Report on the Digital Capture of St Helens 1999/2000 Phase 1 Habitat Survey

January 2005
Rachael Porter

Environmental Advisory Service
Bryant House
Liverpool Road North
Maghull
Merseyside
L31 2PA

Environmental Advisory Service

Digital Capture of St Helens Phase 1 Habitat Data

1. Purpose of the report

The purpose of this report is to summarise the St Helens 1999/2000 Phase 1 habitat data digitally captured by GIS and to identify issues and provide links to North Merseyside Biodiversity Action Plan targets.

2. Summary

This report provides a summary of habitat data captured during the 1999/2000 Phase 1 habitat survey of St Helens. The habitat data has been captured digitally using the GIS package, MapInfo. The digital capture of this information has allowed area data to be generated for each habitat recorded in St Helens. A total of 48 habitat types have been recorded. The habitats with the greatest area cover were arable land, woodland, amenity grassland and improved grassland. The survey found that some habitats are poorly represented in St Helens, these include lowland heath, mire, wetland and species rich hedgerows.

The digital Phase 1 habitat survey data provides baseline data against which changes over time can be assessed and providing valuable information for the implementation and recording of the North Merseyside BAP targets. Phase 1 habitat data is also useful for UDP and RPG monitoring.

3. Introduction

3.1 Phase 1 Habitat Survey

Phase 1 habitat survey was undertaken between 1999 and 2000 by The Environment Partnership. The survey followed methods as set out in JNCC Handbook for Phase 1 Habitat Survey. Habitats were surveyed at 1:5,000 scale. The survey recorded a total of 9,352.14 hectares of the total of 13,639 ha within the St Helens boundary. (The un-recorded area being primarily residential and commercial built up areas.)

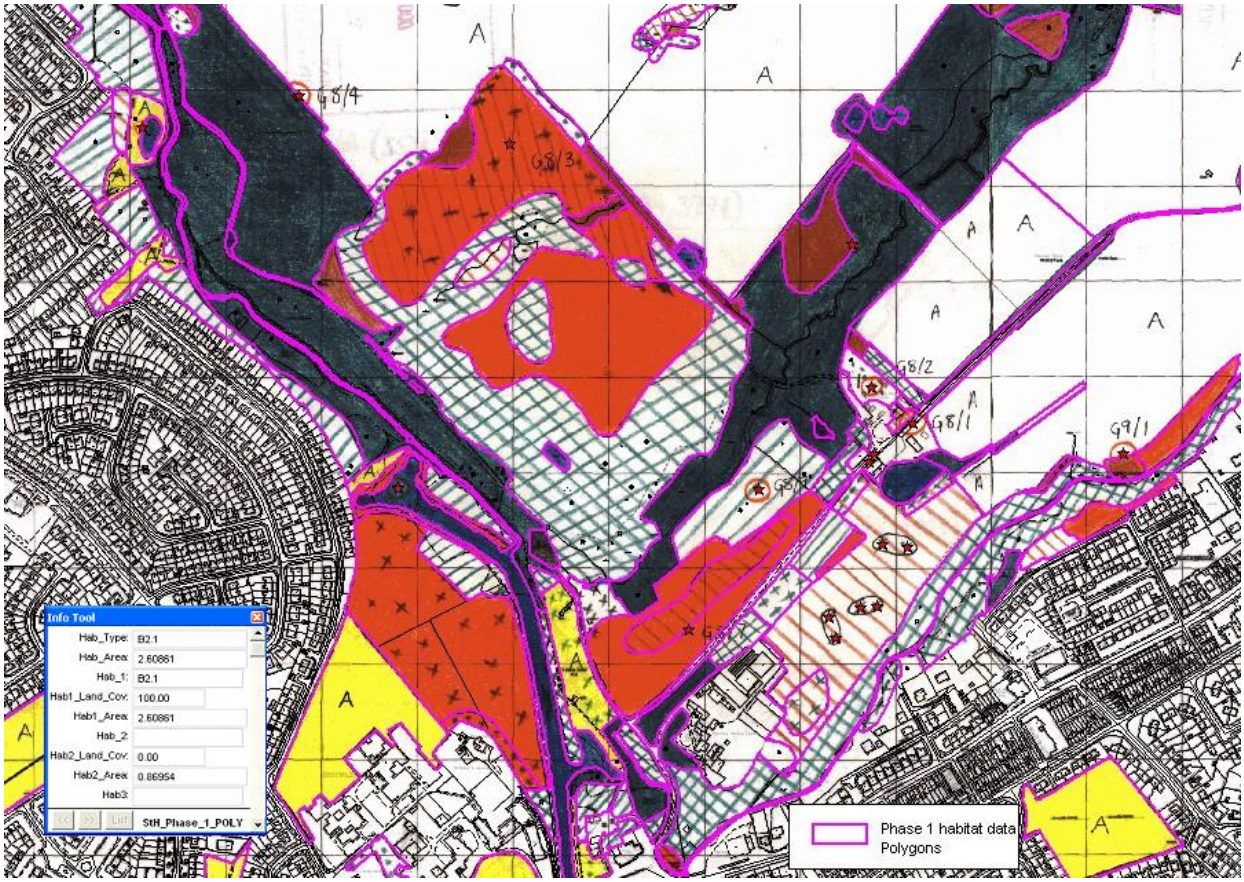
3.1 Digitisation of Phase 1 habitat survey

