ECOLOGICAL ASSESSMENT, BNG ASSESSMENT and ENHANCEMENT STRATEGY

AGRICULTURAL BARN, PELISTRY FARM, ST MARY'S, ISLES OF SCILLY

Client: *Mervyn Bird*

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1. Introduction

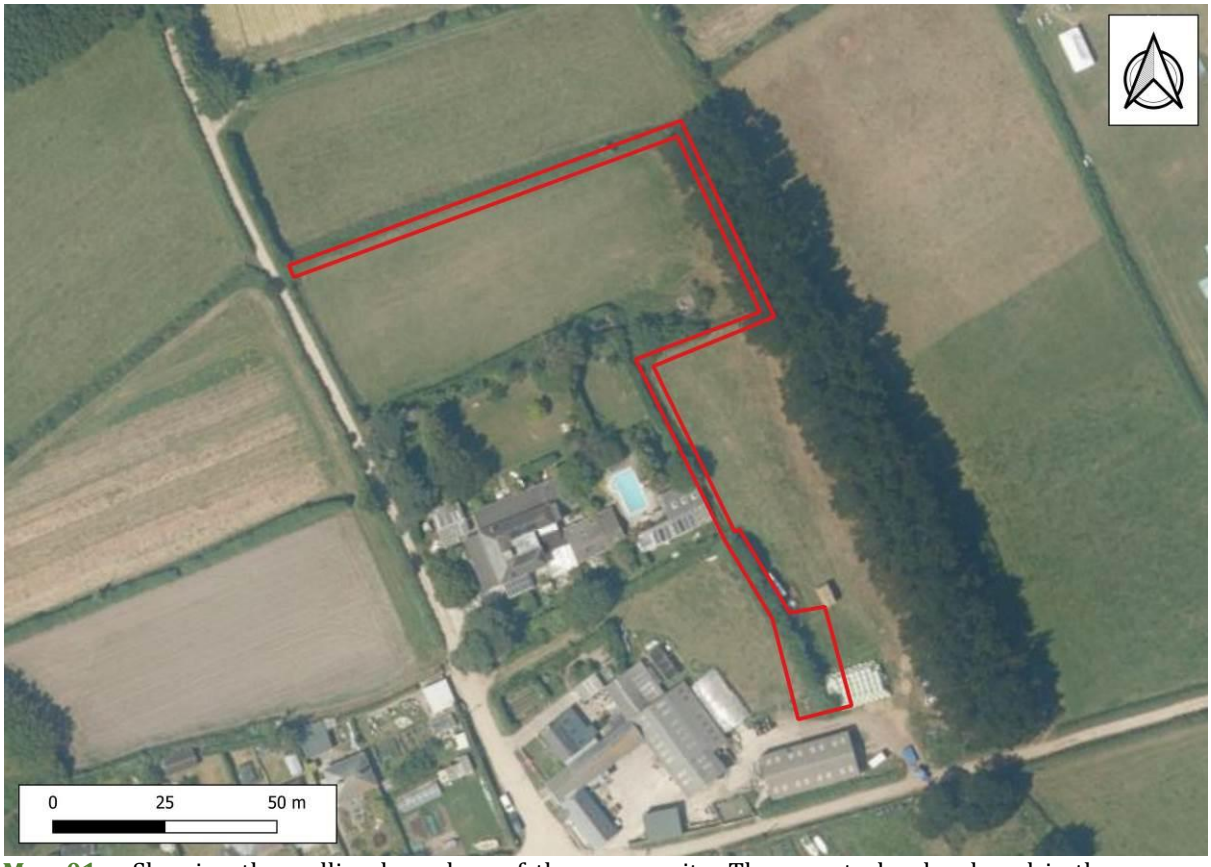
1.1. Overview

An ecological assessment of the proposed location of the agricultural barn at Pelistry Farm, St Mary's was conducted with regards to habitats and protected species. This was used to inform a Biodiversity Net Gain (BNG) assessment for the project and identify any other ecological constraints relevant to the proposals.

The purpose of this report is to characterise the baseline habitats present on site; identify opportunities for enhancement; and outline a Management Strategy to achieve the enhancements targeted.

