



**LAIGH HILLS PARK
DUNBLANE
STIRLING**

PRELIMINARY ECOLOGICAL ASSESSMENT

SEPTEMBER 2013

For

CONNON DESIGN

CONTENTS

| | Page |
|---|-------------|
| 1.0 Introduction | 1 |
| 2.0 Site Location and Description | 1 |
| 3.0 Survey Method | 2 |
| 4.0 Scoping | 3 |
| 5.0 Statutory and Non-Statutory Designations | 3 |
| 6.0 Survey Results | 3 |
| 6.1 Habitat | 3 |
| 6.2 European Protected Species | 9 |
| 6.2.1 Otter | 9 |
| 6.2.2 Bats | 9 |
| 6.2.3 Great Crested Newts | 9 |
| 6.3 Badger | 9 |
| 6.4 Water Vole | 9 |
| 6.5 Birds | 9 |
| 6.6 Amphibians & Reptiles | 9 |
| 6.7 Invertebrates | 10 |
| 6.8 Fish | 10 |
| 7.0 Conclusions | 10 |
| 7.1 Habitats | 10 |
| 7.2 Otter | 11 |
| 7.3 Bats | 11 |
| 7.4 Badger | 11 |
| 7.5 Water Vole | 11 |
| 7.6 Birds | 11 |
| 7.7 Amphibians & Reptiles | 12 |
| 7.8 Invertebrates | 12 |
| 8.0 Summary of Recommendations | 12 |
| 8.1 Primary Surveys | 12 |
| 8.2 Secondary Surveys | 13 |
| 8.3 Habitat Recommendations | 13 |

Refer to Figures

| | | |
|-----------------|----------------------------|----------|
| <i>Figure 1</i> | <i>Site Location</i> | <i>1</i> |
| <i>Figure 2</i> | <i>Phase 1 Habitat Map</i> | <i>8</i> |

Refer to Appendices

| | |
|-------------------|-------------------------------|
| <i>Appendix 1</i> | <i>Plant List</i> |
| <i>Appendix 2</i> | <i>Summary of Legislation</i> |

1.0 INTRODUCTION

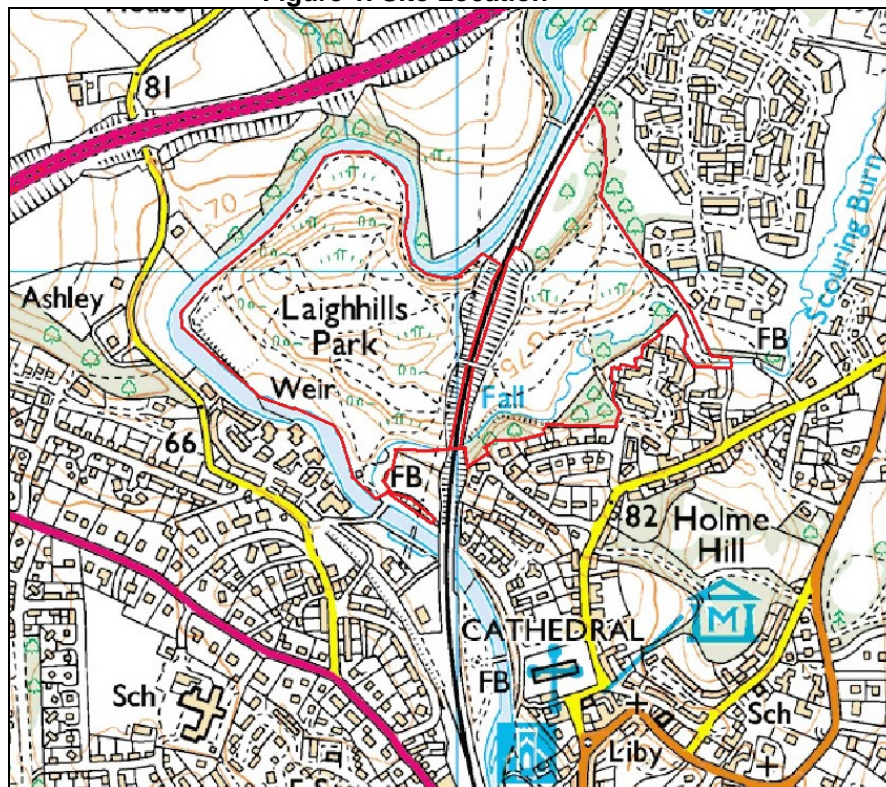
This report was commissioned by Connon Design on behalf of their client Stirling Council and concerns a preliminary ecological assessment of Laigh Hills Park, at Dunblane, Stirling. Stirling Council is proposing to redesign the park.

The survey, carried out in September 2013, was requested in order to provide Connon Design (and their client) with an overview of the area as regards the main habitat types and the presence or likely presence of protected or notable species. Particular attention was given to the potential for otter, water vole, badger, bat, amphibian, breeding bird and invertebrate activity within the survey area, which included the park area and a 50m boundary zones (where practicable).

2.0 SITE LOCATION AND DESCRIPTION

The survey area is located at Grid Reference NN 778 019.

Figure 1. Site Location



Reproduced from Ordnance Survey data by permission of Ordnance Survey® on behalf of The Controller of Her Majesty's Stationery Office. ©Crown Copyright. All rights reserved. Licence Number AL100028592.

The park predominantly consists of a mix of semi-acid grassland, bracken dominated patches, areas with tall ruderals, trees and shrubs – in groups and scattered individuals - wet meadows, the Scouring Burn, amenity (mown) grassland, grass football pitches, a concrete-lined skateboard park, a children's play area, a formalised garden overlooking the Allan Water to the south and edged (in part) by the Allan Water to north, west and south. The wider area is split in to two halves by an active railway line – running south to north.

Land to the west of the park comprises housing and agricultural land – the river forming a strong boundary feature in between; land to the east consists of a mix of housing and open space; land to the north consists of agricultural fields and housing – again the river forms a boundary to the west of the railway line. Land to the south consists primarily of housing with the river forming a strong boundary to the site west of the railway line.



Photo 1. Viewed north and west towards amenity grassland area and river



Photo 2. Formalised garden area to south of park

3.0 SURVEY METHOD

Phase 1 Habitat Survey was undertaken on 10 and 24 September 2013, using standard Phase 1 methodology as outlined in the *JNCC Handbook for Phase 1 Habitat Survey* (JNCC, 1990). All accessible parts of the site were walked and mapped, and target notes were taken where areas of habitat were too small to map, or to provide further information on features of note. The survey was extended out by 50m around the area boundary where access was available.

During Phase 1 Habitat Survey note was taken of the actual or likely presence of faunal species such as otter, water vole, badger, bats, amphibians, birds and invertebrates, and habitats assessed for their likelihood to support these species. Habitats were also considered for their own significance and whether more detailed habitat work would be required.

Weather conditions were good during both periods of survey – dry and bright. September is later in the year for recording some plant species, and faunal species and activity such as breeding amphibians and nesting birds are also past recording. However, as this is a preliminary assessment, specific surveys can be recommended and undertaken in 2014 at the appropriate time.