Original paper Phase 1 habitat maps were scanned by the GeoData Institute of the University of Southampton in 2001 as part of a Countryside Agency project for the CRoW act. This digitisation produced digital images of all Phase1 habitat survey maps.

Between March 2002 and June 2004 the digital Phase 1 habitat maps were polygonised using the GIS programme MapInfo. This work was undertaken by the Environmental Advisory Service and full methods are set out in the document "Digital Capture of Phase 1 Habitat Survey – Digitising Protocol" This has produced a MapInfo dataset which contains a record of all habitats present within St Helens during the 1999 /2000. Figure 1

shows an example of digitised Phase 1 habitat data. This report provides a summary of the Phase 1 habitat types recorded in St Helens.

Figure 1. An example of digitised Phase 1 Habitat Data



4. Phase 1 Habitat Types Recorded in St Helens

4.1 Number of habitats recorded in St Helens.

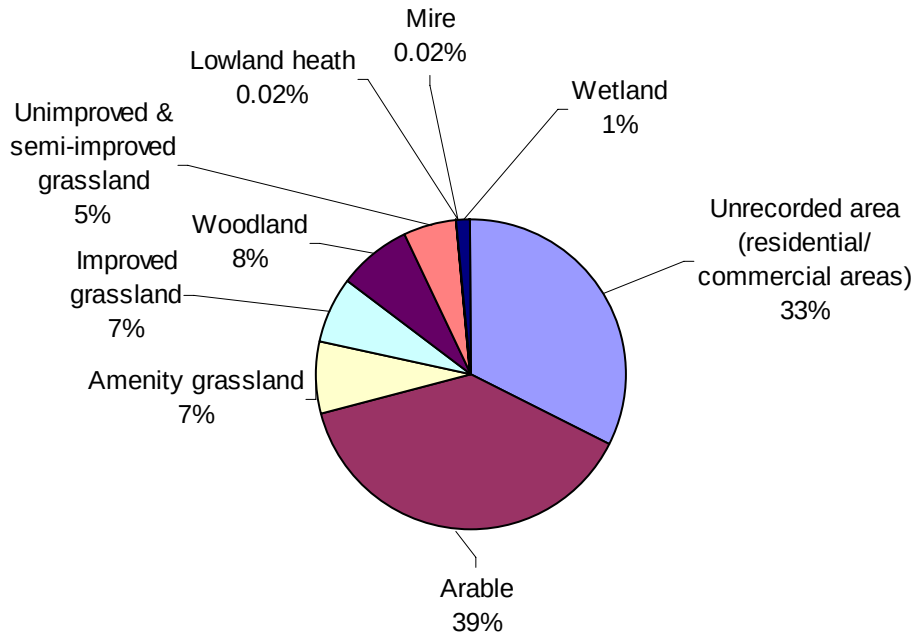
A total of 48 Phase 1 habitat types were recorded in St Helens. Appendix 1 presents total area data recorded for each habitat type. The survey found that the three main habitats which cover the greatest area of St Helens were arable (5,076 ha) accounting for 37% of the land cover, amenity grassland (971 ha) and improved grassland (924 ha) which each account for approximately 7% of St Helens Land cover. These three habitat types account for approximately 50% of the land cover in St Helens and 74% of the total habitat area recorded by the survey.

5. Areas of Broad Habitat Types Recorded in St Helens

The Phase 1 habitat types have been combined to form broad habitat types; woodland, unimproved/semi-natural grassland, wetland, lowland heath and bog / mire. Figure 2

below shows the percentage land area in St Helens covered by each of these broad habitat types. Details of habitat areas for each Phase 1 habitat type are presented in Appendix 1.