1.2. Site Description

The site is just under 0.1 hectares (ha) in size and is identified in Map 01 below. The central grid reference of the site is SV 92504 11804.



Map 01 – Showing the redline boundary of the survey site. The area to be developed is the rectangle at the southern extent of the redline; the remaining linear strip to the north are proposed for biodiversity enhancement only.

2. Methods

2.1. Vegetation and Habitat Assessment

An assessment was made of all areas of vegetation within the site and those habitats immediately bounding the site where this was pertinent to the development of appropriate enhancement proposals.

This involved a walkover survey to identify broad vegetation types, which were then classified against the UKHabs[1] classification.

A list of characteristic plant species for each vegetation type was compiled.

2.2. Approach to BNG

The assessment has been undertaken in accordance with the BNG principles outlined in The Statutory Biodiversity Metric User Guide (November 2023)[2].

The metric used in the assessment is the BNG Metric Release Date: July 2024[3].

The UKHabs Classification Version 2 was used to aid in the classification of habitats within the site.

2.3. Technical Competence and Experience

The surveys which support this assessment, as well as the BNG assessment itself, were undertaken by James Faulconbridge MRes MCIEEM trading as IOS Ecology.

James is a full member of the Chartered Institute of Ecology and Environmental Management (CIEEM); he is a Licensed Bat Worker (Class Licence Level 2) and has over 15 years' experience undertaking a range of ecological surveys and assessing the factors that affect ecology in relation to construction and the built environment.

2.4. Limitations

No limitations pertinent to the assessment of existing habitats or enhancement opportunities were noted.

[1] UKHab Ltd (2023). UK Habitat Classification Version 2.0

[2] https://assets.publishing.service.gov.uk/media/65673fee750074000d1dee31/The_Statutory_Biodiversity_Metric_-_Draft_User_Guide.pdf

[3] https://assets.publishing.service.gov.uk/media/669e4670ab418ab055592a23/The_Statutory_Biodiversity_Metric_Calculation_Tool_-_Macro_enabled_tool_23.07.2024.xlsm

3. Designated Sites

3.1. Designated Sites

The following Designated Sites are identified within 1km of the proposed development:

- **Isles of Scilly SAC Complex –** Encompassing the coastline around St Mary's and situated 340m to the north-east at its closest point, the SAC is designated for its nationally important numbers of Grey Seal and the nationally rare Shore Dock. Annex 1 habitats that are the primary reason for site selection include mudflats; inter-tidal sandflats; reefs and sub-tidal sandbanks.

- **Isles of Scilly SPA Complex –** Encompassing the coastline around St Mary's and situated 250m to the north-east at its closest point, the SPA designated for its internationally important seabird assemblage of 13 species including internationally important numbers of lesser black-backed gull and nationally important numbers of European storm petrel and European shag.

- **Higher Moors and Porth Hellick Pool SSSI –** Situated 610m south of the proposed development lies Higher Moors SSSI – a topogenous mire designated for several rare and notable plant species including bog pimpernel, star sedge and marsh St John's-wort.

- **Watermill Cove SSSI –** Situated 230m to the north-east is designated for predominantly geological rather than ecological interest, with cliff exposures of Quaternary sediments that show the sequence of changes in the climate and environment during the Quaternary period.

3.2. Impact Assessment

The small-scale nature of the proposed development, and the geographical separation between the development and the Designated Sites listed above will ensure no direct or indirect impact of the proposals upon these features.

4. Baseline

4.1. Overview

The site proposed for the development of the new barn is dominated by pasture grassland; a non-native Karo hedge; an area of bare ground used to store bales; and a patch of bramble scrub.

The habitats which lie within the linear band of redline stretching north are the margins of the pasture field.

Map 02 – Showing the baseline habitats present within the redline boundary of the site.

4.2. Bare Ground - Habitat Description

The area of bare ground in the south-eastern corner of the redline is used for bale storage – inspection of aerial photography suggests this is a long-term use for this area of land. The ground beneath the bales is bare.

