Preliminary Ecological Assessment (PEA) of land at Tan-y-Graig Farm, Pentraeth, Ynys Môn

for

Client

06 April 2022

ECO_804

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CONTENTS Page no.

FIGURES & TABLES:

SUMMARY

Ecoscope Ltd was commissioned to undertake a Preliminary Ecological Assessment of land at Tan-y-Graig Farm, Ffordd Talwrn, Llanddyfnan, Pentraeth, Isle of Anglesey, Wales, LL75 8UW, in advance of permissions to site c. 15 chalets on the land.

The survey identified the potential for reptiles, nesting birds and foraging bats, along unmanaged boundary hedgerows around a mosaic of neutral and marshy grassland.

The PEA recommends the need for a reptile survey to determine the requirement for mitigation. We indicate a provisional list of mitigation and enhancement to safeguard and improve the future potential for biodiversity.

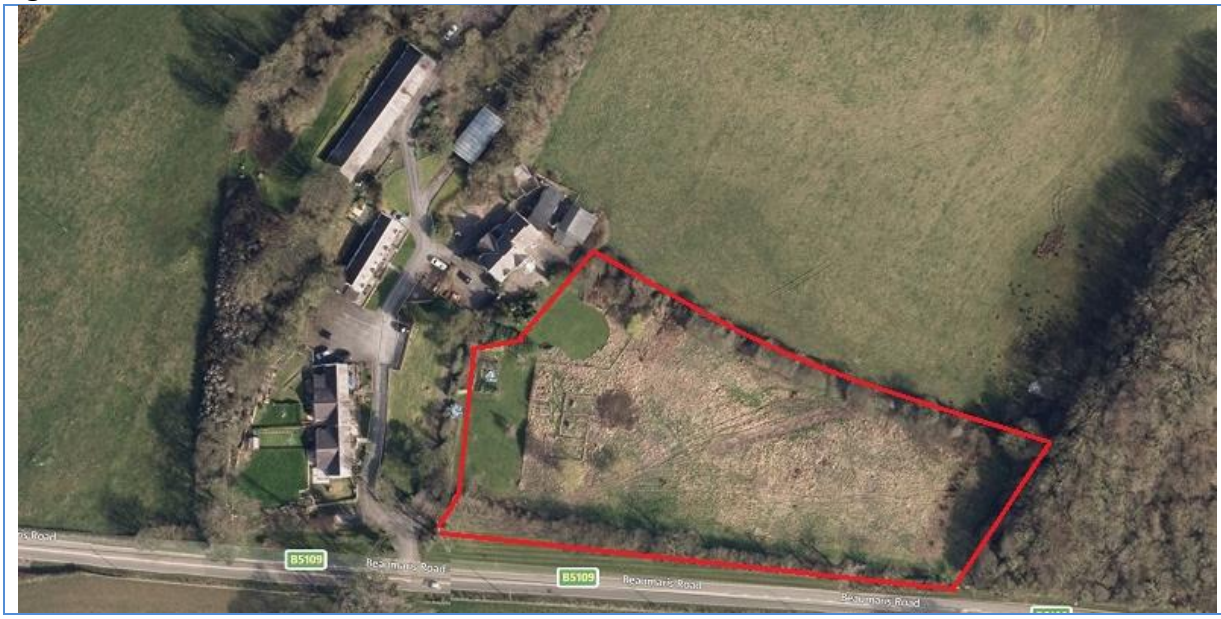
Document Issue Date:	*Wednesday, 06 April 2022*
Approved by:	Mr. Stuart Kato M.Sc., MCIEEM
Prepared by:	Dr Richard Birch CEcol

1. INTRODUCTION

1.1 Description of Brief

1.1.1 Ecoscope Ltd was commissioned to undertake a Preliminary Ecological Assessment (PEA) of land at Tan-y-Graig Farm, Ffordd Talwrn, Llanddyfnan, Pentraeth, Isle of Anglesey, Wales, LL75 8UW (SH 51771 78567 see Figure 1) in advance of a planning application for 15 no. holiday chalets.

Figure 1 Aerial view



1.2 Purpose of study

1.2.1 The PEA identifies the biodiversity capital of the site and the need for any additional surveys.

1.2.2 As part of the Senedd commitment to Biodiversity Net Gain[1] incorporated into new development, and following the guidance provided by the Chartered Institute of Ecology & Environmental Management (CIEEM)[2], the report recommends compensation for potential losses and enhancements to achieve gains in the proposed development.

