Ecological survey of 'Key Habitats' in England, 1992-93

Dataset Documentation

Dataset Name: ***Habitat and vegetation data from an ecological survey of terrestrial key habitats in England, 1992-1993***

Dataset Background & Description: Since 1978, a series of national surveys (Countryside Surveys) have been carried out by the Institute of Terrestrial Ecology/Centre for Ecology and Hydrology to gather data on the natural environment. The sampling framework for these surveys is not optimised to yield data on rarer or more specialised habitats. This Key Habitat survey was commissioned in the early 1990s to carry out additional survey work into habitats which were perceived to be under threat or which represented areas of concern to the Department for the Environment. The habitats were: Lowland heath, Chalk and limestone grasslands, Coasts, Uplands. For reporting purposes, the survey was supplemented by additional data, particularly for river valleys and waterside landscapes (lowlands), from Countryside Survey 1990.

Geographic Coverage: England

Time Period: 1992-93

Data Categories:

Vegetation Data:	Vascular plants. Bryophytes. Lichens.
Boundary data:	Boundary descriptions at grid points across each 1km survey square
Habitat Data:	Land cover data at grid points across each 1km survey square

Survey Design & Methods: Stratified sampling across entire area. Bunce & Shaw's 1973 standardized survey methods with modifications – refer to field handbooks.

Related Datasets: Countryside Survey http://www.countrysidesurvey.org.uk/

Key documents & publications:

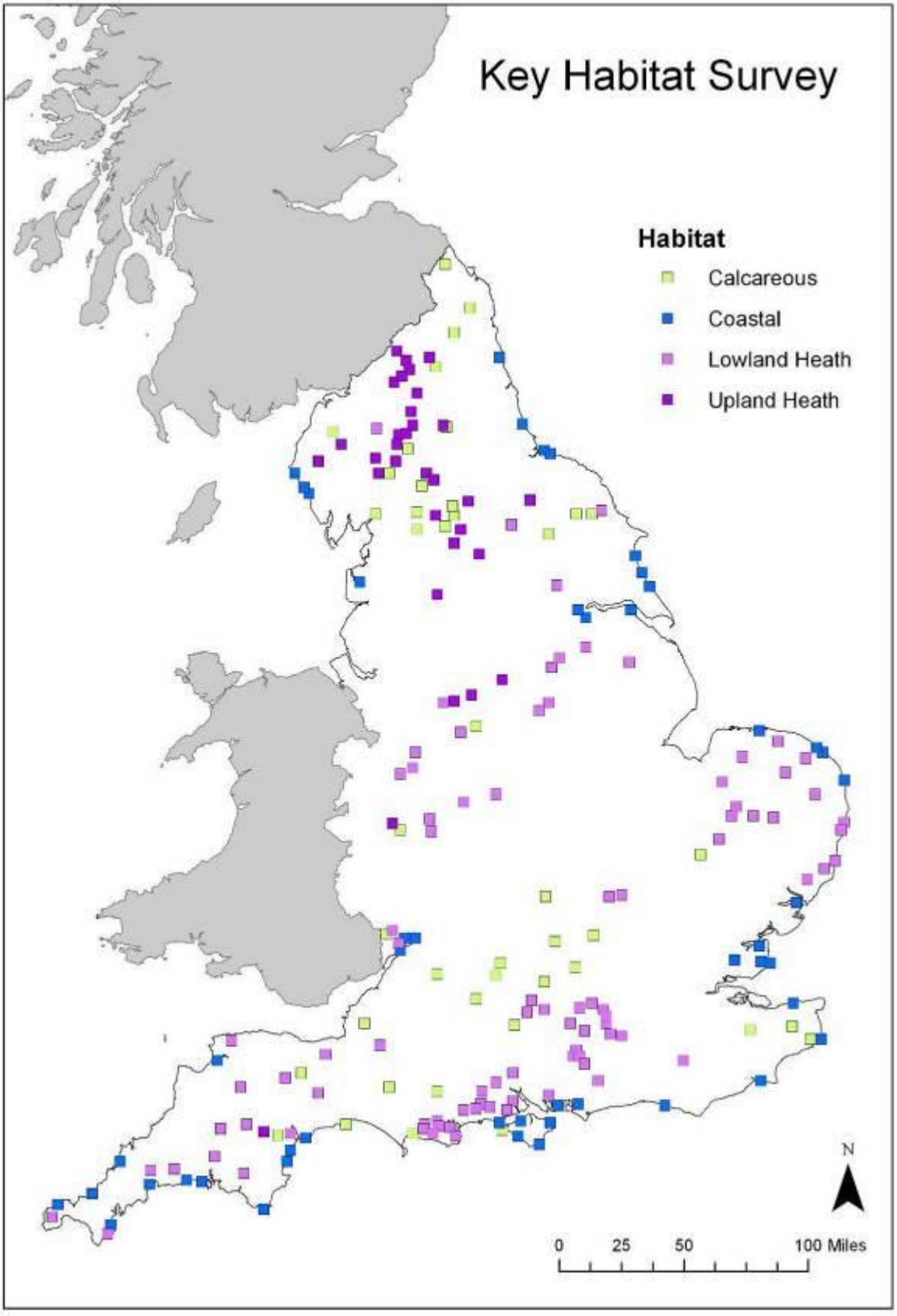
- Barr, C.J. (1993) *Changes in Key Habitat: Surveys of Chalk & Limestone Grassland, Coastal, and Upland Landscapes, Field Handbook. Draft 3.* Grange-over-Sands, NERC/Institute of Terrestrial Ecology.
- Barr, C.J. (1992) *Changes in Key Habitat: A Survey of Lowland Heath, Field Survey Handbook.* ITE Merlewood.
- Barr, C.J. (1997) *Current Status and Prospects for Key Habitats in England, Part 6 Summary Report.* Institute of Terrestrial Ecology, University of Sheffield - Unit of Comparative Plant Ecology, Environmental Resource Management Ltd, Department of the Environment, Transport and the Regions.
- Bunce R.G.H & Shaw M.W. (1973). A Standardized Procedure for Ecological Survey. *Journal of Environmental Management*, Vol. 1, 239-258.

