



**WESTCOURT HOUSE AND GARDENS
HABITAT AND GREEN INFRASTRUCTURE SURVEY**

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1 INTRODUCTION

Blackthorn Ecology has been appointed to carry out a habitat and Green Infrastructure survey of Westcourt House and Gardens, Callan, Co. Kilkenny. The results will inform the future development of the site in conjunction with a proposed walking route along the Kings River and millrace to the south of the house.

The survey and report have been prepared by Dr George F Smith of Blackthorn Ecology. Dr Smith has extensive experience in carrying out habitat and Green Infrastructure surveys in Co. Kilkenny and elsewhere in Ireland. He is a highly experienced botanist and bryologist. He is a Chartered Ecologist and a full member of the Chartered Institute of Ecology and Environmental Management (CIEEM), the chief professional society in Ireland for ecological professionals, and as such, he is bound by their Code of Professional Conduct.

2 METHODS

A field survey of the site was carried out on 6th June 2014. During the survey, habitats were mapped and a list of all vascular plant species encountered was compiled. The presence of any plant or animal species protected under the Wildlife Act 1976, as amended, or the EU Habitats Directive (92/43/EEC) or Birds Directive (79/49/EEC and amendments as codified in 2009/147/EC) was recorded.

Habitat mapping was carried out following the Heritage Council *Best Practice Guidance* (Smith *et al.*, 2011), and habitats were classified according to the Heritage Council (Fossitt, 2000) and Habitats Directive (European Commission, 2007) systems. Green Infrastructure assessment followed the approach used in the Kilkenny City habitat survey (Smith *et al.*, 2010). Surveys were aided by the use of a handheld GPS (Garmin eTrex) and a GPS-enabled camera (Sony Cybershot DSC-HX9V).

Maps were prepared using QGIS 2.2 (QGIS Development Team, 2014).

3 RESULTS

3.1 Habitats

The habitats in the grounds of Westcourt House are mapped in Figure 1 and are described below. Alphanumeric codes used in text refer to habitat types according to the Heritage Council classification system (Fossitt, 2000). A list of plant species recorded is presented in Appendix A.

House Site

The site of the former Westcourt House was a mound of formerly disturbed ground and debris that had been colonised by rank, weedy vegetation. Grasses were much less abundant than tall, broadleaved herbs, and thus the habitat has been classified as **recolonising bare ground (ED3)**. The most common broadleaved herbs occurring here were black medick, turnip, white clover, bush vetch, cleavers, creeping buttercup, prickly sow-thistle, broad-



Site of the former Westcourt House

leaved dock, spear thistle, and common vetch. The latter plant was the formerly cultivated subspecies (*Vicia sativa* subsp. *sativa*), which is now rare in Ireland (Preston *et al.*, 2002, Parnell and Curtis, 2012). Rough meadow-grass and Yorkshire fog were the most frequently occurring grasses. On the house site, **scrub (WSI)** was beginning to invade, forming a mosaic with the broadleaved herb vegetation. Bramble was frequent, forming locally dominant patches. Elder also formed low thickets with occasional grey willow.



Weedy ground between the house site and the walled garden

meadow-grass, and false oat-grass.

On the east of the house site was a small pre-fabricated cottage, some greenhouses and vegetable gardens. This area has been mapped as a mosaic of **horticultural land (BC2)** and **buildings and artificial surfaces (BL3)**. A shed and disturbed ground adjacent to the industrial estate to the east has also been mapped as **buildings and artificial surfaces (BL3)**.

