

Hope Garden – Baseline Ecological Survey



Fleabane Tortoise Beetle *Cassida murraea*, one of the invertebrate species recorded at the site



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02/09/2024

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1. Scope of Report

This report contains both the results of a botanical and Phase 1 Habitat survey carried out at Hope Garden on 11/07/2024, and the results of a West Wales Biodiversity Information Centre (WWBIC) data search for all species records held within 2km of the site. Its purpose is to provide baseline ecological information to inform future site management decisions. Some potential options to benefit biodiversity enhancement are highlighted, but the report does not make specific ecological recommendations.

2. Site Background

Hope Garden is a small (~ 540 sq m), roughly triangular site, roughly centred on the OS grid reference SN19544258. It sits within a larger field, adjacent to a community allotment, just south of the village of Cilgerran, Pembrokeshire. The larger field is on damp, heavy clay soil and historically has predominantly been used as grazing pasture.



Figure 1
Boundaries of Hope Garden and other areas referred to in this report.

3. Ecological Survey

3.1 Methodology

On 11/07/2024 a Phase 1 Habitat survey was undertaken at Hope Garden, and a vascular plant species list produced, both for Hope Garden and for a section of the larger field that it sits within, outlined on Fig 2 below. Phase 1 is a standardised system of broad habitat classification developed by the Joint Nature Conservation Committee (JNCC). No attempt was made to survey for taxon groups other than vascular plants on the survey date. The weather on the survey day was rainy, but this was not considered to affect the detectability of vascular plant species. On 29/08/2024 a short follow-up visit was made to take some site photographs in sunlight, and during this visit some ad-hoc invertebrate records were made.



Figure 2
Areas surveyed for this report.

3.2 Summary of Results

The overall vegetation of both Hope Garden and the surrounding field, broadly fit within the Phase 1 Category 'Marshy Grassland' (Fig 3). There are some limited signs of former agricultural improvement, such as the presence of Perennial Rye-grass *Lolium perenne*, but this is not dominating and overall the composition and diversity of the vegetation is typical of Marshy Grassland. Soft Rush *Juncus effusus* is abundant but not dominating, with smaller numbers of Jointed Rush *Juncus articulatus* and Compact Rush *Juncus conglomeratus* mixed in. The site contains several plant species indicative of good quality marsh habitat, including Marsh Ragwort *Jacobaea aquatica*, Ragged Robin *Silene flos-cuculi*, Meadowsweet *Filipendula ulmaria* and Common Fleabane *Pulicaria dysenterica*, as well as the regionally uncommon Square-stalked Willowherb *Epilobium tetragonum*. Structural diversity of vegetation is high (see Fig 4), which will provide good habitat for invertebrates. No designated or protected species were discovered on the survey.

Hedgerows line the field on all sides and the section of hedgerow adjoining Hope Garden is species rich, with 7 woody/ shrub species recorded along its 30 metre length – hedgerows with at least 5 woody/ shrub species recorded over 30m are typically considered species rich. The hedgerow is of similar character all along the length of the field. The grading of vegetation on the margin of the field, from hedgerow to marshy grassland, provides further structural diversity.

On the follow-up visit, a high density of invertebrates was noted, including high numbers of spiders, craneflies, 7 caterpillars of Elephant Hawk-moth *Deilephila Elpenor*, feeding on Square-stalked Willowherb, and Fleabane Tortoise Beetle *Cassida murraea*, a relatively localised species, feeding on Common Fleabane.



Figure 3
Phase 1 Habitats identified on the survey.



Figure 4

A north-facing view from the southern corner of Hope Garden, capturing the majority of the site and showing the structural diversity in the vegetation.

3.3 Species Lists

Plant species were identified either in the field or from samples taken home. Each species was given a rough abundance measure using the 'DAFOR' scale, which ranks species in the following categories in descending order of abundance: *Dominant, Abundant, Frequent, Occasional, Rare*. They are based on abundance *within* the site surveyed, rather than regionally. The categories are both coarse and subjective, but nonetheless provide a simple relative measure of abundance between species at a site. A total of 37 plant species were identified on the site and are listed in the table below. One visit is usually insufficient to detect all plant species present at a site so the list should be taken as a starting point. More detailed information is provided in the attached spreadsheet, as well as the list of the species in the surrounding field.

Vascular Plants:

