Annex D: Outline Biodiversity Enhancement and Management Plan

Binn Farm Solar & BESS

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V1	1 December 2025	R. Smith	R. King	S. Cockell
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Basis of Report

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Table of Contents

Tables in Text

Annexes

Acronyms and Abbreviations

BESS	Battery Energy Storage System
EcIA	Ecological Impact Assessment
eDNA	Environmental DNA
GCN	Great Crested Newt
GLU	Grazing Livestock Units
HRA	Habitat Regulations Appraisal
INNS	Invasive Non-native Species
LDP	Local Development Plan
LNCS	Local Nature Conservation Site
NPF4	National Planning Framework 4
OBEMP	Outline Biodiversity Enhancement and Management Plan
OSNGR	Ordnance Survey National Grid Reference
PKC	Perth and Kinross Council
SBL	Scottish Biodiversity List
SPA	Special Protection Area
SSSI	Site of Special Scientific Interest

1.0 Introduction

SLR Consulting Ltd. (SLR) was commissioned by Trio Power Limited (the 'Applicant') to develop an Outline Biodiversity Enhancement and Management Plan (OBEMP) for the Proposed Development (Binn Farm Solar and Battery Energy Storage System (BESS)) on an area of land between Strathmiglo and Glenfarg (hereafter referred to as the 'Site').

1.1 Site Description

The Site is located approximately 4 km north-west of Strathmiglo and 5 km north-east of Glenfarg with an approximate address of Glentarkie, Perth and Kinross, KY14 7RU at British National Grid NO 18188 12158 (see **Annex A, Figure 1**).

The Site is currently used for farming, primarily comprised of pastoral fields for livestock grazing. The majority of the area within the Site boundary comprised rough grassland and arable fields, with occasional gorse scrub, intersected by fence lines and a dry-stone wall along the field margins. The A912 runs to the west of the Site, with Millden Road connecting to it providing access to the Site. Adjacent to the north is an area of conifer woodland, with arable fields beyond. To the east is The Scottish Off Road Driving Centre training area, comprising mainly rough grassland and dense scrub. Four ponds are in the surrounding area to the north, east and west.

The wider area consists of arable farmland, grassland, scrub and pockets of woodlands, with the town of Glenfarg to the west.

1.2 Proposed Development

The Proposed Development will consist of ground mounted solar PV modules with an export capacity of up to 30 MW, a BESS with an export capacity of 6 MW, substations, associated electrical equipment, drainage, access, landscaping, underground cabling, fencing and other ancillary infrastructure. The BESS will store excess energy generated by the solar PV array and release it during periods of high demand or low generation. A layout of the Proposed Development is shown in Figure 4.1 of the Supplementary Environmental Information Report (SEIR).

The Proposed Development will be temporary and reversible. The Applicant is seeking consent for an operational lifetime of 40 years.

The infrastructure for the Proposed Development will include:

- PV module mounting frames;
- Battery units housed in containers;
- Substations;
- Inverter cabins to convert direct current (DC) electricity into usable alternating current (AC) power;
- Transformers;
- Underground cabling;
- Internal access tracks;
- Temporary construction compound;
- Spares container;
- CCTV cameras mounted on posts;
- Perimeter fencing;

- Site drainage; and
- Biodiversity and landscaping enhancements.

Construction of the Proposed Development is expected to be completed within approximately eight to twelve months. Normal construction hours are likely to be between 07:00 and 18:00 Monday to Friday and 08:00 and 13:00 on Saturdays.

At the end of the Proposed Development's operational lifetime of 40 years, it will be decommissioned (unless an extension is consented).

1.3 Purpose and Scope of this Document

The OBEMP fulfils two main objectives:

I. Firstly, it outlines the habitat restoration, management and monitoring measures proposed to compensate for the direct and indirect loss of sensitive natural/semi-natural habitats, and to mitigate for potential impacts to protected and notable species as a result of construction and operation of the proposed development.
II. Secondly, it functions as a plan for the delivery of biodiversity enhancement as required by national planning policy, the National Planning Framework 4 (NPF4).

This OBEMP is intended as a precursor to a more detailed Biodiversity Enhancement and Management Plan (final BEMP), which would be produced and agreed with the Local Planning Authority (i.e. Perth and Kinross Council (PKC)) and other key stakeholders, including the landowners, prior to commencement of construction.

The OBEMP will be a live document in place throughout the operational lifetime of the Proposed Development (anticipated to be 40 years), with monitoring results and unexpected developments adapting the plan to ensure the enhancement of habitats and species on the Site.

1.4 Evidence of Technical Competence

This document has been compiled by Rowan Smith MSc BSC (Hons). Rowan is a senior ecologist with over 6 years' professional experience in the environmental sector specialising in aquatic/riparian ecology and impact assessment. Rowan has a proven track record of project managing ecological elements of large scale (2000 MW) energy infrastructure projects, including pump storage hydro schemes, wind farms and solar farms across Scotland where she compiled a range of assessments including Environmental Impact Assessment (EIA), Ecological Impact Assessments (EcIAs) and Habitats Regulations Appraisals (HRAs).

This document has been reviewed by Technical Director Richard King. Richard is an experienced ecologist and ornithologist, who has worked in environmental consultancy for over 18 years. Richard's role ranges from baseline ecological and ornithological surveys, data analysis and technical reporting duties, production and review of technical reporting (i.e. EIAs, HRAs) as well as supporting post-planning project stages, including discipline expert witness. He has worked on a wide range of projects and developments across a variety of sectors, such as renewable energy schemes and infrastructure (onshore wind, cable routes, hydro, BESS, and solar), highways, residential and commercial property schemes, ports and harbours, minerals/quarries as well as for regulatory agencies and private estates.

1.5 Planning Policy

1.5.1 National Planning Framework 4 (NPF4)

The NPF4, Policy 3, sets out requirements for developments to deliver positive effects for biodiversity. Major applications:

"*will only be supported where it can be demonstrated that the proposal will conserve, restore and enhance biodiversity, including nature networks so they are in a demonstrably better state than without intervention"*.

Policy 3b sets out five criteria that should be met to achieve the above "*demonstrably better state"*:

i. *the proposal is based on an understanding of the existing characteristics of the Site and its local, regional and national ecological context prior to development, including the presence of any irreplaceable habitats;*

ii. *wherever feasible, nature-based solutions have been integrated and made best use of;*

iii. *an assessment of potential negative effects which should be fully mitigated in line with the mitigation hierarchy prior to identifying enhancements;*

iv. *significant biodiversity enhancements are provided, in addition to any proposed mitigation. This should include nature networks, linking to and strengthening habitat connectivity within and beyond the development, secured within a reasonable timescale and with reasonable certainty. Management arrangements for their long term retention and monitoring should be included, wherever appropriate; and*

v. *local community benefits of the biodiversity and/or nature networks have been considered.*

Planning policy of relevance to this OBEMP are listed below. Details can be found in **Annex A**.

- NPF4[1];
- Scotland's Environment Strategy[2];
- Scottish Biodiversity Strategy[3]; and
- Tayside Local Biodiversity Plan (TLBP)[4].

2.0 Methodology

This OBEMP is to be implemented to compliment an EcIA (Appendix D of the SEIR) that together will serve to address the predicted impacts of the Proposed Development. The aim of the OBEMP is to set out measures that will compensate for the loss of biodiversity resulting from the Proposed Development and that will enhance existing biodiversity and aid the recovery of natural habitats and populations in a wider biodiversity and nature networks context to achieve significant biodiversity gains such that they are in a demonstrably better state than without intervention.

The aim of the OBEMP is to establish the key objectives and principles by which parts of the Site would be restored and managed to the benefit of biodiversity, which would then form the basis for the more detailed BEMP, post consent. It is not the intention for this document to

[1] Scottish Government. (2023). National Planning Framework 4. [Online] Available at: National Planning Framework 4 - gov.scot (Accessed 19 November 2025)

[2] Scottish Government. (2020). The Environment Strategy for Scotland. Available at: https://www.gov.scot/publications/environment-strategy-scotland-vision-outcomes/

[3] Scottish Government. (2020). Scottish Biodiversity Strategy to 2045. [Online] Available at: https://www.gov.scot/publications/scottish-biodiversity-strategy-2045-tackling-nature-emergency-scotland/documents/

[4] Tayside Biodiversity Partnership. (2015). Action Plan – New LBAP 2016-26. [Online] Available at: https://www.taysidebiodiversity.co.uk/action-plan/action-plan-new-lbap-2015/

provide full details of proposed management, much of which cannot be determined fully at this stage.

2.1 Terminology

The following definitions are taken from the International Standards for Habitat Restoration[5]:

- **Scope** is the broad geographic or thematic focus of a project, or for the purposes of this project, the Site.
- **Vision** is a general summary of the desired condition one is trying to achieve through the work of the project.
- **Targets** identify the native ecosystems to be restored or species to be conserved at a site as informed by a reference model, along with any social outcomes or constraints expected of the project.
- **Goals** are formal statements of the medium to long-term desired ecological or social condition, including the level of recovery sought. Goals must be clearly linked to targets, measurable, time-limited, and specific.
- **Objectives** are formal statements of the interim outcomes along the trajectory of recovery. Objectives must be clearly linked to targets and goals, and be measurable, time-limited, and specific.
- **Indicators** are specific, quantifiable measures of attributes that directly connect longer-term goals and shorter-term objectives. Ecological indicators are variables that are measured to assess changes in the physical (*e.g.*, turbidity units), chemical (*e.g.*, nutrient concentration), or biotic (*e.g.*, species abundance) ecosystem attributes as guided by the reference model. Social-ecological or cultural indicators measure changes in human wellbeing such as participation in traditional practices, governance, language and education.

NatureScot[6] defines **ecosystem services** as:

"…the direct and indirect contributions ecosystems (known as natural capital) provide for human wellbeing and quality of life. This can be in a practical sense, providing food and water and regulating the climate, as well as cultural aspects such as reducing stress and anxiety."

There are four broad categories of ecosystem services: provisioning, regulating, supporting, and cultural. Biodiversity underpins many of these services.

2.2 Baseline Data Collection

The OBEMP has been informed by baseline data collected to inform the EcIA carried out by SLR for the Site. Ecology elements of the project included:

- Preliminary Ecological Appraisal[7]:
  - Ecological desk study;
  - UKHab habitat survey;

[5] McDonald, T., Gann, G., Jonson, J. and Dixon, K. (2016). International standards for the practice of ecological restoration–including principles and key concepts. (Society for Ecological Restoration: Washington, DC, USA.). *Soil-Tec, Inc. Marcel Huijser, Bethanie Walder*.

[6] NatureScot. (2025). What are Ecosystem Services. [Online] Available at: https://www.nature.scot/scotlands-biodiversity/scottish-biodiversity-strategy-and-cop15/ecosystem-approach/ecosystem-services-natures-benefits#:~:text=Ecosystem%20Services%20are%20the%20direct,as%20reducing%20stress%20and%20anxiety

[7] SLR Consulting. (2025). Binn Solar Preliminary Ecological Appraisal.

- Protected species habitat suitability assessment;
- Breeding bird survey; and
- EcIA[8].

3.0 Baseline Data Summary

This section summarises baseline conditions relevant to the OBEMP design, based on field surveys and detailed in the relevant reports.

This OBEMP is based on habitat suitability, protected/notable species and professional judgement to guide the broad principles for biodiversity enhancement and restoration.

3.1 Designated Sites

3.1.1 Statutory Sites

There are no statutory or non-statutory designated sites within the Site boundary.

There are 21 Statutory designated sites were identified within 10 km of the Site, and up to 20 km for those with avian features. Statutory designated sites identified are summarised in Table 3-1.

Table 3-1: Statutory Designated Sites

Site Name	Designation	Relevant Qualifying / Notified Ecological Features	Approx. Distance (km) / Direction from Site Boundary[9]
Turflundie Wood	SSSI	Amphibian assemblage; and great crested newt (GCN) *Triturus cristatus*	1.3 km north-east
	SAC	GCN	
Lacesston Muir and Glen Burn Gorge	SSSI	Subalpine dry heath	4.6 km south
Lochmill Loch	SSSI	Lowland dry heath; and mesotrophic loch	4.7 km north-east
River Tay	SAC	Atlantic salmon *Salmo salar*; brook lamprey *Lampetra planeri*; clear-water lakes or lochs with aquatic vegetation and poor to moderate nutrient levels; otter *Lutra lutra*; river lamprey *Lampetra fluviatilis*; and sea lamprey *Petromyzon marinus.*	6.0 km north
Firth of Tay and Eden Sanctuary	Ramsar	Bar-tailed godwit *Limosa lapponica*, non-breeding; common scoter *Melanitta nigra*, non-breeding; cormorant *Phalacrocorax carbo*, non-breeding; dunlin *Calidris alpina alpina*, non-breeding; eider *Somateria mollissima*, non-breeding; goldeneye *Bucephala clangula*, non-breeding; goosander *Mergus merganser*, non-breeding; grey plover *Pluvialis squatarola*, non-breeding; greylag goose	6.0 km north
	SPA		

[8] SLR Consulting. (2025). Binn Solar Ecological Impact Assessment.

