

SWT WILDLIFE SITE SURVEY
LAIGHHILLS

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Maps: 1 x 1:2,500 (Boundaries)
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INTRODUCTION

The Laighhills (NN780020) site is, predominately, a hilly area of grassland, dense scrub and Bracken (*Pteridium aquilinum*), with a few wooded slopes and low-lying, species-rich river verges. It stands on the outskirts of the old cathedral town of Dunblane, in Stirling District and contains a large area managed as a public park. It is surrounded by both housing and farmland, with Barbush Quarries to the east and the Dunblane Bypass (A9) to the north. The Allan Water, one of the key tributaries of the River Forth, flows around the site and much of the public park is situated within a large, single meander. A fast-flowing burn, known as the Scouring Burn, runs along the south-east boundary. A railway line cuts through the centre of the site.

The owners of the public park and land adjacent to the railway are Stirling District Council and British Rail, respectively. Woodland north of the river, to the west of the site, is owned by Mrs. McCormick of 4, Auchinlay Holdings, Dunblane, although it is soon to be sold. The owners of the other fragments of the woodland further north could not be traced.

There is open access to the park and this popular resource is frequently used by locals throughout the year for dog-walking, fishing, sports, picnicking and visiting the children's play area. Public footpaths criss-cross the site.

There are no known developments planned for the site, although there has been mention of housing proposals for fields adjacent to the Scouring Burn, just beyond the site boundary. Much of the site suffers from invasion from Bracken and tall ruderals, so lack of sensitive management in these areas may threaten the existence of some of the more fragile and fragmented habitats.

The survey was part of an ongoing reassessment of SWT Listed Wildlife Sites in Central Region. Because of the complexity of the site, the survey was divided up into 4 sections (see maps). Sections 1,2 and 3 fall within the original boundaries of the LWS - according to previous map information. Section 4 includes the remainder of the public park that was not included on earlier LWS maps. The survey of Sections 1,2 and 3 was completed over two weeks in early to mid-September, 1994, whilst the brief survey of Section 4 was carried out early in 1995. The surveyor was Kate Fairley, c/o SWT, CEL Enterprise Centre, 58 Cornton road, Stirling FK9 5AT

SITE SUMMARY

Physical Factors:

Much of the site has a irregular, hilly topography. Erosion and deposition by the River Allan has shaped land to the north of the site, creating both steep-sided, unstable slopes on the outer edges of the river's bends - and alluvial flats in the curve of the large meander. The River Allan is fast-flowing and liable to flood in winter and early spring, frequently inundating low-lying ground and depositing stones, gravel and vegetative debris. After particularly heavy flooding in January, 1993, a landslip removed a large section of one of the steep, wooded slopes. The level of the Scouring Burn fluctuates greatly and during wetter weather the flat ground surrounding the burn is regularly inundated. Other flat, low-lying areas, such as those in the north of the site, were created when the railway was built.

The site stands on rocks of the Lower Old Red Sandstone Age, overlain with boulder clay and localised deposits of fluvio-glacial sands and gravels. Rare Highland schist erratics sometimes occur in this area. Tills derived from the sandstone sediments (predominately clay loams) form brown forest soils and associated gleys. Free-draining, nutrient-poor soils occur on the upper flanks of the hills and slopes. Poorly drained soils, with a higher base content, occur in slight hollows at the bases of steep, riverside slopes and on level ground throughout, sometimes with ephemeral surface water. Localised base enrichment occurs at points along the river and in marshy ground above the large meander.

Habitats:

The majority of the site consists of stretches of dense scrub and Bracken (*Pteris aqu.*) forming a mosaic with acid, neutral and amenity grasslands. The bent/fescue acid grasslands of the hilly ground tend to be species-poor and heavily rabbit grazed. However, small patches of unimproved acid grassland can still be found on the steep, north-facing slope overlooking the large meander. Here, the sward includes a greater variety of grasses and clumps of Blaeberry (*Vacc. myr.*).

Damp, low-lying fields of rank neutral grasslands support a good variety of grasses and meadow herbs, although the swards also contain many common forbs and ruderals indicative of past improvement. Of greater interest are the species-rich riverside verges that are covered with a dense mixture of tall grasses, herbs and legumes, including large, colourful patches of Wood Crane's-bill (*Geran. syl.*), Crosswort (*Galium cru.*), Lady's Bedstraw (*Galium ver.*) and Meadow Vetchling (*Lathy. pra.*). A few individuals common to more basic soils also occur: Burnet Saxifrage (*Pimp. sax.*), Greater Butterfly Orchid (*Plata chi.*) and, at the edge of the woods, Wild Strawberry (*Fraga. yes.*). A rich, neutral grassland, supporting an abundance of Meadow Cranes'bill (*Geran. pra.*), has developed on the alluvial flat. However, it is vulnerable - to the spread of scattered scrub, Bracken and Rosebay Willowherb (*Chame. ang.*) that invades much of this area.

Patches of marshy grassland occur throughout the site and many appear to be the remnants of wet meadows /pastures. The sward is usually dominated by Meadowsweet (*Filip. ulm.*), but may also contain other herbs common to adjoining neutral grasslands. Of particular interest are small, isolated fragments of marsh that occur near the base of the north facing slope overlooking the alluvial flats. Wet ground supports a dense cover of sedges found in acid conditions, including Star Sedge (*Carex ech.*) and Bog Cotton (*Eriop. ang.*). Amongst the sedges are patches of Purple Moor Grass (*Molin. cae.*), a rich variety of marsh herbs and many spikes of Common Spotted Orchid (*Dacty. fuc.*) and Northern Marsh Orchid (*Dacty. pur.*). Another marshy area, with a similar herb component, is dominated by rushes. Here, a localised flush supports a dense layer of small sedges.

The fast flowing river is too swift for the establishment of submerged vascular plants. Marginal vegetation is generally patchy, dominated by stands of Reed Canary Grass (*Phala. aru.*), However, in the far NW corner of the site, there is a large, luxuriant stand of Reed Canary Grass, with Bottle Sedge

(*Carex ros.*), rushes and herbs. A greater variety of marginals occur along the Scouring Burn, including Marsh Woundwort (*Stach. pal.*), Great Willowherb (*Epilo. hir.*), Brooklime (*Veron. bec.*) and Watercress (*Nastur. off.*). Swamp vegetation is also dominated by Reed Canary Grass, although in some areas it may be drying out; with invasion from scrub and ruderals.

The woodland habitats are of two main types -oak and ash. Damp Ash (*Fraxi exc.*) woods have an understorey dominated by Hawthorn (*Crata. mono.*), and a lot of regeneration. The patchy ground flora tends to be dominated by herbs and some of those common to all include: Wood Aven (*Geum urb.*), Water Aven (*Geum nv.*), Common Dog-violet (*Viola nv.*) and Primrose (*Pnimu. vul.*). The mature oak woodland is more open, often with much dead wood and fallen trees. The open understorey usually includes a greater variety of species, including Blackthorn (*Prunus spi.*) and Hazel (*Coryl. ave.*). There tends to be an abundance of ferns and, along the river's edge, damp-loving plants such as Great Woodrush (*Luzula syl.*), Pink Purslane (*Montia sib.*) and Opposite-leaved Golden Saxifrage (*Chrys. opp.*)

Small stands of willow carr occur throughout the site and one of particular interest is found in the low-lying field east of the railway. Beneath the carr, wet ground supports two different species of mints, Cuckooflower (*Carda. pra.*) and, when ephemeral surface water is present, extensive clumps of Watercress (*Nastur. off.*).

Wildlife:

A lone Heron was frequently seen along the river, as were Dippers, Mallards, Yellow Wagtails, Pied Wagtails and Goosanders. A single Mink was hunting along the river's edge, to the north of the site. Many woodland birds were present, most commonly: Blue Tit, Robin, Great Tit, Wrens and Dunnocks. Goldfinches and Bullfinches were feeding on the flowerheads of Creeping Thistle and Meadowsweet, respectively. A group of Long-tailed Tits were seen in Hazel. There are many rabbits present throughout. Roe Deer were seen in the north of the site and there is evidence of grazing and bark-stripping in the fields of rank grassland on either side of the railway track.

Past History and Management:

In prehistory and Roman times, a fortified camp inhabited by the local Caledonian tribe stood on this site. In more recent times the land was used for cattle grazing. Oak woodland on the north bank of the river is likely to have originally been planted, with old O.S. maps dating it back to -at least- the latter half of last century. In 1909 the land south of the river was gifted to the people of Dunblane, to be managed as a public park. However, long before this, certain areas of the site were used for recreational pursuits; the remains of an old curling pond can still be seen by the river and in the east of the site there was a 9 hole golf course (1890s-1920s).

The railway arrived in the 1840s and during its construction the river was diverted from its original course along the base of the steep banking to the northeast (comp.62). Small islets were formed from waste tipped into the river during the railway's construction.

The last 15 years has seen the redevelopment of certain ME sections of the site. In the early 1980s the old railway tunnel was removed and a new railway bridge was built to the south. A BMX track was built on the hilly ground to the east. The amenity area has been upgraded, involving the recent reseeded and drainage of the football pitches and the building of a sports pavilion and children's play area. Apart from footpath work, there is no evidence of current management in the remainder of the park.

SECTION 1: WEST OF RAILWAY
COMPARTMENT DESCRIPTIONS

Compartment 1: Semi-improved Neutral Grassland *

Narrow strip of damp grassland bordering a dense stand of marginal vegetation along the river's edge. This strip has been fenced off, relatively recently, from adjacent amenity grassland and allowed to develop - resulting in a sward that is rich in floristic diversity. There is an abundance of Yorkshire Fog (*Holcu. lan.*), with other grasses inc: Cocksfoot (*Dacty. glo.*), Tall Fescue (*Festu. aru.*) and Crested Dogstail (*Cynos. cri.*). Of the herbs, the most common mc: Wood Cranesbill (*Geran. syl.*), Yellow Rattle (*Rhin. min.*), Crosswort (*Galium cru.*), Yarrow (*Aichil. mu.*) and Silverweed (*Poten. ans.*).

Abundance of the fast-growing Yorkshire Fog (*Holcu. lan.*) and the frequency of common forbs, such as Common Sorrel (*Rumex acetosa*) and White Clover (*Trifo. rep.*) may reflect past improvement.

N.B. During the summer, drains were dug at either end of this strip of grassland, presumably to reduce waterlogging of the football pitch. This drainage may effect the future composition of the vegetation.

TG1: Marginal vegetation. Dense, luxuriant stand of Reed Canary Grass (*Phala. arun.*), with Bottle Sedge (*Carex ros.*) and occasional rushes. Also, herbs dominated by Meadowsweet (*Filip. ulm.*), but Inc. Water Mint (*Mentha aqu.*), Marsh Hawk's-beard (*Crepis pal.*) and Great Willowherb (*Epilo. hir.*).

TG2: Mature Sycamore (*Acer pse.*) and Ash (*Fraxi. exc.*), with patches of Bracken (*Pteri. aqu.*) by fence. Under the canopy the soil is damp, sandy and supports only limited vegetation: scattered Pink Purslane (*Montia sib.*), Wood Avens (*Geum urb.*) and Herb Robert (*Geran rob.*), with stand of Raspberry (*Rubus ida.*).

TG3: Inundation vegetation on stones recently brought down by river: Redshank (*Polya. per.*), Knotgrass (*Polyg. avi.*) and Wavy Bittercress (*Carda. fle.*).

TG4: Dense Bracken (*Pteri. acju.*).

Compartment 2: Semi-natural Broad-leaved Woodland *

The slope at the edge of a small hill supports a stand of Ash (*Fraxi. exc.*), with an understorey of tall Hawthorn (*Crata. mono.*). A wide, damp path cuts across the comp., near the base of the slope, edged by Lady's Mantle (*A.lche. vul.*) and Creeping Buttercup (*Ranun. rep.*).

Above the path, the damp, steep banking is covered in thick layer of moss, with only a few thin patches of grasses. There is an abund. of Water Avens (*Geum nv.*), Wood Avens (*Geum urb.*) -and their hybrid- and a rich mixture of low-lying herbs, mc: Germander Speedwell (*Veron. cha.*), Dog Violet (*Viola nv.*), Barren Strawberry (*Poten. ste.*) and Primrose (*Primu. vul.*). Further up the slope there is an increased abund. of grasses - predominately Creeping Soft Grass (*Holcus mol.*) and Common Bent (*Agros. cap.*)- and less cover from mosses and herbs, although there is local. Bluebell (*Hyaci. non.*) and Foxglove (*Digit. pur.*). Here, there is much regeneration, with numerous young Ash and occ. older Rowan (*Sorb. auc.*) and Downy Birch (*Betula pub.*) Towards the top of the slope there is an invasion of Bracken (*Pteri. aqu.*) and Rosebay Willow-herb (*Chame. ang.*).

***For all compartments marked with an asterix complete species lists are included.**

Below the path, there are a few individuals of Sycamore (*Acer pse.*), Hazel (*Coryl. ave.*) and Goat Willow (*Salix cap.*) and steep ground supports a patchy mosaic of leaf litter, bare soil and vegetation similar to that immediately above the path. On flat ground, by the river's edge, the sandy soil is covered in clumps of Great Wood-rush (*Luzula syl.*), moss-covered stones, wood debris and number of plants suited to the damp conditions: Marsh Hawk's-beard (*Crepis pal.*), Field Horsetail (*Equis. arv.*) and Pink Purslane (*Montia sib.*).

TG1: Patches of marginal vegetation: Reed Canary Grass (*Phala. aru.*) and Meadowsweet (*Filip. ulm.*).

TG2: By football pitch - a scrubby patch of Raspberry (*Rubus ida.*) and Dog Rose (*Rosa can. agg.*). There is disturbed ground where earth and gravel (from drain excavations) has been tipped down the banking.

Compartment 3: Continuous Bracken

Dense Bracken (*Pteri aqu.*) on large areas of the slopes and summit of the higher ground present in this section of the Laighhills. There are occ. patches of Rosebay Willowherb (*Chame. ang.*), ccc. scattered scrub -Broom (*Cytisus scorparius*) and Hawthorn (*Crata. mono.*)- and individual young trees: Rowan (*Sorb. auc.*), Silver Birch (*Betula pen.*) and Sessile Oak (*Querc. pet.*).

TG1: Small clearing near base of slope. Semi-improved neutral grassland (see description of comp.7,TG1).

TG2: Small clearing further up slope. Acid grassland (see description of comp.7).

TG3: Grassy clearing with Bramble (*Rubus fru. agg.*). Damp, mossy ground supports local. abund. of Wood Horsetail (*Equis. syl.*) and occ. Hard Fern (*Blech. spi.*).