Originator Details: *Survey & Project Management:* Barr C.J., Bunce, R.G.H., Cummins, R.P., Hallam, C.J. Hornung, M.: Institute of Terrestrial Ecology, Merlewood, Grange over Sands, Cumbria.
Data management: Wood, C.M.: Centre for Ecology & Hydrology, Lancaster.

Field surveyors: *H. Adams, T. Barden, E. Biron, R. Cummins, J. Davis, J. Day, D. De La Pole, C. Hallam, M. Harrison, R. Hewison, J. Hobbs, C. Kanefsky, G. Levine, M. Marler, D. McCutcheon, L. McDonnell, M. Ness, K. Pollock, S. Walters, M. Webb*

Quality control: *All data were collected by trained surveyors. Collected data have been checked and verified as far as possible.*

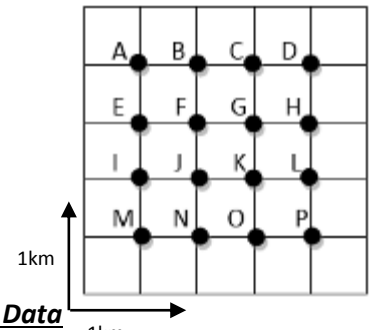
Geographical Coverage



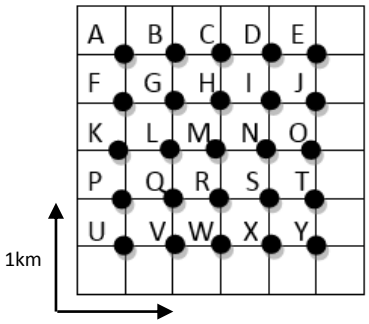
Key Habitat Survey of England 1992-93 - Habitat Data & Boundary Data

At each point on a regular grid (16 or 25 depending on landscape/habitat type), within 1 km survey squares, codes describing land cover and the nearest boundary were recorded. Refer to field handbooks for more detail (Barr, 1992;Barr, 1993).

16 point grid



25 point grid



Land Cover Data

Land Cover at each grid point was described using Countryside Survey 1990 Codes. A list of these codes can be found in Appendix II. The codes reflected the "mappable unit" in which the point fell. The minimum mappable unit was 400m^2. Each mappable unit was determined by the constancy of the codes which described it. If one characteristic (e.g. cover of a dominant plant species) was sufficiently different from an adjacent area to be given a different code then a new mappable unit was recognised.

Boundary data

The nearest vertical boundary to each grid point (within 100m) was described using Countryside Survey 1990 Codes. A list of these codes can be found in Appendix III. The point on the boundary which was nearest to the grid point was recorded as part of a length which can be coded constantly as part of a single unit of not less than 20m (the minimum mappable length). If the nearest point on the boundary was part of a longer length, then the coding reflected the variability of the longer length. Vertical boundaries included: hedgerows, walls, fences, earth/stone banks acting as field boundaries; any combination of these.

Key Habitat Survey of England 1992-93 - Vegetation Data

Detailed plant species information was collected from a series of plots (as outlined in table 1). In this survey, 4 types of plot were used:

a) Main (X) plots: these were either 4m^2 or 200m^2 (nested), depending on the landscape type (see table 1) and were located at five of the grid points within the square (200m^2) or all grid points (4m^2).
b) Targeted (Y) plots: these are 4m^2 and 5 were placed in semi-natural vegetation types/ habitats that had not been covered by the main plots.
c) Stream side (S) and waterside (W) plots: these are 10 x 1m plots and up to 5 were placed immediately adjacent to watercourse where present, in Upland Landscapes only.
d) Roadside (R) and Verge (V) plots: these are 10x1m plots and up to 5 were placed immediately adjacent to roads where present in Limestone and Chalk landscapes only.