Scientific Name	Common Name	DAFOR Score	Comments
<i>Alopecurus pratensis</i>	Meadow Foxtail	Frequent	
<i>Anthoxanthum odoratum</i>	Sweet Vernal-grass	Frequent	
<i>Cerastium fontanum</i>	Common Mouse-ear	Frequent	
<i>Cirsium vulgare</i>	Spear Thistle	Frequent	
<i>Corylus avellana</i>	Hazel	Frequent	In hedgerow.
<i>Crataegus monogyna</i>	Hawthorn	Frequent	In hedgerow.
<i>Dactylis glomerata</i>	Cock's-foot	Frequent	
<i>Dipsacus fullonum</i>	Wild Teasel	Occasional	A couple of plants in southern corner.
<i>Epilobium tetragonum</i>	Square-stalked Willowherb	Occasional	One clump of plants in southern corner.
<i>Filipendula ulmaria</i>	Meadowsweet	Frequent	In field margins.
<i>Fraxinus excelsior</i>	Ash	Frequent	In hedgerow.
<i>Geranium dissectum</i>	Cut-leaved Crane's-bill	Occasional	
<i>Holcus lanatus</i>	Yorkshire-fog	Abundant	
<i>Jacobaea aquatica</i>	Marsh Ragwort	Occasional	A few plants near hedgerow.
<i>Juncus articulatus</i>	Jointed Rush	Occasional	
<i>Juncus conglomeratus</i>	Compact Rush	Occasional	
<i>Juncus effusus</i>	Soft-rush	Abundant	
<i>Lolium perenne</i>	Perennial Rye-grass	Frequent	
<i>Lotus pedunculatus</i>	Greater Bird's-foot-trefoil	Frequent	
<i>Oenanthe crocata</i>	Hemlock Water-dropwort	Frequent	In field margins.
<i>Phleum pratense</i>	Timothy	Frequent	
<i>Plantago lanceolata</i>	Ribwort Plantain	Frequent	
<i>Prunus spinosa</i>	Blackthorn	Frequent	In hedgerow.
<i>Pulicaria dysenterica</i>	Common Fleabane	Occasional	Large patch in wet depression by hedgerow.
<i>Ranunculus acris</i>	Meadow Buttercup	Frequent	
<i>Ranunculus repens</i>	Creeping Buttercup	Frequent	
<i>Rosa canina agg.</i>	Dog Rose	Occasional	In hedgerow.
<i>Rubus fruticosus agg.</i>	Bramble	Occasional	In hedgerow.
<i>Rumex crispus</i>	Curled Dock	Frequent	
<i>Rumex obtusifolius</i>	Broad-leaved Dock	Occasional	
<i>Salix cinerea</i>	Common Sallow	Frequent	In hedgerow.

<i>Silene flos-cuculi</i>	Ragged-Robin	Occasional	A few plants near hedgerow.
<i>Taraxacum</i>	Dandelion	Frequent	
<i>Trifolium dubium</i>	Lesser Trefoil	Frequent	
<i>Trifolium pratense</i>	Red Clover	Frequent	
<i>Trifolium repens</i>	White Clover	Frequent	
<i>Urtica dioica</i>	Common Nettle	Frequent	

Invertebrates: (rough observations; not a complete survey)

Scientific Name	Common Name	Comments
<i>Arianta arbustorum</i>	Copse Snail	
<i>Cassida murraea</i>	Fleabane Tortoise Beetle	One seen on Common Fleabane.
<i>Deilephila elpenor</i>	Elephant Hawk-moth	At least 7 caterpillars on Square-stalked Willowherb.
<i>Dolycoris baccarum</i>	Hairy Shieldbug	
<i>Succinea</i>	Amber Snail	
<i>Tipula paludosa</i>	A crane fly	Mating pair.

4. Data Search

A LERC data search was carried out for species records made within 2km of the site centroid (SN19534258) on 26/08/2024, using Aderyn, the shared LERC Wales online database. This returned records of 7,484 records of 2,282 taxa, including 1,106 records of 256 protected / priority taxa. These records can be viewed using the online Aderyn links supplied with this report. These species include bats, terrestrial mammals, reptiles, birds, amphibians and invertebrates. No previous records were found from the Hope Garden site itself or from the surrounding field, which likely reflects a lack of recording there. However, it can safely be assumed that many of the species of conservation interest from the local area will utilise suitable habitat within Hope Garden. No protected sites were intersecting or nearby to the site, the closest being the Afon Teifi SSSI/ SAC, ~500m away.

5. Options to Benefit Biodiversity

Although no protected/ priority species were found on the survey, the site can still support important biodiversity. Maintaining and enhancing biodiversity on the site would involve maximising structural and plant species diversity, providing food and cover to support an abundance and diversity of invertebrates, which will in turn support vertebrate diversity.

The area of Hope Garden contains good quality Marshy Grassland habitat that is broadly consistent with the Section 7 Priority Habitat 'Purple Moor-grass and Rush Pasture'. It has a high structural diversity and could support good populations of invertebrates. In developing the garden, biodiversity would benefit from having areas of the existing Marshy Grassland habitat retained. If possible, retaining sections within the highlighted areas in Figure 6 (following page) would retain plant species that are less common on the site, including Ragged Robin, Common Fleabane, Marsh Ragwort, Wild Teasel and Square-stalked Willowherb, the latter of which is the least regionally common plant species from the site, representing the first record of this species from this particular 10km square since 1993. Photographs of plant species are provided, and if possible, the garden could be constructed in such a way as to maintain both elements of structural diversity and the highest possible number of existing species from the site.

The hedgerow is an important biodiversity feature and its current form and composition should be maintained. Small elements of water, in any form, would also be of benefit to biodiversity, as would areas of log piles/ debris to provide habitats for invertebrates and cover for small mammals/ reptiles/ amphibians. The small size of the site can be a benefit for environmental education activities as it is easy to cover the whole site in a short time. Populations of distinctive insects, that are localised to specific foodplants, such as Fleabane Tortoise Beetle and Elephant Hawk-moth, are easy to find, identify and monitor and could be useful activities for the local community.



Figure 6

Areas of the site that contain plant species of greater biodiversity interest to the site.

6. Photographs of Species Recorded at Site

A selection of species mentioned in the report are shown below. All photos from the site.

Plants:

Common Fleabane *Pulicaria dysenterica*



Square-stalked Willowherb *Epilobium tetragonum* (finished flowering and now setting seed)



Marsh Ragwort *Jacobaea aquatica*

Looser and more branching than Common Ragwort. Terminal lobe of leaves much larger than lateral lobes.



Invertebrates:

Hairy Shieldbug *Dolycoris baccarum* on Wild Teasel



Elephant Hawk-moth *Deilephila Elpenor* – caterpillar feeding on Square-stalked Willowherb



Cranefly, *Tipula paludosa* – mating pair



Amber Snail – *Succinea* species