TG4: Wide, close-mown paths cut through Bracken.

Compartment 4: Dense Scrub

Scrub is dominated by Broom (*Cytis. sco.*), with Bramble (*Rubus fru. agg.*) and Raspberry (*Rubus ida.*). Dog Rose (*Rosa can. agg.*) and Hawthorn (*Crata. mono.*) are occ. present towards base of slope.

TG1: Dense patches of Gorse (*Ulex eur.*) are frequently present towards the top of the slope.

Compartment 5: Other Habitat

This narrow strip of ground alongside the river shows no clear dominance of habitats or indicator species. It is a dense, overgrown, species-rich mixture of herbs (similar to comp. 1), grasses, legumes and tall ruderals which are - all competing with patches of dense scrub -mainly Bramble (*Rubus fru. agg.*) and Dog Rose (*Rosa can. agg.*)- and Bracken (*Pteri aqu.*). A few patches of Reed Canary Grass (*Phala. aru.*) stand at the river's edge.

TG1: Single Greater Butterfly Orchid (*Plata. chi.*)

TG2: Well-worn path lined with Creeping Buttercup (*Ranun. rep.*) and Lady's-mantle (*Aiche. vul. agg.*). Also, Broad-leaved Plantain (*Plant. maj.*), White Clover (*Ti-ito. rep.*) and Common Sorrel (*Rumex acetosa*).

Compartment 6: Dense Scrub

Narrow strip of tall Hawthorn (*Crata. mono.*) with Dog rose (*Rosa can. agg.*), Raspberry (*Rubus idae.*)

and occasional Broom (*Cytis. sco.*).

Compartment 7: Acid Grassland *

On the steeper, higher ground a grassy clearing is dominated by Heath Bedstraw (*Galium sax.*), with an abundance of Sheep's Fescue (*Festu. ovi.*) and Toril Lentil (*Poten. ere.*). Bluebell (*Hyaci. non.*) is frequent and there are patches of Common Bent (*Agros. cap.*), Brown Bent (*Agros. vine.*) and Sweet Vernal Grass (*Antho.odo.*).

Lower down the slope Heath Bedstraw (*Galium sax.*) is much less common, although Creeping Soft Grass (*Holcus mol.*), which also prefers acid soils, is increasingly abundant. However, there are also localised increases in the frequency of False Oat Grass (*Arrhe. ela.*) and Tufted Hair Grass (*Desch. ces.*). This may reflect a transitional stage between acid grassland and neutral grassland habitats. (see comp.7, TG1 below).

TG1: On flatter ground there is local. abund. of Tufted Hair Grass (*Desch. ces.*) and False Oat Grass (*Arrhe. elat.*)- both indicative of neutral grassland-, with Yorkshire Fog (*Holcus lan.*). Yarrow (*Achil. mu.*) is frequent and there are occ. common forbs and ruderals - Common Sorrel (*Rumex acetosa*) and Nettle (*Urtica dio.*).

N. B. Much of the False Oat Grass (and, on occasion, other grasses) in this section of the site is infested with the poisonous fungus Ergot (*Claviceps purpurea*).

Compartment 8 Semi-improved Neutral Grassland *

Thin strip of species-poor neutral grassland bordering marshy grassland. There is an abund. of False Oat Grass (*Arrhe. elat.*), with occ. Tufted Hair Grass (*Desch. ces.*) and Yorkshire Fog (*Holcus lan.*). Common Sorrel (*Rumex acetosa*) and Lesser Stitchwort (*Stell gram.*) are freq. throughout. Towards the top of the slope, where there is a transition to acid grassland, Bluebell (*Hyaci. non.*) and a few patches of Tormentil (*Poten. ere.*) occur.

TG1: Stand of Silver Birch (*Betula pen.*). Local. abund. of Tufted Hair Grass (*Desch. ces.*), with patches of Nettle (*Urtica dio.*) and Yellow Rattle (*Rhin. mm.*).

Compartment 9: Acid grassland *

Amongst Bracken (*Pteri. aqu.*), near the top of the steep-sided slope, there are clearings of acid grassland vegetation (as higher ground in comp.7), with a layer of moss and freq. clumps of Blaeberry (*Vacci. myr.*). There is scattered Broom (*Cytis. sco.*) and Bracken (*Pteri. aqu.*), with young Rowan (*Sorbus auc.*) and Pendunculate Oak (*Quercus rob.*).

Compartment 10: Marshy Grassland *

Towards the bottom of the slope, in a slight hollow, there is a waterlogged area dominated by sedges, and with an abund. of Marsh Bedstraw (*Galium pal.*) and freq. Wood Horsetail (*Equis. syl.*). Sedges mc: Common Yellow Sedge (*Carex dem.*), Star Sedge (*Carex ech.*), Tawny Sedge (*Carex host.*) and Bog-cotton (*Eriop. ang.*). Pockets of wet ground between the sedge tussocks, support an open bryophyte layer, but the incomplete coverage -and the absence of Spaghnum spp.- prevent classification of the whole compartment as a flush (see comp.10.TG1 below).

Also, there are patches of Purple Moor Grass (*Molin. cae.*) and a rich variety of herbs common to marshy conditions, mc: Sneezewort (*Achil. pta.*), Marsh Thistle (*Cirsi. pal.*) and Wild Angelica (*Angel. syl.*). A number of orchid spikes are present, predominately Common Spotted Orchid (*Dacty. fuc.*), but also Northern Marsh Orchid (*Dacty. pur.*).

TG1: Local. abund. of Jointed Rush (*Junc. art.*), with freq. Soft Rush (*Junc. eff.*) and Meadowsweet (*Filip. ulm.*). Large patches of Greater Birds-foot Trefoil (*Lotus ulg.*) and Common Knapweed (*Centa. nig.*) near bottom of slope. Some invasion of scattered Bracken (*Pteris aqu.*) and Raspberry (*Rubus ida.*).

TG2: Dense Meadowsweet (*Filip. ulm.*), with Soft Rush (*Junc. eff.*) and Common Valerian (*Valer. off.*). Some invasion by Creeping Thistle (*Cirs. arv.*).

TG3: Seepage of water from higher ground, below which there is a local., well-developed bryophyte layer, inc. a very small patch of *Spaghnum palustre* -common to acid or neutral flushes.

Compartment 11: Semi-improved Acid Grassland

Species-poor grassland, dominated by Creeping Soft Grass (*Holcus mol.*), growing over a continuous layer of mosses. Acidic characteristics are more prominent further up the slope where the vegetation inc. increased abund. in Heath Bedstraw (*Galium sax.*), with occ. Bluebell (*Hyaci. non.*), Sheep's Fescue (*Festu. ovi.*) and Tormentil (*Poten. ere.*).

Compartment 12: Swamp *

This distinct, almost circular area was once a small curling pond and the man-made banking can still be seen, although overgrown, surrounding the compartment on three sides. The ruins of a small, stone building are also present. Within these boundaries, the ground is low-lying and waterlogged, with flooding during winter months or after heavy rain.

There are number of scattered Goat Willow (*Salix cap.*), some of which have been coppiced in the past. The ground is covered with stands of Reed Canary Grass (*Phala. aru.*). A variety of herbs occur, inc. Meadowsweet, (*Filip. ulm.*), Marsh Bedstraw (*Galium pal.*), Creeping Buttercup (*Ranun. rep.*) and Wild Angelica (*Angel. syl.*).

A few small hummocks of slightly drier ground support Tufted Hair Grass (*Desch. ces.*), with occ. , colourful patches of Meadow Crane's-bill (*Geran. pra.*) and Ladies Bedstraw (*Galium ver.*). This, and the abund. of herbs throughout, suggests that this compartment may be transitional in the succession to a drier habitat.

TG1: Dense stand of Raspberry (*Rubus ida.*).

TG2: On drier ground, by the path, there is local abund. of Tufted Hair Grass (*Desch. ces.*), with Common Knapweed (*Centa. nig.*) and Water Avens (*Geum nv.*). Also, one Silver Birch (*Betula pen.*) and some Hawthorn (*Crata. mono.*) regeneration.

Compartment 13: Marshy Grassland *

Below the steep bank where an upper path cuts across the slope, there is a long, narrow stretch of marshy grassland. A series of recently built steps, connecting upper and lower paths, has exposed a strip of heavily waterlogged clay soil. This wet ground supports vegetation dominated by dense Jointed Rush (*Junc. art.*), with abund. Soft Rush (*Junc. eff.*). The bryophyte layer is more developed than in comp.10 - inc. *Pleurozium schreberi*, *Thuidium tamariscinum* and *Lophocolea bidentata*- but again the *Spaghnum* spp. are absent.

Amongst the rushes, there is an association of herbs and grasses similar to comp.10, but with freq. Marsh Hawk's-beard (*Crepis pal.*) and scattered Devil's-bit Scabious (*Succi. prat.*). A few spikes of Northern Marsh Orchid (*Dacty. pur.*) are present.

TG1: A very small drainage channel runs alongside the steps. Here, a small flush supports abund. mosses and liverworts, overlain by a dense layer of small sedges mc: Common Sedge (*Carex nig.*),

Tawny Sedge (*Carex hos.*), Star Sedge (*Carex ech.*) and Flea Sedge (*Carex pul.*). Also, occ. patches of Common Spike-rush (*Eleoc. pal.*).

TG2: At the top of the steps, above the waterlogging, there are occ. ferns, inc. Hard Fern (*Blech. spi.*). Here, the exposed soil is a reddish, lighter soil.

Compartment 14: Semi-improved Neutral Grassland

Thin strip of ground supports patches of meadow herbs and a few tall grasses, most commonly: Wood Crane's-bill (*Geran. syl.*), Yarrow (*Achil. mu.*) and False Oat Grass (*Arrhe. elat.*). The habitat has a disturbed appearance.

TG1: Small stand of trees and shrubs: Goat Willow - (*Salix cap.*), Grey Willow (*Salix cin. agg.*), Silver Birch (*Betula pen.*), Ash (*Frax. exc.*) and Hazel (*Coryl. ave.*). In shade, Male Fern (*Dryop. fil.*), Broad Buckler Fern (*Dryop. dii.*) and Great Wood-rush (*Luzula syl.*).

Compartment 15: Other Habitat

A wide area of the river bank is covered in sand and stones washed down by the river. The stands of vegetation that have developed on these alluvial substrates are a mixture of herbs, grasses and ruderals -similar to comp.5, but dominated by extensive, very dense patches of Creeping Thistle (*Cirsi. arv.*). There is also a scattering of perennials common to disturbed ground, such as Coltsfoot (*Tussi. far.*) and Ox-eye Daisy (*Leuca. vul.*).

TG1: Stand of mature, lichen-covered Willows (*Salix- spp.*), with vegetative debris in their branches (showing extent of past water levels). A mixture of woodland plants and inundation vegetation grow on the sandy soil, inc: Wood Avens (*Geum urb.*), Male Fern (*Dryop. fii.*), Redshank (*Polyg. per.*) and Sweet-grass (*Glyc. sp.*).

TG2: The bulk of stones piled up along the river's edge has narrowed the width of the river. Only a few plants have established here, such as Groundsel (*Sene. vul.*) and Pineappleweed (*Matri. matr.*).

TG3: Scattered marginal vegetation, flattened by periodic inundation. One clump of Spear Mint (*Mentha -spi.*) under a Willow (*Salix sp.*). Large boulders present.

Compartment 16: Continuous Bracken

Bracken (*Pteri. aqu.*), with Rosebay Willow-herb (*Chame. ang.*) and occ. scattered Dog Rose (*Rosa can. agg.*) and Hawthorn (*Crata. mono.*).

Compartment 17: Neutral grassland *

This flat, low-lying area supports a rich mixture of meadow herbs, legumes and tall grasses, most commonly, False Oat Grass (*Arrhe. elat.*), Wild Angelica (*Angel. syl.*), Tufted Vetch (*Vicia cra.*) and Meadow Crane's-bill (*Geran. pra.*). There is an invasion of Rosebay Willow-herb (*Chame. ang.*) and Creeping Thistle (*Cirsi. arv.*).

TG1: Under Hawthorn (*Crata. mono.*), and along path, local. abund. of Wood Horsetail (*Equis. syl.*), Field - Horsetail (*Equis. arv.*), Greater Bird's-foot Trefoil (*Lotus uig.*) and tussocks of Cocksfoot (*Dacty. gio.*)

TG2: Local. abund. of Tufted Hair Grass (*Desch. ces.*) and Wood Horsetail (*Equis. syl.*), with Hairy Sedge (*Carex hirta.*) and individuals of Marsh Thistle

(*Cirsi. pal.*) and Soft Rush (*Junc. eff.*).

Compartment 18: Marshy Grassland *

A fragment of wet meadow where the grasses -predominately False Oat Grass (*Arrhe. elat.*)- are subordinate to the herb component. The vegetation has similarities to comp.17, but for the clear dominance of Meadowsweet (*Filip. ulm.*), the f req. Wood Crane's-bill (*Geran. syl.*) and only occ. Wild Angelica (*Angel. syl.*). Invasion by Bracken (*Pteri. aqu.*), Rosebay Willow-herb (*Chame. ang.*) and thistles.

Compartment 19 Non-ruderal

Stands of Male Fern (*Dryop. fil.*), with Foxglove (*Digit. pur.*) and scattered scrub. Birch and oak saplings line the steps on the higher ground.

Compartment 20 Dense Scrub

As comp.4, but with localised abund. of Gorse (*Ulex eur.*) and freq. Foxglove (*Digit. pur.*).

Compartment 21 Semi-improved Acid Grassland *

Species-poor grassland dominated by a mixture of common grasses, predominately Common Bent (*Agros. cap.*) and Creeping Soft Grass (*Holcus mol.*), with a very low diversity and abundance of herbs. Around the edges of the flat hill-top, there is localised abundance of Sheep's Fescue (*Festu. ovi.*) and Heath Bedstraw (*Galium sax.*). A slightly hollowed area, in the centre of the compartment, supports large patches of False Oat Grass (*Arrhe. ela.*) and scattered Soft Rush (*Junc. eff.*), contributing to a reduction in the acidic characteristics of the comp. - perhaps reflecting past improvement. Grass on the hilltop is rabbit-grazed.

TG1: Rosebay Willow-herb (*Chame. ang.*).

TG2: Very tussocky, with mosses underfoot. Local. domin. of Heath Bedstraw (*Galium sax.*) and Sheep's Fescue (*Festu. ovi.*).