To the north and west of the former house site were other extensive areas of disturbed, **recolonising bare ground (ED3)**. These were frequently associated with a track between the buildings on the east side of the site, the avenue and the walled garden. Plants occurring here were similar to those on the ruined house site, and included creeping thistle, curled dock, perennial sow-thistle, dame's-violet, dandelion, pineappleweed, turnip, rough

Walled Garden

The eastern third of the walled garden mainly comprised improved **amenity grassland (GA2)** in the form of a well-maintained, mown lawn. This was bounded by a low beech hedge. There was some surrounding open ground that supported a mixture of cultivated vegetables, flowers and weeds similar to those found around the house site and the vegetable plot to the southeast. A gravel path supported rat's-tail fescue, common cornsalad, daisies, creeping cinquefoil, dandelion, broad-leaved willowherb, scarlet pimpernel and great mullein, along with the mosses *Barbula sardoa*, *B. convoluta*, *Brachythecium rutabulum* and *Funaria hygrometrica*.



Amenity grassland inside the walled garden

The western section of the walled garden supported cattle-grazed **improved agricultural grassland (GAI)** and vegetable gardens mapped as **horticultural land (BC2)**.



Biting stonecrop on walled garden

The walls surrounding the garden were red brick and supported abundant wall vegetation, mainly ivy. A good diversity of typical stone wall plants was present, including rue-leaved saxifrage, ivy-leaved toadflax, biting stonecrop, pellitory-of-the-wall, maidenhair spleenwort, rustyback, common polypody fern and the moss *Grimmia pulvinata*.

Near the walled garden to the northeast was a veteran horse-chestnut tree.

Southern Fields

The land south of the house site and walled garden was mainly occupied by two **improved agricultural grassland (GAI)** fields. The western field had been recently reseeded and was species-poor. Broadleaved herbs were abundant in the eastern field, which may have been under tillage recently. The most abundant grasses were meadow foxtail and perennial ryegrass, with frequent rough meadow-grass, Yorkshire fog and crested dog's-tail. Creeping thistle was abundant, along with frequent meadow buttercup, creeping buttercup and white clover. The fields were separated by two fences, between which was a dry ditch occupied by bramble and grasses.



Improved agricultural grassland south of the former house site



Vegetable plots in southeast part of site

The southeastern part of the site was a vegetable plot used to grow potatoes, onions and brassicas, mapped as **horticultural land (BC2)**. The weed flora at the margins of the vegetable crops included common chickweed, creeping buttercup, field horsetail, fumitory, Welsh poppy, fat-hen, and perennial and smooth sow-thistles. To the east of this was a young orchard. A hawthorn hedge supplemented with recently planted ornamental shrubs

separated the fields from the adjacent industrial estate.

The western boundary of the site was a **treeline (WL2)** of mature lime, approximately 15 m tall. Occurring in the understorey of the treeline were hawthorn, English elm, ivy, hogweed, cleavers, cock's-foot, false oat-grass, cow parsley, wood avens and bush vetch. Also occurring was pencilled crane's-bill, an uncommon neophyte¹. A scrappy **hedgerow (WLI)** of box and beech ran parallel to the treeline, forming a laneway.

Beside the walled garden, the site boundary was formed by a small stream beside an overgrown **hedgerow (WLI)**. Beech was the main canopy species, with hazel and hawthorn composing the understorey. Bramble, lords-and-ladies, and the woodland ferns soft shield fern and hart's-tongue occurred on the steep hedge bank over the stream.

¹ *Neophytes* are alien plant species introduced to Ireland after 1500. Most are not invasive.

The southwestern corner of the site was occupied by a small **mixed broadleaved woodland (WD1)** copse dominated by a veteran horse-chestnut. This tree is listed by the Tree Council of Ireland as a Heritage Tree under the category “arboricultural curiosity” for its size and shape². The tree was measured in 2010 as being 19 m tall with a girth (circumference) of 3.3m. The field layer in the copse was



Veteran horse-chestnut Heritage Tree

sparse due to dense shading. Plant species present included cow parsley, ivy, wood dock, ramsons, ground-elder, soft shield fern and hart’s-tongue. The eastern part of the copse was occupied by the remains of an artificial pool. Water-cress occupied shallow water at the unshaded eastern side of the pond, and reed canary-grass grew at the edge along with nettles, meadowsweet and great willowherb. A young alder and a young ash, probably self-sown, were found at the edge of the pond. Also present were two veteran white willows, one of which had fallen in recent years.

