



Tyn y Caeau, Margam, Port Talbot

**Grassland Survey and Assessment
July 2022**

Survey undertaken by -

Prepared by Leigh Murphy on behalf of I&G Ecological Consulting Ltd

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1 Introduction

1.1 Scope

1.1.1 I&G Ecological Consulting LTD was commissioned by Evans Banks Planning (agents working on behalf of the client) to undertake a grassland survey of two areas of grassland on a area of land measuring approximately 1.4 hectares in size (hereafter referred to as the 'Site'), to help inform future management. The survey comprised of;

- An ecological grassland survey,
- A Phase 1 habitat assessment and map (please see separate report produced by I&G Ecological Consulting for full details);

1.1.2 The ecological grassland survey was commissioned by the Planning Inspectorate to assess species diversity and condition of the grassland and its potential classification as a SINC:

This report includes a description of the methods used during the grassland survey, results, and recommendations for management and monitoring

1.2 **Site Description**

- 1.2.1 The site is an area of land approximately 1.4 hectare in size, located on the outskirts of the village of Margam near Port Talbot.

The land within the site boundary consists predominantly of Semi-improved grassland, Mature Native and non-native trees, House and outbuildings and associated garden planting, partially bounded by outgrown hedges/ tree lined boundaries

1.3 **Legislation**

- 1.3.1 This report has been prepared in accordance with relevant legislation and policy.

Further detail is provided in **Appendix 5**, however the following primary documents are of relevance:

- The Wildlife and Countryside Act 1981 (as amended) (WCA 1981);
- The Countryside and Rights of Way Act (CROW Act), 2000 (as amended);
- The Protection of Badgers Act 1992 (PBA 1992);
- The Environment (Wales) Act 2016
- The Conservation of Habitats and Species Regulations 2017 (as amended) (CHS 2017).

1.3.2 No part of this report should be considered as legal advice and when dealing with individual cases, the client is advised to consult the full texts of the relevant legislation and obtain further legal advice.

2 Survey Methods

2.1 Survey Dates, Conditions & Surveyors

- 2.1.1 All surveys were conducted over the course of one site visit on the 13th of July 2022.
- 2.1.2 Survey was undertaken by Leigh Murphy.

2.2 Ecological Grassland Survey

- 2.2.1 The survey methodology was based on Natural England's Common Standards Monitoring (JNCC, 2009), devised as a method for rapid assessment of SSSIs. This involves a structured walk (following a “W” route) across the site stopping at regular points to record species and other attributes in an approximate 1 x 1m quadrat (see Figure 1).
- 2.2.2 At each point along the structured walk, the following data were recorded:
 - All vascular plant species within 1m X 1m quadrat,
 - % cover of rye-grass, clovers and creeping buttercup
 - % cover of ‘weed’ species (docks, nettles, thistles (excluding marsh thistle))
 - % cover wildflowers
 - % cover of scrub and bare ground
 - Average sward height
 - Any observations of wildlife were also recorded and added to Appendix 2.

2.3 Phase 1 Habitat Survey

- 2.3.1 Please see the separate Phase 1 survey document undertaken by I&G Ecological Consulting Ltd 2019 for full details of the Phase 1 survey.

3 Results

3.1 Ecological Grassland Survey Results – Species Diversity

3.1.1 Overall the site supports a limited diversity of vascular plants, with 26 species recorded (see Appendix 1 for full species list). As this was not an exhaustive plant survey it is likely numerous other species await finding. The majority of species recorded are widespread and commonplace, typical of such habitats. None are of particular rarity, all of which were listed as having a conservation status of 'least concern' in The Vascular Plant Red Data List for Great Britain.

3.1.2 The average species diversity per m² recorded a score of 7.38, which is significantly lower than the target of 15 (Ty'n Y Caeau has less than half the diversity). The resultant score was reduced by a small number of poorly scoring quadrats with relatively high bare ground cover, although it should be noted that only two of the quadrats reached above the target of 15 per sqm and so these outliers did not have a significant effect on the results.