Compartment 22 Semi-improved Acid Grassland *

Similar to that of the drier ground in comp.21, but inc. an abund. of Yorkshire Fog (*Holcus lan.*) and freq. Common Sorrel (*Rumex acetosa*). A wide, mown path, leading to the football pitch, is heavily rabbit-grazed and supports occ. White Clover (*Trifo. rep.*).

Compartment 23 Dense scrub

As comp. 4, but with scattered young trees, most lining football pitch: Silver Birch (*Betula pen.*), Sycamore (*Acer pse.*), Rowan (*Sorbus auc.*) and Willow (*Salix sp.*).

Compartment 24 Dense Scrub

Below banking at the E end of the football pitch, there are a few tall Willows (*Salix sp.*) present amongst stands of Raspberry (*Rubus ida.*), with occ. Broom (*Cyti. sco.*) and Hawthorn (*Crata. mono.*). Beneath this, there are a few grasses -mainly Cocksfoot (*Dacty. gb.*) and Creeping Soft Grass (*Holcus mob.*)- and occ. herbs, mc: Pink Purslane (*Montia sib.*) and Cleavers (*Galium apa.*).

Compartment 25 Semi-improved Acid Grassland *

Species-poor version of acid grassland on the north-facing slopes (coxnps.7&9). The rabbit-grazed

sward contains an abundance of Heath Bedstraw (*Galium sax.*), Sheep's Fescue (*Fest. ovi.*), Tormentil (*Poten. ere.*) and Common Bent (*Agros. cap.*). There are local, clumps of Yorkshire Fog (*Holcus lan.*) alongside an informal path. A recently erected fence keeps members of the public back from the treacherous edge of the landslip.

Compartment 26 Semi-improved Neutral Grassland *

Large, grassy area sloping -very slightly- up from the base of the banking of the football pitch. The relatively dry soil supports a tall sward dominated by False Oat Grass (*Arrhe. elat.*), with a scattering of herbs, mc: an abund. of Yarrow (*Achil. mu.*), freq. Germander Speedwell (*Veron. cha.*) and a few individuals of White Dead Nettle (*Lamium alb.*) and Harebell (*Campa. rot.*). To the south of the compartment, where the soil is more damp, occ. Devil's-bit Scabious (*Succi. pra.*) and Hairy Sedge (*Carex hir.*) occur. A few scattered Hawthorn (*Crat. mono.*) and old, spindly Broom (*Cyti. sco.*) are present. Patches of Rosebay Willow-herb (*Chame. ançr.*) occur throughout. A Kestrel was seen hovering overhead.

TG1: Wide, informal path edged by local. White Clover (*Trifo rep.*) Ribwort Plantain (*Plant. lan.*), and Creeping Buttercup (*Ranun. rep.*).

Compartment 27 Tall Ruderal

Stand of Rosebay Willow-herb (*Chame. ang*)

Compartment 28 Semi-improved Acid Grassland *

Sloping down from the adjacent football pitch there is a small area of grassland similar to comp.25, but with less marked acidic characteristics -a much reduced presence of the indicator species Heath Bedstraw (*Galium saxatile*)- and with an extensive carpet of the moss *Rhytidiadelphus squarrosus*.

Compartment 29 Dense Scrub

On dry, slightly raised ground along the top of the cliff, there is a strip of Broom (*Cyti. sco.*) and Hawthorn (*Crata. mono.*), edged by Rosebay Willowherb (*Chame. ang.*). Alongside the stony path that leads down to the railway track, this scrub inc. Dog Rose (*Rosa can.*) and Willow (*Salix sp.*) regeneration. A few piles of cut branches and twig bundles are present.

Compartment 30 Semi-natural Broad-leaved Woodland *

A steep-sided slope supports the remains of a small area of broad-leaved trees. There is a mixed-aged open canopy consisting of a few mature Ash (*Fraxi. exc.*) and occ. young Rowan (*Sorbus auc.*). The scattered understorey is predominately Hawthorn (*Crata. mono.*) and there is only limited Ash regeneration, in comparison with comp.5. Small clearings are dominated by dense tangles of Raspberry (*Rubus ida.*) and Bramble (*Rubus fru.*).

Beneath the canopy, there is a patchy mosaic of exposed soil, grasses and woodland herbs. There are large clumps of Tufted Hair Grass (*Desch. ces.*) and thin patches of Creeping Soft Grass (*Holus mol.*) and Creeping Bent (*Agros. sto.*). The herb component of the ground flora is similar to comp.2 -except for a slightly lower species diversity- with Avens (*Geum spp.*) and Common Dog-violet (*Viola riv.*) the most common.

Towards the bottom of the slope there is a small, moss-covered embankment, above a very narrow path. The ground here is very damp and the wood is edged with patches of Soft Rush (*Junc. eff.*), sedges (*Carex sp.*) and occ. Meadowsweet (*Filip. ulm.*). Ground adjacent to the landslip (comp.31) is very unstable, with many loose stones and some removal of top soil -exposing many tree roots. There is only a thin, scattered ground flora, but a number of young Ash saplings are present.

TG1: This muddy path has slipped into the river in places. It supports an abund. of Coltsfoot (*Tussil. far.*) and Cocksfoot (*Dactyl. glab.*), with Broad-leaved Plantain (*Plant. maj.*), Broad-leaved Dock (*Rumex obt.*), Common Ragwort (*Senec. jacob.*) and Lady's Mantle (*Alchem. vul.*).

TG2: Marginal vegetation: Reed Canary Grass (*Phalaris arund.*), with Meadowsweet (*Filip. Ulm.*) and a few Willow (*Salix* sp.) saplings.

Compartment 31 Bare Ground

A land-slip has brought down much of this section of the very steep, north-facing slope - removing vegetation and exposing bare soil. There is a collection of large boulders and stones at the foot of this cliff, some of which were a result of the land-slip, while others were carried down in the floods that initiated the slip.

On the bare slope, a few scattered clumps of vegetation that have slipped down -attached to the sandy top soil-have become established: Rosebay Willow-herb (*Chamaem. ang.*), Bracken (*Pteris aqu.*) and occ. Foxglove (*Digit. pur.*). Colonising the rocks and boulders, there is a scattered mixture of plants indicative of inundated and disturbed ground, as well as a few patches of marginal vegetation. There is local Brooklime (*Veronica bec.*), Monkeyflower (*Mimulus gut.*) and Creeping Forgetmenot (*Myosotis sec.*), with Coltsfoot (*Tussil. far.*), Knotgrass (*Polygonum avi.*) and Wavy Bittercress (*Cardamine fle.*).

Compartment 32 Semi-natural Broad-leaved Woodland *

Open mixed-age stand of Ash (*Fraxinus exc.*) and freq. Silver Birch (*Betula pen.*), with dense multi-layered understorey of Hawthorn (*Crataegus mono.*). Compared to comp. 30, the overall appearance is less scrubby, because there are fewer dense stands of Raspberry (*Rubus idaeus*) and Bramble (*Rubus fruticosus*). Also, there is a lot of Ash, Hawthorn and Birch regeneration throughout.

The ground is unstable, with lots of stones, bare soil and mossy patches. The steepest part of the slope supports an abund. of Primrose (*Primula vul.*). The community of low-lying herbs differs slightly from previous woodland compartments (comps. 2&30) and mc: Wild Strawberry (*Fragaria ves.*), Wood Sorrel (*Oxalis ace.*), Opposite-leaved Golden Saxifrage (*Chrysosom. opp.*) and one patch of Dog's Mercury (*Mercurialis per.*). A few ferns and small clumps of grasses, such as Fine-leaved Sheep's Fescue (*Festuca ten.*), grow on the slope, but most grasses are localised in the less shaded areas.

TG1: Dense stand of Meadowsweet (*Filip. Ulm.*). Bullfinches were seen feeding on their flowerheads.

Compartment 33: Dense Scrub

Underneath electricity pylons (past removal of trees), there is an area of scrub dominated by dense stands of Raspberry (*Rubus idaeus*), with Hawthorn (*Crataegus mono.*) and Broom (*Cytisus sco.*). Many young saplings occur around the edges of the compartment, particularly Silver Birch (*Betula pen.*) and Downy Birch (*Betula pub.*).

Compartment 34: Semi-natural Broad-leaved Woodland *

Small, dense stand of Silver Birch (*Betula pen.*), Ash (*Fraxinus exc.*), Downy Birch (*Betula pub.*) and Willows (*Salix* spp.), with a scattered understorey of Hawthorn (*Crataegus mon.*). This is a mixed-age canopy, with stands of young birch saplings, abund. ash regeneration and previously coppiced older trees.

On the slope, the damp, gravelly soil supports a patchy covering of mosses, leaf litter and scattered herbs (similar to comp.30) -predominately Wood Aven (*Geum urb.*) and Dog Violet (*Viola nv.*), but inc. patches of Devil's Bit Scabious (*Succisa pra.*). At the bottom of the slope there are stands of Water Aven

(Geum nv.) and Male Fern (Dryop. fil.). Further up the slope, a few fallen trees (some cut) have produced clearings which support scattered scrub, some regeneration and a ground flora dominated by grasses - mainly Cocksfoot (Dacty. gb.) and Common Couch (Elymus can.). Also, around the top edges of the comp., the ground is unstable and the ground flora inc. plants common to disturbed ground: Colt's-foot (Tussi. far.), Ox-eye Daisy (Leuca. vul..) and Common Ragwort (Senec. jac.).

Compartment 35: Neutral Grassland *

A strip of species-rich, grass-dominated ground borders the trees, where a narrow, informal path runs along the river's edge. The soil is light and sandy and there is some light grazing by rabbits. There are a no. of grasses, mc: Cocksfoot (Dacty. gb.), False Oat Grass (Arrhe. ela.), Tall Fescue (Festu. aru.), Perennial Rye-grass (Lolium per.) and Smooth Meadow-grass (Poa pra.). A mixture of meadow herbs are present (see previous comps. 14&17), with additional umbellifer spp., mc: Cow Parsley (Anthr. syl.), Ground-elder (Aegop. pod.) and, more unusually, Burnet-saxifrage (Pimpi. sax.). A few woodland herbs grow close to the trees and, on the path there is a local. abund. of Creeping Buttercup (Ranun. rep.) and occ. White Clover (Tnt. rep.).

TG1: Goat Willow (Salix cap.) carr on damp, frequently inundated sand. A few low-lying grasses and herbs occur - eg. Creeping Bent (Agros. sto.), Creeping Forgetmenot (Myoso. sec.) Creeping Buttercup (Ranun. repens)- beside clumps of Great Wood-rush (Luzul. syl.). Start of old, overgrown stone wall that borders the river upstream.

Compartment 36: Neutral Grassland and Scattered Scrub *

Beside a path, that runs alongside the railway line, there has developed a species-rich strip of grasses, meadow herbs and legumes, Inc. an abund. of Tufted Vetch (Vicia cra.), with Meadow Vetchling (Lathy. pra.), Hop Trefoil (Trifo. cam.) and other clovers. A few less common species also occur, such as Orpine (Sedum tel.) and Rough Hawkbit (Leot. his.). Along the top of the old wall, that lines the river, stand scattered Goat Willow (Salix cap.), Dog Rose (Rosa can. agg.) and occ. trees.

TG1: Mature Sycamore (Acer pse.), with carpet of Great Wood-rush (Luzula syl.).

TG2: Old, iron bridge. Beside this, there is disturbed ground with local, stands of Rosebay Willow-herb (Chame. ang.) and increased abund. of Raspberry (Rubus ida.) and Nettle (Urtica dio.).

Compartment 37: Dense Scrub

Dense stand of Blackthorn (Prunus spi.) and Elder (Sambu. nig.), with occ. Hawthorn (Crata. mono.). Beneath these tall shrubs, the damp, mossy ground supports an abund. of Ground Ivy (Glech. hed.) and Nettle (Urtica dio.), with patches of Opposite-leaved Golden Saxifrage (Chrys. opp.), Wavy Bitter-cress (Carda. fle.), Hedge Woundwort (Stac. syl.) and Wood Avens (Geum urb.).

Compartment 38: Semi-improved Neutral Grassland *

Large field of rank grassland, with sloping ground in the W of the comp. and scattered Willows (Salix x spp.) lining the river's edge. There is no evidence of any current grazing or cutting regimes, although the abundance of quick-growing grasses -such as Yorkshire Fog (Holcus lan.)- and freq. stands of Broad-leaved Dock (Rumex obt.), nettles and thistles, suggests past improvement. Other common grasses mc: False Oat Grass (Arrhe. elat.), Cocksfoot (Dacty. gb.) and Perennial Rye-grass (Lolium per.), with clumps of Giant Fescue (Festu. gig.) and Marsh Foxtail (Alope. pra.) on the low-lying, sandy edge to the river. There are a no. of herbs within the sward -inc. freq. Meadow Crane's-bill (Geran. pra.) and Crosswort (Galium cru.)- as well as common forbs, such as Creeping Buttercup (Ranun. rep.) and

White Clover (*Trifolium repens*). Towards the N of the field, the ground becomes more damp and there is increased abund. of Tufted Hair Grass (*Deschampsia cespitosa*), with patches of Meadowsweet (*Filipendula ulmaria*) and Water Avens (*Geum rivale*).

TG1: Scattered Hawthorn (*Crataegus monoica*), Dog Rose (*Rosa canina* agg.) and Blackthorn (*Prunus spinosa*) regeneration. Also, local. abund. of Meadowsweet (*Filipendula ulmaria*) and Wood Crane's-bill (*Geranium sylvestre*), with dense Rosebay Willowherb (*Chamaemelum angustifolium*) by the railway line fence.

TG2: Extensive stand of Giant Hogweed (*Heracleum mantegazzianum*) spreading along the sides and base of the slope. A few mature Hawthorn (*Crataegus monoica*) occur on the slope.

N.B. Many of the grass species in this comp. are infected with Ergot (*Claviceps purpurea*).

Compartment 39: Neutral Grassland *

Damp grassland on flat ground at the top of the W-facing slope, surrounding an area of marshy grassland (comp.39). The sward, which is a less species-rich version of comp.17, is dominated by False Oat Grass (*Arrhenatherum elatius*), with a strong herb component, inc., predominately: Meadowsweet (*Filipendula ulmaria*), Greater Bird's-foot Trefoil (*Lotus uliginosus*), Wild Angelica (*Angelica sylvestris*) and Wood Geranium (*Geranium sylvestre*). Dog Rose (*Rosa canina* agg.) is scattered throughout and Hawthorn (*Crataegus monoica*) line the fence. The tall sward shows no obvious signs of improvement, although there is evidence of deer grazing.