[9] Measured from the nearest point “as the crow flies”.

Site Name	Designation	Relevant Qualifying / Notified Ecological Features	Approx. Distance (km) / Direction from Site Boundary[9]
		Anser anser, non-breeding; Icelandic Black-tailed godwit *Limosa limosa islandica*, non-breeding; little tern *Sternula albifrons*, breeding; long-tailed duck *Clangula hyemalis*, non-breeding; marsh harrier *Circus aeruginosus*, breeding; oystercatcher *Haematopus ostralegus*, non-breeding; pink-footed goose *Anser brachyrhynchus*, non-breeding; red-breasted merganser *Mergus serrator*, non-breeding; redshank *Tringa totanus*, non-breeding; sanderling *Calidris alba*, non-breeding; shelduck *Tadorna tadorna*, non-breeding; velvet scoter *Melanitta fusca*, non-breeding; and waterfowl assemblage, non-breeding	
	SAC	Estuaries; harbour seal *Phoca vitulina*; intertidal mudflats and sandflats; subtidal sandbanks	
Inner Tay Estuary	SSSI	Bearded tit *Panurus biarmicus*, breeding; breeding bird assemblage; cormorant, non-breeding; goldeneye, non-breeding; greylag goose, non-breeding; marsh harrier, breeding; pink-footed goose, non-breeding; saltmarsh; transition saltmarsh; and water rail *Rallus aquaticus*, breeding	6.0 km north
Pitkeathly Mires	SSSI	Basin fen	6.7 km north-west
	SAC	Slender green feather-moss *Hamatocaulis vernicosus*; and very wet mires often identified by an unstable 'quaking' surface	
Ballo and Harperleas Reservoirs	SSSI	Mesotrophic loch; and whooper swan *Cygnus cygnus*, non-breeding	6.9 km south-east
Craigmead Meadows	SSSI	Subalpine calcareous grassland	7.4 km south-east
Black Loch (Abdie)	SSSI	Mesotrophic loch; and open water transition fen	8.0 km north-east
Loch Leven	SPA	Cormorant, non-breeding; gadwall *Anas strepera*, non-breeding; goldeneye, non-breeding; pink-footed goose, non-breeding; pochard *Aythya ferina*, non-breeding; shoveler A*nas clypeata*, non-breeding; teal *Anas crecca*, non-breeding; tufted duck *Aythya fuligula*, non-breeding; waterfowl assemblage, non-breeding; and whooper swan, non-breeding	8.3 km south
	Ramsar		
	SSSI	As above plus: beetle assemblage; breeding bird assemblage; eutrophic loch; hydromorphological mire range; and vascular plant assemblage	
	NNR	N/A	
Lindores Loch	SSSI	Breeding bird assemblage; mesotrophic loch; and open water transition fen	8.5 km north-east
Holl Meadows	SSSI	Lowland neutral grassland	8.9 km south-east

Site Name	Designation	Relevant Qualifying / Notified Ecological Features	Approx. Distance (km) / Direction from Site Boundary[9]
Dunbog Bog	SSSI	Basin fen	10.0 km north-east

3.1.2 Non-Statutory Sites

There are no non-statutory designated sites of ecological interest within 2 km of the Site.

3.2 Habitats

The results of the UKHab survey indicated that the Site is primarily comprised of modified grassland (g4) being used as grazing areas for sheep and cattle. The grass was generally species poor (<5 species per m^2), however, areas restricted from grazing presented higher sward height and species richness. Two bare, arable fields were also present within the Site in the north-west and south-west. Both fields were recently ploughed at time of survey.

Scattered gorse, *Ulex europaea,* occurred frequently across the Site, most notably along field boundaries, with occasional scattered rocks and exposed bedrock in the northwest of the Site, the largest stand covering an approximate area of 3,200 m^2.

Linear features were comprised of fencing present along most field boundaries, with a drystone wall also running north to south between the two largest pastural fields. An unvegetated, unsealed surface track also lay partially within the Site along its western boundary. No Annex I habitats, or those present on the Scottish Biodiversity List (SBL) were present within the Site or buffer.

The desk study indicated no ancient woodland identified within the Site, however, there are ten distinct areas within 2 km of the Site[10].

3.2.1 Notable Plants

No notable or protected plant species were noted during the survey. However, three stands of invasive non-native rhododendron, *Rhododendron ponticum,* were confirmed in the access track buffer to the west of the Site on Millden Road, with cherry laurel, *Prunus laurocerasus*, also noted.

3.3 Protected and Notable Species

Evidence of squirrel foraging was widely evident throughout the stand of conifer to the north of the Site. However, as there were no confirmed sightings these cannot be attributed to red squirrel, *Sciurus vulgaris,* or grey squirrel, *Sciurus carolinensis.* Desk study data confirms the area as supporting records for both species[11].

Evidence of GCN in the wider landscape was identified (designated sites and data search). However, of the four ponds located with the Site and 500 m buffer none were identified as containing GCN through eDNA analysis.

The Site provides moderate habitat suitability for reptiles including dense gorse scrub throughout field margins and sections of drystone wall across the Site providing

[10] NatureScot. (2025). Ancient Woodland Inventory. [Online] Available at: https://opendata.nature.scot/datasets/snh::ancient-woodland-inventory/explore

[11] Saving Scotland's Red Squirrels. (2024). Sightings. [Online] Available at: Saving Scotland's Red Squirrels – Transforming hope for Scotland's red squirrels

opportunities for basking and resting. No reptiles or amphibians were noted during the survey.

The Site was considered to have moderate suitability for foraging and commuting bats with the northern and eastern extent noted for good foraging potential. Linear features across the Site including lines of gorse and walls are likely to facilitate commuting. The area of larch plantation provides suitable foraging, notably around the pond. However, no potential roost features (PRFs) were noted in this area. PRFs were noted in the scattered broadleaved trees bordering the south of the Site and along Millden Road.

No watercourses were identified within the Site and a 250 m buffer which had potential suitability for otter or water vole, *Arvicola amphibius*. The ponds present to the west of the Site are considered unlikely to hold sufficient food sources for otter and lack good connectivity to other watercourses. The ponds hold some suitability to support water vole, however, burrowing is likely restricted in margins due to intensive land management.

No badger, *Meles meles,* field signs were noted across the Site or a 100 m buffer, however, areas amongst stands of gorse were noted for their suitability.

Brown hare, *Lepus europaeus,* were noted within the Site and wider landscape.

3.4 Protected and Notable Bird Species

A total of 39 bird species were recorded within the Site, of which 22 were primary target species and 17 were secondary non-target species. None of the species recorded are listed on Annex I of the Birds Directive or Schedule 1 of the Wildlife Countryside Act 1981 (as amended). Twelve of the recorded species are on the SBL, 10 were BoCC5 red listed, 11 were amber listed, 16 were green listed, and 2 were classified as not assessed.

Of the target species with territories, six were BoCC5 red listed and 7 were amber listed. A full breakdown of the identified species territories and corresponding legal and conservation status is available in the Breeding Bird Survey Report[12].

The fields on Site were found to be frequently used as a foraging location by flocks of gulls as well as corvids. Additionally, two wader species – curlew, *Numenius arquata,* and snipe, *Gallinago gallinago* - and two raptor species – kestrel, *Falco tinnunculus,* and buzzard, *Buteo buteo* - were observed foraging or roosting within the Site.

4.0 Habitat Loss

4.1 Direct Habitat Loss

Where existing habitat would be replaced by civil infrastructure associated with the Proposed Development, it would be permanently lost from the Site, at least for the duration of the operation of the Proposed Development. This includes habitats present under the footprint of the Proposed Development and areas that would be subject to cut and fill, grading and excavation for cables.

4.2 Summary of Predicted Habitat Loss

Habitat losses for each habitat type are detailed in **Table 4-1**. Habitat loss calculations are inclusive of the area under the solar PV units.

[12] SLR Consulting. (2025). Binn Solar BBS Report.

Table 4-1: Summary of Habitat Losses

UKHab Code and Name	Total Direct Habitat Loss (ha)
g4 – Modified grassland	10.61
h3e - Gorse scrub	-
c1 – Arable and horticulture	1.12
u1e – Built Linear Features	-
Total	**11.73**

5.0 OBEMP

5.1 Vision and Scope

The vision of this plan is to enhance areas of species poor grassland currently dominating the Site and create fringe areas in mosaic with wildflower to provide enhanced foraging resources for protected and priority species as well as improving the provision of places of shelter (e.g. nests, roosts, hibernacula) in the long term.

Grassland and wildflower planting, grazing management, and provision of wildlife boxes/refugia for bats, birds, and reptiles/amphibians will improve habitat for flora, and a range of fauna, including; bats, bird assemblage, reptiles and amphibians, red squirrels and invertebrates.

The scope of the habitat restoration and enhancement works proposed in this OBEMP are depicted within **Annex A, Figure 1**, the Landscape Enhancement and Mitigation Plan (LEMP).

5.2 NPF4 Adherence

The NPF4, Policy 3, sets out requirements for developments to deliver positive effects for biodiversity. Major applications:

"…*will only be supported where it can be demonstrated that the proposal will conserve, restore and enhance biodiversity, including nature networks so they are in a demonstrably better state than without intervention"*.

The mitigation proposed in this OBEMP aims to meet NPF4 criteria (refer to Section 1.5.1) by replacing the loss of approximately 10.61 ha of species poor grassland (g4) and 1.12 ha of arable land (c1) with enhancement of existing grassland, planting of more species diverse grassland on existing arable land, hedgerow planting and mixed woodland/scrub planting.

The proposed tree and hedgerow planting will all take place on Site, retaining and extending the existing areas on Site. These will also serve to link existing blocks of woodland present within the wider landscape and to areas of grassland/woodland creation.

The plan for mixed woodland, individual tree and hedgerow planting has been integrated with the landscape plan to provide natural screening that fits with the character of the local area and provides benefits for biodiversity. This will require a mix of native broadleaved tree and scrub species to enhance the woodland/hedgerow biodiversity.

The proposed native mixed woodland planting will be carried out on areas of the Site boundary and around areas of existing woodland and scrub. The woodland would be under seeded with a woodland meadow mix. Habitats within the Site are typically of low biodiversity value, e.g. species poor modified grassland and arable cereal fields, as such planting will improve Site value. The planting will comprise of native species and will provide increased habitat and foraging resources for species already present within the Site.

Areas of proposed grassland management would provide benefits for biodiversity through increased sward height and species diversity when coupled with a suitable management regime. With correct management, the area will improve foraging and commuting resources available for fauna present on Site including reptiles, birds, badger, bats and brown hare. Negative effects of tree and scrub planting are not considered to be significant, considering the improvement to species poor grassland and arable crops currently present within the Site.

Methods, management and monitoring are outlined below to ensure the long-term retention and retained biodiversity value of the native woodland, native species rich hedgerows and grasslands.

5.3 BEMP Working Group and Review

As part of the preparation of the final BEMP, post consent, a group of key stakeholders would be invited to form a BEMP working group. Their role would be to provide input to and comment on the final BEMP and subsequent revisions to the BEMP during the lifetime of the Proposed Development.

It is envisaged that the following stakeholders would be invited to join the BEMP working group:

- Trio Power Limited, as the Applicant/operator, and their ecological advisor(s);
- The landowner;
- Perth and Kinross Council Biodiversity Officer;
- NatureScot; and
- SEPA.

Further details, including terms of reference for the BEMP working group, would be provided in the final BEMP, post-consent.

The BEMP would be reviewed and updated on a regular basis, based on monitoring of progress toward achieving its goals and objectives and to inform active management. Proposed review timescales are set out in **Annex C, Table C-1**.

Trio Power is ultimately responsible for meeting the commitments made in the final BEMP. The implementation of the final BEMP would be undertaken by suitably experienced contractors and all monitoring would be undertaken by suitably qualified and experienced environmental professionals.