Table 1: Summary of Survey Sites *(refer to field handbooks)*

Habitat	No. of 1km squares	Map Grid	X Plots (200m^2)	X plots (2x2m)	Y Plots (2x2m)	SW plots (10x1m)	RV plots (10x1m)	Year surveyed
Calcareous	43	16 points, A-P	-	5 plots recorded at AJGDP	5 at locations selected by surveyor	-	5 plots adjacent to roadsides.	1993
Coastal	49	25 points, A-Y	5 plots recorded at points ALITW	-	5 at locations selected by surveyor	-	-	1993
Lowland Heath	89	25 points, A-Y	-	25 plots, on grid.	-	-	-	1992
Upland Heath	32	16 points, A-P	5 plots recorded at AJGDP	-	5 at locations selected by surveyor	5 plots adjacent to watercourses	-	1993
Total	*213*	--	*241*	*662*	*620*	*150*	*201*	-

Table 2: Summary of Vegetation Plots

Habitat	No. of 1km squares	X Plots (200m2)	X plots (4m2)	Y Plots (2x2m)	SW plots (10x1m)	RV plots (10x1m)
Calcareous	43	-	122	215	-	81(R) 120(V)
Coastal	49	93	-	245	-	-
Lowland Heath	89	-	540	-	-	-
Upland Heath	32	148	-	160	60 (S) 90 (W)	-
Total	*213*	*241*	*662*	*620*	*150*	*201*

Note: 35 squares have no plot data, mostly in the lowland heath habitat

Key Habitat Survey of England 1992-93 - Datasets

List of tables

Table Name	Description
Key_Habitat_Survey_Squares.csv	List of set of 1km squares surveyed, for each habitat type
Key_Habitat_Plot_Headers.csv	Vegetation plot header information and location
Key_Habitat_Plot_Species.csv	List of plant species recorded within each vegetation plot
Key_Habitat_LC_Features.csv	Land cover data mapped at each grid point within squares
Key_Habitat_LC_Species.csv	Species details pertaining to land cover features in Key_Habitat_LC_Features table
Key_Habitat_BD_Features.csv	Boundary data mapped at each grid point within squares
Key_Habitat_BD_Species.csv	Species details pertaining to boundary features in Key_Habitat_BD_Features table

Table Relationships

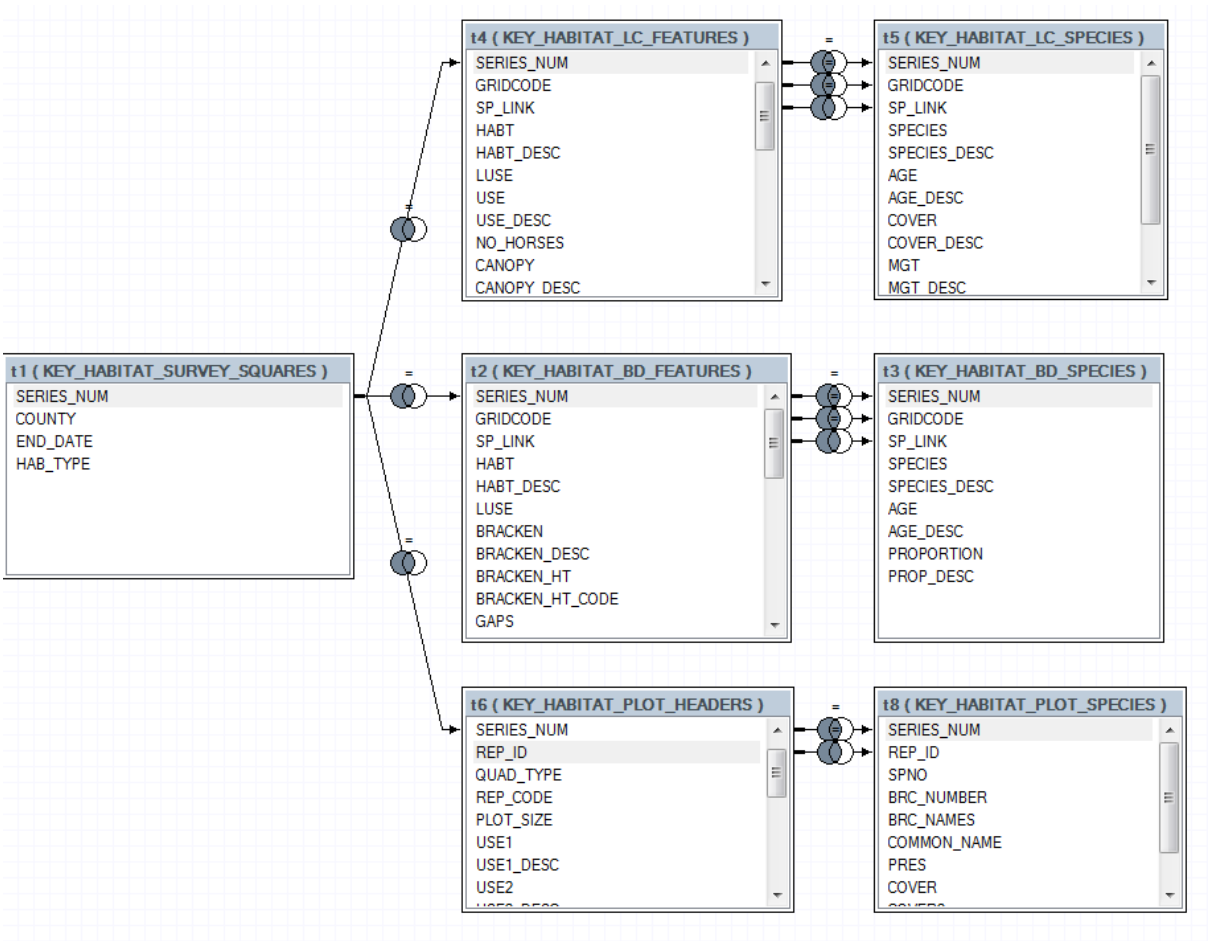


Table Descriptions

***Key_Habitat_Survey_Squares*.csv**

Information from front cover of Field Assessment Booklet regarding 1km survey square. Site code, county in which located, end of survey date, habitat type.