Two Roe deer were observed and in a no. of places the vegetation had been flattened by resting deer.

TG1: Hawthorn (*Crataegus monoica*) and individuals of Holly (*Ilex aquifolium*). Localised Water Aven (*Geum rivale*), Hedge Woundwort (*Stachys recta*) and Cocksfoot (*Dactylis glomerata*).

Compartment 40: Marshy Grassland *

Area in neutral grassland (comp.39), dominated by dense Meadowsweet (*Filipendula ulmaria*), with grasses subordinate to the herb component of the sward (as comp 18).

Compartment 41: Semi-natural Broad-leaved Woodland *

An open canopy of mature ash (*Fraxinus excelsior*) stands at the bottom of a steep slope, beneath which there are a few Ash and Sycamore (*Acer pseudoplatanus*) saplings. Regeneration is more pronounced further up the slope, where there is a mixture of younger trees and saplings (some only a few cm.) and a scattered understorey of Hawthorn (*Crataegus monoica*). Ivy (*Hedera helix*) covers one of the mature trees.

The slope is damp and mossy, with exposed soil under dense cover and the remains of an old, overgrown wall are occ. visible. There is a rich carpet of low-lying herbs, similar to those in previous ash woodland habitats (comps.5, 30 & 32), but which inc. an abund. of Broad-leaved Willow-herb (*Epilobium montanum*), extensive patches of Herb Robert (*Geranium robertianum*) and Opposite-leaved Golden Saxifrage (*Chrysanthemum oppositifolium*). Freq. Bluebell (*Hyacinthus non-scriptus*) and scattered patches of Meadowsweet (*Filipendula ulmaria*) occur near the top of the slope. On flat ground by the river, damp, sandy soil supports a ground flora dominated by grasses - mainly Cocksfoot (*Dactylis glomerata*) and Yorkshire Fog (*Holcus lanatus*) and which inc. herbs suited to the damp conditions: Pink Purslane (*Montia sibirica*), Wood Stitchwort (*Stellaria nemoralis*) and Selfheal (*Prunella vulgaris*).

TG1: Informal, sandy path surrounded by disturbed ground supporting patches of Nettle (*Urtica dioica*), Broad-leaved Dock (*Rumex obtusifolius*) and Coltsfoot (*Tussilago farfara*).

Compartment 42: Semi-natural Broad-leaved Woodland *

A group of trees stands on ground that was once part of the main riverbank, but is now separated from it by a - relatively wide, shallow channel. There is a mixed-age canopy of tall Willows (*Salix* spp.), Gean (*Prunus avi.*) and a few mature Sycamore (*Acer pse.*). Lots of Willow - regeneration is present in the understorey. Some of the ground in the centre of the island is bare, exposing a damp, sandy soil and fine gravel. Charred remains of old campfires are present. Ground flora is dominated by Creeping Soft Grass (*Holcus mol.*), with a patchy mixture of herbs common to damp woods and disturbed or inundated ground. There is scattering of marginal vegetation, mc: Monkey flower (*Mimul. gut.*), Brooklime (*Veron. bec.*) and Water Forget-me-not (*Myoso. sco.*).

TG1: Vegetative debris has built up in lower Willow branches, supporting one large colony of Birds' Nest Fungus (*Cyathus olla*).

TG2: Stands of Reed Canary Grass (*Phala. aru.*)

SECTION 2: NORTH OF THE RIVER

Compartment 43: Semi-natural Broad-leaved Woodland *

Standing on sloping ground, this relatively open area of woodland is dominated by mature Pendunculate Oak (*Querc. rob.*), with a few stands of younger, trees and saplings, mainly Sycamore (*Acer pse.*) and Ash (*Fraxi. exc.*). A single, mature Larch (*Larix eur.*) is present at the top of the slope. On steeper ground there is a scattered understorey of occ. Hawthorn (*Crata. mono.*) and Blackthorn (*Prunus. spi.*) whilst, by the river, f req. Hazel (*Coryl. ave.*) and Willow (*Salix* spp.) occur. On the steepest parts of the slope, there are occ. dense tangles of dense Bramble (*Rubus fru.*) and Raspberry (*Rubus ida.*).

A lot of fallen branches and general wood debris is present on the woodland floor.

Along the length of the comp., the drier top two-thirds of the slope supports a ground flora of predominately, Creeping Soft Grass (*Holcus mol.*) and Common Bent (*Agros. can.*), with freq. Foxglove (*Digit. pur.*) and patches of Wood Sorrel (*Oxalis ace.*) and Wood Sage (*Teu. scor.*). Many clumps of ferns (*Dryop. spp.*) occur in the more shaded areas. Towards the bottom of the slope, where the ground shelves more steeply, the soil becomes increasingly damp and there are many moss-covered rocks present. There is also increased regeneration, mainly Ash (*Fraxi. exc.*) Here, the grasses are sparser and there is an abund. of Common Dog-violet (*Viola riv.*), with Wood Avens (*Geum urb.*) and Bluebell (*Hyacin. non.*). By the river, there are clumps of Great Wood-rush (*Luzula syl.*).

This, and the other areas of oak woodland (comps.45, 50 &51), are probably of long-established plantation origin, although there are no obvious signs of recent management. However, these neglected stands of mature, native trees have developed a semi-natural ground flora and scattered understorey which places them, just over the borderline, in the semi-natural woodland category. Also, self-seeded trees and scattered regeneration have produced canopies of a more mixed age.

TG1: small, grassy clearing, above a group of dead elms (one fallen). Localised Cocksfoot (*Dacty. glo.*) and False Oat Grass (*Am. elat.*), with scattered, scrubby Wych Elm (*Ulmus gla.*). One patch of Wild Basil (*Clino. vul.*).

TG2: Fast-flowing stream, collecting drainage from bypass, runs through a small hollow into the river. The stream sides supports: Reed Canary Grass (*Phala. aru.*), a carpet of Water Aven (*Geum nv.*) and Meadowsweet (*Filip. ulm.*), Nettle (*Urtica dio.*) and Giant Hogweed (*Herac. man.*). Further up the hollow's sloping sides, the wet ground is covered in Pink Purslane (*Montia sib.*), Bugle (*Ajuga rep.*) and Tufted Hair Grass (*Desch. ces.*).

TG3: Small, damp clearing by fallen tree supports Giant Hogweed (*Herac. man.*).

Compartment 44: Semi-natural Broad-leaved Woodland *

This area of oak woodland is very simniliar to the previous compartment (comp.44), although there is a notable lack of Sycamore (*Acer pse.*) and Hazel (*Coryl. ave.*) and little of the scrubby patches of Raspberry (*Rubus ida.*) and Bramble (*Rubus fru.*). Also, the grass-dominated ground flora of the higher ground in comp-44 is restricted to a few species-poor clearings along the top fence, containing large patches of Nettle (*Urtica dio.*).

The sloping, damp and mossy ground supports a ground flora dominated by herbs, with only a few thin patches of grasses -mainly Cocksfoot (*Dactylis gb.*). There is an abund. of Wood Avens (*Geum urb.*), with Herb Robert (*Geran. rob.*) and Broad-leaved Willow-herb (*Epilo. mon.*). There is not the abund. of Male Fern (*Dryop. fil.*) present in comp.44, although Bracken (*Pteri. aqu.*) is scattered throughout, with increased abund. at the top of the slope. Goat Willow (*Salix cap.*) stands by the river and, here, the gravelly, moss-covered ground is covered in a an abund. of Selfheal (*Prun. vul.*), with Marsh Hawk's-beard (*Crepis pal.*), Wood Stitchwort (*Stell. nem.*) and occ. grasses, mainly Yorkshire Fog (*Holcus lan.*). A number of rabbit burrows are present on the slope.

TG1: Very dense Blackthorn (*Prun. spi.*) and Elder (*Sambu. nig.*). The soil is wet, with occ. small rivulets of water running down the slope. There is a carpet of Pink Purslane (*Montia sib.*), with occ. Opposite-leaved Golden Saxifrage (*Chry. opp.*) and thallose liverworts.

TG2: Dense Giant Hogweed (*Herac. man.*).

Compartment 45: Continuous Bracken

Bracken (*Pteri. aqu.*), with Cleavers (*Galium apa.*), Nettle (*Urtica dio.*), Hogweed (*Herac. spo.*) and Rosebay Willowherb (*Chame. ang.*). Also, scattered Elder (*Sambu. nigra.*) and Hawthorn (*Crata. mono.*) by fence.

Compartment 46: Dense Scrub

Dense stand of Hawthorn (*Crata. mono.*), Gorse (*Ulex eur.*) and Broom (*Cyti. sco.*), with occ. Elder (*Sambu. nigra*) and a few Birch saplings (*Betula spp.*). At the top of the slope there are stands of Raspberry (*Rubus ida.*) and small clearings dominated by grasses - typical of semi-improved neutral grassland (see comp.26).

Compartment 47: Neutral Grassland and Scattered Trees

This thin strip of damp, unmanaged, species-rich grassland separates the river from adjacent fields. It has characteristics typical of previous riverbank verges of neutral grassland -dominated by False Oat Grass (*Arrhe. ela.*) and Cocksfoot (*Dacty. gb.*), with Greater Bird's-foot Trefoil (*Lotus uli.*), Meadowsweet (*Filip. ulm.*), Lady's Bedstraw (*Galium ver.*) and Yarrow (*Achil. mu.*). The sward composition is very similar to comp.36, although there are fewer species present and many of the herbs are less abundant.

Scattered Sycamore (*Acer pse.*) and Ash (*Fraxi. exc.*) line the riverbank. A few individuals of Dog Rose (*Rosa can.*), Broom (*Cyti. sco.*) and Hawthorn (*Crata. mono.*) occur, as well as occ. scrubby patches of Bramble (*Rubus fru.*).

TG1: Marginal vegetation: Reed Canary Grass (*Phala. ar-u.*), with occ. Unbranched Bur-reed (*Sparq.*

eme.)

TG2: Disturbed, open ground (under pylons) by felled trees. Local. abund. of thistles and nettles.

TC3: Small sandbank by Goat Willow (*Salix cap.*). On shaded ground: Ground Elder (*Aegop. pod.*), Field Horsetail (*Equis. ar-v.*), Chickweed (*Stell. med.*), Pink Purslane (*Montia sib.*) and thin patches of grass. The edges of the sand are colonised by scattered inundation vegetation, with a single stand of Dames-violet (*Hespe. mat.*). A pair of Mallards were often seen resting here.

Compartment 48: Dense Scrub

Amongst the Willow carr (*Salix sp.*) there is an abundance of Giant Hogweed (*Her-ac. man.*). Beneath this, sandy soil and gravel support thin patches of grasses: Cocksfoot (*Dactyl. gb.*) and Creeping Bent (*Agros. sto.*), and herbs typical of disturbed ground. More open ground is covered with a number of herbs and grasses common to damp, neutral grassland habitats (see previous comps.), as well as freq. ruderals. Large stones by the river's edge are colonised by Monkeyf lower (*Mimul. gut.*), Creeping Forgetmenot (*Myoso. sec.*), Broad-leaved Dock (*Rumex. obt.*) and a patch of Water-cress (*Nastu. off.*).

TG1: Dense stand of Butterbur (*Petas. hyb.*)

Compartment 49: Semi-improved Broad-leaved Woodland *

Open oak woodland, as comp.43, but inc. Rowan (*Sorbus auc.*) amongst the younger, self-seeded trees, occ. Elder (*Sambu. fig.*) instead of Hazel (*Coryl. ave.*) and a few mature Sycamore (*Acer pse.*). Much of the slope is covered in a grass-dominated ground flora of Creeping Soft Grass (*Holcus mol.*), with freq. Cocksfoot (*Dactyl. gb.*) and an abund. of herbs, mc: Common Dog-violet (*Viola nv.*), Wood Sorrel (*Oxalis ace.*), Wood Aven (*Geum urb.*) and Wood Sage (*Teu. scoro.*). On the steeper, shadier parts of the slope there are occ. patches of Dog's Mercury (*Mercu. per.*), Great Wood-rush (*Luzula syl.*) and ferns, inc. a few individuals of Lady's Fern (*Athyr. fib.*) and Hard Fern (*Blech. spi.*).

In the north half of the wood, a series of slight ridges and hollows run length-ways down the slope, with the hollows covered in a local. abund. of ferns, mainly Male Fern (*Dryop. Lii.*) and Broad Buckler Fern (*Dryop. dii.*). The foot of the slope ends sharply in a vertical embankment of exposed rock and soil, with ledges that support clumps of ferns and Great Wood-rush (*Luzuia syi.*). On the ground below, amongst dense Great Wood-rush, there are numerous herbs, Inc. those suited to the damp conditions: Pink Purslane (*Montia sib.*), Water Aven (*Geum nv.*) and Meadowsweet (*Filip. uim.*)

TG1: Marginal vegetation over lots of stones and boulders: Reed Canary Grass (*Phala. aru.*), with patch of Water Mint (*Mentha aqu.*).

TG2: Patch of wet ground near top of slope. Carpet of Bugle (*Ajuga rep.*), with Common Valerian (*Valer off.*).

TG3: Grassy area under oak, with Sweet Vernal Grass (*Antho. odo.*), Red Fescue (*Festu. rub.*) and Heath Bedstraw (*Galium sax.*)

TG4: Blackthorn (*Prunus avi.*) lines fence (old hedge?).

TG5: Gean (*Prunus avi.*) and fallen Larch (*Larix. eur.*).

Compartment 50: Improved Grassland

Fenced-off area surrounding the new drain built to take run-off from the Dunblane Bypass. Sward dominated by Red Fescue (*Festuca rubra*), with patches of Yorkshire Fog (*Hoiculus lanatus*), and Broad-leaved Dock (*Rumex obtusifolius*). Scattered Broom (*Cytisus scoparius*) and Gorse (*Ulex europaeus*), Saplings of Silver Birch (*Betula pendula*) and exotic conifers have been planted by the top of the drain.

TG1: Marginal vegetation: Reed Canary Grass (*Phalaris arvensis*) and Water Forgetmenot (*Myosotis scorpioides*). Scattered, young Eared Willow (*Salix auricularis*).

Compartment 51: Semi-natural Broad-leaved Woodland *

Open mature woodland of Oak (*Quercus robur*), with occasional Ash (*Fraxinus excelsior*) and a scattered understorey of Hawthorn (*Crataegus monogyna*). No Sycamore (*Acer pseudoplatanus*) is present and there is only limited regeneration. Shaded ground is strewn with twigs and leaf litter and supports a thin patchy mosaic of bare soil, mosses, herbs and a few grasses, most commonly: Wood Avens (*Geum urbanum*), Broad-leaved Willowherb (*Epilobium monium*), Bluebell (*Hyacinthus non-scriptus*) Cocksfoot (*Dactylis glomerata*) and Tufted Hair Grass (*Deschampsia cespitosa*). On more open ground there is an increased abundance of grasses, with Tufted Hair Grass local in damp areas.