Following completion of the habitat survey, all habitats (and species) identified as being present within the site are checked against the following documents in order to determine their specific legislative status and ecological significance:

- EC Habitats Directive (Annex I, II, IV);
- EC Birds Directive (Annex I, II);
- The Conservation (Natural Habitats, &c.) Regulations 1994;
- Berne Convention;
- Wildlife & Countryside Act 1981 (Schedules 1, 5, 8, 9);
- Protection of Badgers Act 1992;
- Local Biodiversity Action Plan
- National Biodiversity Action Plans
- Red Data Books
- RSPB Lists of Birds of Conservation Concern
- Scarce Plants in Britain (Stewart et al 1994)
- and other publications as relevant

4.0 SCOPING

Scoping has been undertaken and several organisations have been contacted for potential information on species (Stirling Council, RSPB, SOC, Butterfly Conservation, Central Bat Group, Scottish Badgers). There does not appear to be a local Amphibian & Reptile Group, or Local Biodiversity Records Centre.

Stirling Council advised that they do not hold any ecological information and that no local records centre exists for biological data in Stirling District. However, subsequently the Biodiversity Officer advised that there is a Local Wildlife Site designation for part of the site. There is no map, and a request to Scottish Wildlife Trust who may have a map has not yet had a response. Reading the LWS description, this would imply that the LWS is likely to be the river corridor and an extent of land (described as a narrow corridor), and not the whole site.

From the Local Biodiversity Action Plan (under review), Action Plans that would potentially be relevant to the site are for Barn Owl, Bats, Swift, Water Vole, Rivers & Burns, and potentially those relating to Atlantic Salmon and Lampreys (Allan Water) although there appears to be a restriction on movement further downstream for fish, and the river at this point is unsuitable for Lampreys.

The SOC (Scottish Ornithologists Club) confirmed Kingfisher higher up the Allan Water, Sand Martin on the banks of the river at the site, and that the site is used by spring/early summer and winter migrant species such as warblers and thrushes.

A report on the site by Scottish Wildlife Trust was done in 1994 (SWT Wildlife Site Survey, Laighhills, 1994). This is a thorough record of the site at that time, including plant lists. There are no species of particular significance in the plant record, but the report should form part of the data package for the site and its future management.

Alan Booth of the Dunblane Community Council commented on the first draft of this report, providing some data for the site. Revisions and inclusions have been made where relevant.

5.0 STATUTORY AND NON-STATUTORY DESIGNATIONS

There are no statutory or non-statutory designations for the park area or the surrounding area. It has been suggested that Laigh Hills Park should be considered as a Local Nature Reserve under Stirling Council's Urban Nature Conservation Strategy – adopted by the council pre-1999. The Scouring Burn was also identified as an important wildlife corridor to be protected from developments.

6.0 SURVEY RESULTS

6.1 Habitat

The park contains 13 main Phase 1 Habitat categories, plus fenceline boundary features.

- A1.1.1 Broadleaved semi-natural woodland
- A2.1 Dense/continuous scrub

- A2.2 Scattered scrub
- A3.1 Scattered broadleaved trees
- A3.2 Scattered coniferous trees
- B1.2 Semi-improved acid grassland
- B2.2 Semi-improved neutral grassland
- B5 Marshy grassland
- C1.1 Continuous Bracken
- C3.1 Tall ruderal
- F1 Swamp
- G2 Running water
- I4.1 Acid/neutral exposure
- J1.2 Amenity grassland

The park predominantly consists of a mix of grassland types: semi-improved acid and neutral grasslands, marshy grasslands, and amenity grassland. The grasslands are bracken dominated in patches, and there are areas dominated by tall ruderals. Trees and shrubs – in groups and scattered individuals – run around and through the site and patches of dense scrub occur. Other features are wet meadows, the Scouring Burn, grass football pitches, a concrete-lined skateboard park, a children’s play area, and a formalised garden overlooking the river (Allan Water) to the south and edged (in part) by the Allan Water to north, west and south. The wider area is split into two halves by an active railway line – running south to north. The railway is not a barrier to movement of wildlife.

The Allan Water is a valuable riparian and wildlife corridor. The river varies in width and depth and appears to be carrying clean, clear water.

The Scouring Burn also provides further diversity of habitat conditions, from the freshwater channel to the associated wetland plant communities along its banks.

The survey was late in the year for a detailed plant list and this will need to be revisited. Nevertheless, several species were recorded (Appendix 1). No species of particular note or rarity were recorded, although the native bluebell is present. The extent of this species will need to be revisited in the appropriate months.



Funghi, mosses, and lichens, will all form a component of the park’s diversity, and may be worth further investigation.



Schedule 9 (Wildlife & Countryside Act 1981 – Appendix 2), non-native, aggressive species recorded were Giant Hogweed. Noxious weeds are also present: Broadleaved Dock, Ragwort.



The following target notes are given on Figure 2 on Page 8.

Table 1: Phase 1 Habitat Survey Target Notes

| Target Note | Description |
|--------------------|---|
| TN 1 NN 776 019 | Un-mown grassland patch at the end of the football pitch with cock’s-foot (<i>Dactylis glomerata</i>), perennial rye grass (<i>Lolium perenne</i>), Yorkshire fog (<i>Holcus lanatus</i>), bent grass (<i>Agrostis</i> sp(p)), yarrow (<i>Achillea millefolium</i>), broadleaved dock (<i>Rumex obtusifolius</i>), common knapweed (<i>Centaurea nigra</i>), ribwort plantain (<i>Plantago lanceolata</i>) and cat’s-ear (<i>Hypochaeris radicata</i>) |
| TN 2 NN 776 019 | The edge to the river is lined with trees and shrubs including ash (<i>Fraxinus excelsior</i>), sycamore (<i>Acer pseudoplatanus</i>), oak (<i>Quercus</i> sp(p)), rowan (<i>Sorbus aucuparia</i>), hazel (<i>Corylus avellana</i>), rose (<i>Rosa</i> sp(p)) and hawthorn (<i>Crataegus monogyna</i>). Wood avens (<i>Geum urbanum</i>), great wood-rush (<i>Luzula sylvatica</i>), meadowsweet (<i>Filipendula ulmaria</i>), common dog-violet (<i>Viola riviniana</i>), butterbur (<i>Petasites hybridus</i>) and false brome (<i>Brachypodium sylvaticum</i>) were all recorded in the field layer. |
| TN 3 NN 776 019 | Woodland strip with sycamore, birch (<i>Betula</i> sp(p)), elder (<i>Sambucus nigra</i>) and hawthorn. A lot of young growth to edge of the football pitch. A single large mature sycamore stands within the strip – the largest tree within the park – at NN 77668 01936. |
| TN 4 NN 776 018 | Grass football pitch on ground, raised to create level playing area. This wider grassland alongside the river has been classified as amenity grassland, due to the conditions (intensively mown grassland habitat) although there may be some aspects (species mix) that fit with semi-improved neutral grassland. |