Figure 2. Percentage cover of habitat types within St Helens



6. Data Constraints

There are a number of constraints which need to be considered in association with the data presented in this report.

Phase 1 habitat survey was designed to provide an audit of habitats present over a large area, for example, this survey was recorded at a scale of 1:5,000. Surveying at this scale and the difficulties of mapping on the ground means that habitats recorded may not be accurate in terms of extent or position. Small areas of habitat mosaics in particular tend to be less accurately mapped than larger habitat patches. This was found to be one of the difficulties during the digital capture process. Where possible efforts were made to map the Phase 1 habitat as accurately as possible to match both the Ordnance Survey data and aerial photography, however this was not always possible and there are discrepancies between the digitised data OS data and the situation on the ground. The area data presented in this report should therefore be taken as indicative rather than absolute figures on the area of habitats found within St Helens.

7. Area of woodland and trees recorded in St Helens.

The total woodland, trees and scrub habitat recorded accounts for approximately 8% of St Helens. Broadleaf plantation makes up just over half of this figure covering 533 ha and semi-natural broadleaf woodland just under a third of the total woodland area covering 302 ha.

N.B. The total area covered by scattered trees and scrub is not a true figure. Some areas of scattered trees and scrub were captured as point data in the MapInfo GIS package. It is not possible to generate an area from point data in MapInfo.

Table1. Area of woodland, trees and scrub recorded in St Helens

Phase 1 habitat type	**Phase 1 habitat Code**	**Area of habitat (Ha)**
Broadleaf plantation	A 1.1.2	533
Broadleaf semi-natural woodland	A1.1.1	302
Scattered scrub	A2.2	73
Scattered trees	A3.1	61
Mixed plantation	A1.3.2	39
Coniferous plantation	A1.2.2	15
Scattered conifer trees	A3.2	2
Dense/continuous scrub	A2.1	2
Semi-natural coniferous woodland	A1.2.1	0.6
Scattered broadleaf and conifer trees	A3.3	0.06
Total woodland, scrub and scattered trees and scrub		**1027.66**

Lowland Broadleaf woodland, coniferous woodland and urban trees are North Merseyside Biodiversity Action Plan priority habitats. Habitat targets for lowland broadleaf woodland include to expand the current area by 300 ha by 2005 and to maintain current extent. The figures in this report provide the baseline from which increases in tree cover from 2000 can be measured.

8. Area of grassland recorded in St Helens

As discussed in section 2.1, amenity grassland (covering 971 ha) and improved grassland (covering 924 ha) account for approximately 14% of St Helens land cover and 72% of all grassland habitats recorded. The remaining 28% of grassland habitat is made up of a number of unimproved and semi-improved grassland habitat types.

Urban grasslands, which include unimproved, semi-improved and improved grassland are NMBAP priority habitats. The results of the survey show that improved grassland accounts for approximately 7% of the land cover in St Helens. Of the unimproved and semi-improved grassland habitat types, unimproved neutral grassland covers the largest area (472 ha). Acid grassland covers just 0.36 ha, the principal area being found at Billinge Beacon. Both acid and calcareous grasslands are rare in St Helens. This is of concern as acid grassland is an NMBAP priority habitat and has been lost through

improvement and fragmentation. NMBAP targets for acid grassland include "to increase the area of acid grassland by 20ha by 2015." Current restoration work at Billinge Hill Quarry will increase the acid grassland total for St Helens.

Table 2. Area of Unimproved or semi-improved grassland habitats

Phase 1 habitat type	Phase 1 Habitat code	Area of habitat (Ha)
Unimproved neutral grassland	B2.1	472
Semi-improved neutral grassland	B2.2	119
Poor semi-improved grassland	B6	88
Marshy grassland	B5	40
Unimproved acid grassland	B1.1	0.36
Unimproved calcareous grassland	B3.1	0.33
Total unimproved or semi-improved grassland		**719.69**

9. Area of Lowland Heath recorded in St Helens

Only 2.32 hectares of lowland heath were recorded in St Helens of the two habitat types given in Table 3. Areas of lowland heath were recorded on Penlake Industrial Estate, Parr Flat, and east of Parr Industrial Estate. Of this 0.8 has been lost to development since the time of survey.