Column name	Description	Type
SERIES_NUM	Survey square number	Text
COUNTY	County square located in	Text
END_DATE	Date survey square finished	Date
HAB_TYPE	Key Habitat (landscape) type	Text

Key_Habitat_Plot_Headers.csv

Vegetation plot header information and location (where known).

Column name	Description	Type
HAB_TYPE	Key Habitat (landscape) type	Text
SERIES_NUM	Survey square number	Text
REP_ID	Code of plot	Text
QUAD_TYPE	Type of plot: Y (targeted), X (main plot), R (roadside),V (verge), S (stream),W (waterside) *(see handbook)*	Text
REP_CODE	Number of plot if X, Y, R or V plot types (rather than alphabetic grid codes)	Text
PLOT_SIZE	Size of plot: Y= 2x2m, X= 200m^2 (14.1x14.1m) **or** 2x2m, R=10x1m S=10x1m *(see handbook)*	Text
USE1	Land Use code 1 (from plot sheet)	Numeric
USE1_DESC	Land Use code 1 description	Text
USE2	Land Use code 2 (from plot sheet)	Numeric
USE2_DESC	Land Use code 2 description	Text
USE3	Land Use code 3 (from plot sheet)	Numeric
USE3_DESC	Land Use code 3 description	Text
PHYS	Physiology code (from plot sheet)	Numeric
PHYS_DESC	Physiology description	Text
SLOPE	Slope description. (from plot sheet) Flat (no slope discernable), Slight (<5^o by eye), Moderate (6-15^o), Steep (>15)	Text
ASPECT	Aspect in degrees from north. None if flat (from plot sheet)	Numeric
SHADE	Shade description (from plot sheet). Full/open/partial/none	Text
GRAZING	Grazing description (from plot sheet)	Text
SUBSTRATE	Substrate description (from plot sheet)	Text
SOIL_DEPTH	Soil depth (from plot sheet)	Text
DESCRIPTION1	Site description 1 – notes (from plot sheet)	Text
DESCRIPTION2	Site description 2 – notes (from plot map sheet)	Text

Key_Habitats_Plot_Species.csv

List of plant species and covers recorded within each vegetation plot. *Note: Bare ground and total bryophytes not entered in R/V or S/W plots.*

Column name	Description	Type
SERIES_NUM	Survey square number	Text
REP_ID	Plot code description, sometimes the same as Gridcode in squares where plots were done on the 16/25 point grid	Text
SPNO	Species code number	Numeric
BRC_NUMBER	Biological record centre species code	Text
BRC_NAMES	Biological record centre species name (Stace, 2010)	Text
COMMON_NAME	Common name of species where available	Text
PRES	Quadrat nest number in which species first appears *(see handbook).* If relevant COVER or COVER2 is 0 and PRES >=1, then species is present at <5% cover. For Total Bryophytes and Lichens, 0 = whole quadrat.	Numeric
COVER	Cover % for inner quadrat 4m^2 where plots are 200m^2, otherwise whole plot for un-nested plots	Numeric
COVER2	Cover % for entire plot 200m^2 where plots are 200m^2, otherwise N/A.	Numeric
HAB_TYPE	Key Habitat (landscape) type	Text

***Key_Habitat_LC_Features*.csv**

Land cover data mapped at each grid point within survey squares.

Column Name	Description	Type
HAB_TYPE	Key Habitat (landscape) type	Text
SERIES_NUM	Survey square number	Text
GRIDCODE	Location of plot on square grid	Text
SP_LINK	Additional link to *Key_Habitat_LC_Species.csv* table	
HABT	Habitat type code	Numeric
HABT_DESC	Habitat type description	Text
LUSE	Land Use Code *(see appendix V)*	Text
USE	Use code	Numeric
USE_DESC	Use description	Text
NO_HORSES	Number of horses	Numeric
CANOPY	Canopy code	Numeric
CANOPY_DESC	Canopy description	Text
DESC	Description code	Numeric
DESC_DESC	Description of description code	Text
FOF	Forestry feature type code	Numeric
FOF_DESC	Forestry feature description	Text
FORBS	Forbs cover code	Numeric
FORBS_DESC	Forbs cover description	Text
HEATHER	Heather type code	Numeric
HEATHER_DESC	Heather type description	Text
OTHER	Additional other code	Numeric
OTHER_DESC	Additional other description	Text
PEAT	Peat code	Numeric
PEAT_DESC	Peat cover description	Text
OTHER_USE	Additional use code	Numeric
OTHER_USE_DESC	Additional use description	Text
WEEDPROP	Proportion of weeds code	Numeric

WEEDPROP_DES	Proportion of weeds code	Text

Key_Habitat_LC_Species.csv

Species details pertaining to land cover features in Key_Habitat_LC_Features table