5.4 Targets

This section details the habitat features that will be the targets of the BEMP. The features which form the targets of this OBEMP have been determined through consideration of the relative importance of ecological features present at the Site, the extent to which they may be impacted by the Proposed Development (as set out in the EcIA report[8]), their potential to benefit from restoration/enhancement or management and national or local biodiversity priorities.

Enhancement measures are primarily targeted at those measures that will support a diverse faunal community, from invertebrates through to the higher trophic species groups. **Table 5-1** identifies all the targets of habitat management, the rationale for target inclusion, and the corresponding objective/s. **Table 5-2** describes the associated goals, objectives and indicators.

Some target species, e.g. small mammals and invertebrate assemblages, will not be directly measured or monitored within this OBEMP, however, will still likely benefit from general habitat improvement measures outlined in the targets, as such they have been included in Table 5-1.

Table 5-1: OBEMP Targets

Target	Rationale	Associated Objectives
Grassland	The Proposed Development will result in the loss of 10.61 ha of modified grassland habitat. The enhancement of grassland will compensate for the loss of modified grassland (g4) with additional benefits to breeding birds, reptiles and amphibians, breeding birds, small mammals, bats and invertebrates.	1.1, 1.2
Woodland	Construction activities will not result in the temporary or permanent loss of any existing woodland habitat. Creation and enhancement of woodland will increase connectivity within the wider landscape between existing woodland blocks, benefiting breeding birds, bats, reptiles and amphibians, brown hare, small mammals and invertebrates.	3.1
Scrub	Scrub is an important habitat for commuting, foraging and breeding fauna. Construction activities will not result in the permanent or temporary loss of scrub habitat. Creation and enhancement of scrub will provide additional Site biodiversity improvement benefiting breeding birds, reptiles and amphibians, brown hare, invertebrates and in turn bats.	3.2
Hedgerows	Hedgerows are an important habitat for commuting, foraging and breeding fauna. While construction activities will not result in any loss of hedgerow, this has been identified as an opportunity for habitat enhancement and improved screening of the Proposed Development. The provision of hedgerow planting and gap filling will benefit breeding birds, reptiles and amphibians, brown hare, invertebrates and in turn bats.	3.3
Bat assemblage	Habitats dominating the Site, i.e. modified grassland and arable crops, are considered to be a poor foraging resource for bats with linear features (hedgerows and ditches) of greatest value. Potential roosting opportunities are present in mature trees within the edge of woodland blocks to the north of the Site, however, overall connectivity within the Site is poor. All bats are European protected species under The Conservation (Natural Habitats, &c.) Regulations 1994 and are additionally protected in the UK under Schedules 5 and 6 of the WCA[13]. The works will result in loss of 10.61 ha of potential foraging and commuting habitat for bats (arable land not included). The provision of tree/scrub/hedgerow planting and grassland management will improve invertebrate diversity and thereby improve foraging for bats. The provision of bat boxes will provide additional roosting opportunities currently absent on Site and scarce in the wider area.	1.1, 1.2, 2.1, 3.1, 3.2, 3.3 4.3

[13] Wildlife and Countryside Act (1981 as amended)

Target	Rationale	Associated Objectives
Reptiles and amphibians	The habitats on Site, particularly grassland with areas of scrub, offered suitable habitat for reptiles and amphibians. Potential refugia in the form of dry-stone walls are present across the Site. The works will not provide habitat losses to area of potential habitat for reptiles and amphibians; this is concentrated in field margins and areas of scrub, however, there are opportunities to provide enhancements on Site. Reptile species and some species of amphibians are protected under Schedule 5 of the WCA[13]. Provision of artificial reptile refugia will provide enhancements to existing habitat in improving shelter, and potential breeding opportunities. Grassland planting and management will additionally improve diversity of habitat available for these species providing increased foraging opportunities.	1.1, 1.2, 2.1, 3.1, 3.2, 3.3 4.4
Bird assemblage	Grassland and scrub habitats on Site are considered suitable for nesting birds. All nesting birds are protected under the WCA. The works will result in the loss of 10.61ha of foraging and nesting habitat for birds. The tree/scrub planting and grassland management will improve habitat for birds currently using the Site and provide habitat for additional amber and red listed birds that are likely to be attracted to the habitat. Provision of nest boxes for small birds in areas of tree planting will provide additional breeding locations for small woodland, woodland edge and farmland birds.	1.1, 1.2, 2.1, 3.1, 3.2, 3.3 4.1, 4.2
Small mammals	Existing habitat within the Site is limited for small mammals to field margins and watercourses, however, there are opportunities to provide enhancements on Site. Grassland management, hedgerow and tree planting will improve habitat for small mammals currently using the Site, in turn providing an increased food resource for predators within the Site such as raptors.	1.1, 1.2, 2.1, 3.1, 3.2, 3.3
Brown hare	Grassland and scrub habitats on Site are suitable for brown hare which was also observed on Site. The works will result in the loss of 10.61 ha of habitat for brown hare. The tree/scrub planting and grassland management will improve diversity of habitat available for these species providing foraging and shelter opportunities.	1.1, 1.2, 2.1, 3.1, 3.2, 3.3
Invertebrates	While no significant effects are expected on invertebrates, the provision tree/scrub planting and grassland management will improve habitat for invertebrates currently using the Site and provide additional niches for a variety invertebrate species. Increases in invertebrate numbers and species richness will in turn provide foraging enhancements for a number of species groups, including bats and birds.	1.1, 1.2, 2.1, 3.1, 3.2, 3.3

5.5 Goals and Objectives

Goals and objectives, and associated targets are outlined in **Table 5-2**. This section details how objectives meet the goals, to restore the natural spaces within the Site while providing resources for wildlife. A summary table of actions can be found in **Annex C, Table C-1**.

As a general rule, planting of native species of local provenance will be prioritised within the Site and no invasive and non-native species (INNS) will be planted or allowed to spread on the Site. This applies to all of the below objectives.

Consultation will be required with local and national stakeholders including NatureScot and landowners on the proposed biodiversity restoration and enhancement objectives.

Table 5-2: OBEMP Goals, Objectives and Indicators

Goal	Objective	Area	Associated Targets	Indicators
1. Enhancement of grassland	1.1 Grassland creation/management	Grassland Management Area	Bat assemblage Reptiles and amphibians Brown hare Invertebrates Bird assemblage Small mammals	Scrub presence Species diversity Sward height diversity
	1.2 Reducing grazing pressure	Grassland Management Area	Bat assemblage Reptiles and amphibians Brown hare Invertebrates Bird assemblage Small mammals	Scrub presence Species diversity Sward height diversity
2. Enhancement of aquatic habitats	2.1 Marginal vegetation enhancement	SuDs Management Area	Invertebrates Bat assemblage Reptiles and amphibians Bird assemblage Small mammals	Species diversity Sward height diversity Invertebrate diversity
3. Creation and enhancement of mixed woodland, scrub and hedgerows	3.1 Mixed tree planting	Tree/scrub Planting Areas	Mixed woodland Bat assemblage Reptiles and amphibians Brown hare Invertebrates Bird assemblage Small mammals	Tree health and survival
	3.2 Scrub planting/enhancement	Tree/scrub Planting Areas	Scrub Bat assemblage	Scrub health and survival

Goal	Objective	Area	Associated Targets	Indicators
			Reptiles and amphibians Brown hare Invertebrates Bird assemblage Small mammals	
	3.3 Hedgerow planting	Hedgerow Planting Area	Hedgerow Bat assemblage Reptiles and amphibians Invertebrates Brown hare Bird assemblage Small mammals	Hedgerow health and survival
4. Provision and maintenance of wildlife boxes/refugia	4.1 Provision and maintenance of small bird boxes	Tree/scrub Planting Areas	Bird assemblage	Use of wildlife box Wildlife box condition
	4.2 Provision and maintenance of raptor boxes	Tree/scrub Planting Areas	Bird assemblage	Use of wildlife box Wildlife box condition
	4.3 Provision and maintenance of bat boxes	Tree/scrub Planting Areas	Bat assemblage	Use of wildlife box Wildlife box condition
	4.4 Provision and maintenance of reptile/amphibian refugia	Tree/scrub Planting Areas	Reptiles and amphibians	Refugia condition

5.5.1 Goal 1: Enhancement of Grassland

The proposed infrastructure will result in the loss of 10.61 ha of improved grassland and 1.12 ha of arable land. To compensate for this loss and to provide gains in levels of biodiversity, the enhancement, creation, and management of good condition grassland is proposed. This is based on the assumption that it takes 15 years to reach target condition.

Grassland creation is comprised of two types within the Site. The first is the interior open grassland areas under Solar PV units to be managed with sheep grazing, comprising the majority of the Site, and the second is limited to fenced off areas on verges subject to manual/mechanical mowing. Interior grasslands would cover an area of approximately 40.0 ha and be dominated by low-growing wildflower meadows, and verge grasslands covering an area of 3.3 ha of wildflower meadow.

It should be noted that grassland under panels will be partially shaded by solar PV panels, therefore growth may be limited for flowering species in certain areas.

5.5.1.1 Objective 1.1: Grassland creation/management

Interior Grassland Creation

Managed grassland for sward height and species diversity is proposed within interior areas of the Site surrounding the PV modules. Where the Site is currently being utilised for crop production, these areas of grassland will require seeding and creation. Grassland creation in interior areas will involve the following steps:

- Topsoil removal/preparation – as appropriate for the specific substrate conditions and grassland seed mix.
- Seeding –
    - the prepared areas will be sown with (ideally) local provenance wildflower seed which will contain at least 15 species per m^2 (the minimum number required to be classified as lowland meadow in the UK Habitat Classification (UKHab)). The species within the mix must be shade-tolerant and include low growing fine grasses and wildflowers better suited to management by grazing[14] such as Landlife Wildflower mix (LW12M)[15], see **Annex D** for details.
    - A general guide for grass-wildflower seed mixes is to sow at a rate of 3-5g per m^2.
    - Yellow rattle *Rhinanthus minor* (a semi-parasitic species which feeds off the nutrients in the roosts of nearby grasses) will be included in the seed mix, in order to reduce the vigour of dominant grasses and encourage desirable species.
    - Seeding can be conducted in either spring (March to May) or autumn (Mid-August to late September).
- Seed rolling – after seeding the soil should be rolled or trampled to increase contact between the seeds and the soil.

[14] EcoDev Group. (2024). Best Practice Guidance: Grassland & Wild Flower Management on Solar Farms. [Online] Available at: Grassland & Wildflower Management on Solar Farms.pdf

[15] Landlife Wildflowers. (2025). Low Growing Wildflower Seeds LW12M 80-20%. [Online] Available at: https://www.wildflower.co.uk/products/wildflower-seed-mixtures/lw12-low-growing-80-20.html#:~:text=Buy%20Low%20Growing%20Wildflower%20Meadow%20Seeds%20Mix%20online,species%20suitable%20for%20flowering%20lawns%20or%20road%20verges

Perimeter / Verge Grassland Creation

Grassland creation within verge areas will involve the following steps:

- Topsoil removal/preparation – as appropriate for the specific substrate conditions and grassland seed mix.
- Seeding –
    - The prepared areas will be sown with (ideally) local provenance wildflower seed which will contain at least 15 species per m^2.
    - A grassland mix that is suited to well-drained, loamy soils in open areas, is recommended, such as use of hedgerow meadow mix (SCM4) adjacent to hedgerow enhancement or Scotia Seeds Mavisbank Mix (SCM1) (**Annex D**).
    - Seeding would take place prior to planting of scrub and trees to ensure no bare ground remains.

Interior Grassland Enhancement

It is proposed to enhance the areas of existing grassland within the Site, primarily modified grasslands (g4) through seeding and habitat management:

- Land preparation – the turf will either be stripped or rotovated to break up the turf and allow access for seeding
- Seeding –
    - the prepared areas will be sown with (ideally) local provenance wildflower seed which will contain at least 15 species per m^2 (the minimum number required to be classified as lowland meadow in the UK Habitat Classification (UKHab)). The species within the mix must shade-tolerant and include low growing fine grasses and wildflowers better suited to management by grazing[16] such as Landlife Wildflower mix (LW12M)[17], see **Annex D** for details.
    - A general guide for grass-wildflower seed mixes is to sow at a rate of 3-5g per m^2.
    - Yellow rattle *Rhinanthus minor* (a semi-parasitic species which feeds off the nutrients in the roosts of nearby grasses) will be included in the seed mix, in order to reduce the vigour of dominant grasses and encourage desirable species.
    - Seeding can be conducted in either spring (March to May) or autumn (Mid-August to late September).
- Seed rolling – after seeding the soil should be rolled or trampled to increase contact between the seeds and the soil.