| | |
|-----------------------------|---|
| <p>TN 5 NN 777 020</p> | <p>The Allan Water. The river has a variable width and depth but approximately 20m wide and c. 25cm deep – with deeper pools (at time of survey). It has a fast/rapid flow rate, over sand, gravel, pebbles, cobbles, boulders and bedrock. The water itself would appear to be very clear/clean. Giant hogweed (<i>Heracleum mantegazzianum</i>) along the edge/margins – well established in some parts.</p>  |
| <p>TN 6 NN 777 019</p> | <p>Area dominated by broom (<i>Cytisus scoparius</i>) with occasional rowans.</p> |
| <p>TN 7 NN 778 019</p> | <p>Grass football pitch.</p> |
| <p>TN 8 NN 778 021</p> | <p>Low-lying ground by the river. Largely a mix of ruderals (rosebay willowherb (<i>Chamerion angustifolium</i>)), with bracken (<i>Pteridium aquilinum</i>) in parts but principally a wet area dominated by meadowsweet (<i>Filipendula ulmaria</i>) and reed canary grass (<i>Phalaris arundinacea</i>). Giant hogweed is well established. Trees through the area and up to the river include alder (<i>Alnus glutinosa</i>), willows (<i>Salix</i> spp), birch (<i>Betula</i> sp(p)) rowan, hawthorn and oak where the ground rises away from the river.</p> |
| <p>TN 9 NN 778 020</p> | <p>Steeply banked ground with oak, rowan, birch, broom over bracken. Broadleaved dock (<i>Rumex obtusifolius</i>) and common sorrel (<i>Rumex acetosa</i>) both recorded.</p>  |
| <p>TN 10 NN 778 018</p> | <p>Concrete-lined skateboard park.</p> |
| <p>TN 11 NN 778 018</p> | <p>Raised bank with dense scrubby vegetation consisting of elder (<i>Sambucus nigra</i>), hawthorn, rowan, maple (<i>Acer</i> sp(p)), broom, bramble (<i>Rubus fruticosus</i>), bracken, rosebay willowherb, common nettles (<i>Urtica dioica</i>), common knapweed (<i>Centaurea nigra</i>) and false-oat grass (<i>Arrhenatherum elatius</i>). A large play park slide and steps cut through the vegetation from the top of the bank to the play park below.</p> |
| <p>TN 12 NN 778 017</p> | <p>Children's play park.</p> |
| <p>TN 13 NN 778 017</p> | <p>Woodland along the Scouring Burn with a mix of wych elm (<i>Ulmus glabra</i>), ash (<i>Fraxinus excelsior</i>), holly (<i>Ilex aquifolium</i>), sycamore, alder, hawthorn, birch, willow, spruce (<i>Picea</i> sp(p)), cherry (<i>Prunus</i> sp(p)), rhododendron (<i>Rhododendron</i> sp(p)), cotoneaster (<i>Cotoneaster</i> sp(p)), male fern (<i>Dryopteris filix-mas</i>), broad buckler fern (<i>Dryopteris dilatata</i>), hard-shield fern (<i>Polystichum aculeatum</i>), wood avens (<i>Geum urbanum</i>), bluebells (<i>Hyacinthoides non-scripta</i>), primrose (<i>Primula vulgaris</i>), herb Robert (<i>Geranium robertianum</i>), hedge woundwort (<i>Stachys sylvatica</i>), wavy-hair cress</p> |

| | |
|---------------------|--|
| | (<i>Cardamine flexuosa</i>), opposite-leaved golden saxifrage (<i>Chrysosplenium oppositifolium</i>), foxglove (<i>Digitalis purpurea</i>), red-dead nettle (<i>Lamium purpureum</i>) and willowherbs (<i>Epilobium</i> spp). |
| TN 14 NN 778 016 | Small sports pavilion and annex building. Tile/slate roofs, wooden soffit around pavilion. Do not appear to be in use – small structure derelict. Larger structure has some potential for bat roosts but overall they appear to be limited.  |
| TN 15 NN 779 020 | Steep-sided wooded bank to river with oak (<i>Quercus</i> sp(p)), rowan, hawthorn, hazel (<i>Corylus avellana</i>) and ash. |
| TN 16 NN 779 016 | Formalised garden area with a backdrop of an exposed rock-face (quarried ?) with overhanging trees and shrubs (ash, sycamore, beech (<i>Fagus sylvatica</i>)). The garden has been planted up with exotic species, has areas of mown grass and is edged with a metal railing along the front edge to the main path. |
| TN 17 NN 779 019 | Large area of slumped bank – exposing soil below. |
| TN 18 NN 779 018 | Open grassland, dominated by wavy-hair grass (<i>Deschampsia flexuosa</i>), tormentil (<i>Potentilla erecta</i>), heath bedstraw (<i>Galium saxatile</i>), sheep's sorrel (<i>Rumex acetosella</i>) and devil's-bit scabious (<i>Succisa pratensis</i>) but also with false-oat grass, Yorkshire fog (<i>Holcus lanatus</i>), foxglove, bluebells, fescue (<i>Festuca</i> sp(p)) and bent (<i>Agrostis</i> sp(p)) grasses. Small copper (<i>Lycaena phlaeas</i>) butterfly recorded, along with three bumblebee species – <i>Bombus pascuorum</i> , <i>B. lucorum</i> and <i>B. terrestris</i> . Rabbit burrows and diggings recorded. |
| TN 19 NN 779 017 | Giant hogweed with flowering heads spread along the edges of the watercourse and up at edge of railway line – NN 77943 01745. |
| TN 20 NN 780 020 | Otter spraint/droppings (old and fresh) on a boulder in-stream – NN 78012 02000. |
| TN 21 NN 780 019 | Giant hogweed at the top of the steep wooded bank down to the river – NN 78020 01969. Possibly some treatment being undertaken but fresh growth clear as well. |
| TN 22 NN 780 018 | Banks to the railway line – either side, are dominated by ruderals (rosebay willowherb) and bracken, with scattered scrub (birch, rowan, hawthorn, willow and broom)  |
| TN 23 NN 780 017 | Wooded bank from burn up to the gardens above, dominated by ash, sycamore, willow, hawthorn, elder, rowan with alder by the burn. Rosebay willowherb scattered through with common nettle and ferns (<i>Dryopteris</i> spp). Pink purslane (<i>Montia sibirica</i>) recorded. |
| TN 24 NN 781 017 | Giant hogweed plants recorded – NN 78129 01772, along with a very distinctive stand of <i>Dryopteris</i> fern– most likely sterile hybrid. |