[1] Environment (Wales) Act 2016 Part 1 Section 6: The Biodiversity and Resilience of Ecosystems - GOV.UK (www.gov.uk)

[2] CIEEM-Environmental-Net-Gain-Principles-Final-July2021.pdf

1.2.3 In accordance with the statement produced as an outcome of COP 26 in Glasgow in November 2021, namely section IV para. 21:

'[The Conference of the Parties] *Emphasizes the importance of protecting, conserving and restoring nature and ecosystems, including forests and other terrestrial and marine ecosystems, to achieve the long-term global goal of the Convention by acting as sinks and reservoirs of greenhouse gases and protecting biodiversity, while ensuring social and environmental safeguards;*

1.2.4 The report adheres to these basic principles.

2. METHOD

2.1 Desk study

2.1.1 The desk study involved collecting data from the following sources:

- Protected sites locations from Magic Map at https://magic.defra.gov.uk/MagicMap.aspx;
- Designations and Qualifying Features at https://naturalresources.wales/environmental-topics/wildlife-and-biodiversity/ find-protected-areas-of-land-and-sea;
- Biodiversity data from the Local Environmental Record Centre (LERC) at https://www.cofnod.org.uk.

2.2 Field survey

2.2.1 A site visit was undertaken on 1st March 2022 by the following personnel (Table 1).

Table 1 Personnel

PERSONNEL	EXPERIENCE
Dr Richard Birch CEcol	Qualified horticulturalist and 1st class degree in Botany. 25 years practising ecologist. Licences for bats & newts in England & Wales. Chartered since 2016
Kira Lovatt BSc	Graduate Ecologist with a 1st class degree in Zoology and Conservation. Currently studying Conservation and Land Management at master's level.

2.2.2 The field survey included a Phase 1 map with classification of habitats to Phase II level where appropriate.

3. RESULTS

3.1 Site Description

3.1.1 The location is a small field alongside the B5109 Pentraeth – Talwrn road. It has been unmanaged for many years and consists of wide hedges and a mosaic of marshy and neutral grassland, with scattered trees Figure 2a-c).

Figure 2 Site photos #1

a) TN 01 Bramble scrub and rubble with potential for reptiles and amphibians.

b) TN 02 Standard willow trees (3 no.) *Salix* undet.

c) TN 03 Boundary hedge and earth bank alongside verge of B5109.

d) TN 04 Eastern boundary with former railway line: limestone bank with mixed woodland.

3.1.2 The hedgerows are unmanaged (TN 03, 04, Figure 2c, d), dominated by Willow (*Salix cinerea*) and Blackthorn (*Prunus spinosa*) to 7m, with scattered trees of Ash (*Fraxinus excelsior*). Both north and south boundaries have accompanying earth banks. The north boundary also has a wet ditch flowing into a pond (TN 07, Figure 3b). Access outside the site boundary was not possible however aerial photography indicates that this is the only extant pond found within 250m of the site boundary. It is

considered unsuitable for Great Crested newts as it was mostly dry at the time of survey and filled with leaf litter. If water is present later in the spring eDNA analysis could be used to confirm this although we consider it likely that the pond will be dry.

3.1.3 Encroachment into the field was extensive and recent clearance work has reduced the hedges to a manageable boundary (TN 08, Figure 3c). Evidence of territorial birds nesting in March visit.

Figure 3 Site photos #2

a) TN 06 Marshy grassland in NE corner.

b) TN 07 Shallow pond on NE boundary.

c) TN 08 Boundary hedge, ditch and earth bank.

d) TN 09 Boundary hedge against mosaic of neutral and marshy grassland.

3.1.4 The grassland is a mosaic of neutral, rabbit-grazed tussocky grassland and scrub at the western end of the field, grading downslope to marshy grassland at the eastern end. The principal species visible in March are included in Table 2[3] overleaf.

[3] Table 2 uses the ACFOR scale, where: **A**=Abundant, **C**=common, **F**=Frequent, **O**=occasional, **R**=Rare. The list in Table 2 is not comprehensive and is constrained by the season. Other species are certainly present.