Avenue

















Avenue at entrance of site, looking northward

The avenue at the entrance of the site was a gravel track with a central grassy strip flanked by grassy verges. Coarse, tussocky cock’s-foot and false oat-grass were the dominant species. On the east side was an approximately 5 m tall **hedgerow (WLI)** of hawthorn with some newly planted sycamore and lime. Individual lime trees had also been planted adjacent to the track. The west side of the avenue was a young **treeline (WL2)** of immature lime trees.

² <http://www.treecouncil.ie/heritagetrees/1326.htm>

Legend

Habitat types

-  Horticultural land
-  Horticultural land & buildings
-  Buildings and artificial surfaces
-  Recolonising ground & scrub
-  Recolonising ground
-  Improved agricultural grassland
-  Improved amenity grassland
-  Dry meadows and grassy verges
-  Mixed broadleaved woodland
-  Hedgerows
-  Treelines
-  Stone walls
-  Drainage ditches
-  Depositing/lowland rivers

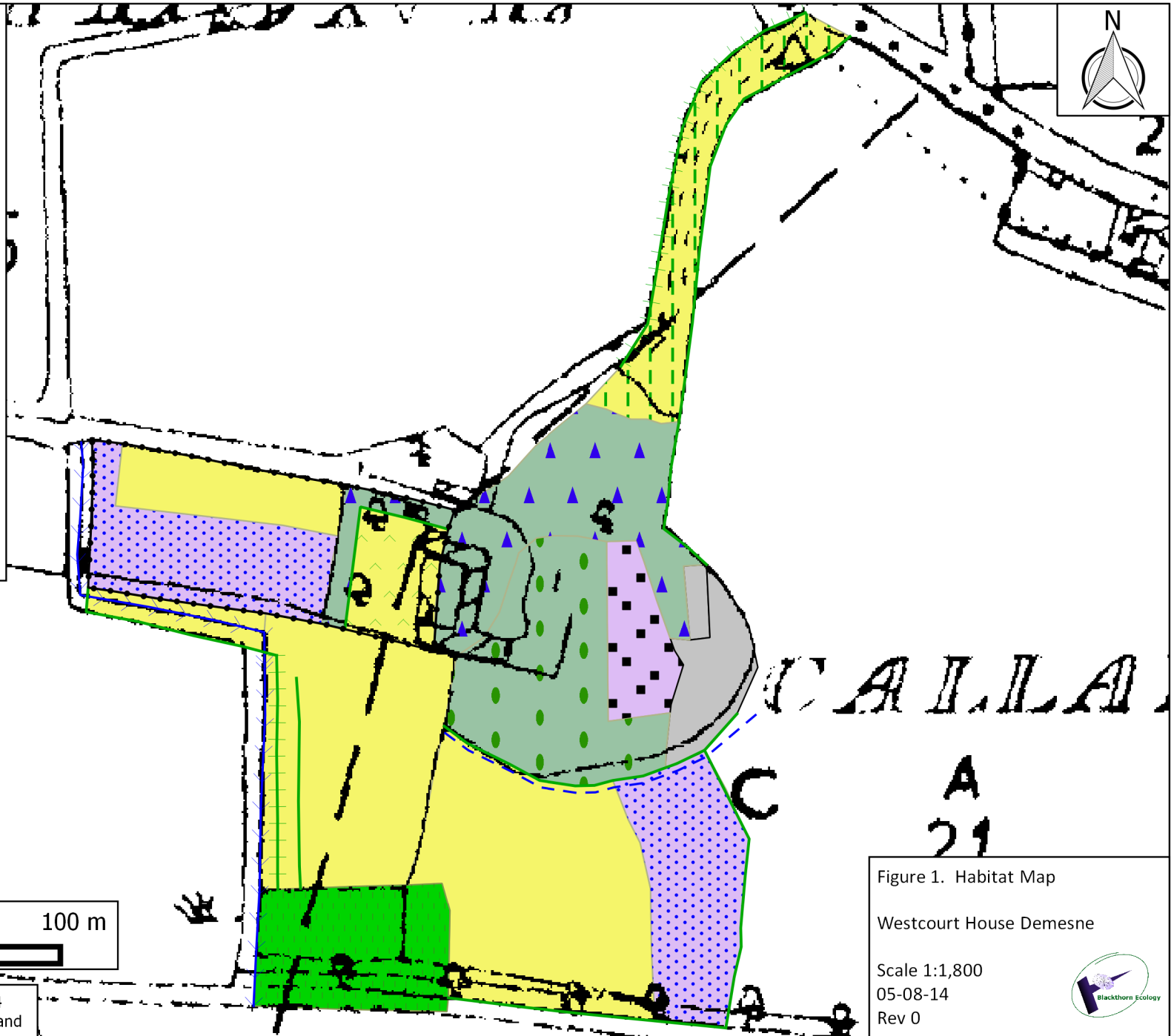


Figure 1. Habitat Map

Westcourt House Demesne

Scale 1:1,800

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3.2 Protected Species

No plant or animal species protected under the Wildlife Act 1976, as amended, or under the Habitats or Birds Directives were recorded. None of the plant species recorded (Appendix A) from the site is particularly rare or notable. No rare or Red List fauna were noted to occur on site.

There is suitable habitat present for common frog spawning in a wet area on the east side of the small parcel of broadleaved woodland. Some of the drains on site would also provide suitable spawning habitat. Common frog is protected under the Wildlife Act.

Crevices within the brick walls of the walled garden and some of the mature trees in the site may provide suitable day roosts for bats. The veteran horse chestnuts in particular have the potential to provide crevices or rot holes for bat roosts. All bat species are protected under the Wildlife Act and under Annex IV of the Habitats Directive.

4 EVALUATION

4.1 Conservation Value