3.1.3 No invasive Schedule 9 plants were seen on site or in the vicinity.

3.2 Ecological Grassland Survey Results – Rye Grass, Clovers & Buttercup (% cover)

3.2.1 % cover of wildflowers, excluding 'weed' plants, namely docks, nettle and creeping and spear thistles were recorded in 30 quadrats across the site, following the structured W walk to ascertain if species diversity was more than 15 per sqm. Analyses of all the quadrat data are provided in full in Appendix 2 and is summarised below.

3.2.2 Average % cover rye-grass, clover and creeping buttercup was recorded at 2.62%, which is well below the 10% maximum limit for these species. White clover and creeping buttercup were recorded occasionally with most of the cover occurring alongside the road leading to the onsite house, within the sward however these recordings were sparse. Both white clover and creeping buttercup are natural components of the MG1 community (see NVC results section), so these results are not of undue concern. Rye-grass was not recorded on site.

3.3 **Ecological Grassland Survey Results – Wildflower Diversity**

3.3.1 Average % cover of wildflowers was recorded at 17.4%; which is 42% less than the target cover of 30%. Patches of common knapweed (*Centaurea nigra*), common hogweed (*Heracleum spodylium*), and common-bird's-foot-trefoil (*Lotus corniculatus*) made up a large proportion. At the time of survey, the sward was tall and dense, crowding out smaller species. With a diverse management plan in place, it is likely wildflower diversity and coverage would increase.

3.4 **Ecological Grassland Survey Results – Additional Attributes**

3.4.1 Additional attributes recorded were bare ground, scrub cover and sward height. The sward is dense and tall with an average height of 0.76m. Bare ground cover was recorded at 1.9%, small molehills found in a number of quadrats were likely the main contributory factor; otherwise bare ground was negligible. Scrub cover of 2.21% comprised solely of bramble (*Rubus fruticosus*) encroaching from the site boundaries and garden area.

3.5 **Phase 1 Habitat Survey Results**

3.5.1 Phase 1 Habitat survey result can be found in the PEA Tyn y Caeau Margam.

3.6 NVC Results

- 3.6.1 A total of 26 species were recorded in the 30 quadrats, with a mean species richness of 7.38. Comparison of the grassland survey result against the NVC community types indicate a correlation with MG1 *Arrhenatherum elatius* grasslands, with strong correlations to both MG1a *Arrhenatherum elatius* – *Festuca rubra* and MG1e *Arrhenatherum elatius* – *Centaruea nigra* sub-communities.
- 3.6.2 The constant occurrence of common knapweed (*Centaruea nigra*) likely caused the high correlation of the quadrat data with the MG1e *Arrhenatherum elatius* – *Centaruea nigra* sub-community, other factors include the constant to frequent occurrence of Yorkshire-fog (*Holcus lanatus*) and common bird's-foot-trefoil (*Lotus corniculatus*). However due to the small size of the site and lack of species richness the site would be better categorised as the MG1a *Arrhenatherum elatius* – *Festuca rubra* sub-community.

4. Assessment

4.1 Neutral Grasslands

The Guidelines for the selection of wildlife sites/SINCs for neutral grasslands include all examples of MG4 (meadow foxtail – great burnet grasslands), MG5 (crested dog's-tail – common knapweed grasslands), MG11 (red fescue – creeping bent – silverweed grasslands), MG12 (tall fescue grasslands) and MG13 (creeping bent - marsh foxtail grasslands). *The grassland on site has been Classified as MG1 (False-oat grassland) which does not meet these criteria.*

Relatively species-rich examples of other neutral grasslands of any significant extent should also be considered. It is suggested that species-rich examples are represented by sites with at least 8 species indicative of unimproved neutral grasslands. During the survey two neutral indicator species were present on site which is significantly lower than the target of 8 and therefore, based on the results of this survey, the site does not meet the criteria for selection as a wildlife site/SINC.

5 Management Recommendations

5.1 Long-Term Management

- 5.1.1 In the long-term, management would ideally take the form of appropriate levels of mixed species grazing, this will create a variety of conditions and help control a variety coarse grasses and weeds allowing for greater diversity within the sward.