Column Name	Description	Type
SERIES_NUM	Survey square number	Text
GRIDCODE	Location of plot on square grid	Text
SPECIES	Species code	Numeric
SP_LINK	Additional link to *Key_Habitat_LC_Features.csv* table	Numeric
SPECIES_DESC	Description of species	Text
AGE	Age code	Numeric
AGE_DESC	Description of age of species	Text
COVER	Percentage cover code of species	Numeric
COVER_DESC	Description of Percentage cover of species. *Note: sometimes this refers to the cover of the overall feature - these should be cover codes (COVER) 651-655 but occasionally these have been used for species and there is some confusion.*	Text
MGT	Management code	Numeric
MGT_DESC	Description of management	Text
HEIGHT	Height of species	Numeric
HEIGHT_DESC	Description of height	Text

Key_Habitat_BD_Features

Boundary data mapped at each boundary nearest to grid points within survey squares.

Column Name	Description	Type
SERIES_NUM	Survey square number	Text
GRIDCODE	Location of plot on square grid	Text
SP_LINK	Additional link to *Key_Habitat_BD_Species.csv* table	Numeric
HABT	Habitat/feature code	Numeric
HABT_DESC	Habitat/feature description	Text
LUSE	Land Use code *(see appendix V)*	Text
BRACKEN	Bracken code	Numeric
BRACKEN_DESC	Bracken description	Text
BRACKEN_HT_CODE	Bracken height code	Numeric
BRACKEN_HT	Bracken height description	Text
GAPS	Gaps code	Numeric
GAPS_DESC	Gaps description	Text
MGT	Management code	Numeric
MGT_DESC	Management description	Text
STOCK	Stock proof code	Numeric

STOCK_DESC	Stock proof description	Text
USE	Use code	Numeric
USE_DESC	Use description	Text
DESC1	Description 1 code	Numeric
DESC1_DESC	Description 1 description	Text
DESC2	Description 2 code	Numeric
DESC2_DESC	Description 1 description	Text
DESC3	Description 3 code	Numeric
DESC3_DESC	Description 3 description	Text
OTHER	Other information	Numeric
OTHER_DESC	Other information description	Text
CANOPY	Canopy code	Numeric
CANOPY_DESC	Canopy description	Text
HEIGHT	Feature height code	Numeric
HEIGHT_DESC	Feature height description	Text
HAB_TYPE	Key Habitat type	Text

Key_Habitat_BD_Species

Species details pertaining to land cover features in Key_Habitat_BD_Features table

Column Name	Description	Type
SERIES_NUM	Survey square number	Text
GRIDCODE	Location of plot on square grid	Text
SP_LINK	Link to *Key_Habitat_BD_Features.csv* table	
SPECIES	Species code	Long integer
SPECIES_DESC	Species description	Text
AGE	Age code (of trees)	Long Integer
AGE_DESC	Age description (of trees)	Text
PROPORTION	Proportion of cover of species code	Long Integer
PROP_DESC	Proportion of cover of species description	Text