[16] EcoDev Group. (2024). Best Practice Guidance: Grassland & Wild Flower Management on Solar Farms. [Online] Available at: Grassland & Wildflower Management on Solar Farms.pdf

[17] Landlife Wildflowers. (2025). Low Growing Wildflower Seeds LW12M 80-20%. [Online] Available at: https://www.wildflower.co.uk/products/wildflower-seed-mixtures/lw12-low-growing-80-20.html#:~:text=Buy%20Low%20Growing%20Wildflower%20Meadow%20Seeds%20Mix%20online,species%20suitable%20for%20flowering%20lawns%20or%20road%20verges

Indicators

Scrub presence

Any scrub present in the grassland management area should be removed, unless in an area designed for scrub presence. Removal should allow for environmental variables, including weather and seasonality with regards to breeding birds.

Species diversity

Habitat species diversity should be surveyed during flowering seasons as an indicator of habitat management success. The aim to is achieve a diversity of 15 species per m^2, the minimum required to classify as Lowland meadow in the UK Habitat Classification (UKHab). It is anticipated species diversity will increase and eventually plateau. If declines in species diversity are seen, habitat management should be reviewed.

The aim is for the grasslands to reach good condition after 15 years, by passing 5 or 6 criteria including essential criterion A and F for Statutory Metric Condition Sheet: Grassland Habitat Type (medium, high and very high distinctiveness) by year 15 after sowing.

Foraging resource

Increases in the number of invertebrates should be evident by increased bird and bat foraging activity in the areas of grassland management. It is anticipated that dependence on grassland as a foraging resource will vary seasonally depending on the availability of other food sources in the area.

5.5.1.2 Objective 1.2: Reducing Grazing Pressure

Conservation Grazing

It is proposed to graze the interior grassland beneath the solar PV units to manage the wildflower meadows. For optimal results (maintain species diversity), the areas should be grazed at a density of approximately 0.08-0.16 GLU[18] per ha.

Sheep would be sourced to graze the area to benefit biodiversity and the community structure of grasslands[19].

If no grazing animals can be sourced for the area, grazing can be replaced with grass cutting provided cuttings are removed from the area. Avoid grazing in spring as emerging leaves and flower spikes can be easily damaged. The aim in all situations is to provide a level of grazing that allows plants to grow from early spring, flower in May and June and then set seed, but which keeps highly competitive vegetation under control through grazing or cutting.

Grazing will be restricted in verge areas by fencing and subject only to manual/mechanical management (see below).

Manual / Mechanical Management

As an alternative to grazing in interior areas and within verge areas, the grassland can be cut once a year at the end of the growing season (late August). Arisings would be removed in order to reduce soil fertility, which in turn promotes higher diversity as highly competitive species (e.g. grasses) are less able to outcompete less competitive species (e.g. wildflowers). Removing the arisings also exposes the soil surface, thus providing light and space for seeds

[18] Grazing Livestock Units (GLU)

[19] Jishuai, S., Fengwei, X. and Zhang, Y. (2023). Grassland biodiversity and ecosystem functions benefit more from cattle than sheep in mixed grazing: A meta-analysis. *Journal of Environmental Management*. 337. DOI: 117769

to germinate and grow. The arisings will be left in situ for a few days to dry out and facilitate seeds being shed from capsules.

It is beneficial to leave uncut strips along the edges of the meadows, as a foraging resource for insects, enabling late flowering species to set seed and provide shelter for other wildlife.

The aim in all situations is to provide a level of grazing that allows plants to grow from early spring, flower in May and June and then set seed, but which keeps highly competitive vegetation under control through grazing or cutting.

Overseeding / plug-planting

If monitoring results indicate initial establishment attempts were not as successful as desired, over-seeding or plug planting to supplement established plants will be undertaken.

Weed Control

Control of weed species such as ragwort *Senecio jacobaea*, creeping thistle *Crisium arvense*, and spear thistle *C. vulgare* may be undertaken if they occur at high abundance, but only hand pulling or cutting of weed species will be used.

It should be noted that common nettle *Urtica dioica* has high value for some invertebrate species, such as the caterpillar stage of the peacock *Aglais io* and small tortoiseshell *A. urticae* butterflies. While it may be removed where it risks outcompeting other species and reducing species diversity, consideration will be given to retaining areas of nettle to promote invertebrate populations.

Fertilisers and Pesticides

The management of the habitat areas is intended to promote biodiversity and therefore use of fertilisers and pesticides is contrary to the aims of the OBEMP. No fertilisers or pesticides will be used within the grasslands or within close proximity, to avoid creating nutrient-rich conditions that would result in a loss of less competitive plant species, and to ensure protection of invertebrate diversity.

Continued adaptive management will be necessary for the management of all grassland. It is likely that cutting and grazing schedules will need to be monitored and updated continuously to allow for environmental variables, including weather and breeding birds. Management decisions should be taken with advice from a qualified ecologist.

Indicators

Species diversity

Habitat species diversity should be surveyed during flowering seasons as an indicator of habitat management success. Botanical monitoring will record floristic diversity within the grassland, with an aim of annual incremental increases up to an average of 15 species per 1m x 1m sample by year 10. A varied sward height should be aimed for during the growing season, with at least 20% of the sward less than 7cm and at least 20% more than 7cm in height.

If declines in species diversity are seen, habitat management should be reviewed.

5.5.2 Goal 2: Enhancement of Aquatic Habitat

5.5.2.1 Marginal Vegetation Enhancement

As shown on the Landscape Enhancement and Mitigation Plan (**Annex A**, **Figure 1**), the plan is inclusive of approximately a 0.10 ha sustainable drainage systems (SuDS) pond

north of the substation and BESS infrastructure in the centre of the Site. The SuDS pond will be fed by surface water runoff.

Surrounding this feature is the area of approximately 0.04 ha of proposed wet meadow planting, creating a 3.5 m buffer. It is recommended that the meadow is seeded with a mix that is tolerant to being occasionally flooded or waterlogged. A suitable mix for this location would be a Wet Meadow Mix (SCM2) (www.scotiaseeds.co.uk, see **Annex D** for full details).

Within the SuDS pond, planting of native species within the basin will be incorporated into planting scheme to maximise species diversity around the wetland area and promote use by pond dwelling species such as amphibians, aquatic/terrestrial invertebrates and dragonflies/damselflies. This will provide increased foraging resource for higher trophic level species within the Site such as bats, birds and amphibians. The following native plant species will be incorporated into the mix:

- Brooklime, *Veronica beccabunga*;
- Water forget-me-not, *Myosotis scorpioides*;
- Purple loosestrife, *Lythrum salicaria*;
- Marsh marigold, *Caltha palustris*; and
- Water mint, *Mentha aquatica*.

Scotia Seeds (www.scotiaseeds.co.uk) have a pond-edge wildflower mix that could be used, in conjunction with planting plugs, to help create this habitat (see **Annex D** for full details). Seeding would be conducted as follows:

- To reduce potential risk of erosion if soil is left bare it is recommended that soil is prepared and sown in the spring (March to June);
- Ensure ground is free of vegetation, then firm and rake to create a seedbed;
- Aim to let the area settle for four to six weeks to allow any weed seeds to germinate then remove before sowing seeds;
- Seed is to be sown in the spring or autumn at a rate of 3g per square metre using wet meadow mix (SCM2). Bulk up the seed with an inert carrier such as sand to make distribution easier. The seed must be surface sown by machine or broadcast by hand; and
- Tread or roll in seed lightly to produce a firm surface.

Should herbicides be deemed necessary, only those cleared for aquatic use may be used in or beside water. These must be used under strict control and in accordance with the instructions printed on the product label.

The design will include features within the margins such as log piles, rock stacks or varied substrate to provide diversity to topography and provide increased habitat opportunities for invertebrates.

Indicators

Species diversity

Habitat species diversity should be surveyed during flowering seasons as an indicator of habitat management success. It is anticipated species diversity will increase and eventually plateau. If declines in species diversity are seen, habitat management should be reviewed.

Area and Extent

Marginal vegetation enhancements are limited to the SuDS management area the slopes of the SuDS pond in addition to a 3.5 m buffer.

5.5.3 Goal 3: Creation and Enhancement of Mixed Native Woodland, Scrub and Hedgerows

5.5.3.1 Objective 3.1 Mixed Native Tree Planting

Mixed native tree planting is proposed around the eastern and northern Site boundary, and in discrete areas of retained vegetation in the centre of the Site (see **Annex A**, **Figure 1**). Areas determined for planting shall include a moderate density (i.e. c.1,600 stems per ha[20]) following appropriate guidance[21,22] and will include seeding of the understory with a woodland meadow mix. Proposed native tree planting would cover an area of approximately 1.65 ha.

Species should include a mix of conifers and broadleaved trees to provide both screening and biodiversity enhancement value, priority should be given to the use of native species appropriate to the ground conditions. In this instance, species such Acer *Acer campestre,* silver birch *Betula pendula,* hawthorn *Crataegus monogyna,* sweet cherry *Prunus avium,* Scot's pine *Pinus sylvestris* and rowan *Sorbus aucuparia* will be used within the woodland mix. Bare root tree species also include alder *Alnus glutinosa,* downy birch *Betula pubescens* and sessile oak *Quercus patraea.* Stock of local provenance should be used where practicable.

Tree tubes and stakes should be used to protect trees from deer herbivory; sustainable or non-plastic tree tubes should be used to reduce plastic waste/pollution. Tree tube removal at the right time is important to permit healthy tree growth, ensure protection if measures fail, and avoid waste.

A suitable woodland meadow mix would be sourced and used within the understory of all proposed woodland planting areas. It is recommended that the meadow is be seeded with a mix that is tolerant dappled or limited light and sown at a rate of 3.0g / m^2. A suitable mix for this location would be a Woodland Meadow Mix (SCM3) (www.scotiaseeds.co.uk, see **Annex D** for full details).

Indicators

Tree health and survival

Planted trees should be appropriate to ground conditions to ensure good health and plant survival. It is likely that there will be some mortality of those planted, but this should remain below 10% mortality to ensure connected habitat areas.

Management

Where mortality of tree planting is over 10%, beating up may be required, where dead plants are replaced. Should any particular species show low survival rates, it is recommended that the replacement species is reviewed and a species with high survival likelihood planted.

[20] Woodland Trust (2022). Woodland Creation Guide.

[21] Scottish Forestry. Farm Woodlands. Available online at https://www.forestry.gov.scot/support-regulations/farm-woodlands [Accessed April 2025]

[22] Woodland Trust. Tree Planting Advice. Available online at https://www.woodlandtrust.org.uk/plant-trees/advice/ [Accessed April 2025]

Tree tubes should be replaced if they are damaged and removed once the plants are mature enough. Weeding of tree tubes may be required.

Area and Extent

The total area of mixed native woodland planting is 1.65 ha. Blocks of woodland are located on the Site boundary to enhance connectivity between existing blocks of woodland in the wider landscape and to have maximum screening benefit.

5.5.3.2 Objective 3.2 Native Scrub Planting/Enhancement

Scrub planting and enhancement is proposed throughout the Site (see **Annex A, Figure 1**). Scrub planting should prioritise native species and use plants appropriate to the ground conditions. Species are likely to include hazel *Corylus avellana,* broom *Cytisus scoparius,* blackthorn *Prunus spinosa,* dog rose *Rosa canina* and gorse, *Ulex europaeus.* Existing scrub would be retained where possible, with gorse and broom scrub allowed to naturally regenerate in the area, mixing with the proposed planting of tree and scrub within existing gaps. Proposed native scrub planting would cover an area of approximately 1.55 ha.

Indicators

Scrub health and survival

Planted scrub should be appropriate to ground conditions to ensure good health and plant survival. It is likely that there will be some mortality of those planted, but this should remain below 10% mortality to ensure scrub is dense enough to provide sufficient habitat/cover for species.

Area and Extent

Areas of scrub planting are proposed in areas of existing scrub habitat present within the Site, including two distinct blocks within the Site boundary, and one to the south of the Site. These will cover a total area of 1.55 ha.

5.5.3.3 Objective 3.3 Native Species-rich Hedgerow Planting

Native hedgerow planting is proposed along the western, eastern and southern Site boundary as discrete linear feature totalling approximately 1.14 km. The hedgerow should be planted in a double staggered row configuration to provide an increased shelter area for fauna.

Hedgerow planting should prioritise native species and use plants appropriate to the ground conditions. Single-species hedgerows will be avoided, with a mix of species to be used including hawthorn, blackthorn, dog rose, *Rosa canina,* and elderberry, *Sambucus nigra,* using stock of local provenance where practicable.