The habitats present in the Westcourt House site are all frequently occurring habitats in Kilkenny and in Ireland. No Habitats Directive Annex I habitat were found on site.

No protected or Red List fauna were recorded on site. There is suitable habitat present for common frog and for bats. These species are legally protected but not rare or threatened.

The flora present includes some uncommon introduced species, such as pencilled crane's-bill and a subspecies of common vetch (*Vicia sativa* subsp. *sativa*), but none are protected or Red Listed (Curtis and McGough, 1988, Kingston, 2005). The flora of the site contains several species indicative of a long history of cultivation at the site.

The site is located adjacent to a part of the King's River floodplain that is part of the River Barrow and River Nore SAC (site code 2162). In a local context, the site can be considered to supplement the SAC, and there is connectivity between the site and the SAC via hedgerows and treelines. The site's habitats, however, are not of a type or quality such that it can be considered a stepping stone site in the context of the Habitats Directive.

Overall, the site is of **low local conservation value**, i.e. it is of low to moderate ecological interest in a local context.

The broader natural heritage value of the site is greater, however, due to the presence of the veteran horse-chestnut listed as a Heritage Tree. This tree is of natural heritage value at the **county scale** because of its listing.

4.2 Green Infrastructure

Following the criteria used in the assessment of Kilkenny City's Green Infrastructure (Smith *et al.*, 2010), the site as a whole is not of sufficient conservation value to be considered Green Infrastructure for biodiversity.

The woodland copse and the horse-chestnut Heritage Tree can be considered Green Infrastructure for their amenity and recreation functions and also for their roles in carbon sequestration. Hedgerows and treelines also have carbon sequestration function.

The grazing land and horticultural land is Green Infrastructure with food production value.