| | |
|-----------------------------|---|
| <p>TN 25 NN 781 020</p> | <p>Broadleaved woodland along banked ground. The woodland consists of wych elm, ash, willow, hawthorn and bird cherry (<i>Prunus padus</i>). Rabbits are very active in one part of the bank with much exposed sandy soil.</p> |
| <p>TN 26 NN 781 019</p> | <p>Bike (BMX) circuit – appears to be largely out of use – now dominated by ruderals.</p> |
| <p>TN 27 NN 781 018</p> | <p>Grassland and tall ruderal mix. Species recorded include rosebay willowherb, raspberry (<i>Rubus idaeus</i>), heath bedstraw, Yorkshire fog, sweet vernal grass (<i>Anthoxanthum odoratum</i>), common sorrel, bent grass (<i>Agrostis</i> sp(p)), ragwort (<i>Senecio jacobaea</i>) and harebell (<i>Campanula rotundifolia</i>).</p> |
| |  |
| <p>TN 28 NN 781 021</p> | <p>Low-lying ground dominated by tall ruderals, tall herbs and grasses but with damp/wet mix. Species recorded include rosebay willowherb, creeping thistle (<i>Cirsium arvense</i>), cock's-foot grass (<i>Dactylis glomerata</i>), false-oat grass, meadowsweet, wild angelica (<i>Angelica sylvestris</i>).</p> |
| <p>TN 29 NN 782 022</p> | <p>Giant hogweed stand – NN 78222 02196. It would appear that treatment of the stand is being undertaken. Meadow crane's-bill (<i>Geranium pratense</i>), hogweed (<i>Heracleum sphondylium</i>) and tufted vetch (<i>Vicia cracca</i>) all recorded close to railway line.</p> |
| <p>TN 30 NN 782 019</p> | <p>Small pool of water just off the footpath – NN 78262 01927. It is likely, from the habitat conditions and general appearance of the pool, that it retains water for much of the year. Species recorded include branched bur-reed (<i>Sparganium erectum</i>), common water-starwort (<i>Callitriche stagnalis</i>), water mint (<i>Mentha aquatica</i>), common duckweed (<i>Lemna minor</i>), lesser spearwort (<i>Ranunculus flammula</i>), water forget-me-not (<i>Myosotis scorpioides</i>) and sweet grass (<i>Glyceria</i> sp(p)).</p> |
| <p>TN 31 NN 782 017</p> | <p>Dense scrubby woodland with willows, alder, sycamore, rowan, hawthorn, elder, birch and lime (<i>Tilia x europaea</i>)</p> |
| <p>TN 32 NN 783 019</p> | <p>Generally wetter conditions alongside the burn with common reed (<i>Phragmites australis</i>), reed canary grass (<i>Phalaris arundinacea</i>), wild angelica, meadowsweet, great willowherb (<i>Epilobium hirsutum</i>) and common nettles.</p> |
| |  |
| <p>TN 33 NN 783 018</p> | <p>Greater plantain (<i>Plantago major</i>) and a patch of Canadian goldenrod (<i>Solidago canadensis</i>) both recorded close by.</p> |
| <p>TN 33 NN 783 018</p> | <p>Large number of otter spraints below the footbridge – NN 73420 01861(hard to make out number but old to recent)</p> |

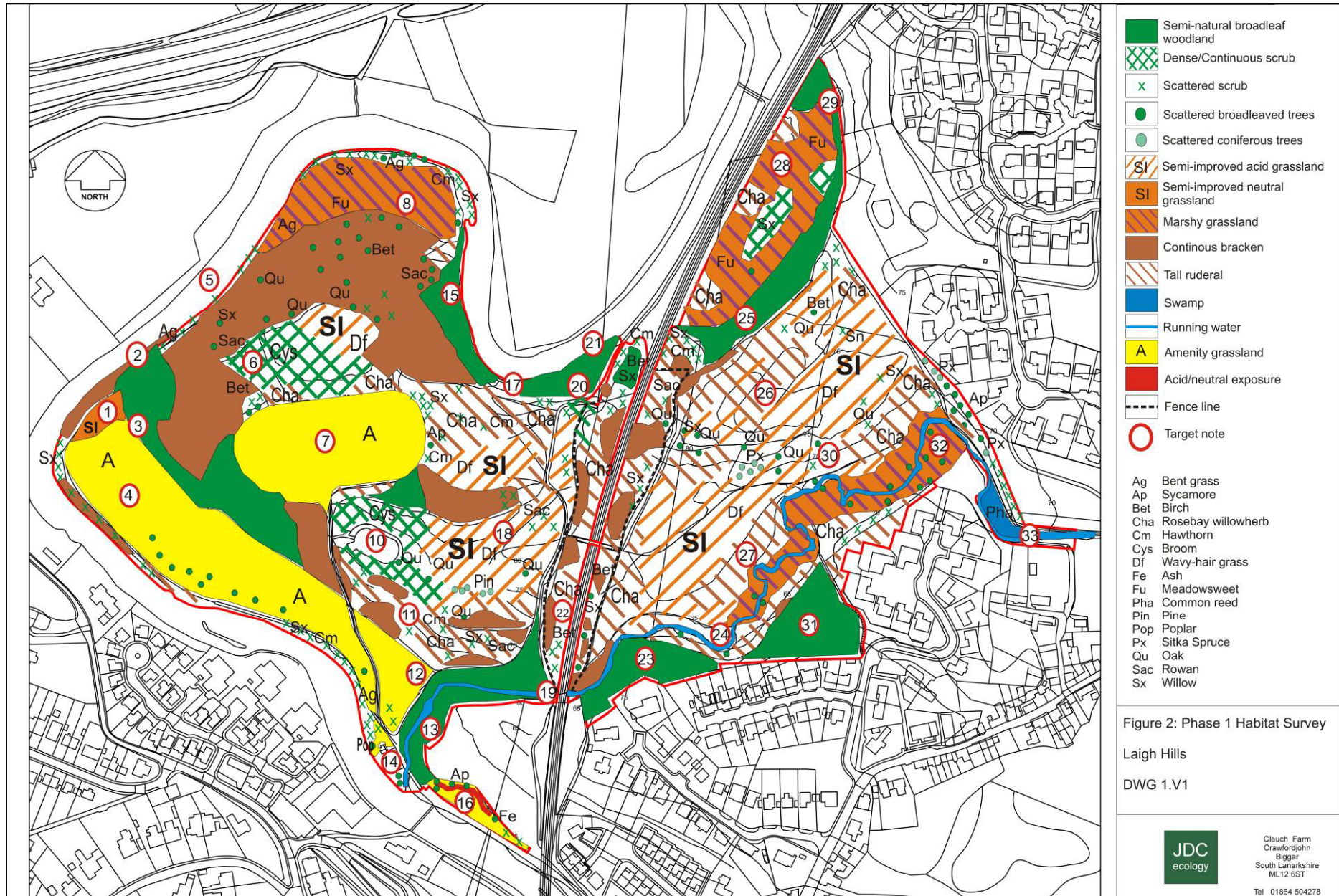


Figure 2: Phase 1 Habitat Survey

Laigh Hills

DWG 1.V1



Cleuch Farm
Crawfordjohn
Biggar
South Lanarkshire
ML12 6ST

Ecological & Wildlife
Consultancy

Tel 01864 504278
Fax 01864 504069
mail@jdc-ecology.co.uk

Reproduced from Ordnance Survey® data by permission of The Controller of Her Majesty's Stationery Office. Crown Copyright© All rights reserved. Licence Number AI100028592.

6.2 European Protected Species

European Protected Species are governed by The Conservation Regulations 1994 (Appendix 2).

6.2.1 Otter (*Lutra lutra*)

Two watercourses pass through or are at the boundary to the park – the Allan Water and the Scouring Burn. Neither watercourse was surveyed in detail. However, field signs of otter were recorded on both watercourses (see TN 20 and TN 33), and conditions could permit lying up along both watercourses.