4.3. Modified Grassland - Habitat Description

The modified grassland is managed as pasture fields – species include perennial rye grass (*Lolium perenne*), cock's foot (*Dactylis glomerata*), common bent (*Agrostis capillaris*), ribwort plantain (*Plantago lanceolata*), Yorkshire fog (*Holcus lanatus*), common mouse-ear (*Cerastium fontanum*), fescue (*Festuca* sp.), meadow grass (*Poa* sp.), daisy (*Bellis perennis*), creeping buttercup (*Ranunculus repens*), cat's ear (*Hypochaeris radicata*), common sorrel (*Rumex acetosa*), and

broadleaf plantain (*Plantago major*). The typical number of species within a 1m^2 quadrat is 4-5 with herbaceous species being low in frequency.

The land is cut for hay with longer margins present closer to the edges of the habitat. The quality and condition of the sward indicates agricultural improvement through nutrient enrichment – this is more pronounced in the more southerly field.

The field which occupies the northern edge of the redline has bracken (*Pteridium aquilinum*) and occasional bramble (*Rubus* sp.) at the northern periphery where the field is bounded by a dry-stone wall. Some rabbit activity is evident here.

Beneath the overhanging conifer tree line which lies to the east of the pasture field, the character of the sward is shadier with occasional red campion (*Silene dioca*) and bramble seedlings noted.

The grassland is in Poor Condition in accordance with the BNG Condition Assessment criteria (see Table 01).

Table 01 – Habitat Condition assessment for Low Distinctiveness grasslands as adapted from BNG Condition Assessment 5.

Criteria	**Criteria Met?**	**Notes**
A - There are 6-8 vascular plant species per m^2 present, including at least 2 forbs. This criterion is essential for achieving Moderate or Good condition.	No	<5 species per m^2 quadrat were recorded
B - Sward height is varied (at least 20% of the sward is less than 7 cm, and at least 20% is more than 7 cm), creating microclimates that provide opportunities for vertebrates and invertebrates to live and breed.	No	The management through hay cuts results in a consistent sward height
C - Any scrub present accounts for less than 20% of the total grassland area. Scattered scrub (e.g., bramble Rubus fruticosus agg.) may be present. Note: Continuous scrub patches (more than 90% cover) should be classified as the relevant scrub habitat type.	Yes	Minimal evidence of scrub
D - Physical damage is evident in less than 5% of the total grassland area. Examples include excessive poaching, machinery damage, erosion caused by high access levels, or other damaging activities.	Yes	
E - Cover of bare ground is between 1% and 10%, including localized areas (e.g., rabbit warrens).	No	
F - Cover of bracken (Pteridium aquilinum) is less than 20%.	Yes	Minimal evidence of bracken due to management
G - There is an absence of invasive non-native plant species (as listed on Schedule 9 of WCA).	Yes	No evidence at the time of survey
Number of Criteria Passed	**4**	**The grassland is in Poor condition – mandatory criteria A is failed.**

4.4. Introduced Scrub - Habitat Description

A portion of the land where the new barn is proposed in the southern end of the redline is occupied by a karo (*Pittosporum crassifolium*) hedge. The hedge is between 6-7m high and does not appear to have been recently cut. Dense bramble and bracken scrub is present in the ground layer with common nettle (*Urtica dioica*), stinking iris (*Iris foetidissima*) and red campion also recorded.

For the purposes of the BNG assessment, this feature is also identified as a Non-Native and Ornamental Hedgerow.

4.5. Bramble Scrub - Habitat Description

The boundary between the karo hedge and the pasture field to the east is dominated by bramble scrub with bracken, common nettle, foxglove (*Digitalis purpurea*), red campion, broadleaf dock (*Rumex obtusifolius*) and black nightshade (*Solanum nigrum*) also present.

4.6. Condition Assessments

None of the habitat types aside from Modified Grassland require a Condition Assessment within the BNG framework.

5. BNG Good Practice Principles

The following section considers each of the 10 BNG Good Practice Principles and identifies the ways in which these have been addressed or achieved within the project.

5.1. Apply the Mitigation Hierarchy

The mitigation hierarchy has been followed throughout the development of the project design.

The habitats to be lost as a result of the barn are all of Low Distinctiveness and their retention would not override the functional requirements related to the siting of the barn in its proposed location.

Timing of works and other measures to avoid impacts to species such as nesting birds are prioritized.