In areas where defunct hedgerow and individual trees exist along proposed hedgerow planting areas, current trees would be retained, and infill planting will be conducted where necessary, this will help maintain established trees in the landscape. This will provide increased sheltering areas for fauna and enhance connectivity within the landscape between existing blocks of woodland and scrub in the wider landscape. Infill planting should be conducted out with the breeding bird season where possible, taken to be mid-March to late July in central Scotland.

Low density livestock grazing could be carried out in the tree/hedgerow planting areas as outlined in Objective 1.2. Livestock can maintain a diverse understory vegetation structure and create niches for a range of woodland species. Livestock densities should be kept very low to prevent damage to young trees. Recommended grazing density for lowland woodland is <0.05

GLU/ha/year, which equates to 0.33 sheep/ha/year[23]. In this small area we would recommend a low number sheep grazing in the summer and autumn, with grazing removed in the winter.

Indicators

Tree, scrub, and hedgerow health and survival

Planted hedgerow plants should be appropriate to ground conditions to ensure good health and plant survival. It is likely that there will be some mortality of those planted, but this should remain below 10% mortality to ensure connected habitat areas.

Area and Extent

The total length of hedgerow proposed is 1.14 km. This will be limited to areas surrounding the Site boundary on the eastern, western and southern extents of the Site.

5.5.4 Goal 4: Provision and Maintenance of Wildlife Boxes/Refugia

The number of boxes/refugia should be detailed in the final BEMP, but this outline plan indicates that the following will be suitable for this Site as a minimum:

- 6 small bird boxes;
- 2 raptor boxes;
- 6 bat roost boxes; and
- 4 reptile refugia.

5.5.4.1 Objective 4.1 Provision and Maintenance of Small Bird Boxes

Bird boxes should be placed in the tree/scrub planting areas on-Site.

Hole nesting woodland and forest edge birds are likely to benefit from the installation of nest boxes. This will allow them to breed in or near new woodland areas before the woodland matures to an age where natural tree holes are likely to develop and provide safe rest areas for birds utilising the nearby habitats.

Final decisions on placement should be assessed in the final BEMP, following a Site visit by a qualified ecologist and with reference to recommended guidance [24].

5.5.4.2 Objective 4.2 Provision and Maintenance of Raptor Boxes

Raptor boxes should be places in tree/scrub planting areas on Site or nearest appropriate habitat.

Within this part of Scotland, three target species of raptor and/or owl are likely to benefit from the installation of larger “raptor” nest boxes including barn owl, kestrel and tawny owl. Kestrel will be targeted given their existing presence within the Site. This will allow them to breed in or near areas of new woodland before it matures to an age where cavities, such as tree hollows, have formed. Raptor boxes would be placed at sufficient distances from small bird boxes to prevent a deterrent effect of these structures and near areas of proposed grassland and scrub enhancement/creation. Boxes should be installed at a height of 6-8 m with a minimum of 400 m between boxes. Final decisions on placement should be assessed in the final BEMP, following a Site visit by a qualified ecologist and with reference to recommended

[23] Farm Advisory Services. (2024). Developing grazing plans for the conservation of semi-natural habitats. SAC Consulting, Scottish Government. Available online at https://www.fas.scot/downloads/tn686-conservation-grazing-semi-natural-habitats/. [Accessed April 2025]

[24] Cromack, D. and Baker, N. (2018). Nestboxes. Your Complete Guide. British Trust for Ornithology

guidance [25]. Where trees of appropriate height are not present on Site, sufficient structures will be erected or trees adjacent to the Site identified.

5.5.4.3 Objective 4.3 Provision and Maintenance of Bat Boxes

The Site holds suitability for foraging bats but has a low availability of roosting opportunities. The installation of bat boxes within the tree/scrub planting areas is recommended. Boxes should be positioned at a variety of aspects, with clear flight lines to the boxes. Final decisions on placement should be assessed in the final BEMP, following a Site visit by a qualified ecologist and with reference to recommended guidance[26].

5.5.4.4 Objective 4.4 Provision and Maintenance of Reptile/Amphibian Refugia

The Site contains some areas of potential refugia in the form of dilapidated dry-stone walls and suitable habitat as scrub and woodland edges. With enhancements proposed to grassland (Goal 1), aquatic habitats (Goal 2) and woodland/scrub/hedgerows (Goal 3) it is likely that the reptile population will increase, as such an increased availability of refugia will help support this increase. The artificial refugia must be in place before reptiles enter hibernation (October). The following recommendation is based on guidance[27]. Where possible, sections of drystone wall or rocks that require dismantling/removing will be reused when creating artificial refugia to maintain the character of current features.

Generally, artificial hibernacula should be at least 4 m long, 2 m wide and 1 m high, but ideally larger. In general, they should be located in a sunny position, have a long southern aspect, have access points allowing reptiles to enter the structure, be located in suitable foraging habitat and not be prone to flooding. It is often recommended that a pit is dug, and materials partially buried when creating a hibernaculum. The bulk of the hibernaculum can be created using a variety of materials, including timber, brash, tree roots, inert hardcore, bricks, rocks etc. However, materials which will decompose (e.g. plant matter) should not be placed under more enduring matter, such as rocks, to avoid risk of collapse.

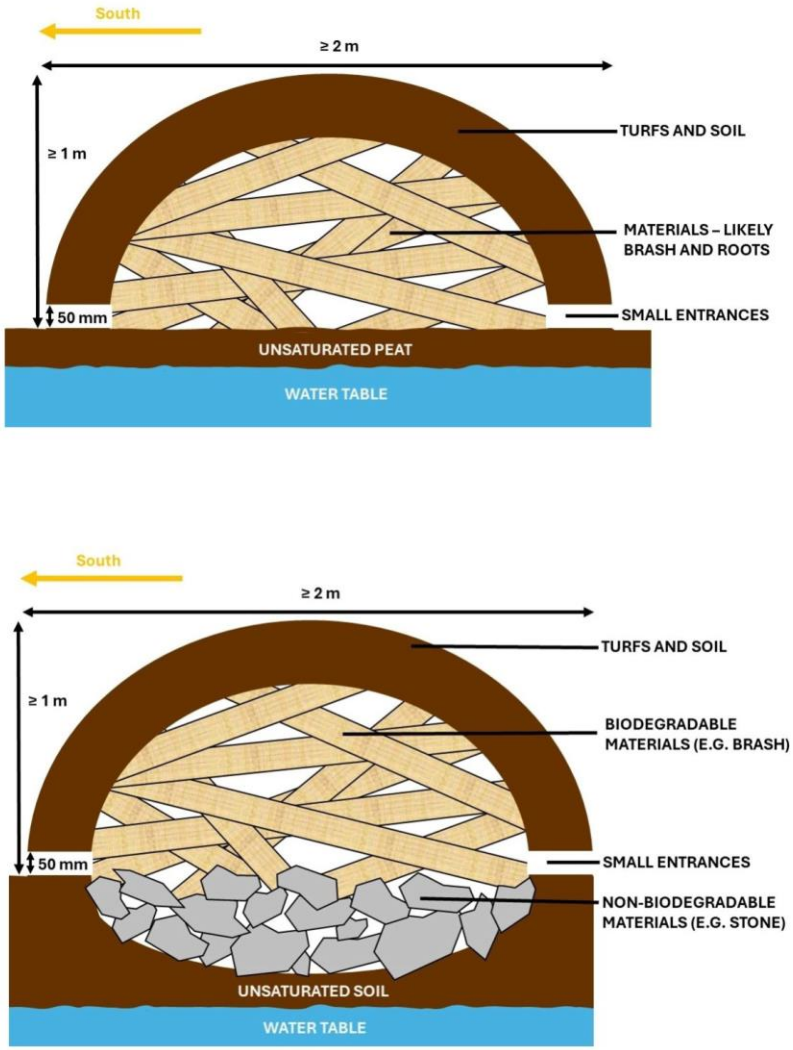
Turfs should be removed from the footprint of the hibernaculum before construction. These should be retained and replaced over the completed hibernaculum. Loose topsoil could be compacted into any remaining larger cavities, as reptiles will use quite small holes and this may provide some protection against predators (e.g. mustelids) while they are vulnerable during hibernation.

Graphic 5-1 below provides simplified hibernaculum design where the water table is high (A) and for other habitats where the water table is lower (B).

[25] Cromack, D. and Baker, N. (2018). Nestboxes. Your Complete Guide. British Trust for Ornithology

[26] Bat Conservation Trust. Bat Box Information Pack. Available at: https://www.bats.org.uk/our-work/buildings-planning-and-development/bat-boxes/putting-up-your-box

[27] ARG UK (2024). Advice Note 10: Reptile Survey and Mitigation Guidance for Peatland Sites. Available at: https://www.froglife.org/wp-content/uploads/2018/04/Compressed-Advice-note-10-Reptile-Survey-and-Mitigation-Guidance-for-Peatland-Habitats.pdf



Graphic 5-1: Hibernaculum designs[27]: Top down [A] habitats where water table is high (e.g. peatland). Excavation must be avoided. [B] Other habitats where water table is lower and excavation can be undertaken. *Note that in both cases hibernaculum should be 4 m in length, and non-biodegradable materials must be placed under biodegradable materials. However, that it is preferable to incorporate entrances using natural materials, and not to use pipes as in some of these examples, as reptiles seem to prefer to use more 'natural' holes.*

Indicators

Use of wildlife box/refugia

Nest boxes should be checked for efficacy by assessing use. If birds are not using certain boxes for multiple years, it is likely that they are inappropriately placed and should be moved to a better location.

Box/refugia use should be monitored (**Section 6.1.1**) to assess the need to move boxes/refugia to more appropriate locations.

Wildlife box/refugia condition

Boxes/refugia should be kept in appropriate condition for use. This means boxes/refugia should be clean and in good repair. Box/refugia condition should be monitored (Section 6.1.1) to assess the need to clean, repair or replace the items.

Area and Extent

A total of 18 wildlife boxes/refugia are proposed within the Site in woodland, scrub and hedgerow areas.

6.0 Management and Monitoring

Detailed monitoring and management prescriptions will be included in the final BEMP. All monitoring would be undertaken by suitably qualified and experienced ecologists. Short and long-term monitoring and management efforts are outlined in **Table 6-1** and detailed below:

- For the first three years after sowing/planting, and then in years five, seven and ten, one monitoring visit during the peak flowering season (May to August) will be undertaken by a suitably qualified ecologist (SQE) to record plant species diversity with the Site and determine if the management scheme is successful or if additional measures are required. This visit will include monitoring of the protected species mitigation and enhancement measures.
- Where the requirement for remedial measures is identified, the SQE will communicate this to Applicant and / or those responsible for the long-term landscape maintenance contract.
- A nominated person will keep a record of enhancement measures undertaken under this plan and the results of monitoring visits by the SQE. Any adjustments or changes to the management plan will be noted.
- On completion of three years monitoring, and again in years five, seven and ten, a monitoring report will be made available to PKC. Recommendations will be made for changes to management prescriptions if objectives are not being met, as appropriate

An outline of monitoring methods is described in **Section 6.1** below.

Table 6-1: Management and Monitoring Prescriptions

Area	Type	Prescription	Time/Extent	Indicators/Informed by
Grassland management area	Monitoring	Scrub presence	Annually	Scrub presence
	Monitoring	Species richness	At years one, three, and five and every five years thereafter.	Species richness
	Management	Grazing	Annually	Scrub presence, wildflower count, species richness
	Management	Scrub removal	As required	Scrub presence
SuDS management area	Monitoring	Species richness	At years one, three, and five and every five years thereafter.	Species richness
	Management	Management	Grazing	Annually
Mixed woodland, scrub, and hedgerows	Monitoring	Tree/scrub/hedgerow plant health and survival	At years one, three, and five and every five years thereafter.	Tree/scrub/hedgerow plant health and survival
	Monitoring	Hedgerow extent	At years one, three, and five and every five years thereafter.	Hedgerow continuity and minimum width 1.5 m
	Management	Beating up of dead trees/scrub/hedgerow plants	As required	Tree/scrub/hedgerow plant health and survival monitoring
	Management	Replacing/removing tree tubes and stakes	As required	Tree/scrub/hedgerow plant health and survival monitoring
	Management	Hedgerow cutting	First cut at year two, annually thereafter	Hedgerow extent
Wildlife boxes/refugia	Monitoring	Monitoring box/refugia use	Yearly for the first 5 years, requirement to be assessed thereafter	Wildlife box/refugia monitoring
	Management	Repairs to damaged boxes/refugia	As required	Wildlife box/refugia monitoring
	Management	Cleaning of boxes/refugia where necessary	As required	Wildlife box/refugia monitoring

Area	Type	Prescription	Time/Extent	Indicators/Informed by
	Management	Moving boxes/refugia	If required	Wildlife box/refugia monitoring

6.1 Monitoring Methods

It is proposed that monitoring surveys will take place periodically, as agreed with the BEMP Working Group. However, it is suggested that monitoring surveys take place in Years 0 (construction), 1, 2, 3, 5, 7, 10, 15 and as deemed necessary thereafter.