6.2.2 Bats

It is likely that bats would be recorded foraging and commuting around the park. Several trees and the sports pavilion building (see TN 14) may have some potential for roosting bats.

6.2.3 Great Crested Newts (GCN – *Triturus cristatus*)

There is no clear evidence of breeding opportunities within the park or in the immediate area. A small pool was established to the east of the railway line (see TN 30) but the pool would appear to have very limited potential in relation to GCN's.

6.3 Badger (*Meles meles*)

Badgers and their setts are protected by the Protection of Badgers Act 1992 (Appendix 2).

No evidence of badger was recorded within the boundaries of the site during the course of the Phase 1 Habitat Survey.

6.4 Water Vole (*Arvicola amphibius*)

Water vole burrows and animals in the burrows are protected by the Wildlife & Countryside Act 1981 (Appendix 2).

The Scouring Burn has potential for water voles. However, no evidence was found during the course of the Phase 1 Habitat Survey, although the burn was not surveyed in detail. There is anecdotal account of water voles on the burn and it would be useful to carry out water vole survey to determine if this species is still present.

6.5 Birds

All wild birds, their nests, and eggs are protected by the Wildlife & Countryside Act 1981.

Species recorded within or around the park during the period of survey included white-throated dipper (*Cinclus cinclus*), grey heron (*Ardea cinerea*), common blackbird (*Turdus merula*), black-billed magpie (*Pica pica*), hedge accentor (*Prunella modularis*), chaffinch (*Fringilla coelebs*), common wood pigeon (*Columba palumbus*) and European robin (*Erithacus rubecula*).

There will be a larger assemblage at the site, particularly in the breeding season. There are opportunities throughout the site for nesting birds to be present, and the site provides a forage and roosting resource throughout the year. Further bird work will be necessary to determine use of the site and advise on detailed design for the park to avoid significantly negatively impacting the bird population. This would relate mainly to a Breeding Bird Survey. The SOC have confirmed that winter migrants such as fieldfare and redwing use the site.

6.6 Amphibians and Reptiles

A small pool is established to the east of the railway line (see TN 30). There may be some potential for amphibians but that would appear to be limited. Alan Booth of Dunblane Community Council advised that frogs and small newt species have been recorded.

There is scope for reptiles in the park, although this is likely to be limited to the common lizard.

6.7 Invertebrates

Small copper (*Lycaena phlaeas*) butterfly recorded, along with three bumblebee species – *Bombus pascuorum*, *B. lucorum* and *B. terrestris*. It may be worth considering invertebrate survey for broad groups as part of the data gathering exercise for the park, and to inform re-design in terms of food and breeding patches for some species, butterflies for example. Broad groups would include: Hymenoptera (bees, wasps, ants, etc), Lepidoptera (butterflies, moths), Coleoptera (beetles) and Orthoptera (grasshoppers, ground hoppers, crickets). Freshwater invertebrates in the burn could also be sampled.

6.8 Fish

Three-spined stickleback (*Gasterosteus aculeatus*) were recorded in the Scouring Burn. There is potential for fish on the Allan Water although desktop search suggests that there is an issue downstream for passage of fish, therefore salmon and lamprey for example may not make it to this stretch of the river. The river here is also unsuitable for lamprey. Alan Booth of Dunblane Community Council advised that the river has been stocked with brown trout in the past.

It is unlikely that the Allan Water would be affected by any proposals for the park. If that were to change it may be necessary to undertake detailed survey of the river habitats and species in due course.

7.0 CONCLUSIONS

7.1 Habitat

The site is a mix of amenity/recreational areas, and semi-natural habitats, and there is a good mixture of habitats across the survey area. Although they do not appear (from the broad based habitat survey) to be of significant quality relative to the recorded species, they do provide opportunities (niches) for a wide range of species and can be considered significant in that sense.

The main areas of interest are: the broadleaved woodlands, some of which may have been enhanced in the past by planting, but present a more 'natural' quality in their composition and structure; the grasslands, variable in their base status – ranging from neutral to acidic; the wet meadows (good foraging areas for invertebrates, birds and small mammals); the watercourses (potentially significant corridors for the movement of fish and mammals); and the dense scrubby habitats that provide good nesting habitat for birds. With the Local Wildlife Site designation for the river corridor at least (extent of the LWS not being known), this raises the need to protect this significant river and its habitats.

An NVC (National Vegetation Classification) survey of the plant communities may be of value to understand the vegetation types across the wider area, particularly if any significant changes to the landscape are envisaged.

Alan Booth of Dunblane Community Council has undertaken NVC surveys of the Laigh Hills area in the past and has made some suggestions with regard to management of habitats. He believes that the M27 *Filipendula ulmaria-Angelica sylvestris* mire is probably the "best" habitat on the LA site and that there may be some potential to expand the plant community further. This is clearly something that can be looked at once full information is gathered on the site. Certainly, retaining the swamp habitat and protecting the Scouring Burn and associated marshy grassland/mire habitats is recommended.

There is an issue with regard to the spread and local dominance of giant hogweed, which should be addressed. However, this is likely to require more than just the eradication of the plant from the park area, as it is well established to the north of the park (over the river) and potentially further upstream. A programme of treatment to manage and eradicate giant hogweed should be considered, that will involve all landowners and interested parties.

The dominance of other invasive species such as bracken and rosebay willowherb should be considered. At the time of survey these species were very prominent across the landscape, dominating large swathes. However, they provide vital resources, in terms of food and cover for a range of species and their ecological significance would require a more informed view of the conditions within the park over a greater time period (seasons) before decisions on management should be taken. The two areas of dense scrub adjacent to the football pitches are also a significant resource, particularly for nesting birds, and these areas take higher priority earlier in the year when the bracken and willowherb has not yet grown.

low

The park offers a range of opportunities and resources to those species that make use of and inhabit the park – human and non-human alike. Those opportunities range from the more formal open spaces managed for recreational use (mown grassland for play or relaxation, grass football pitches), the more managed ‘garden’ space close to the river, and the footpath network for casual walking and dog walking. It then moves through a less intensively managed aspect of well-used footpaths and desire-lines, largely as a result of the dog walkers, through less used (in a human sense) spaces and ending with the more natural (‘wild’) habitats (east and north) – particularly the wetter areas and those slopes/banks that are difficult for people to pass through.

There is scope for the park to be utilised for educational purposes, whether a simple a “nature walk” with associated interpretation around the park, or could encompass activities such as pond dipping, plant identification, simple invertebrate studies, a “bat walk” (assuming a bat presence), putting up bird and bat boxes, creating invertebrate habitats (ie dead wood piles, installing bee houses). The list goes on. It would be worth investigating this with schools in the area.

During the initial survey work (Phase 1 Habitat Survey - 2013) it became clear that there are knowledgeable and experienced people living in the Dunblane area that could have a valuable input in to the direction of the management of the park, and continued consultation will undoubtedly be of significant value.