5.2. Avoid losing biodiversity that cannot be offset by gains elsewhere

The biodiversity loss is the minimum which can be achieved whilst delivering the project given the functional floorspace requirement of the proposed agricultural building.

The losses entailed by the development can be offset and net gain ensured on land in close proximity to the development site.

5.3. Be inclusive and equitable

The small-scale nature of the scheme within a private farm does not necessitate consultation or wider discussion with neighbors or other stakeholders.

5.4. Address risks

The proposed BNG enhancement within the site redline is considered to be low risk. The gains will be achieved through scrub planting.

The site will remain under the ownership of the Applicant allowing for appropriate management of the site to secure the habitat creation and habitat conditions targeted.

All of the habitat enhancements and creations detailed within the BNG metric are identified as 'Low Risk' and there are no site-specific reasons to adjust this assessment.

5.5. Make a measurable net gain

The BNG metric outlined in this report identifies a net gain within the redline boundary.

5.6. Achieve the best outcomes for biodiversity

At present, the Nature Recovery Strategy for Cornwall and the Isles of Scilly is still in development[4]; therefore the BNG results for the site cannot be assessed against this.

Planting of native shrubs already known to be on the island and on the list of species approved by the Duchy of Cornwall will ensure alignment with existing nature enhancement works on the islands.

5.7. Be additional

The proposed habitat creation and enhancement works are only proposed in response to the requirement to secure net gain for what is otherwise a negligible ecological impact on a very small scale. This enhancement would not otherwise have been undertaken.

5.8. Create a net gain legacy

The onsite and offsite habitat creation and enhancement works will be managed by the Applicant who will retain ownership of the site in the long term.

This will allow continuity and confidence in the long-term retention of these habitats.

5.9. Optimise sustainability

The onsite habitat enhancement will deliver significant ecological benefits through connectivity, habitat and foraging resource for a range of common farmland species whilst ensuring that the use of the land by the Applicants for their farming business is not compromised.

5.10. Be transparent

The commitment to BNG is identified by the applicant in the submission of planning documentation such as this, which are publicly available on the Isles of Scilly Planning Portal[5].

[4] https://www.scilly.gov.uk/environment-transport/local-nature-recovery-strategy
[5] https://www.scilly.gov.uk/planning-development/planning-applications

6. Proposed Design

6.1. Development Impacts

The project involves the siting of the new barn within the rectangular footprint to the southern end of the redline – see Map 03. The remainder of the karo hedge to the north will be retained. Beyond this to the north, the linear belt of pasture grassland will be planted with native shrub species.

Habitat loss will comprise:

- 0.06ha of Modified Grassland converted to Developed Land/Sealed-Surface;
- 0.02ha of Introduced Shrubs converted to Developed Land/Sealed-Surface;
- <0.01ha of Bramble Scrub converted to Developed Land/Sealed-Surface.

Map 03 – Showing the proposed habitats present within the redline boundary of the site.

6.2. Enhancement Proposals

Habitat enhancements will comprise:

- 0.056ha of Modified Grassland converted to Mixed Scrub (native).

In addition to the area modifications, a portion of the new Mixed Scrub habitat will be managed as a Native Hedgerow which is 0.018km long, strategically

situated to connect existing hedgerows and increase the connectivity of the local landscape.

Species of native shrub to be planted are drawn from those already established on the Isles of Scilly and are on the approved planting list developed by the Duchy of Cornwall. These would include:

- Hawthorn (*Crataegus monogyna*);
- Hazel (*Corylus avellana*);
- Holly (*Ilex aquifolium*);
- Elder (*Sambucus nigra*) and;
- Guelder rose (*Viburnum opulus*).

6.3. Confidence and Risks

The identified enhancements can be undertaken with a high degree of confidence provided management is maintained.

The species selected for planting within the mixed scrub habitat are those which are already present on the Isles of Scilly and are demonstrated to be able to establish successfully.

In order to control for risk associated with long-term management, a Poor Condition is targeted. This would therefore only require successful establishment to secure net gain, therefore avoiding risks associated with targeting higher condition status.

The planting, establishment and ongoing management actions would be undertaken by the Applicants who will continue to farm the land in the long term.