Appendix 1 - List of Square codes and habitats/landscape types

Habitat	Square code	Habitat	Square code	Habitat	Square code	Habitat	Square code	Habitat	Square code
Calcareous	**AD1**	Lowland Heath	**A1**	Lowland Heath	**D7**	Upland Heath	**MD1**	Coastal	**ED10**
Calcareous	**AD10**	Lowland Heath	**A10**	Lowland Heath	**D8**	Upland Heath	**MD10**	Coastal	**ED2**
Calcareous	**AD101**	Lowland Heath	**A11**	Lowland Heath	**E1**	Upland Heath	**MD2**	Coastal	**ED3**
Calcareous	**AD11**	Lowland Heath	**A12**	Lowland Heath	**E10**	Upland Heath	**MD3**	Coastal	**ED5**
Calcareous	**AD13**	Lowland Heath	**A2**	Lowland Heath	**E11**	Upland Heath	**MD4**	Coastal	**ED6**
Calcareous	**AD2**	Lowland Heath	**A3**	Lowland Heath	**E12**	Upland Heath	**MD5**	Coastal	**ED7**
Calcareous	**AD4**	Lowland Heath	**A4**	Lowland Heath	**E2**	Upland Heath	**MD7**	Coastal	**ED8**
Calcareous	**AD5**	Lowland Heath	**A5**	Lowland Heath	**E3**	Upland Heath	**MD8**	Coastal	**ED9**
Calcareous	**AD6**	Lowland Heath	**A6**	Lowland Heath	**E4**	Upland Heath	**MD9**	Coastal	**EN10**
Calcareous	**AD7**	Lowland Heath	**A7**	Lowland Heath	**E5**	Upland Heath	**MN1**	Coastal	**EN2**
Calcareous	**AD8**	Lowland Heath	**A8**	Lowland Heath	**E6**	Upland Heath	**MN2**	Coastal	**EN201**
Calcareous	**AN1**	Lowland Heath	**A9**	Lowland Heath	**E7**	Upland Heath	**MN3**	Coastal	**EN3**
Calcareous	**AN10**	Lowland Heath	**B1**	Lowland Heath	**E8**	Upland Heath	**MN4**	Coastal	**EN4**
Calcareous	**AN2**	Lowland Heath	**B2**	Lowland Heath	**E9**	Upland Heath	**MN5**	Coastal	**EN6**
Calcareous	**AN4**	Lowland Heath	**B3**	Lowland Heath	**F1**	Upland Heath	**MN6**	Coastal	**EN7**
Calcareous	**AN5**	Lowland Heath	**B4**	Lowland Heath	**F2**	Upland Heath	**MN9**	Coastal	**EN9**
Calcareous	**AN6**	Lowland Heath	**B5**	Lowland Heath	**F3**	Upland Heath	**TD10**	Coastal	**HD1**
Calcareous	**AN7**	Lowland Heath	**B6**	Lowland Heath	**F4**	Upland Heath	**TD101**	Coastal	**HD10**
Calcareous	**AN8**	Lowland Heath	**B7**	Lowland Heath	**F5**	Upland Heath	**TD11**	Coastal	**HD101**
Calcareous	**AN9**	Lowland Heath	**B8**	Lowland Heath	**F6**	Upland Heath	**TD12**	Coastal	**HD3**
Calcareous	**BD1**	Lowland Heath	**C1**	Lowland Heath	**F7**	Upland Heath	**TD13**	Coastal	**HD4**
Calcareous	**BD11**	Lowland Heath	**C10**	Lowland Heath	**F8**	Upland Heath	**TD14**	Coastal	**HD5**
Calcareous	**BD13**	Lowland Heath	**C11**	Lowland Heath	**G1**	Upland Heath	**TD15**	Coastal	**HD6**
Calcareous	**BD14**	Lowland Heath	**C12**	Lowland Heath	**G10**	Upland Heath	**TD2**	Coastal	**HD7**
Calcareous	**BD15**	Lowland Heath	**(L)C13**	Lowland Heath	**G11**	Upland Heath	**TD4**	Coastal	**HD9**
Calcareous	**BD16**	Lowland Heath	**(L)C14**	Lowland Heath	**G12**	Upland Heath	**TD6**	Coastal	**HN1**
Calcareous	**BD17**	Lowland Heath	**(L)C15**	Lowland Heath	**(L)G13**	Upland Heath	**TD7**	Coastal	**HN10**
Calcareous	**BD18**	Lowland Heath	**(L)C16**	Lowland Heath	**(L)G14**	Upland Heath	**TD8**	Coastal	**HN2**
Calcareous	**BD19**	Lowland Heath	**(L)C17**	Lowland Heath	**(L)G15**	Upland Heath	**TD9**	Coastal	**HN3**
Calcareous	**BD21**	Lowland Heath	**C2**	Lowland Heath	**(L)G16**	Upland Heath	**TN2**	Coastal	**HN4**
Calcareous	**BD22**	Lowland Heath	**C3**	Lowland Heath	**G2**	Upland Heath	**TN3**	Coastal	**HN5**
Calcareous	**BD4**	Lowland Heath	**C4**	Lowland Heath	**G3**	Upland Heath	**TN4**	Coastal	**HN6**
Calcareous	**BD7**	Lowland Heath	**C5**	Lowland Heath	**G4**			Coastal	**HN9**
Calcareous	**BD8**	Lowland Heath	**C6**	Lowland Heath	**G5**	Lowland Heath	**H6**	Coastal	**SD1**
Calcareous	**BD9**	Lowland Heath	**C7**	Lowland Heath	**G6**	Lowland Heath	**H7**	Coastal	**SD10**
Calcareous	**BN10**	Lowland Heath	**C8**	Lowland Heath	**G7**	Lowland Heath	**H8**	Coastal	**SD2**
Calcareous	**BN101**	Lowland Heath	**C9**	Lowland Heath	**G8**			Coastal	**SD4**
Calcareous	**BN2**	Lowland Heath	**D1**	Lowland Heath	**G9**	Coastal	**SN2**	Coastal	**SD5**
Calcareous	**BN5**	Lowland Heath	**D2**	Lowland Heath	**H1**	Coastal	**SN3**	Coastal	**SD7**
Calcareous	**BN6**	Lowland Heath	**D3**	Lowland Heath	**H2**	Coastal	**SN5**	Coastal	**SD8**
Calcareous	**BN7**	Lowland Heath	**D4**	Lowland Heath	**H3**	Coastal	**SN6**	Coastal	**SD9**
Calcareous	**BN8**	Lowland Heath	**D5**	Lowland Heath	**H4**	Coastal	**SN7**	Coastal	**SN1**
Calcareous	**BN9**	Lowland Heath	**D6**	Lowland Heath	**H5**	Coastal	**SN8**	Coastal	**SN10**