As grazing is not appropriate, it is possible to mimic the effects by cutting several times a year. To achieve this, it is recommended the majority of cutting take place in early spring and autumn every 2 to 3 weeks to prevent coarse grasses from dominating. While leaving the grassland uncut between mid-May and August will allow the majority of plants to flower and seed, leaving the first cut vegetation in the field for a day or two will preserve the seedbank and encourage a greater range of wildflowers.

- 5.1.2 It is proposed that a number of areas be augmented with wildflower planting (either seed or plug plant, as suitable) and subsequently maintained as a wildflower meadow, cutting a number of times per year to help maintain a diverse mix of flowers and grasses. The introduction of yellow rattle (*Rhinanthus minor*) in the Autumn may help control coarser grasses, opening the sward and allowing wildflowers to compete.

- 5.1.3 A considerable area of grassland will be retained as part of the proposed development, a portion of which should be reserved for the creation of a wildlife area with the aim to create a mix of vegetation heights and a variety of substrates including bare ground, grassland and scrub, this will provide forage, refugia and hibernation opportunities for a range of species. Management of the wildlife area will consist of periodic reduction in scrub and grassland/other vegetation to retain a mosaic of micro-habitats, e.g. bare areas, low vegetation, dense cover (suggest every 2-5yrs). Arisings can be left in piles within the receptor area to create further habitat. The timing of such works must take into consideration nesting birds and hibernating reptiles, therefore should ideally be undertaken between August and September.

5.2 Short-Term Management

- 5.2.1 In the short-term there are no obvious critical management issues, so lack of any practical work in the next 2-3 years is unlikely to be a problem. However, a lack of management can, over time, permit succession from grassland to scrub. It is considered likely that the encroaching scrub will continue to thicken, lessening the diversity of wildflowers and its suitability for reptiles. Occasional cutting and edge management is recommended, either by mowing or flailing. This is best achieved in late summer/autumn to avoid damaging seeding herbs.
- 5.2.2 Reinstatement of temporarily damaged or cleared terrestrial habitat will be carried out as soon as practicable. Habitat reinstatement will involve the replacement of stripped soils and the planting of native hedgerows, shrubs and trees, typical of the local area and of local provenance where possible.

See Appendix 3 for further details on Meadow Management at Tyn y Caeau.

5.3 Recommended Survey Effort

- 5.3.1 The Phase 1 Habitat survey shows a large number of local records for slow-worm, common lizard, grass snake and adder. See the separate Reptile and Amphibian Survey 2022 report produced by I&G Ecological Consulting Ltd.
- 5.3.2 The Reptile and Amphibian Survey will detail working methods and timing in order to minimise harm, as well as lay out a number of post-development enhancement measures including the creation of artificial refugia and hibernaculum.
- 5.3.3 The site could accommodate a small pond without detriment to the wider grassland area. This may provide additional habitat niches for a range of amphibian species already present in the area.

6 References

- Amphibian & Reptile Conservation UK (Sept. 2010) *Legislative Protection for Herpetofauna (England & Wales)*
- British Standard (2005) *Trees in relation to construction – recommendations BS 5837:2005*
- Crown copyright (1992) *Protection of Badgers Act 1992*
- CIEEM (2015) *Guidelines for Ecological Report Writing*, Chartered Institute of Ecology and Environmental Management, Winchester.
- CIEEM (2016) *Guidelines for Ecological Impact Assessment in the UK and Ireland: Terrestrial, Freshwater and Coastal, 2nd edition*. Chartered Institute of Ecology and Environmental Management, Winchester
- DEFRA (2007) *Hedgerow Survey Handbook A standard procedure for local surveys in the UK*
- English Nature (2002) *Badgers & Development*, English Nature.
- Environment & Heritage Service (2004) *Badgers & Development*, Environment & Heritage Service Publishing Unit.
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- JNCC (2004) *National Vegetation Classification, Field Guide to Woodland*, Joint Nature Conservation Committee.
- National Federation of Badger Groups (2005) *Badgers and the Law*, NFBG
www.badger.org.uk/action/index.html
- Poland. J & Clement. E (2009) *The Vegetative Key to the British Flora*, BSBI.
- Rose, F. (2006) *The Wildflower Key (2nd end.)*, Penguin London.
- Wales Biodiversity Partnership (2016) *Environment Act (Wales)*, website accessed 10 Dec. 2018.
- Welsh Assembly Government (WAG 2016). *Environment (Wales) Act 2016 Section 7 – list of the living organisms of principal importance for the purpose of maintaining and enhancing biodiversity in relation to Wales*. Welsh Government, Cardiff.