6.4. BNG Credits

This report should be accompanied by the BNG Metric relevant to the site which fully characterises the ecological performance of the project. In summary:

- The proposed development and ecological enhancement works undertaken together would represent **+0.02 BNG Area Credits.** This represents an **11.4% Area Net Gain** arising from the project.
- The creation of a new native hedgerow to offset the removal of the existing non-native hedgerow would represent **+0.04 BNG Area Credits.** This represents **a 150% Linear Net Gain** arising from the project.
- No watercourse habitats are present within the site under consideration.

7. Protected Species

7.1. Bats

The site itself does not offer any suitable features for use by roosting bats – there are no trees, buildings or areas of exposed rock which would be directly impacted in a way which could result in negative impacts to roosting bats.

The change in land use is considered *de minimis* in terms of impacts on potential foraging habitat. The enhancements proposed post-development would offer a significant improvement in the quality of the foraging resource for local bat populations.

There would be a minor short-term reduction in vegetated commuting corridors as a result of the removal of a small stretch of karo hedge; however the construction of the new barn in the footprint of the removed hedge and in the same orientation would replace this connective function for species such as common pipistrelle which is the only resident species commonly recorded in this part of the islands[6]. The new scrub planting proposed to secure the positive BNG score would increase the suitability of the site for commuting bats.

7.2. Nesting Birds

7.2.1. Impact Assessment

The karo hedge and bramble scrub provides nesting habitat for a range of small bird species.

In order to ensure legislative compliance, those undertaking the works must ensure that nesting birds are not disturbed in accordance with requirements under the Wildlife and Countryside Act (1981)[7].

7.2.2. Timing of Works - Avoidance

The most reliable means of ensuring nesting birds are not impacted by the works is for clearance and development works affecting relevant areas to be conducted outside the bird breeding season of March to September inclusive. Clearance works can be undertaken outside of the breeding season without constraints relating to breeding birds.

If works affecting nesting sites are undertaken outside of the nesting season to a stage where the nesting habitat is removed, then breeding birds will find alternative offsite nesting opportunities. In this way, works begun during the winter can proceed into the spring/summer with minimal risk of causing disturbance or damage.

[6] Isles of Scilly Wildlife Trust (2023) *Big Scilly Bat Survey Report 2023*.
[7] HMSO (1981). Wildlife and Countryside Act 1981 (as amended). HMSO, London.

7.2.3. Works during the Breeding Season - Mitigation

If works are scheduled to commence during the breeding season, a nesting bird survey would need to be carried out by a suitably qualified person prior to commencement. Careful observation of any potential nesting sites would be required to ensure that the parent birds are not visiting a nest and provisioning the young. Nests are only protected if they are active (i.e. being used to rear young) or in the process of being built.

Where active nests are identified, works affecting these areas must be delayed until the chicks have fledged the nest.

7.3. Other Protected Species

St Mary's does not support many of the terrestrial protected species found in mainland UK including great crested newts; badgers; reptiles; dormouse; otter or watervole. These species do not therefore require further consideration.

7.4. Rabbits

Rabbits are covered under the Wild Mammals Act 1996[8] which prevents causing unnecessary suffering. If works impact or block burrows, this could lead to killing, injuring or entombment which would contravene the legislation.

Rabbit activity was noted only in those areas where new scrub planting is proposed to the north of the site. Works including clearance and planting in these areas should proceed with appropriate care and caution to ensure that burrows are not blocked or damaged during the works.

7.5. Other Species

There is the potential for the habitat to support small mammals including the white toothed shrew.

Initial scrub clearance works would be undertaken manually to remove woody vegetation to ground level. This would cause disturbance which would encourage any small mammals to leave the area; and the timing of works would avoid key breeding periods when there may be dependent young in burrows.

More intrusive ground works to dig foundations and services would be undertaken after the exposed location has been left for a period of at least 48 hours and it can be considered likely that small mammals would have left the area. Such works would subsequently be carried out with care and vigilance to the potential presence of small mammals and works paused or adapted to allow their safe evacuation prior to proceeding.

[8] HMSO (1996) Wild Mammals (Protection) Act 1996. HMSO, London.