7.2 Otters

It is clear that otters move along both the Allan Water and the Scouring Burn. The Allan Water should be a more significant channel in relation to food resources and places of shelter. However, the Scouring Burn channel will provide a corridor for movement and potential links to areas with good cover/shelter. Both watercourses should be protected from adverse impact at all times.

A more detailed survey of otter use of the watercourses (and park) should be undertaken to ensure best practice, particularly to determine if any places of shelter are present within licensable distance of any works at the re-design phase (currently licensable distance is 30m, but can be much more if a natal holt is present).

7.3 Bats

There is some potential for roosting bats within the boundaries of the park, in particular the pavilion building near the entrance to the park and in some of the mature trees. It is certain that bats will use the site for forage and commuting (the tree belts and watercourse corridors providing easy commuting routes and foraging edges). While a bat survey of the park in general would be useful in terms of gathering data, it would be an extensive exercise. It may be more realistic to determine what trees, if any, would be removed for the agreed redesign of the park (or if the pavilion might be removed or altered), or what substantial changes might be made to foraging areas and potential commuting routes, and undertaken appropriate dusk/dawn surveys of those trees/areas to determine use.

7.4 Badgers

While there does not appear to be a badger presence, a badger survey of the area would be prudent to be certain that badgers are not present in or within licensable distance of any working area for the redesign phase. This should be undertaken during the winter months, if possible.

7.5 Water Vole

There is anecdotal evidence of water voles, and a survey for water voles should be undertaken at a more appropriate period, preferably April - July.

7.6 Birds

Future management actions for the site will need to consider use of the site by birds. Breeding Bird Survey (April to June) should be undertaken to determine species, use of the site, and in particular important areas for nesting before any decisions are taken on habitat adaptations. There is scope to increase the availability of forage resources around the site by planting additional berry bearing species. Rowan berries and brambles are available and these could be supplemented by the addition of elder, hawthorn, bird cherry, and nut-bearing hazel. In addition to feeding birds this increases the diversity of the

site and feeds small mammals and invertebrates. Apple trees could be considered, which would feed both faunal and human species.

Notwithstanding use of the site, the nesting season would need to be considered in relation to any schedule of works. There is no provision in the legislation to license disturbance for the purposes of development. Therefore any works that would disturb nesting birds should be undertaken between October and February inclusive to avoid the nesting season. If that is not possible then nest checks would be needed from March to September, and any bird building a nest or any active nest would need be avoided until no longer in use. Given the potential for nesting to occur in many areas of the site and the resultant delays that avoidance could cause, it would be prudent to carry out works in the October to February period.

7.7 Amphibians & Reptiles

The nearest known site with great crested newts is currently not known. There is no obvious breeding opportunity for amphibians in general although they may be present in their terrestrial phases in suitable areas, eg the woodlands and marshy grasslands, and as discussed reptiles (common lizard) may be present. Survey would be required to confirm, and the small pool could be checked for any evidence of amphibians, most likely common frog.

There is scope to increase diversity at the site by introducing ponds. This attracts amphibians and a range of invertebrates and birds. The most potential for larger ponds lies in the marshy grassland zone immediately adjacent to the railway at the north point of the park, although how wet this area is would need to be investigated. Small pools could be created adjacent to the scouring burn, and the marshy grassland and the north-west could accommodate ponds. However, this area may be subject to flooding which would make it unsuitable.

7.8 Invertebrates

Surveys would be needed to confirm the broad groups for invertebrates, and this would again inform habitat management.

7.9 Fish

Information on the fish species of the Allan Water and Scouring Burn could be further explored if there were to be any impacts that may affect either watercourse. However, if the first principle for the river and burn is to avoid any negative impact, this may not be necessary.

8.0 SUMMARY OF RECOMMENDATIONS

8.1 Primary Surveys

1. National Vegetation Classification of park habitats, record the extent of bluebells, and completion of a plant list. Timing - May to July.
2. Otter Survey of both watercourses to 250m up and downstream of the park. Timing – winter preferably when vegetation is down.
3. Bat survey. Active season – May to September, Winter season – December to February/March if hibernation potential exists. Bat survey could encompass the whole park for general bat movement and use, and target any trees or buildings that would be subject to removal or alteration and that are suitable for roosting or hibernation.
4. Badger Survey. Timing – winter preferably.
5. Water Vole Survey. Timing – April to September.
6. Breeding Bird Survey. Timing – April to June.
7. Amphibians and Reptiles Survey. Timing – February to June.

8. Invertebrates: Broad groups - Hymenoptera (bees, wasps, ants, etc), Lepidoptera (butterflies, moths), Coleoptera (beetles) and Orthoptera (grasshoppers, ground hoppers, crickets). Freshwater invertebrates in the burn could also be sampled. Timing -

8.2 Secondary Surveys

- 1 River Habitat Surveys of the Allan Water and Scouring Burn.
- 2 Fish Survey. Only if necessary
- 3 Funghi Survey.
- 4 Mosses and Lichen Survey.

8.3 Habitat Recommendations

There are a few key considerations in relation to habitat that should inform the plans for the park:

- 1 The park area east of the railway line is wilder and quieter (less human disturbance) overall than the west side. This should remain that way, keeping any new path construction to a minimum.
- 2 The north end of the western section is also quieter and again should be retained as such, protecting the marshy grasslands.
- 3 Protect the Scouring Burn and its associated wetland plant communities, e.g. the marshy grasslands/mire and swamp communities and examine the potential for habitat expansion/change
- 4 Ensure that the river is not negatively impacted by any works on site, and whether or not a map showing the Local Wildlife Site extent is located, the river corridor should be considered carefully for any design alterations, aiming to protect the corridor and enhance where/if appropriate.
- 5 Create additional 'wild and quiet' areas for use by humans (and faunal species that will inevitably move in).
- 6 Wooded areas should remain intact, ie do not fragment by cutting paths through.
- 7 Areas of dense scrub should be retained.
- 8 Areas of bracken and tall ruderal should be subject to further survey for use by birds in particular, before any decision is taken on managing these areas.
- 9 Consider installation of ponds and small pools to increase diversity of habitat and species, possibly locating them in the marshy grassland areas, although the hydrology would need to be investigated.
- 10 Consider installation of bird and bat boxes around the park, and features such as dead wood piles, invertebrate banks, hedgehog boxes, etc.
- 11 Consider supplementary planting of nut, berry and fruit plants, eg rowan, bramble, elder, hawthorn, bird cherry, apple, and nut-bearing hazel.
- 12 If the footbridge across the railway is to be altered this should include removal of the steps and installation of ramps. While the railway does not present any difficulties for species movement from west to east and vice versa, if any mammal were to use the bridge ramped access is necessary.
- 13 Consider using the park habitat educationally, increasing interpretation, and liaising with schools to encourage educational use.