Appendix II - Land Cover Codes

CODE	DESCRIPTION		CODE	DESCRIPTION		CODE	DESCRIPTION	
1	Cliff > 30m high	P	**113**	Fen	P	**163**	Molinia caerulea	
2	Cliff 5-30m high	P	**114**	Marsh	P	**164**	Eriophorum angustifolium	
3	Rock outcrop & cliff < 5m	P	**115**	Flush	P	**165**	Eriophorum vaginatum	
4	Scree	P	**116**	Saltmarsh	P	**166**	Trichorophorum caespitosum	
5	Surface boulders	P	**117**	Wheat	P	**167**	Sphagnum spp.	
6	Limestone pavement	P	**118**	Barley	P	**168**	Juncus squarrosus	
7	Peat hags	P	**119**	Oats	P	**169**	Juncus squarrosus	
10	Soil erosion	P	**120**	Sugar beat	P	**170**	Erica cinerea	
17	10-50% peat		**121**	Turnips/swedes/roots	P	**175**	25-50%	
31	Cliff > 30m high	P	**122**	Kale	P	**176**	50-75%	
32	Cliff 5-30m high	P	**123**	Potatoes	P	**177**	75-95%	
34	Rocky/boulder shore	P	**124**	Field beans	P	**178**	95-100%	
35	Pebble/gravel shore	P	**125**	Peas	P	**179**	< 10cm	
36	Sandy shore (or dune)	P	**126**	Maize	P	**180**	10-30cm	
37	Bare mud	P	**127**	Rye	P	**181**	30-50cm	
38	Sea	P	**128**	Oilseed rape	P	**182**	0.5-1m	
51	Lake - natural	P	**129**	Other crop	P	**183**	1-1.5m	
52	Lake - artificial	P	**130**	Flowers	P	**184**	> 1.5m	
53	River	P	**131**	Commercial horticulture	P	**185**	Beef	
54	Canalised river	P	**132**	Orchard	P	**186**	Dairy	
55	Canal	P	**133**	Unmanaged grass	P	**187**	Breeders	
56	Stream	P	**134**	Tall herb vegetation	P	**188**	Dual purpose	
58	Other ditch	P	**136**	Ley		**189**	Sheep	
61	Signs of drainage	P	**137**	Unimproved grass		**190**	Goats	
64	Levee	P	**138**	Forbs 10-25% (grass)		**191**	Horses	
65	Bank < 1m		**139**	Forbs 25-50% (grass)		**192**	Pigs	
66	Bank 1-5m		**140**	Forbs > 50% (grass)		**193**	Silage	
67	Bank > 5m		**141**	Neglected		**194**	Hay	
90	Burnt heather		**142**	Abandoned		**195**	Deer	
91	Regenerating heather		**143**	Ploughed	P	**196**	Grouse	
92	Vigorous heather		**144**	Burnt		**197**	No apparent use	
93	Heather mosaic		**145**	Mown		**201**	Individual trees	P
94	Heather dominant		**146**	Lolium multiflorum		**202**	Scattered trees	P
95	Collapsing heather		**147**	Lolium perenne		**203**	Line of trees	P
96	Mat heather		**148**	Trifolium repens		**204**	Belt of trees	P
97	Bushy heather		**149**	Dactylis glomerata		**205**	Clump of trees	P
98	Mop heather		**150**	Anthoxanthum odoratum		**206**	Woodland/forest	P
99	Dead heather		**151**	Phleum pratense		**207**	Individual scrub species	P
101	Lowland agricultural grass	P	**152**	Cynosurus cristatus		**208**	Scattered scrub	P
102	Upland grass	P	**153**	Holcus lanatus		**209**	Line of scrub	P
103	Moorland - grass	P	**154**	Agrostis tenuis		**210**	Patch of scrub	P
104	Moorland - shrub heath	P	**155**	Festuca ovina		**215**	Closed canopy	
105	Calcareous grassland	P	**156**	Pteridium aquilinum - dense	P	**216**	Canopies not touching	
106	Maritime vegetation	P	**157**	Pteridium aquilinum -		**218**	Parkland	
107	Lowland heath	P	**158**	Juncus effusus		**221**	Fir - Douglas	
108	Aquatic macrophytes	P	**159**	Deschampsiaflexuosa		**222**	Larch	
110	Raised bog	P	**160**	Nardus stricta		**223**	Pine - Corsican	
111	Blanket bog	P	**161**	Calluna vulgaris		**224**	Pine - Lodgepole	
112	Valley bog	P	**162**	Vaccinium myrtilus		**225**	Pine – Scots	