Again, slight hollows run down the slope (see comp.50) and these support a localised increase in mosses, with, Opposite-leaved Golden Saxifrage (*Chrysanthemum oppositifolium*). By the river's edge, on sandy soil, there is a strip of Goat Willow (*Salix caprea*) carrying over a ground flora dominated by grasses: Cocksfoot (*Dactylis glomerata*), Creeping Soft Grass (*Holcus mollis*), French Oat (*Gaudium fruticosum*) and Giant Fescue (*Festuca gigantea*). There is also an abundance of Pink Purslane (*Montia sibirica*) and Creeping Buttercup (*Ranunculus repens*), with Great Wood-rush (*Luzula sylvatica*), Marsh Thistle (*Cirsium palustre*) and a few ruderals.

Patches of Wood Avens (*Geum urbanum*) had clearly been grazed and a young Roe Deer was observed above the wood.

TG1: A small clearing of stony, disturbed ground dominated by grasses: Red Fescue (*Festuca rubra*), French Oat (*Gaudium fruticosum*), False Oat Grass (*Arrhenatherum elatius*) and Timothy (*Phleum pratense*), with local Creeping Buttercup (*Ranunculus repens*) and Broad-leaved Dock (*Rumex obtusifolius*).

TG2: Stand of Giant Hogweed (*Heracleum mantegazzianum*).

TG3: Wet, unstable ground supports dense Giant Hogweed (*Heracleum mantegazzianum*), with Nettle (*Urtica dioica*) and Meadowsweet (*Filipendula ulmaria*).

TG4: Damp, well-worn rock face covered in Ivy (*Hedera helix*) and some thallose liverworts. At its base, pools of water have collected in holes eroded from flat, exposed rocks (possibly old route for river?). Over stones there are patches of marginal and inundation vegetation and, above the rock face, there is dense, coppiced Hazel (*Corylus avellana*), with Wych Elm (*Ulmus glabra*). A large group of Long-tailed Tits were flying around the Hazel.

Compartment 52: Semi-natural Broad-leaved Woodland *

Unable to get access across fast-flowing river. However, this island appears similar comp.42, although the canopy looks more mature - it includes a number of Ash (*Fraxinus excelsior*) and fewer Willows (*Salix* sp.).

Compartment 53: Semi-natural Broad-leaved Woodland *

A small stand of trees, mainly Ash (*Fraxinus excelsior*), line the river. A single mature Pendunculate Oak (*Quercus robur*) stands by the edge of the iron bridge. Blackthorn (*Prunus spinosa*) lines the fence and its regeneration has produced a few dense stands throughout. This patchy understorey also includes Hazel (*Corylus avellana*), Hawthorn (*Crataegus monogyna*), Broom (*Cytisus scoparius*) and many Ash (*Fraxinus excelsior*) and Sycamore (*Acer pseudoplatanus*) saplings.

The remains of an old, man-made embankment are present and the mossy stones are covered an abundance.

of Male Fern (*Dryop. fil.*). The ground flora is dominated by these ferns, with freq. Wood Avens (*Geum urb.*), Common Dog-violet (*Viola nv.*) and Wood Sage (*Teu. scor.*). In the heavy shade of the oak, damp ground supports a thinner ground flora that inc. Hairy Brome (*Bromus ram.*). There is a local abund. of Creeping Soft Grass (*Holcus mol.*) in more open areas, particularly to the south of the comp. where the ground flora grades into a grassland habitat (see coinp.47). Here, where ground has slipped, exposing sandy soil, a rabbit warren is present.

SECTION 3: EAST OF THE RAILWAY

Compartment 54: Dense Scrub

Over flat, grassy ground there stands a no. of tall, mature Hawthorn (*Crata. mono.*), with f req. Dog Rose (*Rosa can.*) and dense stands of Raspberry (*Rubus ida.*). There is some Bracken (*Pteri. aqu.*) invasion. A wide, damp channel runs along the E side of the comp. -overgrown with scrub, coarse grasses, such as Cocksfoot (*Dacty. gb.*) and Common Sedge (*Carex nigra.*). By the railway line, an informal path leads up to a stile at the N of the comp. (footpath to Ashfield).

Compartment 55: Tall Ruderal

Rosebay Willowherb (*Chame ang.*) has spread over much of - the flat ground and along the railway line fence.

Compartment 56: Semi-improved Neutral Grassland

Damp, rank grassland with tall tussocks of False Oat Grass (*Arrhe. ela.*) and Cocksfoot (*Dacty. gb.*). There is an abund. of Lady's Bedstraw (*Galium ver.*), freq. Yarrow (*Achil. mu.*) and Wild Angelica (*Ang. syl.*), although, overall, the sward is relatively species-poor, with a low abundance of meadow herbs. The presence of common forbs - such as Common Sorrel (*Rumex acetosa*) and Meadow Buttercup (*Ranun. acr.*)- and patches of Creeping Thistle (*Cirsium any.*), suggest some past improvement. There is evidence of grazing by Roe Deer and rabbits.

TG1: On increasingly damp ground, there is an abund. of Creeping Buttercup (*Ranun. rep.*), with clumps of Jointed - Rush (*Junc. art.*) and occ. Marsh Thistle (*Cirsium pal.*).

Compartment 57: Marsh

A single-species stand of dense Meadowsweet (*Filip. ulm.*) cuts across this low-lying area, following the line of the old river course. In wetter months, a small channel of slow-moving water runs along the centre of this strip, accumulating in small ephemeral pools under willow carr (see comp. 58) and at the south end of the field (TG2). A second, narrow strip of Meadowsweet (*Filip. ulm.*) runs along damp ground below the steep slope to the east.

TG1: Stand of Jointed Rush (*Junc. art.*).

TG2: Slight, wet hollow, by Goat Willow (*Salix cap.*), supports Reed Canary Grass (*Phalara. aru.*).

Compartment 58: Dense Scrub

Goat Willow (*Salix cap.*) carr stands on wet ground that was once the site of the old river course. At both ends of the comp. there is local., dense Meadowsweet (*Filip. ulm.*), with much of the remainder of the ground covered in patches of Nettle (*Urtic dio.*) over grasses, such as Bearded Couch (*Elymus can.*). Wet, muddy ground supports Brooklime (*Veron. bec.*), Marsh Bedstraw (*Galium pal.*), Cuckoof lower (*Carda. pra.*) and the remains of a tall, heavily grazed Mint (*Mentha sp.*) -probably a Water Mint (*Mentha aqu.*) hybrid. In wet months, shallow pools of water form and these become covered in luxuriant clumps

of Water-cress (*Nastur. off.*).

Compartment 59: Semi-improved Neutral Grassland and Scattered Scrub

Damp, rank grassland shows no clear dominance of grass species, with a mixture of Creeping Soft Grass (*Holcus mol.*), Common Bent (*Agros. cap.*), False Oat Grass (*Arrhe. elat.*), Cocksfoot (*Dacty. gb.*) and Tufted Hair Grass (*Desch. cesp.*). There is an abund. of the ujubellifers Hogweed (*Herac. sph.*) and Wild Angelica (*Ang. syl.*). Few meadow herbs are present, although there is freq. Yarrow (*Achil. mu.*) and occ. (Wood Crane's-bill). Throughout the sward there are a no. of common forbs and ruderals typical of improvement through grazing pressure. There is some Bracken invasion (*Pteri. aqu.*), as well as a few scattered Ash (*Fraxi. exc.*) saplings, f req. Dog Rose (*Rosa can.*) and ccc. young Hawthorn (*Crata. mono.*). Again, there is evidence of grazing by deer and rabbits.

Compartment 60:

Poor, rank grassland as comp.59, but with none of the scattered regeneration and with numerous mossy hummocks throughout. Also, there is much less variety of herbs and grasses present, predominately an abund. of Yorkshire Fog (*Holcus lan.*) and Wild Angelica (*Ang. syl.*).

Compartment 61: Dense scrub

Dense, single-species stand of Raspberry (*Rubus ida.*)

Compartment 62: Semi-natural Broad-leaved Woodland *

Fragments of a damp woodland stand on a very steep slope, separated by a cleared area of developing scrub (comp.63) The mixed-age canopy is dominated by Ash (*Fraxi. exc.*), with a few individuals of Gean (*Prunus avi.*). There is a well developed understorey of Hawthorn (*Crata. mono.*) and occ. Elder (*Sambu. nig.*), with lots of ash regeneration. A number of fallen trees are present, creating a few small clearings - often covered in Raspberry (*Rubus ida.*).The ground flora is dominated by ferns, such as Male Fern (*Dryop. fil.*), with an abund. of Wood Aven (*Geum urb.*), f req. Common Dog-violet (*Viola nv.*) and, in less shaded areas, patches of grasses. The steep ground is often unstable, with exposed soil and disturbed areas supporting clumps of Nettle (*Urtica dio.*).The S half of the wood is more damp with fewer, and less abund., herbs, except for ccc. patches of Meadowsweet (*Filip. ulm.*) that spread up the slope. A muddy path runs along the top of the N half of the wood and there is much rabbit activity.

TG1: On a flat, grassy area at the foot of the slope, there stands some very old, tall Hawthorn (*Crata. mono.*), with young Ash (*Fraxi. exc.*) saplings and occ. Dog Rose (*Rosa can.*). A no. of moss-covered fallen trees and branches are present. There is an abund. of Creeping Soft Grass (*Holcus mol.*), Cocksfoot (*Dacty. gb.*), Common Bent (*Agros. cap.*) and Crosswort (*Galium cru.*).

TG2: Large patch of Rosebay Willowherb (*Chame. ang.*).

TG3: Small clearing - abund. of Red Clover (*Trif 0. pra.*), with Greater Bird's-foot Trefoil (*Lotus ulg.*).

Compartment 63: Dense scrub

Developing scrub: Dog Rose (*Rosa can.*), Broom (*Cyti. sco.*), Raspberry (*Rubus ida.*), and Hawthorn (*Crata. mono.*), with a few scattered Ash (*Fraxi. exc.*) saplings. Amongst this there is a rich mixture of coarse grasses, ferns and herbs, such as Wood Crane's-bill (*Geran. syl.*), Wild Angelica (*Ang. syl.*), Meadowsweet (*Filip. ulm.*), Creeping Buttercup (*Ranun. rep.*) and Cleavers (*Galium apa.*). Freq. patches of Rosebay Willowherb (*Chame. ang.*), Creeping Thistle (*Cirsium any.*) and Bracken (*Pteni. aqu.*)

Compartment 64: Dense Scrub

Much of this area of higher ground is covered in stands of Broom (*Cyti. sco.*), with freq. tangles of

Bramble (*Rubus fru.*). Where the scrub is less dense there is some invasion from Rosebay Willowherb (*Chame. ang.*) and Bracken (*Pteri. aqu.*), whilst larger clearings uncover a species-poor acid grassland (see comp.65). Frequent Bluebells (*Hyacin. non.*) occur below the taller stands of Broom. A wide, well-worn path -dominated by Common Bent (*Agros. cap.*)- leads up the N-facing slope to a BMX track. On the SE-facing slopes, overlooking the Scouring Burn, the scrub is more sparse and inc. a no. of young, scattered trees: Silver Birch (*Betula pen.*), Rowan (*Sorbus auc.*) and Oak (*Quercus sp.*).

TG1: Grassy clearing with freq. Sheep's Sorrel (*Rumex ace.*) and grasses perhaps indicative of past improvement: Yorkshire Fog (*Holcus lan.*), Red Fescue (*Festuca rub.*) and Black Bent (*Agros. gig.*).

Compartment 65: Semi-improved Acid Grassland *

Amongst the developing scrub (comp.64) there are stretches of species-poor grassland dominated by Common Bent, with Heath Bedstraw (*Galium sax.*), Sheep's Fescue (*Festuca ovi.*) and occ. Tormentil (*Potentilla ere.*).

Although there are no recent signs of management, in the past ground may have been cleared or areas of grass regularly cut, eg. when the BMX track was built or, further back, when paths used to criss-cross the area. This is reflected in the presence of a few plants often found on improved grasslands or disturbed ground (see TG2). Also, clearings to the north -that mark the remains of an informal path along the cliff top- support, amongst local, clumps of False Oat Grass (*Arrhenatherum ela.*), patches of Red Dead Nettle (*Lamium pur.*) and Yarrow (*Achillea mil.*).

TG1: Moving up the slope there is an increase in the abund. of both Sheep's Fescue (*Festuca ovi.*) and Heath Bedstraw (*Galium sax.*). On the hilltop dense tussocks of Sheep's Fescue (*Festuca ovi.*) dominate the sward, except for one extensive patch of Creeping Soft Grass (*Holcus mollis*) under a single Oak (*Quercus rob.*).

TG2: Edge of BMX track: abund. of False Oat Grass (*Arrhenatherum ela.*), with Nettle (*Urtica dio.*), Hogweed (*Heracleum sph.*), Meadow Buttercup (*Ranunculus acr.*) and occ. Meadow Vetchling (*Lathyrus pra.*) and Common Knapweed (*Centaurea fig.*)

Compartment 66: Improved Grassland

Well-worn, grassy path edged by False Oat Grass (*Arrhenatherum ela.*) and Cocksfoot (*Dactylis gl.*), with clovers, buttercups and occ. patches of Nettle (*Urtica dio.*) and Creeping Thistle (*Cirsium arv.*).

Compartment 67: Tall Ruderal

Part of the slope is covered in Rosebay Willowherb (*Chamaemelum ang.*), with scattered Broom (*Cytisus sco.*), Bramble (*Rubus fru.*) and Bracken (*Pteridium aqu.*).

Compartment 68: Improved Grassland

Surrounding the gravel-covered BMX track is an area of regularly mown grass, predominately Common Bent (*Agrostis cap.*) and Creeping Soft Grass (*Holcus mol.*) A few common forbs are also present: White Clover (*Trifolium rep.*), Creeping Buttercup (*Ranunculus rep.*), Broad-leaved Plantain (*Plantago maj.*), Common Mouse-ear (*Cerastium hol.*) and Common Ragwort (*Senecio jacob.*).