Appendix 1: Species List

False Oat (<i>Arrhenatherum elatius</i>)	D
Cock's foot (<i>Dactylis glomerata</i>)	A
Yorkshire fog (<i>Holcus lanatus</i>)	F
Creeping Bent (<i>Agrostis stolonifera</i>)	A
Red fescue (<i>Festuca rubra</i>)	F
Sweet Vernal (<i>Anthoxanthum odoratum</i>)	O
Common hogweed (<i>Heracleum sphondylium</i>)	A
Common Bird's-foot Trefoil (<i>Lotus corniculatus</i>)	F
Lesser knapweed (<i>Centaurea nigra</i>)	A
Ribwort plantain (<i>Plantago lanceolata</i>)	A
Sorrel (<i>Rumex acetosa</i>)	F
Orpine (<i>Sedum telephium</i>)	R
Ragwort (<i>Senecio jacobaea</i>)	O
Bramble (<i>Rubus</i> sp.)	O
Nettles (<i>Urtica dioica</i>)	R
Cleavers (<i>Galium aparine</i>)	R
Creeping buttercup (<i>Ranunculus repens</i>)	O
Bitter dock (<i>Rumex obtusifolius</i>)	F
Curly dock (<i>Rumex crispus</i>)	R
Spear thistle (<i>Cirsium vulgare</i>)	O
Creeping cinquefoil (<i>Potentilla reptans</i>)	O
Scarlet pimpernel (<i>Anagallis arvensis</i>)	R
Petty spurge (<i>Euphorbia peplus</i>)	R
Hairy willowherb (<i>Epilobium hirsutum</i>)	R
Hoary Mullein (<i>Verbascum thapsus</i>)	R
White Clover (<i>Trifolium repens</i>)	R

Appendix 2: Grassland Survey Photos





Appendix 3: Meadow Cutting Programme

Without sensitive management, grasslands soon become invaded by more vigorous plants that can overwhelm and replace what is a vital habitat for birds, invertebrates and animals.

The exact management requirements of an area of grassland, not only vary with the site location but also on the species present.

Meadow management plan Principles

The principles of wild-flower meadow management are:

- allow growth from spring to summer
- remove unacceptable weeds using suitable herbicide during growth (only if required)
- cut late summer to assure seeds are mature and dispersed before cutting
- remove hay to avoid adding nutrients

Management strategies.

To prevent incursion of scrub into meadow we need to:

- clear hedgerow bottoms in the late autumn / winter
- mow agreed edge paths regularly to prevent unwanted incursions into the meadow
- clear around meadow trees at ground level
- keep meadow tree branches above head height to allow mowing underneath.

To avoid damage by pedestrians

- mow paths regularly during growing season to provide a clear channel for pedestrians.

To ensure the meadow management plan is followed in a timely manner:

- use contractors for mowing, baling and removing hay
- use volunteers for small scale clearing

Month by month plan

Timing	Activity
January/February	Hedge cutting
March / April	Clear hedge bottoms
April through August	Keep meadow edge and areas under trees clear.
April through October	Path mowing
May / June	Weed pull thistle, etc
May / June	Spot weed kill
July / August	Weed pull ragwort
July / August	Cutting and baling
July / August	Remove bales
September / October	Final clearance at edges
December through to March	Meadow trees – maintain clear trunks to head height so meadow is not shaded by low branches.