3.1.5 The eastern boundary is formed by the disused Pentraeth branch railway line, now covered in dense woodland of Hazel (*Corylus avellana*) and Grey willow (*Salix cinerea*).

Table 2 Vegetation: dominant species

NEUTRAL GRASSLAND		ACFOR	MARSHY GRASSLAND		ACFOR
COMMON NAME	**LATIN NAME**		**COMMON NAME**	**LATIN NAME**	
Yorkshire fog	*Holcus lanatus*	**C**	Meadowsweet	*Filipendula ulmaria*	**C**
Cock's-foot	*Dactylis glomerata*	**F**	Great horsetail	*Equisetum telmateia*	**A**
False oat grass	*Arrhenatherum elatius*	**F**	Wild angelica	*Angelica sylvestris*	**O**
Red fescue	*festuca rubra*	**A**	Great willowherb	*Epilobium hirsutum*	**A**
Soft rush	*Juncus effusus*	**F**	Floating sweet grass	*Glyceria fluitans*	**F**
Compact rush	*Juncus conglomeratus*	**F**	**WOODLAND**		
Glaucous sedge	*Carex flacca*	**C**	**COMMON NAME**	**LATIN NAME**	**ACFOR**
Yarrow	*Achillea millefoilium*	**F**	Blackthorn	*Prunus spinosa*	**A**
Lesser celandine	*Ficara verna*	**C**	Hawthorn	*Crataegus monogyna*	**F**
Sorrel	*Rumex acetosa*	**F**	Grey willow	*Salix cinerea*	**A**
Black knapweed	*Centaurea nigra*	**O**	Ivy	*Hedera helix*	**A**
Ribwort plantain	*Plantago lanceolata*	**F**	Hart's-tongue fern	*Asplenium scolopendrium*	**O**
Creeping cinquefoil	*Potentilla reptans*	**F**	Male fern	*Dryopteris felix-mas*	**O**
Meadow buttercup	*Ranunculus acris*	**O**	Cuckoo pint	*Arum maculatum*	**F**

3.1.6 The proposal encroaches on the gardens (Figure 4a) which includes a planted orchard (Figure 4b).

Figure 4 Site photos #3

a) TN 10 Plot extends into improved grassland with ornamental conifer plantings.

b) Planted orchard over improved grassland.

3.2 Desk study

3.2.1 Protected sites and their qualifying features within 1km are included in Table 3.

Table 3 Protected Sites and their Qualifying Features within 1km

SITE NAME	STATUS	SUMMARY OF QUALIFYING FEATURES	AREA	DISTANCE
Gwenfo And Rhos y Glad	SSSI	• Two distinct wetlands with tall fen vegetation and meadow communities • Population of nationally uncommon plant species	43.6Ha	671m
Anglesey Fens	SAC	• Inland water bodies • Bogs, marshes, Water fringed vegetation, fens • Heath, scrub, maquis and garrigue, phygrana • Dry grassland, steppes • Humid grassland, mesophile grassland • Mixed woodland	465.04Ha	671m
Afon Nodwydd/ Traeth Coch	Wildlife Sites	• Lowland Fens and Reedbeds • Purple moor grass and rush pastures	Unspec.	542m
Ancient semi-natural woodland		• Mixed woodland	Unspec.	524m
Ancient semi-natural woodland				824m
Traditional orchard				813m

3.2.2 Species data within 1km, from the Local Environment Records Centre Cofnod, is included in Table 4 (NB the list is not comprehensive: only the significant species are included).

Table 4 Significant records within 1km

COMMON NAME	LATIN NAME	STATUS	DISTANCE
Great crested newt	*Triturus cristatus*	LBAP, HDir2, HDir4, S7, WCA5	600m
Red squirrel	*Sciurus vulgaris*	LBAP, Bern3, S7, WCA5	200m
Slow worm	*Anguis fragilis*	LBAP, Bern3, S7, WCA5	500m
Hedgehog	*Erinaceus europaeus*	LBAP, Bern3, S7	100m
Otter	*Lutra lutra*	LBAP, Bern2, CHS2, CITES-A, HDir2, HDir4, S7, WCA5	150m
Barn Owl	*Tyto alba*	S7, BoCC **Red** list, WCA Schedule 1	600m
Greenfinch	*Chloris chloris*	BoCC **Red** list	On site
House sparrow	*Passer domesticus*	BoCC **Red** list	238m
Song Thrush	*Turdus philomenus*	BoCC **Red** list	On site
Dunnock	*Prunella modularis*	BoCC **Amber** list	On site
Kestrel	*Falco tinnunculus*	BoCC **Amber** list	185m
Rook	*Corvus fugilegus*	BoCC **Amber** list	50m
Dipper	*Cinclus cinclus*	BoCC **Amber** list	150m

3.2.3 Records of Pipistrelle and Noctule bat were included in the data. Bats may forage along the hedgerows and over the fields, but none of the affected habitat is likely to support a bat roost.