Compartment 69: Marshy Grassland

Damp ground, adjacent to the BMX track, is covered in dense clumps of Soft Rush (*Juncus eff.*). Amongst these are a few grasses and herbs, mc: Common Bent (*Agrostis cap.*), Yorkshire Fog (*Holcus lan.*), Creeping Buttercup (*Ranunculus rep.*) and Greater Bird's-foot Trefoil (*Lotus uli.*).

Compartment 70: Semi-improved Acid Grassland and Scattered Coniferous trees and Scattered Scrub.

A line of tall, exotic conifers -probably Spruce (*Picea* sp.)- stand at the top this cleared area, with one or two younger trees. The rest of the slope is covered with scattered Broom (*Cytisus* sp.) over a grass-dominated flora similar to disturbed ground in comp.65, but inc. patches of Yorkshire Fog (*Holcus lan.*), Creeping Thistle (*Cirsium arv.*) and White Dead-nettle (*Lamium alb.*).

Compartment 71: Semi-improved neutral grassland

This small area of neglected grassland, surrounding an informal path, is similar to comp.56; although slightly drier, with less variety in the sward and with a lower abund. of herbs inc. the absence of Wild Angelica (*Ang. syl.*) -abund. in comp.56. However, in addition, there are patches of Yellow Rattle (*Rhin. mm.*). A strip of Rosebay Willowherb (*Chamaem. ang.*) runs along the slope's base. Along the path there is local. White Clover (*Trifol. rep.*), Broad-leaved Plantain (*Plant. maj.*), Annual Meadow-grass (*Poa ann.*) and Perennial Rye-grass (*Lolium per.*)

Compartment 72: Marshy Grassland *

Low-lying, waterlogged ground supports an abund. of Jointed Rush (*Juncus art.*) and Meadowsweet (*Filip. ulm.*), with freq. Wild Angelica (*Ang. syl.*), Hogweed (*Herac. sph.*), Meadow vetchling (*Lathy. pra.*) and Greater Bird's foot Trefoil (*Lotus ulg.*) scattered throughout. Towards the centre of the comp., near the path, the ground is drier and fewer rushes are present. Here, there is a local, increase in grasses: False Oat Grass (*Arrhe. ela.*), Yorkshire Fog (*Holcus lan.*) and Meadow Foxtail (*Alopec. pra.*). Patches of thistles and nettles occur. Lining the path is an abund. of Creeping Buttercup (*Ranun. rep.*), with occ. Meadow Buttercup (*Ranun. acr.*) and White Clover (*Trifol. rep.*).

TG1: Small area around exposed mud -freq. containing standing water in wetter weather- supports local. Soft Rush (*Juncus aft.*), Marsh Foxtail (*Alopec. gen.*), Redshank (*Polyg. per.*) and Silverweed (*Poten. ans.*).

Compartment 73: Swamp *

A wide band of dense Reed Canary Grass (*Phalaris aru.*) borders the Scouring Burn. A few herbs and grasses are scattered throughout the stand, mc: freq. Wild Angelica (*Ang. syl.*) and occ. Meadowsweet (*Filip. ulm.*).

TG1: Tall, dense stand of planted Alder (*Alnus glu.*) by a stone footbridge. There is a lot of alder regeneration. The ground is heavily shaded, covered in leaf litter and a scattered ground flora: Creeping Buttercup (*Ranun. rep.*), Meadowsweet (*Filip. ulm.*) and Nettle (*Urtica dio.*), with Opposite-leaved Golden Saxifrage (*Chrys. Opp.*) and Wavy Bittercress (*Carda. tie.*) on wet, unstable ground. Stream banks have been reinforced with stone.

TG2: Willow Carr (*Salix* sp.) stands where the burn temporarily diverges. Wet ground supports an abund. of Opposite-leaved Golden Saxifrage (*Chrys. Opp.*) and Pink Purslane (*Montia sib.*) and occ. ruderals and grasses.

TG3: Stand of Alder (*Alnus glu.*), with occ. clumps of Water Mint (*Mentha aqu.*). Vegetative debris and rubbish block the burn.

Compartment 74: Marsh

Dense Meadowsweet (*Filip. ulm.*), with scattered Wild Angelica (*Ang. syl.*), Cleavers (*Galiurn apa.*) and patches of Nettle (*Urtica dio.*). Wet, organic soil supports mosses and Opposite-leaved Golden Saxifrage (*Chrys. Opp.*)

Compartment 75: Tall Ruderal *

Damp, flat ground supports what may be the remnants of a wet meadow. A neglected sward contains frequent patches of Meadowsweet (*Filip. ulm.*), and a few scattered meadow herbs, amongst tall grasses, such as False Oat Grass (*Arrhe. ela.*) and Cocksfoot (*Dacty. gb.*). One or two spikes of Northern Marsh Orchid (*Dacty. pur.*) are present at the foot of steps at the S of the comp. However, the whole area is now dominated by dense stands of Nettle (*Urtica dio.*), with Creeping Thistle (*Cirsium arv.*), Rosebay Willowherb (*Chame. ang.*) and quick-growing, invasive grasses: Common Couch (*Elymus rep.*) and Perennial Rye-grass (*Lolium per.*). To the W of the path where ground is slightly wetter, there is an increased abundance of Meadowsweet (*Filip. ulm.*) and Reed Canary Grass (*Phala. aru.*) occurs at the base of a steep slope to the SE. A single Alder (*Alnus glu.*) stands by the footbridge.

A variety of marginal plants are scattered along the edge of the burn, including: Reed Canary Grass (*Phala. aru.*), Marsh Woundwort (*Stac. pal.*), Great Willowherb (*Epilo. hir.*) and Water Forgetmenot (*Myoso. sco.*). Where the banks are less steep and the burn more shallow, there are clumps of Brooklime (*Veron. bec.*) and Watercress (*Nastur. off.*) and the water is occasionally choked by grasses.

TG1: Grassy area -Tufted Hair Grass (*Desch. cep.*), False Oat Grass (*Arrhe. ela.*) and Red Fescue (*Festuca rub.*)- with scattered Raspberry (*Rubus ida.*).

TG2: Goat Willow (*Salix cap.*) with much regeneration. Compartment 76: Marshy Grassland *
Species-poor grassland where grasses- False Oat Grass (*Arrhe. ela.*) and Yorkshire Fog (*Holcus lan.*)-are subordinate to patches of Meadowsweet (*Filip. ulm.*) and other herbs present. Drier ground by the path supports an increased abundance of grasses and tall ruderals.

Compartment 77: Swamp *

This narrow band of swamp vegetation covers shaded ground between 2 steep-sided embankments. Compared to comp.73, the stands of Reed Canary Grass (*Phala. aru.*) are less dense and there is an increased variety and abundance of herbs, including frequent Meadowsweet (*Filip. ulm.*) and Marsh Willowherb (*Epilo. pal.*). A few small clearings contain invasive tall ruderals and scattered Raspberry (*Rubus ida.*). The soil is often wet, unstable and covered with low-lying herbs, including: Creeping Buttercup (*Ranun. rep.*) and Opposite-leaved Golden Saxifrage (*Chrys. opp.*)

TG1: Large clump of Ostrich Fern (*Matteuccia struthiopteris*) under Goat Willow (*Salix cap.*)

Compartment 78 Running Water

The Scouring Burn is fast-flowing and liable to flood. Water is clear, with little algae. Upstream the substrate is generally stony and banks are vertical (often undercut) and support little vegetation. Downstream (comp.57) the banks are less steep and the substrate contains much sand and mud. Within the steep-sided gorge the burn flows over larger mossy stones and rocks, culminating in small falls on the W side of the railway.

Compartment 79: Semi-natural Broad-leaved Woodland

A stretch of open woodland runs along the small, steep-sided gorge that surrounds the Scouring Burn. The mixed-aged canopy contains an abundance of Ash (*Fraxi. exc.*), frequent Rowan (*Sorbus auc.*) and a few

Silver Birch (*Betula pen.*) and Sycamore (*Acer pse.*). Despite the distance between some of the older trees, there appears to be little obvious signs of a plantation origin and there is some regeneration present. There is a scattered understorey of Hawthorn (*Crata. mono.*) and, towards the top of the N slope, an abund. of Raspberry (*Rubus ida.*), with occ. Bramble (*Rubus fru.*) and Broom (*Cyti. sco.*).

Much of the steep ground is covered in bare soil and leaf litter, with areas of slippage on the S slope. This, sometimes unstable, ground supports a scattering of herbs, inc. an abund. of Water Aven (*Geum nv.*), with Bluebell (*Hyacin. non.*), Barren Strawberry (*Poten ste.*) and Primroses (*Primu. vul.*). There are also clumps of Male Fern (*Dryop. til.*) and occ. patches of grasses and Rosebay Willowherb (*Chame. ang.*). On flat ground, damp, muddy soil supports a carpet of low-lying herbs, such as Opposite-leaved Golden Saxifrage (*Chrys. opp.*) and Creeping Forgetmenot (*Myoso. sec.*), and a field layer dominated by Nettle (*Urtica dio.*). There are a few thin clumps of Reed Canary Grass (*Phala. aru.*) along the burn.

TG1: Concrete drain - outflow from street above.

SECTION 4: AMENITY AREAS AND RAILWAY CUTTINGS

Here follows descriptions from a brief survey of the remaining areas of the Laighhills, carried out in January, 1995. Because of the season, the information on the numbers and diversity of species present is limited. Accordingly, the large stretches of heavily rabbit-grazed grassland are mapped as semi-improved, although future species lists may suggest an unimproved habitat. Stands of Bracken (*Pteri aqu.*) are scattered across this area.

Compartment 80: Dense scrub

Scrub dominated by Broom (*Cyti. sco.*), with occ. Bramble (*Rubus fru.*). A few large local, patches of Raspberry (*Rubus ida.*) occur and there is invasion from Rosebay Willowherb (*Chame. ang.-*) and Bracken (*Pteri. aqu.*).

Where a band of scrub spreads down the slope above the burn, the Broom is less dense and occ. Elder (*Sambu. nig.*) is present. A second, narrower strip of scrub grows on a small, but steep embankment (possibly man-made) that gives this area a distinct 'stepped' appearance. Numerous rabbit burrows are present on this banking.

Compartment 81: Semi-improved Acid grassland

Large area of species-poor, rabbit-grazed acid grassland dominated by Sheep's Fescue (*Festu. ovi.*) and Common Bent (*Agros. cap.*), with Heath Bedstraw (*Galium sax.*), Common Sorrel (*Rumex acetosa*) and Tormentil (*Poten. ere.*). A wide, well-worn path leads to the railway bridge.

TG1: Site of a path that once led over the old railway tunnel. Here, previously disturbed ground supports freq. Creeping Thistle (*Cirsi. art'*), with occ. White Clover (*Trifo. rep.*), Common Ragwort (*Senecio jab.*) and Broad-leaved Dock (*Rumex obt.*). Where damp, there is an abund. of Creeping Buttercup (*Ranun. rep.*) and some stands of Soft Rush (*Junc. eff.*).

Compartment 82: Poor Semi-improved Grassland

Damp, rank grassland with a sward containing very few forbs and a mixture of grasses: Common Bent (*Agros. cap.*), Tufted Hair Grass (*Desch. ces.*), Creeping Soft Grass (*Holcus mol.*) and Sheep's Fescue (*Festu. ovi.*). Towards the footbridge, the clayey soil also supports local, patches of Cocksfoot (*Dacty. gb.*), Creeping Thistle (*Cirsi. arv.*) and Common Knapweed (*Cent. nig.*).

Compartment 83: Dense Scrub

As comp.80, but the scrub is more sparse, with occ. small clearings supporting ruderals and coarse grasses, such as Cocksfoot (*Dacty. gb.*). Also, scattered trees and saplings occur: Ash (*Fraxi. exc.*),

Silver Birch (*Betul. pen.*), Downy Birch (*Betul. pub.*) and Willow (*Salix sp.*). At the N end of the comp. there is a row of Silver Birch and occ. Ash saplings by the railway and a few tall Sycamore (*Acer pse.*) near the top of the cuttings.

Compartment 84: Semi-natural Broad-leaved Woodland

Mixed-age Ash (*Fraxi. exc.*) woodland -an extension of comp.62, although the ground is slightly drier and grasses and ferns are more abund. in the ground flora.

Compartment 90: Dense Scrub

Tall Broom (*Cyti. sco.*) -sparse in places. Large rabbit warren on side of slope.

Compartment 91: Dense Bracken

Bracken (*Pteri. aqu.*) covers the majority of this SW-facing slope. A number of trees are scattered over either end of the comp. Many of these are young trees and saplings - predominately, Rowan (*Sorbus auc.*), with Silver Birch (*Betul. pen.*), Oak (*Querc. sp.*), Beech (*Fagus syl.*) and Sycamore (*Acer pse.*)-although there are mature Sycamore and mature Ash (*Fraxi. exc.*). A single exotic conifer stands by a path that leads down from the higher football pitch. Some of the young trees along the base of the slope have been planted. Hawthorn (*Crata. mono.*) is scattered over the slope and lines its base; it is particularly dense alongside the lower football pitch.

Compartment 92: Dense Scrub

Broom (*Cyti. sco.*), with scattered trees -a continuation of comp.23.

Compartment 93: Planted Broad-leaved Woodland

Single age stand of Sycamore (*Acer pse.*), although there is some, limited regeneration below the canopy. There is an open understorey of Elder (*Sarizbu. nig.*), with Hawthorn (*Crata. mono.*) lining the football pitch. There is lots of leaf litter and only a thin ground flora of ferns (*Dryop. spp.*) and Pink Purslane (*Montia sib.*).

Compartment 94: Amenity Grassland

Large expanses of very short, regularly mown grass. New drainage has been put in around both football pitches and the upper football pitch has been recently re-sown. Grass identification was difficult, but it may be a Perennial Rye-grass (*Lolium per.*) mix. A line of planted trees near the river appear to be varieties of Cherry (*Prunus sp.*). Alongside the gravel-covered path that follows leads down to the sports pavillion and toilets there is a line of tall, pruned Hawthorn (*Crata. mono.*). Patches of scrub stand above the rocky river banks: Blackthorn (*Prunus spi.*), Hawthorn (*Crata. mono.*), Bramble (*Rubus fru.*), Broom (*Cyti. sco.*) and Raspberry (*Rubus ida.*), with occ. Willow (*Salix sp.*) and Ash (*Fraxi. exc.*). Large clump of Cherry Laurel (*Prunus lau.*) behind the public toilets.

TG1: Children's play area

TG2: Very narrow strip of species-rich bankside vegetation, similar to comp.1, but lacking the dense stands of marginal vegetation.