Ends

APPENDIX 1: PLANT LIST

| Common Name | Scientific Name | Common Name | Scientific Name |
|-------------------------------|--------------------------------|----------------------------------|--------------------------------------|
| Trees and Shrubs | | Plants | |
| Sitka Spruce | <i>Picea sitchensis</i> | Bramble | <i>Rubus fruticosus</i> |
| Pine | <i>Pinus sp(p)</i> | Raspberry | <i>Rubus ideaus</i> |
| Ash | <i>Fraxinus excelsior</i> | Wood avens | <i>Geum urbanum</i> |
| Oak | <i>Quercus sp(p)</i> | Rosebay willowherb | <i>Chamerion angustifolium</i> |
| Hazel | <i>Corylus Avellana</i> | Common nettle | <i>Urtica dioica</i> |
| Sycamore | <i>Acer pseudoplatanus</i> | Common knapweed | <i>Centaurea nigra</i> |
| Hawthorn | <i>Crataegus monogyna</i> | Bluebell | <i>Hyacinthoides non-scripta</i> |
| Willow | <i>Salix sp(p)</i> | Primrose | <i>Primula vulgaris</i> |
| Birch | <i>Betula sp(p)</i> | Ragwort | <i>Senecio jacobaea</i> |
| Bird Cherry | <i>Prunus padus</i> | Giant Hogweed | <i>Heraclium mantegazzianum</i> |
| Cherry | <i>Prunus spp</i> | Hogweed | <i>Heraclium sphondylium</i> |
| Alder | <i>Alnus sp(p)</i> | Herb Robert | <i>Geranium robertianum</i> |
| Rowan | <i>Sorbus aucuparia</i> | Hedge woundwort | <i>Stachys silvatica</i> |
| Elder | <i>Sambucus nigra</i> | Opposite leaved golden saxifrage | <i>Chrysosplenium oppositifolium</i> |
| Poplar | <i>Populus sp(p)</i> | Red dead nettle | <i>Lamium purpureum</i> |
| Maple | <i>Acer sp(p)</i> | Foxglove | <i>Digitalis purpurea</i> |
| Broom | <i>Cytisus scoparius</i> | Tormentil | <i>Potentilla erecta</i> |
| Wych elm | <i>Ulmus glabra</i> | Heath bedstraw | <i>Galium saxatilel</i> |
| Lime | <i>Tilia x europaea</i> | Sheep's sorrel | <i>Rumex acetosella</i> |
| Holly | <i>Ilex aquifolium</i> | Broadleaved dock | <i>Rumex obtusifolius</i> |
| Rose | <i>Rosa sp(p)</i> | Common sorrel | <i>Rumex acetosa</i> |
| Rhododendron | <i>Rhododendron sp(p)</i> | Devil's scabious | <i>Succisa pratensis</i> |
| Cotoneaster | <i>Cotoneaster sp(p)</i> | Ribwort plantain | <i>Plantago lanceolata</i> |
| Blackthorn | <i>Prunus spinosa</i> | Greater plantain | <i>Plantago major</i> |
| Grasses, Sedges, Ferns | | Cat's ear | <i>Hypochaeris radicata</i> |
| Cock's-foot | <i>Dactylis glomerata</i> | Yarrow | <i>Achillea millefolium</i> |
| Wavy-hair grass | <i>Deschampsia flexuosa</i> | Meadow crane's-bill | <i>Geranium pratense</i> |
| False-oat grass | <i>Arrhenatherum elatius</i> | Great wood rush | <i>Luzula sylvatica</i> |
| Bent grass | <i>Agrostis sp(p)</i> | Dog violet | <i>Viola riviniana</i> |
| Yorkshire fog | <i>Holcus lanatus</i> | Creeping thistle | <i>Cirsium arvense</i> |
| Fescue | <i>Festuca sp(p)</i> | Spear thistle | <i>Cirsium vulgare</i> |
| Sweet vernal grass | <i>Anthoxanthum odoratum</i> | Cow parsley | <i>Anthriscus sylvestris</i> |
| Perennial rye grass | <i>Lolium perenne</i> | Wild angelica | <i>Angelica sylvestris</i> |
| False brome | <i>Brachypodium sylvaticum</i> | Meadowsweet | <i>Filipendula ulmaria</i> |
| Reed canary grass | <i>Phalaris arundinacea</i> | Butterbur | <i>Petasites hybridus</i> |
| Sweet grass | <i>Glyceria sp(p)</i> | Tufted vetch | <i>Vicia cracca</i> |
| Common reed | <i>Phragmites</i> | Vetches | <i>Vicia spp</i> |
| Bracken | <i>Pteridium aquilinum</i> | Meadow vetchling | <i>Lathyrus pratensis</i> |
| Male fern | <i>Dryopteris filix-mas</i> | Common mouse-ear | <i>Cerastium fontanum</i> |
| Broad buckler fern | <i>Dryopteris dilatata</i> | Germander speedwell | <i>Veronica chamaedrys</i> |
| Hard shield fern | <i>Polystichum aculeatum</i> | Creeping buttercup | <i>Ranunculus repens</i> |
| | | Meadow buttercup | <i>Ranunculus acris</i> |
| | | Wood horsetail | <i>Equisetum sylvaticum</i> |
| | | Colt's-foot | <i>Tussilago farfara</i> |
| | | Rushes | <i>Juncus sp (p)</i> |
| | | Branched bur-reed | <i>Sparganium erectum</i> |
| | | Common water starwort | <i>Callitriche stagnalis</i> |
| | | Water mint | <i>Mentha aquatica</i> |

| Common Name | Scientific Name | Common Name | Scientific Name |
|--------------------|------------------------|---------------------|-------------------------------|
| | | Common duckweed | <i>Lemna minor</i> |
| | | Lesser spearwort | <i>Ranunculus flammula</i> |
| | | Water forget-me-not | <i>Myosotis scorpioides</i> |
| | | Great willowherb | <i>Epilobium hirsutum</i> |
| | | Canadian goldenrod | <i>Solidago Canadensis</i> |
| | | Harebell | <i>Campanula rotundifolia</i> |
| | | Pink purslane | <i>Montia sibirica</i> |

APPENDIX 2: SUMMARY OF LEGISLATION

EC Habitats Directive (Council Directive 92/43/EEC)

The Directive aims to maintain biodiversity by requiring signatories to the directive to maintain or restore certain natural habitats and species at a favourable status within the European Community. Annex 1 lists habitats that require the designation of special areas of conservation. Annex II lists animal and plant species whose conservation requires the designation of special areas of conservation. Annex IV consists of animal and plant species of community interest, in need of strict protection.

EC Birds Directive (Council Directive 79/409/EEC)

The Directive aims to deliver protection, management and control of all species of wild birds where they occur naturally. Member states are required to take steps to maintain populations at levels at which they are sustainable both ecologically and scientifically. For particular species a member state must designate Special Protection Areas (SPAs) of suitable habitat. An Annex 1 species is listed for reason of danger of extinction, vulnerability to specific habitat changes, rarity either by population size or restricted local distribution, or other specific habitat requirements.