Lowland heath is an NMBAP habitat. Targets for this habitat are concerned with expanding the area of lowland heath within North Merseyside, targets include:

- To recreate a further 10% of lowland heath by 2015.
- To initiate the restoration of 50% of degraded heaths by 2010 and all heath by 2015.
- To link small patches of heath into larger heathland units.

Table 3. Area of lowland heath recorded in St Helens

Phase 1 habitat type	Phase 1 Habitat type	Area of habitat (Ha)
Wet dwarf scrub heath	D2	2
Total area of heathland		**2**

10. Area of Mire in St Helens

Mire or bog vegetation only accounts for 3.04 hectares in St Helens. These are found in the areas around Holiday Moss, Kings Moss and Reeds Moss. (Mire vegetation is also recorded at Islands Brow Bank, however this is a survey error.)

Table 4. Area of Mire / Bog habitat recorded in St Helens

Phase 1 habitat type	Phase 1 Habitat type	Area of habitat (Ha)
Wet modified bog	E1.7	3
Blanket bog	E1.6.1	0.04
Total area of Mire		**3.04**

Since this survey was undertaken restoration work has been undertaken on Bold Moss increasing the area of moss at this site.

11. Area of wetland habitats in St Helens

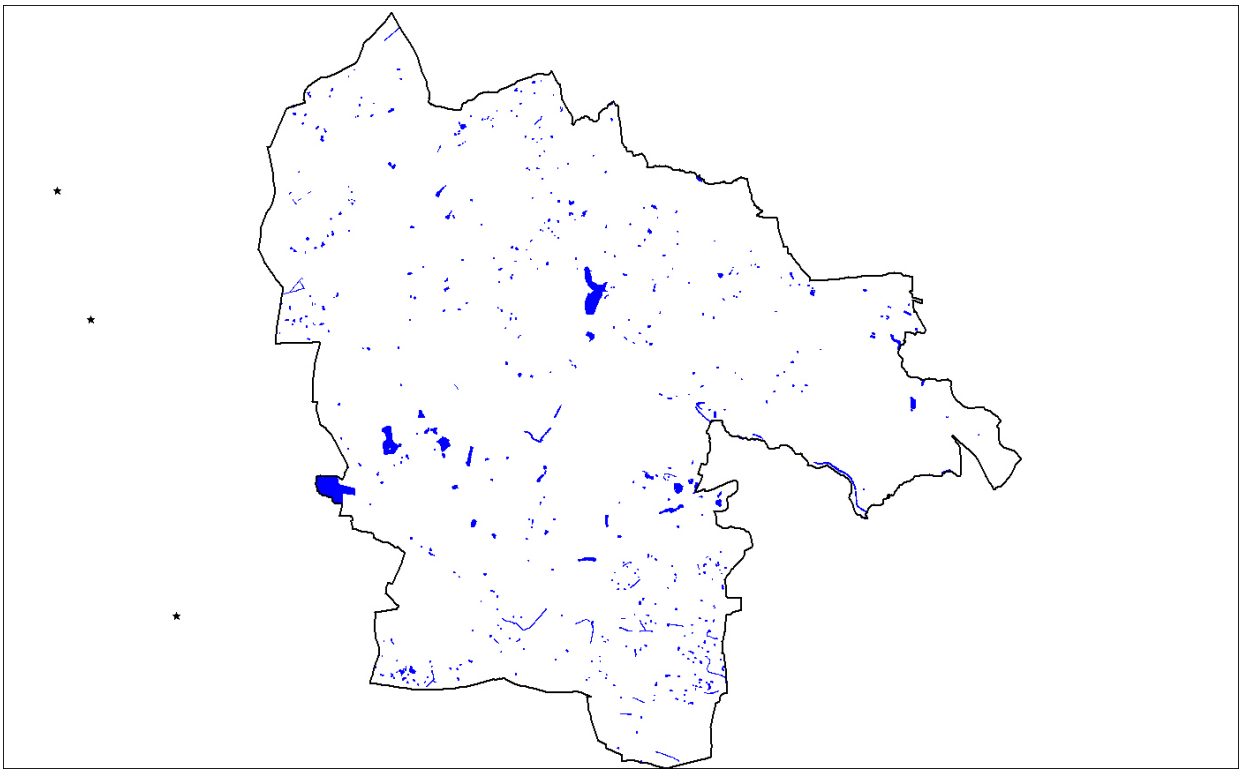
The wetland habitat covering the largest area in St Helens is standing water, which includes ponds, lakes and some ditches. Figure 3 shows the distribution of ponds in St Helens. The figure shows that ponds are widely distributed across St Helens, with particular concentrations being to the south east of Marshall's Cross and Bold and in the Rainford and Billinge area.