TG3: Shady area, with grass less frequently cut. A few herbs are present in the sward, such as Daisy (*Bellis per.*) and White Clover (*Trifo. rep.*). Planted trees inc. Cherry (*Prunus sp.*) and Spruce (*Picea*

sp). A path leads to a flat, semi-circular area, at the edge of the burn, which is surrounded by a low, stone wall.

Compartment 95: Mixed Plantation

Planted trees stand on a small slope at the site boundary. These mc: Spruce (*Picea* sp.), Ash (*Fraxi. exc.*), Silver Birch (*Betula pen.*), Cherry (*Prunus* sp.) and Scots Pine (*Pinus syl.*). There is a species-poor, grass-dominated ground flora with a regularly cut sward. A few planted bulbs are present.

Compartment 96: Poor Semi-improved grassland

Damp ground covered in tall, coarse grasses, such as Cocksfoot (*Dacty. gb.*), with very few herbs present. There is a scattering of Raspberry (*Rubus ida.*) and Nettle (*Urtica dio.*).

Compartment 97: Tall Ruderal

Rosebay Willowherb (*Chame. ang.*) dominates a flat area of damp, neglected grassland.

Compartment 98: Semi-natural Broad-leaved Woodland

Mixed-aged canopy of Ash (*Fraxi. exc.*), with a few individuals of Alder (*Alnus glu.*), Goat Willow (*Salix cap.*), Beech (*Fagus syl.*) and Sycamore (*Acer pse.*). Two dead elms stand on the N side of the burn. There is abund. regeneration -mainly Ash and Wych Elm (*Ulmus gla.*)- spreading over the steep sides of the stream. A no. of old stumps and fallen trees are present. There is a well-developed scrub layer of Hawthorn (*Crata. mono.*) and Bramble (*Rubus fru.*), with occ. Rose (*Rosa can.*), Elder (*Sambu. nig.*) and Holly (*hex aqu.*). The ground is very mossy, covered in leaf litter and occ. unstable. The ground flora, typical of other damp ash woodlands in this site, mc: Water Aven (*Geum nv.*), Pink Purslane (*Montia sib.*), Barren Strawberry (*Poten. ste.*), Germander Speedwell (*Veron. cha.*) and ccc. ferns (*Dryop. spp.*). Wet areas support Creeping Buttercup (*Ranun. rep.*) and Wavy Bittercress (*Carda. fle.*).

Compartment 99: Dense Scrub

Scrub -Broom (*Cyti. sco.*), Bramble (*Rubus fru.*) and Hawthorn (*Crata. mono.*)- grows above a small, exposed - rock face, whose damp, shaded surface supports mosses, lichens and occ. ferns.

Compartment 100: Dense Scrub

On steep ground overlooking the playpark (comnp.94,TG1), there is a large, well-developed stand of scrub. Dense Broom (*Cyti. sco.*) dominates, with many extensive tangles of Bramble (*Rubus fru.*) and occ. Raspberry (*Rubus ida.*) and Hawthorn (*Crata. mono.*). Planted Sycamore (*Acer pse.*) are present at the bottom of the slope.

SURVEYOR'S STATEMENT

This is the fourth detailed SWT survey that I have completed and I am confident with my plant identification skills. I have a working knowledge of botany and I attended training courses prior to the season's survey.

Because the survey of sections 1,2 and 3 was carried out in September, the early flowering woodland herbs may be significantly under-recorded. In addition, some of the fruits of the sedges were absent, making identification to species level difficult. Lichens and bryophytes were not recorded, except when the identification of mosses was required to substantiate a habitat type. Section 4 was surveyed in January and, due to this, complete species lists are not available for the habitats mapped.

In the field, books used were: The Wildflower Key, Rose; Collin's Grasses, Sedges, Rushes and Ferns....

Fitter, Fitter and Farrer and Collin's Ferns, Mosses and Lichens..., Jahns. Also consulted, Excursion Flora of the British Isles, Clapham, Tutin and Warburg.

A past survey (1981) indicates a small area of basic grassland on the old railway tunnel's sides, recording species such as Quaking Grass, Burnet Saxifrage and Wild Strawberry. Although there is little evidence of this surviving the removal of the tunnel, it may be useful to resurvey this area earlier in the growing season, to see if any characteristic grasses or herbs occur.

I found that, in some cases, using the NCC handbook to distinguish habitat types was somewhat limited, particularly along the river's edge, where there is much floristic diversity, a great deal of competition and no clear dominance of indicator species. Also, the mapping of semi-improved and unimproved grasslands was often very subjective, with little guidance regarding the time-scale of past improvement. Also, I feel that a survey method based on compartmentalising habitats down to an area of 10m² is often excessive, particularly for relatively large sites, like the Laighhills, that contain many complex mosaics. A method based on habitat descriptions rather than detailed compartment descriptions, with accompanying species lists, would be more effective.

LAIGHILLS
NN780020

10.9.94

SPECIES LISTS

A111. SEMI-NATURAL BROAD-LEAVED WOODLAND

Species List

	Compartment/Abundance					
	5	30	32	34	40	41
Acer pseudoplatanus	R				R	F
Achillea millefolium					R	F
Aegopodium podagraria					R	F
Aethusa cynapium						
Agrostis capillaris	O	R	F	O		F
Agrostis stolonifera	O	F				
Ailuca rectans					R	
Alchemilla vulgaris	F				R	
Anemone nemorosa	O			R		
Angelica sylvestris						R
Anthoxanthum odoratum						
Anthriscus sylvestris						
Arrhenatherum elatius		R		R	O	O
Athyrum filix-femina		R				
Bellis perennis						
Betula pendula	O		F	A		
Betula pubescens				O		
Blechnum spicant						
Bromus ramosus					R	R
Cardamine flexuosa						R
Centaurea nigra		R		R		
Cerastium holosteoides	R	R				R
Chamaenerion angustifolium		O				
Chrysosplenium obovatifolium	R		O		F	
Cirsium palustre					R	
Cirsium vulgare						
Clinopodium vulgare						
Conopodium majus	O					
Corvulus avellana	R				R	R
Crataegus monogyna	A					
Crepis paludosa	O	F	A	O	R	
Cynosurus cristatus						O
Cytisus scorparius						R
Dactylis glomerata	O	A	O	O	F	O
Deschampsia cespitosa	O	O				
Digitalis purpurea	R	O			R	
Dryopteris affinis		R				
Dryopteris dilatata	O	O	O	O	R	R
Dryopteris filix-mas					R	
Elymus caninus						
Elymus repens				O	F	
Epilobium montanum		O	O		A	F
Equisetum arvense	O					O
Equisetum sylvaticum		R				
Festuca gigantea						
Festuca ovina	R					
Festuca rubra						
Festuca tenuifolia	R	O	O	R		
Filipendula ulmaria	O	R	A	R	O	
Fragaria vesca	O	O	A	A	O	R
Fraxinus excelsior	D	D	A	A	D	
Galium aparine	R			R	O	
Galium cruciata						F
Galium saxatile						
Gaudinia fragilis						
Geranium robertianum	O				A	
Geranium sylvaticum				R	R	
Geum rivale	A	O	O	R	F	R
Geum urbanum	F	F	O	R	F	F
Glechoma hederacea					O	O
Hedera helix					O	O
Heracleum mantegazzianum	R				O	O
Heracleum sphondylium						O
Hieracium iricum						
Holcus lanatus	R				O	O
Holcus mollis	F			R	F	A
Hvacinthoides non-scriptus	O					
Hvpanicum perforatum		R				
Hypochoeris radicata	R					
Ilex aquifolium						
Juncus effusus		R				
Lamium purpureum						
Lapsana communis	R					
Larix decidua						
Leucanthemum vulgare				O		O
Lotus ulcinosus	R					
Luzula sylvatica						
Mentha aquatica						
Mercurialis perennis			R			R
Minulus guttatus						F
Montia sibirica	O				F	F
Mvosotis caespitosa						O
Mvosotis scorpioides					R	O
Oxalis acetosella			F			O
Phalaris arundinacea					R	
Phleum pratensis						
Pimpinella saxifraga				R		
Plantago lanceolata		R				
Plantago majus	R	R				
Poa trivialis	R					
Polypodium vulgare	R					R
Potentilla sterilis	O					
Primula vulgaris	O	O	A	O	O	
Prunella vulgaris						
Prunus avium						O
Prunus spinosa						
Pteridium aquilinum	F	F				
Quercus robur						
Ranunculus acris	R			R		

LAIGHILLS
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A111. SEMI-NATURAL BROAD-LEAVED WOODLAND

Species List

Species List	Compartment/Abundance					
	5	30	32	34	40	41
Ranunculus repens	F	O	O			
Rosa canina	R			O	F	F
Rubus fruticosus		A	R			
Rubus idaea		F	O	F	O	
Rumex acetosa					R	R
Rumex acetosella						
Rumex obtusifolius		R				O
Salix sp.				R	F	A
Salix aurita				R		
Salix caprea	R			R		
Salix x cinerea agg.				R		
Sambucus nigra						
Scrophularia nodosa	O	O		R	R	
Senecio jacobaea	R			O	O	O
Sorbus aucuparia	R	O				
Sparanium emersum						
Stachys sylvatica		O			O	O
Stellaria media	R		R		R	O
Stellaria nemorum					O	O
Succisa pratensis			O	O		
Taraxacum officinale	R	R		R		
Teucrium scorodonia						
Trifolium pratense						
Trifolium repens	R				O	O
Tripleurospermum maritimum						
Tussilago farfar		O		F	R	O
Ulex europaeus		R				
Ulmus glabra	R		R	R		
Urtica dioica		O			O	O
Vaccinium myrtillus			R			
Valerian officinale						
Veronica beccabunga						
Veronica chamaedrys	A		O		F	O
Veronica serpyllifolia	R	R				
Vicia cracca		R		R		
Vicia sativa ssp. angustifolia	R	R		R		O
Viola riviniana	A	A	F	F	F	

LAIGHILLS
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10.9.94

A111. SEMI-NATURAL BROAD-LEAVED WOODLAND

Species List

	Compartment/Abundance				50	52	
	43	44	49				
Acer pseudoplatanus	F		O		F		
Achillea millefolium							
Aegopodium podagraria	O	O			O	R	R
Aethusa cynapium							
Agrostis capillaris	F	O	R		O	O	O
Agrostis stolonifera		O	O				
Ajuga reptans	O	R			R		
Alchemilla vulgaris						R	R
Anemone nemorosa							
Angelica sylvestris	R	R	O		O	R	
Anthoxanthum odoratum	R	R			O		
Anthriscus sylvestris							
Arrhenatherum elatius	R	R	R		O	O	
Athyrium filix-femina							
Bellis perennis	R						
Betula pendula		R					
Betula pubescens							
Blechnum spicant						R	
Bromus ramosus			F				R
Cardamine flexuosa							
Centaurea nigra	R		R		R	R	
Cerastium holosteoides							
Chamaenerion anqustifolium	R		R				
Chrysosplenium oppositifolium			O			O	R
Cirsium palustre		R				O	R
Cirsium vulgare	R	R				R	
Clinopodium vulgare	R						
Conopodium majus							
Corylus avellana	O		O		R	O	
Crataegus monogyna	O		R		R	O	
Crepis paludosa		O			R		
Cynosurus cristatus							
Cytisus scorparius	O		R			F	F
Dactylis glomerata	O	O	R		F		
Deschampsia caespitosa	F		R		R	R	
Digitalis purpurea	F	F	F		R	R	
Dryopteris affinis						R	
Dryopteris dilatata		R	O		F	A	
Dryopteris filix-mas	A	R	A				
Elymus caninus							
Elymus repens							
Epilobium montanum	O	O	O		F	A	
Equisetum arvense							
Equisetum sylvaticum							
Festuca gigantea							O
Festuca ovina							R
Festuca rubra							
Festuca tenuifolia	F	R					R
Filipendula ulmaria	O		O		O	R	
Fragaria vesca	O		O		O	R	
Fraxinus excelsior	O		F		O	R	
Galium aparine	F	O			O	R	
Galium cruciata		R				R	
Galium saxatile							
Gaudinia fragilis							
Geranium robertianum	R	F			O	R	
Geranium sylvaticum	R	O	O			O	
Geum rivale	O	A	F		O	F	
Geum urbanum	O				O	F	
Glechona hederacea						O	
Hedera helix						O	
Heracleum mantegazzianum	O	R			O	O	
Heracleum sphondylium	R						
Hieracium iricum							
Holcus lanatus		O			R	A	
Holcus mollis	A	O	A		F	F	
Hyacinthoides non-scriptus	O						
Hypericum perforatum	R						
Hypochoeris radicata							
Ilex aquifolium					R		
Juncus effusus	O	R					R
Lamium purpureum							
Lapsana communis		R					
Larix decidua	R				R		
Leucanthemum vulgare							
Lotus uliginosus							
Luzula sylvatica	O	O	F		A	O	
Mentha aquatica					R		
Mercurialis perennis	R		O		O	O	
Mimulus guttatus							
Montia sibirica	O	A	O		O	A	
Myosotis caespitosa							
Myosotis scorpioides	R	R			R	R	
Oxalis acetosella	F		O		R		
Phalaris arundinacea	R				R	R	
Phleum pratensis							
Pimpinella saxifraga							
Plantago lanceolata			R				
Plantago major							
Poa trivialis							
Polypodium vulgare							
Potentilla sterilis	O	R				O	
Primula vulgaris	O	F			R		
Prunella vulgaris							
Prunus avium					R		
Prunus spinosa	O	F	A		R		
Pteridium aquilinum	O	D			D		
Quercus robur	D		R				D
Ranunculus acris							R
Ranunculus repens	R	O			O		F
Rosa canina		O	O				
Rubus fruticosus	F	O			R		
Rubus idaea	O		R				
Rumex acetosa	R						R
Rumex acetosella							R
Rumex obtusifolius	O	R			R	O	
Salix sp.							