3.2.4 Various bird species were recorded during the site visit, including:

Dunnock	Singing.	Greenfinch	Singing.
Song thrush	Singing.	Grey wagtail	Fly over
Rook	Twelve nests within 50m	Bullfinch	Singing.

3.2.4 Singing birds are likely to be holding territories and may be nesting within the site boundary.

3.2.5 There is a significant long-established Rookery within 50m.

3.3 Phase 1 survey

3.3.1 The results of the Phase 1 survey are included in Figure 6 Phase 1 Map, APPENDIX 1, p. i.

3.3.2 Target notes are included in Table 9 Target Notes, APPENDIX 1, p. ii.

4. CONCLUSION

4.1 Summary of results

4.1.1 The site consists of a mosaic of unimproved low-input neutral grassland, grading downslope to marshy grassland. There is potential for reptiles, particularly slow-worm *Anguis fragilis*.

4.1.2 The grassland is grazed by rabbits, which have a warren in the northern boundary hedge.

4.1.3 The field is bounded on three sides by unmanaged hedgerow to 7-8m tall, dominated by Grey willow (*Salix cinerea*) and Blackthorn (*Prunus spinosa*). There is potential for foraging bats, and several red- and amber-listed bird species were recorded and are likely to nest.

4.1.4 There is a pond within the boundary, in the NE corner. It is fed by the ditch along the northern boundary, and possibly from seeps in the neighbouring embankment. Potential for breeding newts is low, but it may support other amphibians.

4.2 Risk assessment

4.2.1 The impacts of the development on the site (based on its current biodiversity assessment and without mitigation) are assessed in Table 5.

Table 5 Risk assessment (without mitigation)

IMPACT	FEATURE AFFECTED	RISK	SEVERITY	RISK × SEVERITY
Loss of hedgerows	• Breeding birds • Foraging bats	5	5	25
(Long term) Additional lighting	• Foraging bats	5	3	15
(Long term) Disturbance	• Reptiles • Foraging bats • Breeding birds	5	4	20

Key

RISK		SEVERITY		RISK × SEVERITY	
1	Negligible	1	Negligible	1-9	Cumulative effect of likelihood × severity = minor negative (potentially positive) impact
2	Slight risk	2	Low level of impact		
3	Moderate risk	3	Moderate impact	10-16	

RISK		SEVERITY		RISK × SEVERITY	
4	Event likely to occur	4	Major impact		Cumulative effect of likelihood × severity = moderate negative impact
5	High risk of event occurring	5	Severe impact	17 - 25	Cumulative effect of likelihood × severity = major negative impact

4.3 Conclusion

4.3.1 The impacts of the proposed development on birds, reptiles and foraging bats is considered **High** at a **Local** level (see Table 6).

Table 6 Hierarchy of Impacts

HIERARCHY OF IMPACT	DEFINITION
International	Having an impact on the population size or habitat area on a Worldwide scale
National	Having an impact on a habitat or species distributed throughout the British Isles
Regional	Having an impact on a habitat or species distribution in any of the individual countries making up the British Isles
Local	Having an impact on a habitat or species that may be significant at a local level (Borough or Parish)

5. RECOMMENDATIONS

5.1 Mitigation Strategy

5.1.1. Risk is reduced by implementation of a hierarchy of strategies:

- Avoidance
- Protection
- Reduction
- Enhancement
- Mitigation

5.1.2 As a result of the PEA, the following actions are required prior to any development.

5.2 Avoidance

5.2.1 No works can commence without a reptile survey undertaken between late March and mid-June (and again between September-October if required).

5.2.2 Survey to involve the placing of c.130 reptile refugia at appropriate locations around the site boundary and commencing reptile checks after a 10-day 'bedding-in' period. A minimum of 7 visits is generally recommended.