5 RECOMMENDATIONS

The following recommendations are given to conserve and enhance the natural heritage value and the Green Infrastructure functioning of the site:

- Any development of the site should safeguard its most important natural heritage feature, the Heritage Tree horse-chestnut.
- Conservation of the walled garden should take cognisance of the wall flora present. Most plants, such as ferns, mosses and wildflowers, growing on walls are not harmful to the fabric of the wall and should be retained.
- Crevices in the brick wall surrounding the walled garden may be suitable for roosting bats. Any conservation work that will involve rebuilding wall sections or sealing crevices should be preceded by a bat survey to ensure no bats are harmed.
- Existing hedgerows and treelines should be conserved and connectivity with the King's River corridor should be maintained and strengthened. Where necessary, gaps should be filled with tree and shrub species selected to match the present composition. For example, hawthorns should be used to fill gaps in hawthorn-dominated hedges. Although non-native, lime and horse-chestnut trees are a notable feature of the site and can be used to replace dead trees and gaps in treelines and avenues.
- Planting new trees and hedgerows should favour native trees and shrubs of local provenance, as a general rule. As noted above, lime and horse-chestnut would be appropriate for some specimen tree planting.
- Any development on the site should have regard for the proposed Callan Moat Trail and aim to integrate the recreational Green Infrastructure that will be developed by the project.
- Work on the old artificial pond or drains should avoid disturbing any frogs or frogspawn present. Interfering with frogs or frogspawn without a license from NPWS would constitute an offence under the Wildlife Acts.

6 REFERENCES

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APPENDIX A LIST OF PLANT SPECIES RECORDED

Nomenclature of vascular plant species follows (Stace, 2010).

Common Name	Scientific Name
Alder	<i>Alnus glutinosa</i>
Ash	<i>Fraxinus excelsior</i>
Beech	<i>Fagus sylvatica</i>
Biting Stonecrop	<i>Sedum acre</i>
Black Medick	<i>Medicago lupulina</i>
Bramble	<i>Rubus fruticosus agg.</i>
Box	<i>Buxus sempervirens</i>
Broad-leaved Dock	<i>Rumex obtusifolius</i>
Broad-leaved Willowherb	<i>Epilobium montanum</i>
Bush Vetch	<i>Vicia sepium</i>
Caper Spurge	<i>Euphorbia lathyris</i>
Cleavers	<i>Galium aparine</i>
Cock's-foot	<i>Dactylis glomerata</i>
Common Chickweed	<i>Stellaria media</i>
Common Cornsalad	<i>Valerianella locusta</i>
Common Field-speedwell	<i>Veronica persica</i>
Common Nettle	<i>Urtica dioica</i>
Common Soft-brome	<i>Bromus hordaceus</i>
Common vetch	<i>Vicia sativa subsp. sativa</i>
Cow Parsley	<i>Anthriscus sylvestris</i>
Creeping Bent	<i>Agrostis stolonifera</i>
Creeping Buttercup	<i>Ranunculus repens</i>
Creeping Cinquefoil	<i>Potentilla reptans</i>
Creeping Thistle	<i>Cirsium arvense</i>
Crested Dog's-tail	<i>Cynosurus cristatus</i>
Curled dock	<i>Rumex crispus</i>
Cut-leaved Crane's-bill	<i>Geranium dissectum</i>
Daisy	<i>Bellis perennis</i>
Dame's-violet	<i>Hesperis matronalis</i>
Dandelion	<i>Taraxacum officinalis</i>
Dog-rose	<i>Rosa canina</i>
Downy Birch	<i>Betula pubescens</i>
Elder	<i>Sambucus nigra</i>
English Elm	<i>Ulmus procera</i>
False Oat-grass	<i>Arrhenatherum elatius</i>
Fat-hen	<i>Chenopodium album</i>
Field Forget-me-not	<i>Myosotis arvensis</i>
Field Horsetail	<i>Equisetum arvense</i>
Field-rose	<i>Rosa arvensis</i>