Wetland habitats including ponds and canals are NMBAP priority habitats. Targets set for ponds are to create a further 150 ponds by 2015. This Phase 1 habitat data provides a base line against which increase in ponds numbers can be measured. The Phase 1 habitat data recorded a total of approximately 700 ponds.

Table 5. Wetland habitat types recorded in St Helens

Phase 1 habitat type	Phase 1 Habitat type	Area of habitat (Ha)
Standing water	G1	133
Running water	G2	33
Swamp	F1	15
Inundation vegetation	F2.2	4
Swamp	F1.2	3
Eutrophic standing water	G1.1	0.58
Swamp	F1.1	0.18
Total area of wetland		**188.76**

Figure 3. Distribution of ponds and standing water bodies in St Helens



12. Linear Habitats

Table 6. Total length of hedgerow recorded in St Helens.

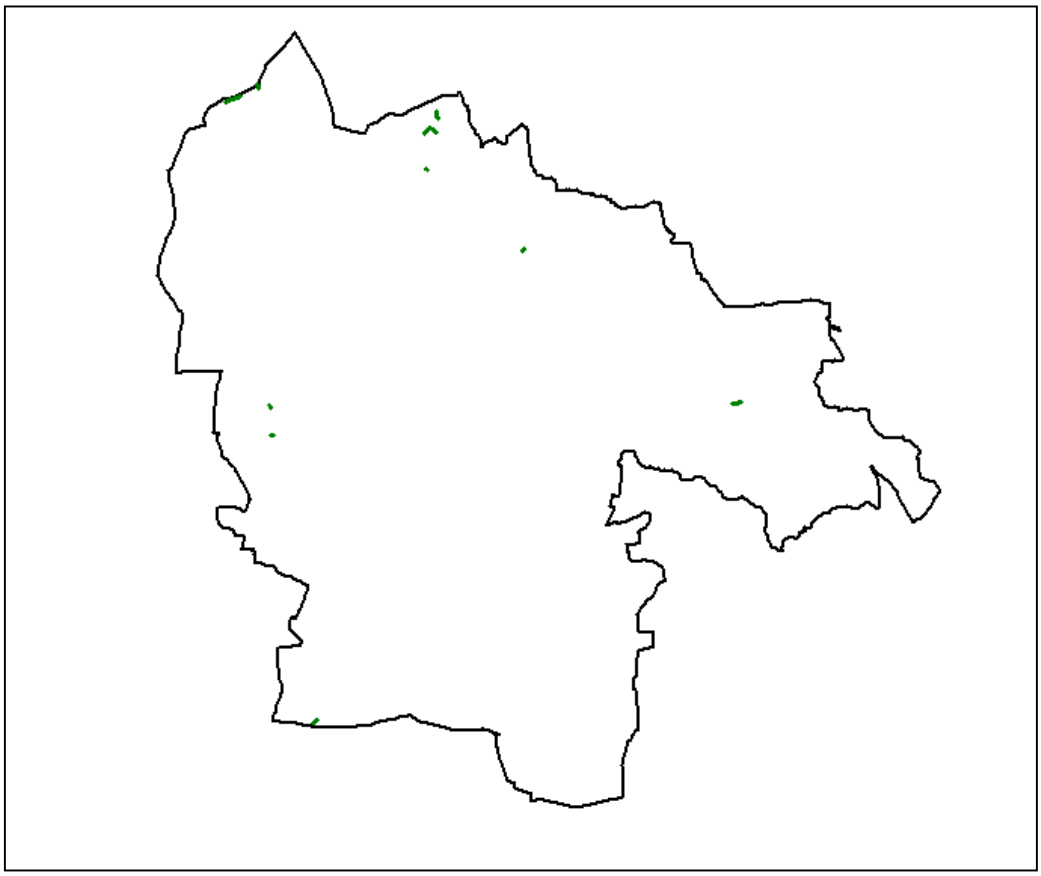
The survey recorded almost 193km of hedgerow in St Helens. Of these hedgerows there are approximately 1.5km of species rich hedgerows. Figure 4 shows that these species rich hedgerows are found in short unconnected sections widely spaced across St Helens.