5.2.3 If reptiles are found to be present, a strategy of relocation will be required.

5.2.4 Scrub clearance and works to trees and hedgerows must not be done during the bird nesting season (1st March – 31st August).

5.3 Protection and Reduction

5.3.1 Boundary hedgerows are unmanaged and dense, providing corridors for wildlife between adjacent habitat. A strategy to maintain dense hedgerows must be implemented, particularly where a new access route to the main road is considered.

5.3.2 In conjunction with a hedgerow strategy, a lighting diagram must be included with the application. Lighting must be at low level and directional, affording sufficient visibility for safety but minimising light spill (see Figure 5a, b)

Figure 5 Mitigation and enhancement

				
a) Slanted lighting bollard	**b)** Screened lighting bollard	**c)** Schwegler 1B bird box	**d)** Schwegler 2H bird box	**e)** Schwegler 2F bat box

5.3.3 In conjunction with the above, a planting plan must be included, with proposed planting used to provide additional screening for light spill and enabling a flight corridor across the site for foraging bats.

5.4 Enhancement and Mitigation

5.4.1 Mitigation cannot be finalised prior to reptile survey. However, some aspects apparent during the site visit must be considered in the design:

a) Tree planting. Predominately native along existing hedgerows but can include ornamental trees alongside the drive (e.g. flowering cherries) and specimens to support the ornamental conifer trees already established within the garden (see Figure 4a);

b) Loss of neutral grassland to be mitigated by wild flower seeding, enhanced margins and shrub beds with ornamental species suitable as pollinator plants[4];

c) Consideration of rabbits in the development (not a protected species, but a welfare matter);

[4] Recommend advice provided by competent ecologist.

d) A biodiversity strategy to prevent subsequent contamination from Invasive Non-Native species (INNS), particularly Himalayan Balsam (*Impatiens glandulifera*) and Montbretia (*Crocosmia ×crocosmiflora*) to be incorporated in the site bylaws;

e) Pond provision. The existing pond is overgrown and likely to be drained as part of site drainage. Provision of a pond will provide enhanced biodiversity benefits;

f) Provision of bird and bat boxes (2x each Figure 5c-e).

5.4.2 A detailed mitigation and landscaping plan will need to be produced post-reptile survey and may include additional proposals if reptiles are found to be present.

Table 7 Risk assessment summary (with mitigation)

IMPACT	Mitigation	RISK	SEVERITY	RISK × SEVERITY
Loss of hedgerows	• Hedgerow retained by design. Appropriate management of retained hedgerow	2	3	6
(Long term) Additional lighting	• Sensitive lighting plan using appropriate lights	2	3	6
(Long term) Disturbance	• Lighting plan and enhancement measures	2	3	6
Reptile habitat and individuals	**Further survey required**			

Table 8. Enhancement suggestions summary

- Provision of bird and bat boxes
- INNS strategy
- Wildflower seeding in landscaping design
- Tree planting as part of landscaping design
- Pond creation or enhancement of existing pond

5.4.3 Provided the measures above are adopted, the final proposal is unlikely to have any major direct or indirect negative impacts on wildlife and can provide positive benefit. This would follow local and National planning policy.

6. APPENDIX 1

Figure 6 Phase 1 Map

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Table 9 Target Notes

No.	NOTES
1	Bramble scrub (*Rubus fruticosus*) along fence line. Potential to support reptiles.
2	Individual standard willow trees (unidentified).
3	Boundary hedge, fence and earth bank. Unmanaged (to 7m high) and deep, with woodland ground flora in the understorey.
4	Former Pentraeth railway embankment beyond boundary. Limestone woodland with Hazel (*Corylus avellana*) and willow.
5	Tall herb marshy grassland within boundary, with meadowsweet, great willowherb and giant horsetail (National Vegetation Classification = OV 26).
6	Marshuy grassland with soft and compact rush, glaucous sedge and floating sweet grass.
7	Shallw pond within boundary. Heavily shaded.
8	Boundary hedge, running water and earth bank. Hedge to 8m, dominated by blackthorn and formerly extending into field. Significant population of rabbit.
9	Neutral grassland with false oat grass and red fescue (National Vegetation Classification = MG 1).
10	Amenity grassland with planted orchard.