk of disturbing birds using it as a roosting site during the cold winter months.
- 7.26. All bats and their roosts are protected by law, and it is an offence to deliberately disturb, handle or kill bats. If a bat box need needs to be opened at any stage, a suitably licenced bat worker must be present. This includes during cleaning of the bat boxes.
- 7.27. The invertebrate hotels will be checked once each summer for a minimum of five years after installation. Any missing or damaged hotels will be replaced within seven weeks (to allow for sourcing and deployment).

## RECOMMENDED MANAGEMENT

- 7.28. Management recommendations in this BMP have been made:
- to maintain and improve the biodiversity of species within the Application Site;
  - to enhance the quality of habitats present;
  - to increase the Application Site's potential for supporting wildlife, and
  - to avoid any potential negative impacts arising from the development of the site.
- 7.29. Recommendations of management actions required to achieve the desired condition of the site are summarised within **Table 7-5** of this document. The table also provides a brief summary of the rationale and possible constraints to adopting the recommended management.

Table 7-5: Recommended Management

Objective	Action Plan Task	Timescale	Notes
To enhance the quality of habitats present	<u>New and bolstered hedgerows</u> Implementation of new species rich hedgerows, and infilling of defunct hedgerows and existing treelines with native hedgerow species	Year 1	The new and bolstered hedgerows will provide habitat that has a higher ecological value than previous habitats found on site, this will have a positive effect on local bird and bat species, and invertebrates.
Ensure fencing does not inhibit the movement of wildlife	To allow movement of badgers, and other small mammals across the development area mammal gates will be installed within security fencing at locations determined during the pre-commencement check.	Year 1 (during construction phase)	Gates are to be located where mammal paths are present and where badger buffers are present, where necessary.
Creating a diversity of habitats within the site	Installation of one hibernacula.	Year 1	See <b>Appendix A</b> The hibernacula comprise of a log, rock and stone pile aimed at providing shelter for herptile species to hibernate. However, the hibernacula / log piles may also be used by a variety of insects and small mammals.
Creating a diversity of habitats within the site	<u>Creation of bat roosting habitat</u> Six bat boxes will be placed on mature trees within the site	Year 1	The creation of roosting habitat, along with the creation of species-rich habitat that will encourage an abundance of invertebrate life (a potential food source)

			will be beneficial to local bats.
Creating a diversity of habitats within the site	<p><u>Creation of bird nesting habitat</u></p> <p>Six bird boxes will be placed on mature trees within the site</p>	Year 1	<p>The creation of nesting habitat, along with the creation of species rich habitat that will encourage an abundance of invertebrate life (a potential food source) will be beneficial to local bird populations.</p> <p>Boxes installed should include a mixture of single-hole and open-fronted bird boxes.</p>
Creating a diversity of habitats within the site	<p><u>Creation of invertebrate friendly habitat</u></p> <p>Two invertebrate hotels to be placed within the site</p>	Checked once each summer for a minimum of five years after installation	Create an environment to encourage invertebrates which are both pollinators and potential food source for other species within the site

## 8. GENERAL CONSIDERATIONS

### Obligations

- 8.1. During each of the development phases there are a number of legal obligations that should be considered by all those involved in site work:
- Ensure obligations of the European Communities (Birds and Natural Habitats) Regulations 2011 are met by all involved with the site.
  - Ensure obligations of the Wildlife Act 1976 and Wildlife (Amendment) Act 2000 are met on the same basis.
  - Ensure all relevant Health & Safety at Work Act obligations are met on the same basis.

### Good Ecological Practice

- 8.2. Whilst management practices should only be altered if there is a good ecological reason for doing so, they should not be rigidly adhered to if they are obviously detrimental.

## 9. INDICATIVE MANAGEMENT SCHEDULE

- 9.1. **Appendix B** shows possible months in which activities will commence within the initial planting period after the construction phase.