Common Name	Scientific Name
Fool's-water-cress	<i>Apium nodiflorum</i>
Fumitory	<i>Fumaria sp.</i>
Germander Speedwell	<i>Veronica chamaedrys</i>
Goat Willow	<i>Salix caprea</i>
Great Mullein	<i>Verbascum thapsus</i>
Great Willowherb	<i>Epilobium hirsutum</i>
Greater Plantain	<i>Plantago major</i>
Ground-elder	<i>Aegopodium podagraria</i>
Groundsel	<i>Senecio vulgaris</i>
Hart's-tongue Fern	<i>Asplenium scolopendrium</i>
Hawthorn	<i>Crataegus monogyna</i>
Hazel	<i>Corylus avellana</i>
Hedge Bindweed	<i>Calystegia sepium</i>
Herb-Robert	<i>Geranium robertianum</i>
Hogweed	<i>Heracleum sphondylium</i>
Horse chestnut	<i>Aesculus hippocastanum</i>
Intermediate Polypody	<i>Polypodium interjectum</i>
Ivy	<i>Hedera helix</i>
Ivy-leaved Toadflax	<i>Cymbalaria muralis</i>
Lesser Trefoil	<i>Trifolium dubium</i>
Lime	<i>Tilia x europaea</i>
Lords-and-Ladies	<i>Arum maculatum</i>
Maidenhair Spleenwort	<i>Asplenium trichomanes</i>
Meadow Buttercup	<i>Ranunculus acris</i>
Meadow Foxtail	<i>Alopecurus pratensis</i>
Meadowsweet	<i>Filipendula ulmaria</i>
Pellitory-of-the-wall	<i>Parietaria judaica</i>
Pencilled Crane's-bill	<i>Geranium versicolor</i>
Pendulous Sedge	<i>Carex pendula</i>
Perennial Rye-grass	<i>Lolium perenne</i>
Perennial Sow-thistle	<i>Sonchus arvensis</i>
Pineappleweed	<i>Matricaria discoidea</i>
Polypody	<i>Polypodium vulgare</i>
Potato	<i>Solanum tuberosum</i>
Prickly Sow-thistle	<i>Sonchus asper</i>
Ramsons	<i>Allium ursinum</i>
Rat's-tail Fescue	<i>Vulpia myuros</i>
Red Clover	<i>Trifolium pratense</i>
Red Dead-nettle	<i>Lamium purpureum</i>
Reed Canary-grass	<i>Phalaris arundinacea</i>
Rosebay Willowherb	<i>Chamerion angustifolium</i>
Rough Hawk's-beard	<i>Crepis biennis</i>
Rough Meadow-grass	<i>Poa trivialis</i>

Common Name	Scientific Name
Rue-leaved Saxifrage	<i>Saxifraga tridactylites</i>
Rusty Willow	<i>Salix cinerea</i> subsp. <i>oleifolia</i>
Rustyback	<i>Asplenium ceterach</i>
Scarlet Pimpernel	<i>Anagallis arvensis</i>
Shepherd's-purse	<i>Capsella bursa-pastoris</i>
Shining Crane's-bill	<i>Geranium lucidum</i>
Smooth Sow-thistle	<i>Sonchus oleraceus</i>
Soft Shield-fern	<i>Polystichum setiferum</i>
Spear Thistle	<i>Cirsium vulgare</i>
Spindle	<i>Euonymus europaeus</i>
Swine-cress	<i>Lepidium coronopus</i>
Turnip	<i>Brassica rapa</i>
Water-cress	<i>Nasturtium officinale</i>
Welsh Poppy	<i>Meconopsis cambrica</i>
White Clover	<i>Trifolium repens</i>
White Willow	<i>Salix alba</i>
Wild Parsnip	<i>Pastinaca sativa</i>
Wood Avens	<i>Geum urbanum</i>
Wood dock	<i>Rumex sanguineus</i>
Yorkshire-fog	<i>Holcus lanatus</i>



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