LAICHILLS
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A111. SEMI-NATURAL BROAD-LEAVED WOODLAND

Species List	Compartment/Abundance				
	43	44	49	50	52
Salix aurita					
Salix caprea	F	O		O	F
Salix x cinerea aqq.	R				
Sambucus nigra		F			
Scrophularia nodosa	O			R	R
Senecio jacobaea		F		R	F
Sorbus aucuparia				O	
Sparanium emersum					R
Stachys sylvatica	F				R
Stellaria media		R		R	
Stellaria nemorum		O			
Succisa pratensis		R			R
Taraxacum officinale			R		
Teucrium scorodonia	O		A	O	
Trifolium pratense					
Trifolium repens		R	R		R
Tripleurospermum maritimum		R			
Tussilago farfar					R
Ulex europaeus	R				R
Ulmus glabra	O		R	O	R
Urtica dioica	F	R	F	R	R
Vaccinium myrtillus					
Valerian officinale				R	
Veronica beccabunga					
Veronica chamaedrys			R		
Veronica serpyllifolia	O				R
Vicia cracca					
Vicia sativa ssp. anqust.			R		
Viola riviniana	A	R	O	A	O

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B11. ACID GRASSLAND

Species List

Compartment/Abundance
7 9

Achillea millefolium	O	
Achillea ptarmica	R	
Agrostis capillaris	A	O
Agrostis stolonifera	O	
Agrostis vinealis	F	O
Anthoxanthum odoratum	F	O
Arrhenatherum elatius	O	
Betula pubescens	R	
Campanula rotundifolia	R	
Carex binervis	O	
Chamaenerion angustifolium	R	
Cytisus scorparius	R	O
Deschampsia cespitosa	O	
Dryopteris dilatata	R	R
Festuca ovina	A	D
Festuca rubra	R	
Galium saxatile	D	D
Holcus lanatus	O	R
Holcus mollis	A	F
Hyacinthoides non-scriptus	F	F
Lathyrus montanus	R	
Lotus corniculatus	R	
Poa pratensis	R	
Potentilla erecta	A	O
Rumex acetosa	R	R
Pteridium aquilinum	O	O
Urtica dioica	O	
Vaccinium myrtillus	O	F

B12. SEMI-IMPROVED ACID GRASSLAND

Species List

Compartment/Abundance
21 22 25 28 65

Agrostis capillaris	A	A	A	D	A
Anthoxanthum odoratum					R
Arrhenatherum elatius	F			R	O
Carex ovalis				R	
Centaurea nigra					O
Chamaenerion angustifolium	O		R	R	R
Cytisus scorparius	R	R			O
Festuca ovina	F	F	A	A	F
Galium saxatile	O	F	A	F	F
Holcus lanatus	R	A	O		
Holcus mollis	F				R
Juncus effusus	R	R			R
Lamium purpureum					O
Lathyrus pratensis					R
Leontodon autumnalis					R
Potentilla erecta	R		A	A	O
Pteridium aquilinum	R	R			O
Quercus robur					O
Rumex acetosa	O	F			O
Rumex acetosella	R				
Stellaria graminea	O			O	R
Trifolium repens					
Urtica dioica		R			O
Veronica chamaedrys					R

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B21. NEUTRAL GRASSLAND

Species List	Compartment/Abundance			39
	17	35	36	
Acer pseudoplatanus			R	
Achillea millefolium			A	
Achillea ptarmica	O	O	R	
Aegopodium podagraria		R	R	
Aethusa cynapium		R	O	
Agrostis capillaris	O	R	O	F
Agrostis gigantea		R	R	R
Agrostis stolonifera		R	O	O
Alchemilla vulgaris				
Alopecurus pratensis				
Angelica sylvestris	F	O	O	F
Anthriscus odoratus				
Anthriscus sylvestris		O	O	A
Arrhenatherum elatius	A	O	A	D
Bellis perennis		R		
Betula pendula			R	
Blechnum spicant				
Campanula rotundifolia	R			
Carex hirta	R			
Centaurea nigra	O	O	A	
Cerastium holosteoides	O	O	R	
Chamaenerion angustifolium	O	R	O	
Cirsium arvense	O			R
Cirsium palustre	R			O
Cirsium vulgare				R
Crepis paludosa				R
Crataegus monogyna	R			
Cynosurus cristatus			O	
Cytisus scoparius	R		R	
Dactylis glomerata	R	A	A	O
Deschampsia cespitosa	R	R	R	R
Dryopteris dilatata		R	R	
Epilobium montanum		R	O	
Equisetum pratense	R		O	O
Equisetum sylvaticum	O			
Festuca arundinacea		O	R	
Festuca gigantea		O		
Filipendula ulmaria	F	O	F	A
Fraxinus excelsior		R		
Galium aparine	O		R	R
Galium cruciata	O	O	F	
Galium verum	R		R	
Geranium pratense	F	F	O	O
Geranium sylvaticum	O		F	F
Geum rivale	R		O	
Heracleum mantegazzianum		R		
Heracleum sphondylium	R	O	O	R
Holcus lanatus	R	F		
Holcus mollis	O	F	F	O
Hypericum perforatum			R	
Hypochoeris radicata			R	
Ilex aquifolium				R
Juncus articulatus		R		
Juncus effusus	R			
Lathyrus pratensis	O		A	F
Leontodon autumnalis			R	
Leontodon hispidus			R	
Lolium multiflorum		R		
Lolium perenne	R	O	R	
Lotus uliginosus	F	F		F
Luzula sylvatica		R	R	
Matricaria matricarioides		R		
Montia sibirica		R		
Myosotis scorpioides		R		
Phalaris arundinacea		R		
Pimpinella saxifraga		R		
Phleum pratense				
Plantago lanceolata	R	O	A	
Plantago major	R		F	
Poa annua	R			
Poa pratensis		O	R	
Potentilla erecta	R		R	
Prunella vulgaris		R	R	
Pteridium aquilinum				
Ranunculus acris	O	O	O	
Ranunculus repens	R	A	F	
Rosa canina aq.	R		F	R
Rubus fruticosus			R	
Rubus idaea	R	R	R	
Rumex acetosa	O	O	R	
Rumex obtusifolium		R	R	
Salix caprea			F	
Salix cinerea aq.			O	
Scrophularia nodosa	R	R		
Sedum telephium			R	
Senecio jacobaea		R	R	
Sorbus aucuparia			R	
Stachys sylvatica	R			R
Stellaria graminea	O	O	F	
Stellaria media		O		
Succisa pratensis	R	R		
Taraxacum officinale aq.			R	
Trifolium campestre			R	
Trifolium pratense	R	R		R
Trifolium repens		O	F	
Tussilago farfar		R	R	
Urtica dioica	R	O	O	O
Veronica chamaedrys		O	O	
Vicia cracca	F	O	A	F
Vicia sativa ssp. anqust.	F	F	R	

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B22. SEMI-IMPROVED NEUTRAL GRASSLAND

Species List

	Compartment/Abundance				
	1	8	26	38	56
Acer pseudoplatanus	R				
Achillea millefolium	O		A		F
Aegopodium podagraria				R	
Agrostis capillaris	F	F	F		O
Agrostis gigantea				O	
Agrostis stolonifera	O			R	O
Alchemilla vulgaris				F	
Alopecurus pratensis	R			O	
Anemone sylvestris	R			O	F
Anthriscus sylvestris				O	
Anthoxanthum odoratum	R				
Arrhenatherum elatius		A	D	F	D
Aster novi-belgii	O				
Betula pendula		R			
Campanula rotundifolia		R	R		
Cardamine flexuosa	R				
Carex rostrata	O				
Carex hirta			O		O
Centaurea nigra	O	R	F	R	O
Cerastium holosteoides				R	R
Chamaenerion angustifolium	R	R	R	R	R
Cirsium arvense	O	O		F	F
Cirsium palustre					R
Corylus avellana					
Crepis paludosa	R				
Crataegus monogyna	O		R	O	
Cynosurus cristatus	O				
Cytisus scoparius	O		O		
Dactylis glomerata	O	O	R	D	O
Deschampsia cespitosa				O	
Epilobium hirsutum	R				
Epilobium montanum	O				
Equisetum sylvaticum	R	F			
Festuca arundinacea	F				
Festuca rubra	R	R		O	R
Festuca tenuifolia	R				
Filipendula ulmaria	A			O	R
Fraxinus excelsior	R				
Galeopsis tetrahit		R			
Galium aparine	O			R	F
Galium cruciata	F				
Galium verum	F				A
Geranium pratense	R			F	
Geranium robertianum				R	
Geranium sylvaticum	A			O	
Geum rivale	R			R	
Glechoma hederacea	R			F	
Heracleum mantegazzianum					
Heracleum sphondylium	F			O	R
Holcus lanatus	A	O	O	D	
Holcus mollis	O		R	R	O
Hyacinthoides non-scriptus		F			
Juncus articulatus	O				O
Juncus bulbosus					
Juncus effusus	O		R	R	
Lamium album					
Lathyrus pratensis	F			O	R
Lolium perenne	R			F	
Lotus uliginosus	O				R
Mentha aquatica	R				
Misulus guttata	F				
Montia sibirica	R				
Myosotis scorpioides	F				
Phalaris arundinacea	A			R	
Plantago lanceolata	A				
Poa annua	R				
Polygonum aviculare	R				
Polygonum persicaria	R				
Potentilla anserina	A				
Potentilla erecta		O	R		R
Prunella vulgaris	R				
Prunus spicant				R	
Pteridium aquilinum	O			O	
Ranunculus repens	O		F	A	F
Ranunculus acris	R		R		O
Rhinanthus minor	F	R			
Rosa canina				R	
Rubus idaea	R				
Rubus fruticosus			R		
Rumex acetosa	F	F			F
Rumex obtusifolium	R			F	
Salix cinerea agg.	R				
Salix caprea				O	
Scrophularia nodosa				R	
Senecio jacobaea	O				R
Stachys sylvatica	A				
Stellaria graminea	R	F		O	R
Stellaria media					
Succisa pratensis		R	O		
Taraxium officinale				R	
Trifolium pratense					O
Trifolium repens	O		O	F	
Urtica dioica	O			F	
Veronica beccabunqa	O				
Veronica chamaedrys	R			F	R
Vicia cracca	O			R	
Vicia sativa ssp. angustifolium			O		
Viola sp.					O

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B5. MARSHY GRASSLAND

Species List

	Compartment/Abundance					
	10	13	18	40	72	76
Achillea millefolium	R		O			
Achillea ptarmica	F	O			R	
Agrostis stolonifera		O				
Agrostis gigantea		F			R	
Alchemilla vulgaris					R	
Alopecurus geniculatus					R	
Alopecurus pratensis					R	
Angelica sylvestris	O	R	O	F	R	F
Arrhenatherum elatius	R	R	F	F	O	F
Blechnum spicant		R				
Campanula rotundifolia	R	R				
Carex demissa	F					
Carex echinata	A	O				
Carex hostiana	A	O				
Carex nigra		F				
Carex pulicaris		R				
Carex sp.						
Centaura nigra	R				R	
Chamaenerion angustifolium						
Cirsium arvense			O		R	R
Cirsium palustre	F	O	F	R	O	O
Crepis paludosa	R	F	R			
Cytisus scoparius	R					
Dactylis glomerata	R			R	R	
Dactylorhiza fuchsii	F					
Dactylorhiza purpurella	O	R				
Deschampsia cespitosa						
Elocharis palustris			R			R
Elymus repens		O			R	
Equisetum pratense		O		O		
Equisetum sylvaticum	F	O				
Eriophorum angustifolium	O					
Filipendula ulmaria	F	O	D	D	A	A
Galium aparine					R	
Galium cruciata	A	F	O			
Galium palustre						
Geranium pratense			R	R		
Geranium sylvaticum			F			
Geum rivale		R				
Heracleum sphondylium					F	F
Holcus lanatus	R	R	R		F	F
Holcus mollis	R					
Juncus acutiflorus		R				
Juncus articulatus	F	D			A	
Juncus effusus	F	A			O	
Lathyrus pratensis			R		O	F
Lotus uliginosus	O	A	O		O	O
Luzula multiflora ssp congesta	R					
Mollinia caerulea	O					
Myosotis secunda					R	
Phalaris arundinacea						R
Plantago lanceolata	R	O				
Polygonum aviculare					R	
Polygonum persicaria					R	
Potentilla anserina					R	
Potentilla erecta	O	O			O	
Primula vulgaris		R				
Pteridium aquilinum	R		O			
Ranunculus acris		R	O		R	A
Ranunculus repens		R	O			
Rubus idaea	R			R		
Rumex acetosa	O	F	R	R	O	
Rosa canina agg.						
Stellaria graminea			O		O	
Succisa pratensis		F				
Tussilago farfar	R					
Urtica dioica					O	F
Vicia cracca			F			
Viola sp.	R					

LATGHILLS
NN780020

10.9.94

C31. TALL RUDERAL

Species List

Compartment/Abundance
75

Achillea millefolium	R
Aegopodium podagraria	R
Alnus glutinosa	R
Alopecurus pratensis	R
Anthriscus sylvestris	F
Angelica sylvestris	F
Arrhenatherum elatius	F
Aster novi-belgii	R
Chamaenerion anquatifolium	O
Cirsium arvense	F
Dactylis glomerata	O
Dactylorhiza purpurella	R
Deschampsia cespitosa	R
Elymus repens	F
Epilobium hirsutum	O
Epilobium palustre	O
Festuca rubra	R
Filipendula ulmaria	F
Galium aparine	O
Galium verum	R
Heracleum sphondylium	A
Holcus lanatus	O
Juncus bulbosus	R
Lapsana communis	R
Lathyrus pratensis	F
Lolium perenne	F
Lotus uliginosus	R
Mentha aquatica	R
Nasturtium officinale	R
Myosotis scorpioides	O
Phalaris arundinacea	F
Ranunculus repens	F
Rosa canina	R
Rubus idaea	R
Rumex obtusifolius	O
Stachys palustris	O
Stachys sylvatica	R
Stellaria graminea	O
Stellaria media	R
Tussilago farfara	R
Urtica dioica	D
Veronica beccabunqa	R
Vicia sativa ssp. anqust.	F

F1. SWAMP

Species List

Compartment/Abundance
12 73 77

Epilobium montanum	R		
Epilobium palustre			F
Festuca arundinacea	R		
Festuca rubra			O
Filipendula ulmaria	A		F
Galium aparine		O	
Galium palustre		R	
Galium verum	O		
Galium pratense	O		
Heracleum mantegazzianum	R		
Heracleum sphondylium		R	
Holcus lanatus	R	O	
Juncus effusus	R		R
Lathyrus pratensis	R	O	
Lotus uliginosus	O		
Matteuccia struthiopteris			R
Mentha aquatica	R	O	
Mimulus guttatus			R
Montia sibirica		O	
Myosotis secunda		R	R
Nasturtium officinale			O
Phalaris arundinacea	D		A
Polygonum persicaria			O
Ranunculus repens	F	F	A
Rumex obtusifolius			O
Salix caprea	O	R	R
Urtica dioica		O	O
Veronica beccabunqa			R

SWT WILDLIFE SITE SURVEY

LAIGHILLS

GRID REF: NN 760020

SURVEYORS - K. FARLEY (1994)

A. THIEL (1998)

Amendments have been made to the 1994 map based on 1998 survey data.