Phase 1 habitat type	**Phase 1 habitat code**	**Habitat length (m)**
Species poor intact hedge	J2.1.2	160,120
Defunct hedge species poor	J2.2.2	25,896
Hedge and trees species poor	J2.3.2	5,270
Native species rich intact hedge	J2.1.1	828
Hedge and trees native species rich	J2.3.1	644
Total hedgerow (m)		**192,758**

Table 7. Total length of species rich hedgerows

Phase 1 habitat type	**Phase 1 habitat code**	**Habitat length (m)**
Native species rich intact hedge	J2.1.1	828
Hedge with standard trees native species rich	J2.3.1	644
Total species rich hedge (m)		**1472**

Figure 4. Distribution of Species Rich Hedgerows in St Helens



13. Further Survey information

Previous Phase one habitat survey was undertaken between 1981 and 1983. These data are available as a GIS image layer, however these data have not been digitised and so comparisons and analysis can not be undertaken.

In addition to Phase 1 habitat data further more detailed site specific survey is available. National Vegetation Classification survey was undertaken of specific sites during 2001/2002. This survey data is held by EAS and includes a GIS layer and can be obtained via data requests that will be dealt with under the amended Environmental Information Regulation (2000).

14. Conclusion

The digital capture of Phase 1 habitat data (1999/2000) quantifies the habitats found within St Helens and provides important monitoring information on the implementation of the NMBAP. The digital data can also be use to provide an indicator of where efforts

need to be focused. The habitat survey data have shown that arable land habitat covers the greatest proportion of St Helens accounting for 39% of the borough. Arable land, amenity grassland and improved grassland account for 53% of the boroughs. Of the remaining 47%, only approximately 14% contains semi-natural or natural habitats (33% of the borough was not recorded being residential or commercial areas). Woodland accounts for 8%. The remaining 6% of the borough area is made up of unimproved and semi-improved grassland, wetland, lowland heath and mire. Wetlands only cover 1% of the district, including approximately 700 ponds. Acid grassland, lowland heath and bog/mire habitats are particularly poorly represented with acid grassland covering only 0.36 ha, lowland heath covering 2.32 ha and mire covering 3.04 ha.

Figures for some habitats are likely to have increased since the time of survey as a result of projects such as the Mersey Forest, and restoration projects for example, Bold Moss. These contribute to the NMBAP targets and increases in cover for these habitats can now be measured against the baseline data provided by this survey.

Appendix 1

Area totals for each habitat type recorded in St Helens

Table 8. Total Area (Ha) for Phase One Habitat Types recorded in St Helens.
(In order of greatest area)

Phase 1 Habitat type	**Phase 1 Habitat code**	**Total area (hectare)**
Arable	J1.1	5075.98
Amenity grassland	J1.2	970.67
Improved grassland	B4	923.75
Broadleaved plantation	A1.1.2	533.44
Neutral unimproved grassland	B2.1	471.51
Broadleaved semi-natural woodland	A1.1.1	302.40
Tall ruderal herb	C3.1	207.89
Bare ground	J4	152.28
Standing water	G1, G1.1	133.97
Neutral semi-improved grassland	B2.2	119.35
Poor semi-improved grassland	B6	88.05
Scattered scrub	A2.2	73.32
Scattered trees	A3.1	61.58
Marshy grassland	B5	40.21
Ephemeral/short perennial vegetation	J1.3	39.11
Coniferous scattered trees	A1.3.2	38.98
Running water	G2	33.02
Continuous bracken	C1.1	18.77
Swamp / marginal vegetation	F1, F1.1, F1.2	17.70
Coniferous plantation	A1.2.2	14.72
Introduced scrub	J1.4	9.39
Unidentified grassland type	Grassland	9.01
Inundation vegetation	F2.2	3.73
Wet modified bog	E1.7	3.01
Wet dwarf scrub heath	D2	2.32
Mixed woodland plantation	A3.2	2.27
Dense/continuous scrub	A2.1	2.18
Scattered bracken	C1.2	1.00
Semi-natural coniferous woodland	A1.2.1	0.57
Basic inland cliff	I1.1.2	0.55
Unimproved acid grassland	B1.1	0.36
Unimproved calcareous grassland	B3.1	0.32
Basic scree	I2.2	0.27
Semi-improved acid grassland	B1.2	0.14
Dry ditch	J2.6	0.06
Recently felled broadleaved woodland	A4.1	0.06
Scattered broadleaf and coniferous trees	A3.3	0.06
Acid/neutral inland cliff	I1.1.1	0.05
Blanket bog	E1.6.1	0.04
Total area recorded		**9352.09**