The Conservation Regulations 1994 make provision for implementing Council Directive 92/43/EEC, and provides for the conservation of natural habitats and habitats of species, provision for notification of "European Sites", and provides for the protection of certain wild animals and plants. It is an offence, except as permitted under the Regulations, to deliberately or recklessly:

- capture, injure or kill a European Protected Species;
- harass an animal or group of animals;
- disturb an animal in any structure or place it uses for shelter or protection;
- disturb an animal while it is rearing or otherwise caring for its young;
- obstruct access to a structure or place used for shelter or protection or to otherwise deny the animal use of that place;
- disturb an animal in a manner that is, or in circumstances which are, likely to significantly affect the local distribution or abundance of the species;
- disturb an animal in a manner that is, or in circumstances which are, likely to impair its ability to survive, breed or reproduce, or rear or otherwise care for its young.

It is also an offence to:

- damage or destroy a breeding site or resting place of such an animal (note that this does not need to be deliberate or reckless to constitute an offence);
- keep, transport, sell or exchange or offer for sale or exchange any wild animal or any part or derivative of one (if obtained after 10 June 1994).

Licences for disturbance are at the discretion of Scottish Natural Heritage. The following tests apply with regard to European Protected Species:

1. A detailed summary of why the works are justifiable as a derogation of the 1994 Regulations Section 44 (2). In the case of development, (e), may be the most likely option. This states:

"preserving public health of public safety or **other imperative reasons of overriding public interest** including those of a social or economic nature and beneficial consequences of primary importance for the environment"

In simple terms, the reason why the works are necessary must be clearly stated. **If Test 1 (or any test) cannot be met, the licence application will fail.** Holding planning consent for a site does not meet the conditions of this test.

2. That there is no other satisfactory solution both in terms of why this site was chosen instead of others considered, and that there is no other option other than to disturb etc the animals.
3. Reasons why the proposed work would not be detrimental to the maintenance of the population of the species concerned at a favourable conservation status at their natural range. This would include detailed information on the mitigation measures to be employed. A mitigation programme should therefore be developed in consultation with a recognised expert for the species concerned and SNH

(Scottish Natural Heritage) prior to making the application and the methodology of this clearly stated. This is important information which is considered as part of the application.

Nature Conservation (Scotland) Act 2004

“The Act sets out a series of measures which are designed to conserve biodiversity and to protect and enhance the biological and geological natural heritage of Scotland. In doing so, the Act provides the principal legislative components of a new, integrated, system for nature conservation within Scotland....In relation to biodiversity in particular, it requires public bodies and office-holders to consider the effect of their actions at a local, regional, national and international level. Measures relating to the protection of species and habitats also recognise the importance of the wider international context.”

“It introduces, in Part 1, a new general duty on all public bodies and office holders (referred to in these notes as "public bodies") to further the conservation of biodiversity; It makes significant changes, in Part 2, to the existing arrangements for the establishment and protection of sites of special scientific interest. In doing so, it replaces most of Part II of the existing Wildlife and Countryside Act 1981 (c.69) ("the 1981 Act"); It extends in Part 3 the law in relation to the protection of birds, animals and plants by making significant amendments to the current provisions of Part I of the 1981 Act and by requiring production of a new code of guidance covering whale and dolphin watching and similar activities; It updates, also in Part 3, the provisions of the existing Protection of Badgers Act 1992 (c.51), in order to increase penalties for offences such as badger baiting and aims to ensure greater consistency between that Act and the 1981 Act; It requires, in Part 4, the creation by Scottish Natural Heritage ("SNH") of a code of guidance setting out recommendations, advice and information relating to fossils; It provides, in Part 5, for various supplemental matters including the publication of statutory guidance about the duty to further the conservation of biodiversity and SNH's functions under Part 2 and for minor and consequential amendments and repeals to a variety of other statutes

Wildlife & Countryside Act 1981 (as amended)

The Act protects plants and animals, with general and particular provisions regarding wild plants, birds, and animals on the various schedules.

Schedule 1 birds are priority species for which special penalties apply to infringement of the Act either against the bird, its nest, or eggs. Additionally under the Act, all wild birds, their nests and eggs are protected. It is an offence, except as permitted by the Act to intentionally or recklessly,

- kill, injure, or take any wild bird
- take, damage, destroy, or otherwise interfere with the nest of any wild bird while that nest is in use or being built
- at any other time take, damage, destroy or otherwise interfere with any nest habitually used by any wild bird included in Schedule 1
- obstruct or prevent any wild bird from using its nest
- take or destroy the eggs of any wild bird

Schedule 5 lists animals which have particular protection under the Act due to their conservation status. Offences again relate to intentional or reckless behaviour as regards:

- kills, injures, or takes any wild animal
- damages, destroys, or obstructs access to any structure or place which any wild animal included in Schedule 5 uses for shelter or protection
- disturbs any such animal while it is occupying a structure or place which it uses for that purpose

At present water vole burrows have protection, and licences to disturb for the purposes of development are possible through Scottish Natural Heritage. It is anticipated that the animal itself will have protection by the end of 2012. Notwithstanding this, all wild mammals have protection under the Wild Mammals (Protection) Act 1996.

Schedule 8 protects certain plant species due to their conservation status. Offences relate to intentional or reckless behaviour as regards:

- picking, uprooting, or destroying any wild plant on that schedule

- or, not being an authorised person, intentionally uprooting any wild plant not included on that schedule

Other offences relate to sale of wild plants.

Wild mammals (Protection) Act 1996

The Act makes provision for the protection of wild mammals from certain cruel acts; and for connected purposes.

It is an offence except as permitted by the Act to: mutilate, kick, beat, nail or otherwise impale, stab, burn, stone, crush, drown, drag or asphyxiate any wild mammal with intent to inflict unnecessary suffering.

Protection of Badgers Act 1992 (as amended)

Badgers and their setts are fully protected by the Act. Except as permitted by the Act it is an offence to deliberately or recklessly:

- wilfully or recklessly kill, injure, take or attempt to take a badger from the wild;
- possess the body or any remains of a dead badger;
- possess, sell or offer for sale a living badger;
- cruelly ill treat a badger;
- use badger 'tongs' in any attempt to kill or take a badger from the wild;
- dig for a badger;
- use a firearm to kill a badger;
- interfere with a badger sett by obstructing the entrance;
- destroying the sett;
- encouraging a dog to enter the sett;
- in any way disturbing a badger while it is occupying a sett.

Legislation with regard to non-native invasive species

The Wildlife and Countryside Act 1981 (as amended) is the principal domestic legislation concerning non-native species. It was amended by the Wildlife and Natural Environment (Scotland) Act 2011. It is envisaged that these amendments will enable Scotland to adopt the internationally recognised 3-stage approach to dealing with invasive non-native species and aim to:

- prevent the release and spread of non-native animal and plant species into areas where they can cause damage to native species and habitats and to economic interests;
- ensure a rapid response to new populations can be undertaken;
- ensure effective control and eradication measures can be carried out when problem situations arise.

It will be an offence to:

- release or allow to escape from captivity any animal to a place out with its native range;
- release or allow to escape from captivity any other animal specified in an order made by the Scottish Ministers;
- cause any animal out with the control of any person to be at a place outwith its native range;
- plant or otherwise cause to grow any plant in the wild out with its native range.

Native range is defined in section 14P(2) as "... the locality to which the animal or plant of that type is indigenous, and does not refer to any locality to which that type of animal or plant has been imported (whether intentionally or otherwise) by any person."