If following a previous survey year conditions indicate remedial interventions or changes in prescribed measures are required, then subsequent monitoring years will likely need to be adjusted appropriately.

6.1.1 Tree Monitoring

6.1.1.1 Tree survival and health

All tree/scrub planting areas should be checked for tree health and survival, particularly during the first few years following planting. Surveyors should assess all tree/scrub areas for mortality and indicate areas of poor growth and disease so that these areas can be beaten up. Weeding of tree tubes should be advised where necessary. Tree tubes and stakes should also be checked within this timescale.

Remedial Action

Beating up of dead trees and weeding of tree tubes should be carried out where advised by monitoring. Tree tubes and stakes should be repaired where necessary, and tubes and stakes should be removed and recycled when no longer required to avoid littering the woodland areas and to avoid damage to mature trees. This should be carried out within one year of survey results with the aim to keep young trees healthy.

6.1.2 Grassland Monitoring

All grassland areas should be surveyed for habitat health and survival, particularly in the first few years following planting. Surveyors should assess all planted grassland areas for large patches of bare ground; where these exist targeted re-seeding should take place and/or re-evaluation of the seed mix based on ground conditions at that stage. Species of plants should be noted to ensure those targeted in the seed mix have grown and not others from the surrounding area. Monitoring should also assess the presence of scrub in interior grassland areas.

Remedial Action

Should surveys indicate the presence of scrub, additional management may be required, such as removal or the grazing regime may require a review and amendment. Where significant areas of grassland have failed to seed, it may be recommended that the grass mix is re-assessed for suitability.

6.1.3 SuDS Management

Management for the SuDs grassland areas would be conducted in accordance with those outlined in **Section 6.1.3**.

6.1.4 Wildlife Box/refugia Surveys

All wildlife box surveys will be conducted by suitably qualified and licenced (where necessary) ecologists. Wildlife boxes will be checked for occupancy once in autumn, at the end of the bird and bat breeding season. If any bat hibernation boxes are installed these will be checked once during January-February. The condition of the wildlife boxes will also be assessed each monitoring year.

Remedial Action

Should boxes be reported faulty or missing, boxes will be fixed/replaced before as soon as possible. Should occupancy be reported low for consecutive years at any box, it may be recommended that the box is moved to a more suitable location.

6.1.5 Report and Review

Monitoring results would be reported annually (in years when monitoring takes place) and recommendations made for changes to management prescriptions if objectives are not being met, as appropriate. As such, the detailed BEMP would be a live document, such that it can be altered following monitoring results, unexpected events or evolving guidance. Any amendments to the BEMP because of the outcome of monitoring would be agreed with the BEMP Working Group in advance of any such revised prescriptions being implemented. The BEMP would be reviewed every five years.

6.2 Timescales

All BEMP works, including tree and scrub planting and the installation of wildlife boxes/refugia should take place within one year of construction works. A more detailed programme will be provided in the Final BEMP, post-consent.

7.0 Summary

The OBEMP for the Binn Solar and BESS is comprised of four primary goals:

- **Goal 1:** To create and enhance grassland within the Site. Managed grassland is proposed around the solar PV modules to enhance sward height and species diversity. In crop areas, new grassland will be created using native seed mixes, preference is given to species-rich mixes such as hedgerow meadow or flowering lawn, while existing grasslands will be enhanced through low-pressure grazing and/or mowing. Management will focus on increasing botanical diversity, improving foraging habitat. This habitat will provide increased opportunities for insects, which in turn will provide increased foraging habitat for birds and bats.
- **Goal 2:** To provide enhancements to aquatic habitats within the Site. A SuDS pond will be seeded with a wet meadow mix. Native aquatic and marginal plant species will be introduced in and around the pond to enhance biodiversity and support amphibians, invertebrates, and species higher up the food chain such as birds and bats. Additional habitat features like log piles and varied substrates will be added to increase ecological value.
- **Goal 3:** To create and enhance areas of mixed woodland, scrub and hedgerows throughout the Site. Planting is proposed across the Site to enhance biodiversity, provide screening, and improve habitat connectivity. Native tree species such as hawthorn, sweet cherry, rowan, hazel and oak will be planted at moderate density, with woodland meadow mixes sown beneath. Scrub and hedgerow planting will use native species suited to Site conditions, with hedgerows planted in double staggered rows to maximise shelter for wildlife. Existing vegetation will be retained and enhanced where possible. Low-density livestock grazing is recommended to help maintain diverse ground vegetation without damaging young trees.
- **Goal 4:** To provide and maintain wildlife boxes/refugia for birds, bats and reptiles/amphibians. This will compensate for the loss of some refugia within the Site (drystone dyke) and provide nesting/roosting opportunities for bats and birds to help increase species assemblages within the Site while young, planted trees mature.

Annex A Figures

Figure 1 Landscape Mitigation Plan

Annex D: Outline Biodiversity Enhancement and Management Plan

Binn Farm Solar & BESS

Bare Root Trees

Code	Species	Form	Height (cm)	Grown
AG	Alnus glutinosa (Alder)	Feathered	125-150	BR
BP	Betula pubescens (Downy Birch)	Feathered	125-150	BR
Pa	Prunus avium (Bird Cherry)	Feathered	125-150	BR
Qp	Quercus patraea (Sessile Oak)	Feathered	125-150	BR
SA	Sorbus aucuparia (Rowan)	Feathered	125-150	BR

Woodland (1/m^2, in groups of 5-7no. same species)

Code	% mix	Species	Form	Height (cm)	Grown
Ac	20	Acer campestre	BR	60-90	1+1
Bp	15	Betula pendula	BR	60-90	1+1
Cm	15	Crataegus monogyna	BR	60-90	1+1
Pa	15	Prunus avium	BR	60-90	1+1
Ps	15	Pinus sylvestris	Bushy	30-40	1+2
Sa	20	Sorbus aucuparia	BR	60-90	1+1

Native Mixed Hedgerow (Double staggered row, 5no. per linear m, groups of 5-7 same species)

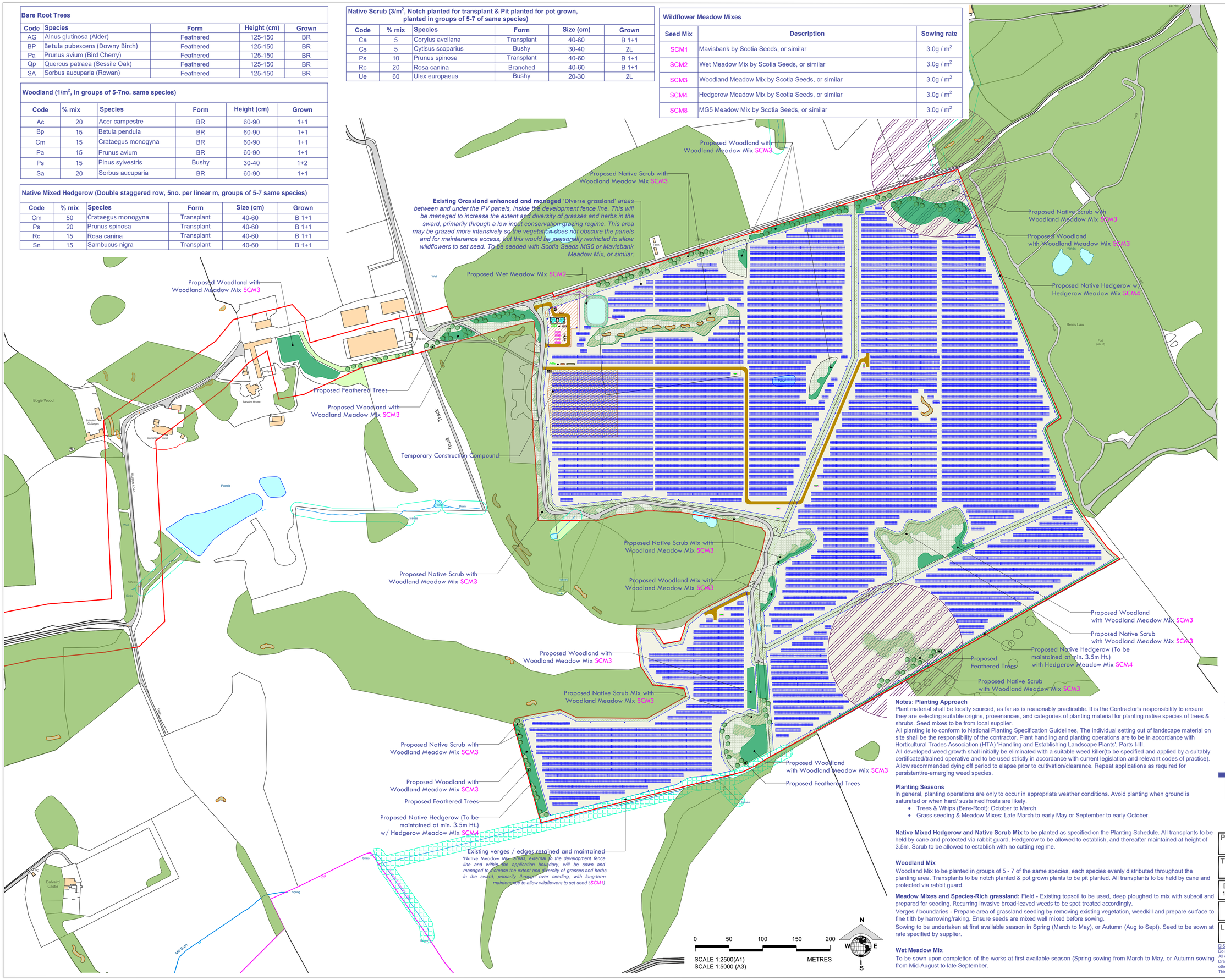
Code	% mix	Species	Form	Size (cm)	Grown
Cm	50	Crataegus monogyna	Transplant	40-60	B 1+1
Ps	20	Prunus spinosa	Transplant	40-60	B 1+1
Rc	15	Rosa canina	Transplant	40-60	B 1+1
Sn	15	Sambucus nigra	Transplant	40-60	B 1+1

Native Scrub (3/m^2, Notch planted for transplant & Pit planted for pot grown, planted in groups of 5-7 of same species)

Code	% mix	Species	Form	Size (cm)	Grown
Ca	5	Corylus avellana	Transplant	40-60	B 1+1
Cs	5	Cytisus scoparius	Bushy	30-40	2L
Ps	10	Prunus spinosa	Transplant	40-60	B 1+1
Rc	20	Rosa canina	Branched	40-60	B 1+1
Ue	60	Ulex europaeus	Bushy	20-30	2L

Wildflower Meadow Mixes

Seed Mix	Description	Sowing rate
SCM1	Mavisbank by Scotia Seeds, or similar	3.0g / m^2
SCM2	Wet Meadow Mix by Scotia Seeds, or similar	3.0g / m^2
SCM3	Woodland Meadow Mix by Scotia Seeds, or similar	3.0g / m^2
SCM4	Hedgerow Meadow Mix by Scotia Seeds, or similar	3.0g / m^2
SCM8	MG5 Meadow Mix by Scotia Seeds, or similar	3.0g / m^2



- Site Boundary
- Proposed Perimeter Fence
- Water
- 10m Water Buffer

Soft Landscape:

- Existing Woodland & Scrub
- Existing Groundcover
- Proposed *Wet Meadow Mix* *SCM2* by Scotia Seeds, or similar
- Proposed Woodland underseeded with *Woodland Meadow Mix SCM3*, or similar
- Proposed Native Scrub underseeded with *Woodland Meadow Mix SCM3*, or similar
- 'Diverse Grassland' Pastoral / grazing grassland: *SCM1, SCM8*, or similar
- Proposed 'Native Meadow Mix' *SCM1*, by Scotia Seeds, or similar
- Proposed Hedgerow underseeded with *Hedgerow Meadow Mix SCM4*
- Proposed Feathered Trees
- Temporary Construction Compound

Notes: Planting Approach

Plant material shall be locally sourced, as far as is reasonably practicable. It is the Contractor's responsibility to ensure they are selecting suitable origins, provenances, and categories of planting material for planting native species of trees & shrubs. Seed mixes to be from local supplier.