8. Habitat Enhancement Strategy

8.1. Planting

8.1.1. Planting Stock and Density

Shrubs will be planted as whips, sourced from reputable suppliers to ensure genetic diversity and enhance resilience against pests, diseases, and climate change. The shrubs will be planted in a double staggered row at a density of 5–7 plants per metre. This arrangement will provide a dense, cohesive structure while allowing adequate space for individual plants to establish and grow.

8.1.2. Planting Process

The planting will be undertaken between November and March when the shrubs are dormant. Whips will be planted using the notch planting method, ensuring roots are evenly spread and firmly secured in the ground. Care will be taken to prevent the roots from drying out during handling and planting operations.

8.1.3. Protection

To protect the whips from potential browsing by rabbits, tree guards will be installed around individual plants. Regular inspections will ensure these guards remain effective and intact.

Guards should be removed as soon as they are no longer required.

8.2. Establishment

8.2.1. Watering (Year 1)

Supplemental watering will be carried out during the first growing season if required, particularly during periods of dry weather. This will be monitored, and watering will be conducted only when necessary to support establishment.

8.2.2. Replacement (Years 1 – 5)

Any whips that fail to establish during the first year will be replaced like-for-like during the next suitable planting season to ensure the success of the planting scheme.

8.2.3. Competition (Years 1 – 3)

Vegetation around the newly planted shrubs will be managed to reduce competition for resources. This will be achieved through routine clearing of a 1-metre-wide strip along the planting line.

8.3. Management (Dense Scrub)

Cutting and trimming will commence once the shrubs are established and reaching a point where management is necessary. The relatively exposed coastal location of the site may naturally wind-prune the vegetation when it reaches a certain height, but this would otherwise be undertaken by mechanical means as required by the landowner. Trimming will be conducted outside the bird nesting season (March to August) to avoid disturbance.

8.4. Management (Hedgerow)

The area of scrub to be managed as a native hedgerow would be subject to a cutting regime designed to develop this feature.

8.4.1. Initial Growth (Year 1)

No cutting will be carried out during the first growing season to allow the hedge plants to establish strong root systems and sufficient top growth.

8.4.2. Formative Pruning (Years 2 - 3)

Formative pruning will begin at the end of the second growing season during the dormant period (November to February). This process will involve:

- Cutting the leading shoots to approximately 15–20 cm above the previous year's growth to encourage lateral branching.
- Trimming side branches lightly to promote dense, bushy growth.
- Removing any dead, damaged, or diseased material.

8.4.3. Development Phase (Years 4 – 8)

The hedge will be allowed to grow to its intended height during this period, with light trimming conducted annually during the dormant season to shape the hedge.

Side branches will be trimmed lightly each year to encourage lateral thickening and prevent gaps from forming.

8.4.4. Ongoing Management (Year 8+)

Once the hedge has reached its desired height and width, cutting will be reduced to a rotational system to preserve its ecological value while maintaining structure:

- One side of the hedge will be trimmed every two to three years.
- The other side will be trimmed in alternating years.

- Top growth will be managed to maintain a uniform height without allowing it to become overgrown.

Table 03: Scrub Management Activities

OPERATION	YEARS	J	F	M	A	M	J	J	A	S	O	N	D	COMMENT
General Review of Planting	1 to 30									X				The establishment of the habitat would be monitored and the management strategy amended as required to ensure establishment.
Planting of New Whips	0	X	X										X	
Watering	1					X	X	X	X					As required
Replacement of Dead Whips	2 - 5	X	X										X	As required if individual whips die or fail to establish
Removal of Tree Guards	3 - 5	X	X	X	X	X	X	X	X	X	X	X	X	As soon as establishment allows
Clear competing vegetation	1 - 3	X					X							As required
Cutting (Dense Scrub habitat)	5+	X	X									X	X	As required
Formative Pruning (Hedgerow only)	2 - 3	X	X									X	X	
Development Phase Pruning (Hedgerow only)	4 - 8	X	X									X	X	
Standard Management (Hedgerow only)	8+	X	X									X	X	

8.4.5. Monitoring

The establishment of the scrub and hedge would be monitored annually against the relevant habitat descriptions within the BNG framework in order to identify current status and any management actions or modifications required to ensure the habitats are developing correctly.