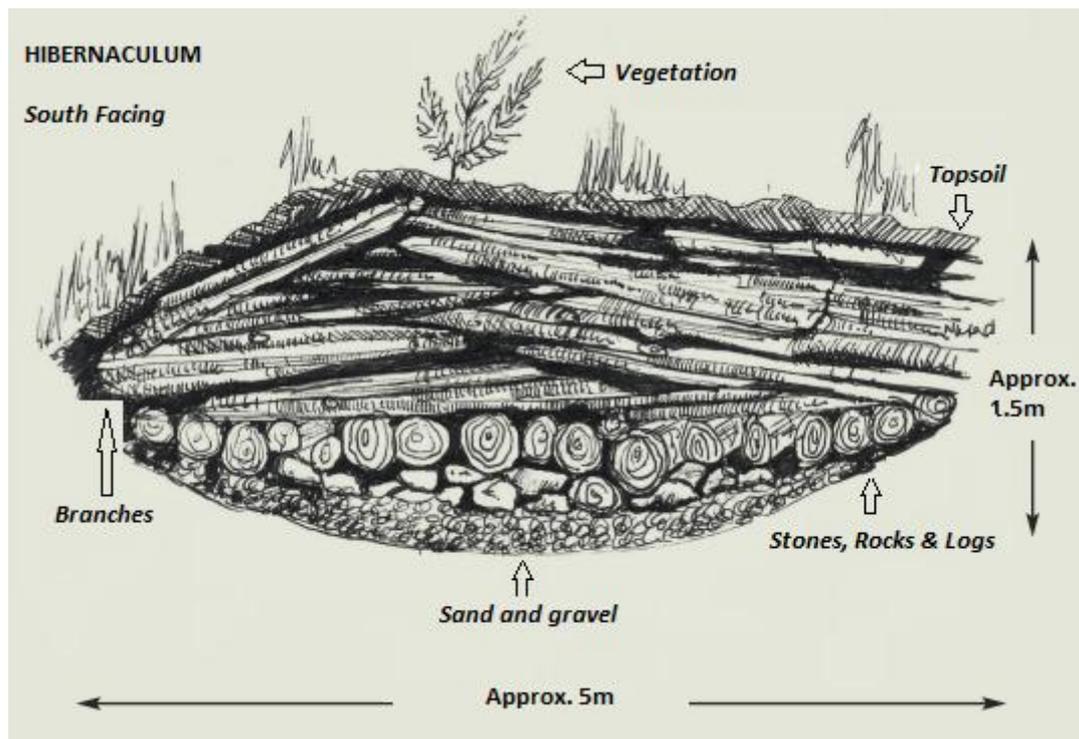
## 10. DECOMMISSIONING

- 10.1. While no decommissioning phase has been envisaged for this development, a possible decommissioning phase would involve the use of construction machinery and the removal of infrastructure on site in a similar manner to that which occurs at construction phase. In this scenario, where possible, areas of grassland and hedgerow would be retained after the lifespan of the development would be beneficial to local wildlife.

# APPENDICIES

## APPENDIX A - HIBERNACULUM CONSTRUCTION

- 10.2. The hibernaculum will follow the basic construction set out below, with the log and stone piles situated to the north of the hibernaculum.



- A 5m long east-west running ditch 1m deep and 1m wide will be dug.
- The base will be lined with sand and gravel.
- This will be followed with layers of stones, rocks and logs.
- Smaller branches will then be placed on top, and covered soil from the excavation will be placed over the pile, leaving gaps for access.
- The soil will be shaped into a mound.
- North-facing side of the mound will be seeded / planted with species that will attract insects and will also provide extra shelter.

- South-facing side will be maintained with a sparse vegetation cover to provide an area to bask.
- A log pile of approximately 2m by 1m will be placed to the north of the hibernacula

## APPENDIX B-INDICATIVE MANAGEMENT SCHEDULE

Table 7-6: Timeframes for Management Activities

MANAGEMENT ACTIVITY	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC
Year 1 – Initial Habitat Enhancement												
Tree planting	✓	✓								✓	✓	✓
Cultivate and allow soil to settle						✓	✓					
Field margin cutting									✓	✓		
Installation of bat and bird boxes, invertebrate hotels and herptile hibernacula	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
Year 2 - Annual Habitat Management												
Field margin cutting									✓	✓		
Checks by contractor through the initial maintenance period to comprise weed clearance, watering and pruning			✓	✓	✓	✓	✓	✓				

Ongoing Annual Management – Year 3-4												
Field margin cutting										✓	✓	
Ongoing Annual Management – Year 4 onwards												
Existing hedgerows cut on a 2- or 3-year cycle. All hedgerows from year 5, with no more than 1/3 cut in any one year	✓	✓										



**An Origin Enterprises Company**

**GLASGOW - HEAD OFFICE**

---

Wright Business Centre, 1 Lonmay Road,  
Glasgow, G33 4EL  
T: 0141 773 6262

**NORTHERN IRELAND OFFICE**

---

83-85 Bridge Street, Ballymena, Co. Antrim,  
Northern Ireland, BT43 5EN  
T: 0282 565 04 13

**BRISTOL OFFICE**

---

Spaces 8th Floor  
The Programme Building  
The Pithay  
Bristol, BS1 2NB  
T: 0282 565 04 13

**DUBLIN OFFICE**

---

C/O Origin Enterprises PLC  
4-6 Riverwalk,  
Citywest Business Campus  
Dublin 24, D24 DCW0  
T: 00 353 (1) 5634900

**RUGBY OFFICE**

---

Valiant Office Suites  
Lumonics House, Valley Drive,  
Swift Valley, Rugby,  
Warwickshire, CV21 1TQ  
T: 01788 297012

**WARRINGTON OFFICE**

---

Lakeview 600, Lakeside Drive  
Centre Park Square  
Warrington  
WA1 1RW  
T: 01925 984 682