All planting is to conform to National Planting Specification Guidelines, The individual setting out of landscape material on site shall be the responsibility of the contractor. Plant handling and planting operations are to be in accordance with Horticultural Trades Association (HTA) 'Handling and Establishing Landscape Plants', Parts I-III.

All developed weed growth shall initially be eliminated with a suitable weed killer(to be specified and applied by a suitably certificated/trained operative and to be used strictly in accordance with current legislation and relevant codes of practice). Allow recommended dying off period to elapse prior to cultivation/clearance. Repeat applications as required for persistent/re-emerging weed species.

Planting Seasons

In general, planting operations are only to occur in appropriate weather conditions. Avoid planting when ground is saturated or when hard/ sustained frosts are likely.

- Trees & Whips (Bare-Root): October to March
- Grass seeding & Meadow Mixes: Late March to early May or September to early October.

Native Mixed Hedgerow and Native Scrub Mix to be planted as specified on the Planting Schedule. All transplants to be held by cane and protected via rabbit guard. Hedgerow to be allowed to establish, and thereafter maintained at height of 3.5m. Scrub to be allowed to establish with no cutting regime.

Woodland Mix

Woodland Mix to be planted in groups of 5 - 7 of the same species, each species evenly distributed throughout the planting area. Transplants to be notch planted & pot grown plants to be pit planted. All transplants to be held by cane and protected via rabbit guard.

Meadow Mixes and Species-Rich grassland: Field - Existing topsoil to be used, deep ploughed to mix with subsoil and prepared for seeding. Recurring invasive broad-leaved weeds to be spot treated accordingly.

Verges / boundaries - Prepare area of grassland seeding by removing existing vegetation, weedkill and prepare surface to fine tilth by harrowing/raking. Ensure seeds are mixed well mixed before sowing.

Sowing to be undertaken at first available season in Spring (March to May), or Autumn (Aug to Sept). Seed to be sown at rate specified by supplier.

Wet Meadow Mix

To be sown upon completion of the works at first available season (Spring sowing from March to May, or Autumn sowing from Mid-August to late September.

25.12.16 Rev. F	Drawing formatting
25.11.25 Rev. E	Specifications and Landscape Layout
13.11.25 Rev. D	Site Plan update / Landscape Layout
06.11.25 Rev. C	Landscape layout / specification
08.10.25 Rev. B	Wet Meadow Mix added adjacent to SuDs Pond
26.09.25 Rev. A	Grassland updated to Pasture

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Also in Edinburgh & Newcastle

Project	Binn Farm Solar & BESS
Title	Landscape Enhancement & Mitigation Plan

Date	Scale	Drawn	Checked
18.09.25	1:2500 @ A1	CL/AK	SF/NH/CL

Job	Suitability	No.	Issue	Revision
2256	-	L01	-	F

LI WORKSTAGE: 0/1 ☐ 2 ☐ 3 ☒ 4 ☐ 5 ☐ 6 ☐

Annex B Planning Policy

Annex D: Outline Biodiversity Enhancement and Management Plan

Binn Farm Solar & BESS

A.1 National Planning Policy

A.1.1 National Planning Framework 4 (NPF4)

The National Planning Framework 4 (NPF4) was adopted by Scottish Ministers on 13 February 2023. In order to accord with the biodiversity provisions of NPF4, development proposals should demonstrate that they contribute to the enhancement of biodiversity. Of particular relevance to this project, Policy 3 of NPF4 states:

'3a) Development proposals will contribute to the enhancement of biodiversity, including where relevant, restoring degraded habitats and building and strengthening nature networks and the connections between them. Proposals should also integrate nature-based solutions, where possible.

…

c) Development proposals for national or major development, or for development that requires an EIA will only be supported where it can be demonstrated that the proposal will conserve, restore and enhance biodiversity, including nature networks so they are in a demonstrably better state than without intervention. This will include future management. To inform this, best practice assessment methods should be used. Proposals within these categories will demonstrate how they have met all of the following criteria:

i. the proposal is based on an understanding of the existing characteristics of the Site and its local, regional and national ecological context prior to development, including the presence of any irreplaceable habitats;

ii. wherever feasible, nature-based solutions have been integrated and made best use of;

iii. an assessment of potential negative effects which should be fully mitigated in line with the mitigation hierarchy prior to identifying enhancements;

iv. significant biodiversity enhancements are provided, in addition to any proposed mitigation. This should include nature networks, linking to and strengthening habitat connectivity within and beyond the development, secured within a reasonable timescale and with reasonable certainty. Management arrangements for their long-term retention and monitoring should be included, wherever appropriate; and

v. local community benefits of the biodiversity and/or nature networks have been considered.

d) Any potential adverse impacts, including cumulative impacts, of development proposals on biodiversity, nature networks and the natural environment will be minimised through careful planning and design. This will take into account the need to reverse biodiversity loss, safeguard the ecosystem services that the natural environment provides, and build resilience by enhancing nature networks and maximising the potential for restoration.'

A.1.2 Scotland's Environment Strategy

Scotland's Environment Strategy sets out the Scottish Government's vision for tackling the twin climate and nature crises and sits alongside high-level Scottish Government policy frameworks. The Strategy sets out six outcomes to achieve its vision of restoring nature and ending Scotland's contribution to climate change, transforming the country for the better.

A.1.3 Scottish Biodiversity Strategy

Targets for biodiversity are set out the Scottish Biodiversity Strategy to 2045 (draft)[28]. The Strategy sets targets for Scotland to be Nature Positive by 2030 and to have restored and regenerated biodiversity across the country by 2045. The following six objectives have shaped the development of actions to deliver the high-level goals required to meet the above targets of halting biodiversity loss and being Nature Positive by 2030:

1 Accelerate restoration and regeneration;

2 Protect nature on land and at sea, across and beyond protected areas;

3 Embed nature-positive farming, fishing and forestry;

4 Protect and support the recovery of vulnerable and important species and habitats;

5 Invest in Nature; and

6 Take action on the indirect drivers of biodiversity loss.

A.2 Local Planning Policy

Perth and Kinross Council recognises its duty as a public body to further the conservation of biodiversity. The Perth and Kinross Local Development Plan 2 (Perth & Kinross Council, 2019)5 highlights the importance of:

- Forestry and woodland;
- The water environment;
- Protected sites and conservation areas;
- Protected species; and
- Biodiversity and geodiversity.

In particular, Policy 41 (Biodiversity) requires that all new developments protect, enhance, and manage biodiversity, ensuring that the mitigation hierarchy is followed and biodiversity enhancements are delivered in line with local and national priorities.

Perth and Kinross Biodiversity Strategy (2016-2026)

Perth and Kinross Council recognises the importance of conserving and enhancing biodiversity and its role in supporting healthy communities, climate resilience, and sustainable development. The Tayside Local Biodiversity Action Plan (2016–2026)6, which covers the Perth and Kinross area, sets out the vision and objectives for biodiversity conservation across the region. The strategy aims to:

- Conserve and enhance a wide variety of habitats and species throughout Tayside;
- Increase awareness, understanding, and involvement in biodiversity action across communities and sectors; and
- Integrate biodiversity into policies, strategies, and practices that affect the local environment.

The plan includes a statement of vision for biodiversity in Tayside:

“Biodiversity will be protected, conserved, and enhanced to contribute to a high-quality environment which supports sustainable economic growth, climate change resilience, and healthy, thriving communities.”

[28] Scottish Government (2023) Scotland’s Biodiversity Strategy to 2045: tackling the nature emergency - draft. Accessed via https://www.gov.scot/publications/scottish-biodiversity-strategy-2045-tackling-nature-emergency-scotland-2/

Annex C Outline Schedule of Works

Annex D: Outline Biodiversity Enhancement and Management Plan

Binn Farm Solar & BESS

Outline Schedule of Works

Table C-1: Outline Schedule of Works

Task	Pre-construction	Construction	Post Construction Year														
			1	2	3	4	5	6	7	8	9	10	11-14	15	16-19	20	After Year 20
Enabling Tasks																	
Form BEMP working group	x																
Detailed BEMP preparation and finalisation	x																
BEMP reviews and updates							x					x		x		x	
Detailed woodland creation plan	x																
Detailed grassland enhancement plan	x																
Ongoing adaptive management			x	x	x	x	x	x	x	x	x	x	x	x	x	x	
Grassland Enhancement Area																	
Hay meadow cut		x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x
Grazing management		x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x
Habitat condition and botanical monitoring			x		x		x					x		x		x	
Scrub monitoring			x	x	x	x	x					x		x		x	
Scrub removal		As required															
Removal of undesirable species		As required															
Woodland, scrub and hedgerows																	
Tree/scrub/hedgerow planting		x	x														

Task	Pre-construction	Construction	Post Construction Year														
			1	2	3	4	5	6	7	8	9	10	11-14	15	16-19	20	After Year 20
Grazing management		x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x
Tree/scrub/hedgerow and survival monitoring			x	x	x	x	x	Additional works as required									
Beating up			As required														
Replacement/removal of tree tubes/stakes			As required														
Hedgerow cutting				x	x	x	x	x	x	x	x	x	x	x	x	x	x
Placement of wildlife boxes			x	x													
Wildlife box monitoring			x	x	x	x	x	x	x	x	x	x	x	x	x	x	x
Wildlife box repair			As required														
Wildlife box cleaning			As required														
Moving wildlife boxes			As required														
Enabling Tasks		Management Tasks												Monitoring Tasks			

Annex D Seed Mixes

Annex D: Outline Biodiversity Enhancement and Management Plan

Binn Farm Solar & BESS

A.3 Landlife LW12M Low Growing 80/20 Wildflower Meadow

LW12 Low Growing 80/20 Wildflower Meadow

LANDLIFE wildflowers

LW12 contains twenty native British wildflowers and grasses to create a low growing meadow.

Consisting of 80% grass and 20% wildflowers, LW12 creates a permanent meadow with flowers from May to October. Suitable for creating habitats of only low growing plants. It is ideal for use where visibility is important, for example along roadsides.

LW12 supports bees, butterflies and other pollinators as 88% of the wildflowers included in this mixture are recommended by the Royal Horticultural Society (RHS) as 'Perfect for Pollinators'.

RHS PERFECT FOR POLLINATORS

Mixture Contents:

	Common Name	Latin Name	Quantity	Flowers	Height	Type
1	Bedstraw, Lady's	Galium verum	1.5%	Jun - Sep	50 - 80cm	Perennial
2	Black Medick	Medicago lupulina	1.2%	May - Oct	15 - 80cm	Annual
3	Burnet, Salad	Sanguisorba minor	2%	Jun - Sep	15 - 50cm	Perennial
4	Campion, Bladder	Silene vulgaris	0.8%	May - Sep	25 - 60cm	Perennial
5	Carrot, Wild	Daucus carota	1%	Jun - Oct	30 - 100cm	Perennial
6	Cat's-ear, Common	Hypochaeris radicata	0.8%	Jun - Oct	15 - 50cm	Perennial
7	Cornflower	Centaurea cyanus	2%	Jun - Oct	20 - 80cm	Annual
8	Cowslip	Primula veris	0.4%	Apr - May	15 - 30cm	Perennial
9	Forget-me-not, Field	Myosotis arvensis	1%	May - Jul	20 - 40cm	Annual
10	Hawkbit, Autumn	Leontodon autumnalis	1.2%	Aug - Oct	15 - 20cm	Perennial
11	Hawkbit, Rough	Leontodon hispidus	1.3%	Jun - Oct	15 - 35cm	Perennial
12	Plantain, Hoary	Plantago media	0.8%	May - Sep	15 - 45cm	Perennial
13	Ragged Robin	Lychnis flos-cuculi	0.2%	May - Aug	30 - 90cm	Perennial
14	Self-heal	Prunella vulgaris	1%	Jun - Sep	15 - 30cm	Perennial
15	Sorrel, Sheep's	Rumex acetosella	0.4%	May - Jul	20 - 40cm	Perennial
16	Toadflax, Common	Linaria vulgaris	0.2%	Jun - Oct	30 - 90cm	Perennial
17	Trefoil, Bird's-foot	Lotus corniculatus	1%	Jun - Aug	10 - 40cm	Perennial
18	Vetch, Kidney	Anthyllis vulneraria	1%	May - Oct	15 - 50cm	Perennial
19	Yarrow	Achillea millefolium	0.2%	Jun - Oct	20 - 100cm	Perennial
20	Yellow-rattle	Rhinanthus minor	2%	Jun - Sep	25 - 50cm	Annual
	Bent, Common	Agrostis castellana	4%		50 - 100cm	Grass
	Bent, Creeping	Agrostis stolonifera	4%		40 - 100cm	Grass
	Crested Dogstail	Cynosurus cristatus	34%		30 - 60cm	Grass
	Fescue, Sheeps	Festuca ovina	20%		15 - 50cm	Grass
	Meadow Grass, Smooth Stalked	Poa pratensis	8%		30 - 90cm	Grass
	Timothy, Small Leaved	Phleum pratense ssp Bertolinii	10%		50 - 100cm	Grass

Contains:

Sowing Rate: 5g/sqm

Wildflower seed in Landlife Wildflowers mixtures is of UK native origin.

A.4 Mavisbank Meadow Mix

SCOTIA SEEDS wildflowers of scotland

MIX CONTENTS

Mavisbank Meadow Mix

Our most popular mixture, a general mix for well-drained, loamy soils in open sites, this provides a range of plants for a type of species-rich grassland widespread in Scotland. There are 17 wildflower & 6 grass species in this mix.

Species	Common name	Origin	%
20	% wildflowers		
Achillea millefolium	Yarrow	Fife	2
Centaurea nigra	Common Knapweed	Fife	2
Conopodium majus	Pignut	Angus	0.2
Galium verum	Ladys Bedstraw	Fife	1.5
Hypochaeris radicata	Cat's Ear	Fife	0.5
Lathyrus pratensis	Meadow Vetchling	Fife	0.3
Leucanthemum vulgare	Ox-eye Daisy	Fife	2
Plantago lanceolata	Ribwort Plantain	Fife	2
Primula veris	Cowslip	Fife	0.5
Prunella vulgaris	Selfheal	Fife	1.5
Ranunculus acris	Meadow Buttercup	Fife	2.5
Rhinanthus minor	Yellow Rattle	Inverness-shire	1
Rumex acetosa	Common Sorrel	Fife	2.1
Scorzoneroides autumnalis	Autumn Hawkbit	Fife	0.5
Succisa pratensis	Devils-bit Scabious	Fife	0.4
Trifolium repens	White Clover	Angus	0.5
Vicia cracca	Tufted Vetch	Fife	0.5
80	% grasses		
Agrostis capillaris	Common Bent	cultivated	10
Alopecurius pratensis	Meadow Foxtail	cultivated	4
Anthoxanthum odoratum	Sweet Vernal Grass	Fife	1
Cynosurus cristatus	Crested Dogs-tail	cultivated	11
Festuca rubra commutata	Chewings Fescue	cultivated	34
Poa pratensis	Smooth Stalked Meadow Grass	cultivated	20

Mix well before sowing and sow at a rate of 3g/m^2.
If you have any queries about the mix please call us on 01356 626425. 24

A.5 Wet Meadow Mix

SCOTIA SEEDS wildflowers of scotland

MIX CONTENTS

Wet Meadow Mix

This mix has a colourful range of species for wet soils, including sites which are occasionally flooded or waterlogged for short periods. There are 19 wildflower & 6 grass & sedge species in this mix.

Species	Common name	Origin	%
	20 % wildflowers		
Achillea ptarmica	Sneezewort	Inverness-shire	2
Centaurea nigra	Common Knapweed	Fife	2.25
Cirsium palustre	Marsh Thistle	Angus	0.1
Filipendula ulmaria	Meadowsweet	Fife	2.5
Geranium pratense	Meadow Cranesbill	Fife	0.5
Geum rivale	Water Avens	Fife	0.5
Hypericum tetrapterum	Square-stemmed St John's Wort	Argyll	0.5
Hypochaeris radicata	Cats Ear	Inverness-shire	0.5
Iris pseudacorus	Yellow Flag Iris	Fife	1
Leucanthemum vulgare	Ox-eye Daisy	Fife	1.5
Lotus uliginosus	Greater Trefoil	Angus	0.1
Plantago lanceolata	Ribwort Plantain	Fife	1.5
Prunella vulgaris	Selfheal	Fife	1
Ranunculus acris	Meadow Buttercup	Fife	1
Rhinanthus minor	Yellow Rattle	Inverness-shire	1
Rumex acetosa	Common Sorrel	Fife	1
Scorzoneroides autumnalis	Autumn Hawkbit	Fife	1
Silene flos-cuculi	Ragged Robin	Fife	1.5
Succisa pratensis	Devil's-bit Scabious	Fife	0.5
	80 % grasses & sedges		
Agrostis capillaris	Common Bent	cultivated	10
Alopecurus pratensis	Meadow Foxtail	cultivated	5
Carex ovalis	Oval Sedge	Berwickshire	0.05
Deschampsia caespitosa	Tufted Hair Grass	Inverness-shire	7.6
Festuca rubra commutata	Chewing's Fescue	cultivated	36.5
Poa pratensis	Smooth-stalked Meadow Grass	cultivated	20.9

Mix well and sow at a rate of 3g/m^2

If you have any queries about the mix please call us on 01356 626425.

A.6 Pond-edge Wildflower Mix

SCOTIA SEEDS wildflowers of scotland

Pond-edge wildflower mix

For marshy conditions or water margins, these wildflowers provide interest & colour around the edges of ponds. Adding appropriate native plants around ponds will encourage pond-dwellers like toads, frogs, newts & dragonflies. There are 21 species in this mix.

Species	Common name	Origin	%
100	% wildflowers		
Achillea ptarmica	Sneezewort	Inverness-shire	13
Angelica sylvestris	Angelica	Aberdeenshire	2
Caltha palustris	Marsh Marigold	Fife	1
Carex leporina	Oval sedge	Berwickshire	2
Carex paniculata	Greater Tussock Sedge	Berwickshire	7
Carex pendula	Pendulous Sedge	Roxburghshire	7
Cirsium palustre	Marsh Thistle	Angus	3
Comarum palustre	Marsh Cinquefoil	Inverness-shire	2
Filipendula ulmaria	Meadowsweet	Fife	17
Geum rivale	Water Avens	Fife	7
Hypericum tetrapterum	Square stemmed St John's wort	Argyll	4
Iris pseudacorus	Yellow Flag Iris	Fife	10
Lotus pedunculatus	Greater Trefoil	Angus	1
Lythrum salicaria	Purple Loosestrife	Argyll	7
Mentha aquatica	Water Mint	Argyll	1
Myosotis scorpioides	Water Forget me not	Inverness-shire	2
Ranunculus flammula	Spearwort	Fife	1
Silene flos-cuculi	Ragged Robin	Fife	5
Stachys palustris	Marsh Woundwort	Fife	1
Valeriana officinalis	Valerian	Angus	6
Veronica beccabunga	Brooklime	Berwickshire	1

Mix well and sow at a rate of 2g/m^2

If you have any queries about the mix please call us on 01356 626425.

24

A.7 Woodland Meadow Mix

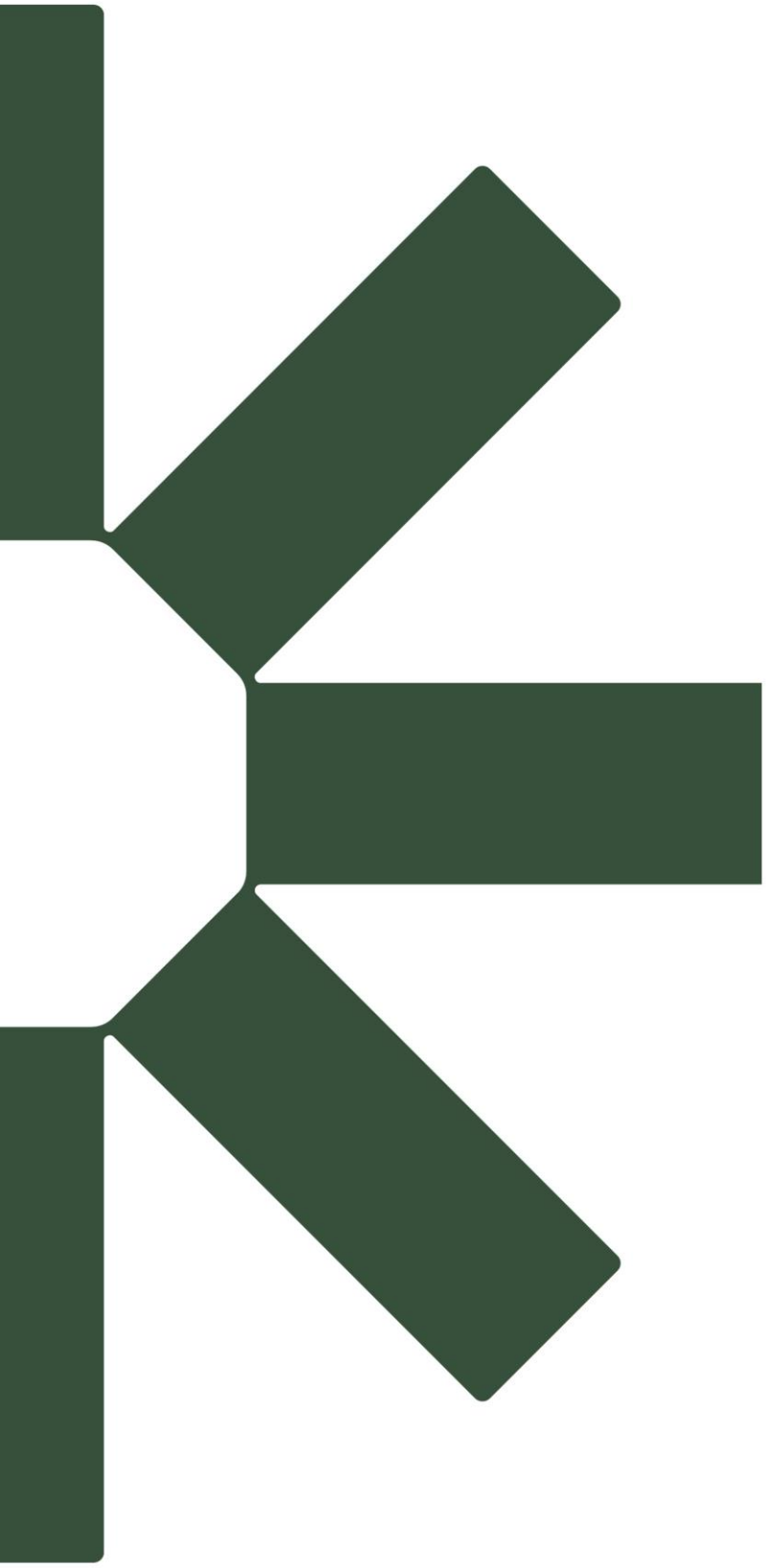
SCOTIA SEEDS
Wildflowers of Scotland
www.scotiaseeds.co.uk
01356 626425
Mavisbank, Farnell, Brechin, DD9 6TR

MIX CONTENTS

Woodland Meadow mix

For deep shade, this mix provides a colourful, tall mix of plants tolerant of lower light levels. There are 17 wildflower & 5 grass species in this mix.

Species	Common name	Origin	%
20	% wildflowers		
Allium ursinum	Wild Garlic	Perthshire	0.3
Campanula latifolia	Giant Bellflower	Fife	1.0
Circea lutetiana	Enchanters Nightshade	Fife	0.7
Digitalis purpurea	Foxglove	Fife	2
Fragaria vesca	Wild Strawberry	Angus	0.1
Geranium robertianum	Herb Robert	Fife	0.3
Geum urbanum	Herb Bennet	Fife	1.7
Hyacinthoides non-scripta	Bluebell	Perthshire	2
Hypericum pulchrum	Slender St Johns Wort	Inverness-shire	0.1
Primula vulgaris	Primrose	Fife	0.2
Silene dioica	Red Campion	Fife	3
Silene flos-cuculi	Ragged Robin	Fife	2
Stachys sylvatica	Hedge Woundwort	Inverness-shire	2
Teucrium scorodinia	Wood Sage	Angus	1
Torilis japonica	Upright Hedge Parsley	Inverness-shire	2.5
Vicia sepium	Bush vetch	Fife	1
Viola riviniana	Common Dog Violet	Angus	0.2
80	% grasses		
Agrostis capillaris	Common Bent	cultivated	10
Cynosurus cristatus	Crested Dog's Tail	cultivated	10
Festuca rubra	Red Fescue	Fife	25
Poa nemoralis	Wood Meadow Grass	cultivated	10
Poa pratensis	Smooth-stalked Meadow Grass	cultivated	25



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