CODE	DESCRIPTION	CODE	DESCRIPTION	CODE	DESCRIPTION

226	Spruce - Norway	
227	Spruce - Sitka	
228	Unspecified conifer	
231	Alder	
232	Ash	
233	Beech	
234	Birch	
235	Bramble	
236	Elder	
237	Elm	
239	Gorse	
240	Hawthorn	
241	Hornbeam	
242	Lime	
243	Oak	
244	Poplar	
245	Rowan	
246	Sweet chestnut	
247	Sycamore	
248	Willow	
250	Mixed broadleaf	
251	Mixed conifer	
252	Unspecified broadleaf	
256	25-50%	
257	50-75%	
258	75-95%	
259	95-100%	
261	1-4 years	
262	5-20 years	
263	20-100 years	
264	> 100 years	
266	Timber production	
267	Landscape	
268	Sporting/game	
269	Public recreation	
270	Nature conservation	
271	Shelter	
275	Well managed	
276	Unmanaged - thriving	
277	Unmanaged - improvable	
278	Declining	
281	Felling/stumps	
282	Natural regeneration	
283	Underplanting	
284	Planted	
286	Staked trees	
287	Tree protectors	
288	Fenced (single trees)	
289	Windblow	
290	Dead standing trees	P
291	Regrowth - cut stump	
292	Grazing (stock)	
293	Ride/firebreak	P
294	Bracken - dense	
295	Bracken - scattered	
322	Hedge > 50% other species	P
331	Stone bank	P
341	> 2m high	
358	Uncut	
364	Bracken present	
401	Building	P
402	Garden/grounds with trees	P
403	Garden/grounds without trees	P
404	Public open space	P
405	Amenity grass > 1ha	P
406	Allotments	P
407	Car park	P
409	Graden centre/nursery	P
410	Embankment	P
411	Other land	P
421	Residential	
422	Commercial	
423	Industrial	
424	Public service & facilities	
425	Institutional	
426	Educational/cultural	
427	Religious	
428	Agricultural	
429	Sporting/recreational	
430	Waste - domestic	P
431	Waste - industrial	P
432	Quarry/mine	
433	Gravel pit	
441	New	
442	Vacant	
443	Derelict	
451	Railway track/land	P
452	Road (tarmac)	P
453	Verge < 1m	
454	Verge 1-5m	
455	Verge > 5m	
456	Constructed track	P
457	Unconstructed track	P
458	Footpath (exclusive)	P
459	Footpath (other)	P
460	Satisfactory throughout	
501	School playing fields	P
502	Other playing fields	P
503	Golf course	P
507	Static caravan(s)	P
508	Touring caravan park	P
511	Other designated area	P
521	Horsiculture	P
522	Angling	P
524	Other recreation	P
601	Dry heath	P
602	Wet heath	P
605	Rock crevice veg (maritime)	
608	Maritime grassland	
609	Maritime heath	
610	Strandline vegetation	
613	Stable yellow dune	
615	Dune slacks	
616	Inundation grassland (maritime)	
621	Pioneer saltmarsh	
622	Low marsh	
623	Middle/upper marsh	
625	Weeds>10%	
626	Weeds>25%	
627	Weeds>50%	
628	Festuca rubra	
630	Cattle	
631	Setaside	
640	Blackthorn	
641	Hazel	
645	Glade	P
651	10-25% (1ry codes only)	
652	26-50%	
653	51-75%	
654	76-95%	
655	96-100%	
678	Calcareous	
777	Unknown	P
888	New to map	P

** P = Primary Code*

Note: Surveyors were allowed to add unique codes in each Square, therefore certain codes will not be listed here

Appendix III - Boundary Codes

CODE	DESCRIPTION		CODE	DESCRIPTION		CODE	DESCRIPTION	
34	Rocky/boulder shore	P	**237**	Elm		**352**	Not stockproof	
38	Sea	P	**238**	Field maple		**353**	Filled gaps < 10%	
52	Lake - artificial	P	**239**	Gorse		**354**	Filled gaps > 10%	
53	River	P	**240**	Hawthorn		**355**	Signs of replacement	
55	Canal	P	**241**	Hornbeam		**356**	Signs of removal	
56	Stream	P	**242**	Lime		**357**	Trimmed	
57	Roadside ditch	P	**243**	Oak		**358**	Uncut	
58	Other ditch	P	**244**	Poplar		**359**	Derelict	
62	Waterfall	P	**245**	Rowan		**360**	Line of relict hedge	
63	Gorge	P	**246**	Sweet chestnut		**361**	Laying	
65	Bank < 1m		**247**	Sycamore		**362**	Flailing	
66	Bank 1-5m		**248**	Willow		**363**	Regrowth from stumps	
67	Bank > 5m		**250**	Mixed broadleaf		**364**	Bracken present	P
94	Heather dominant		**251**	Mixed conifer		**410**	Embankment	
112	Valley bog	P	**252**	Unspecified broadleaf		**421**	Residential	
113	Fen	P	**256**	25-50%		**443**	Derelict	P
134	Tall herb vegetation	P	**257**	50-75%		**457**	Unconstructed track	
149	Dactylis glomerata		**258**	75-95%		**640**	Blackthorn	
151	Phleum pratense		**259**	95-100%		**641**	Hazel	
162	Vaccinium myrtilus		**261**	1-4 years		**651**	10-25% (1ry codes only)	
175	25-50%		**262**	5-20 years		**652**	26-50%	
176	50-75%		**263**	20-100 years		**653**	51-75%	
178	95-100%		**264**	> 100 years		**654**	76-95%	
180	10-30cm		**267**	Landscape		**655**	96-100%	
181	30-50cm		**271**	Shelter		**888**	New to map	P
182	0.5-1m		**282**	Natural regeneration		**999**	No longer on map	
183	1-1.5m		**284**	Planted				
184	> 1.5m		**286**	Staked trees				
189	Sheep		**287**	Tree protectors				
201	Individual trees	P	**290**	Dead standing trees	P			
203	Line of trees	P	**291**	Regrowth - cut stump				
204	Belt of trees	P	**295**	Bracken - scattered				
205	Clump of trees	P	**301**	Dry-stone wall	P			
207	Individual scrub species	P	**302**	Mortared wall	P			
208	Scattered scrub	P	**303**	Other wall	P			
209	Line of scrub	P	**311**	Fence - wood only	P			
210	Patch of scrub	P	**312**	Fence - iron only	P		* P = Primary Code	
215	Closed canopy		**313**	Fence - wire on posts	P		***Note: Surveyors were allowed***	
216	Canopies not touching		**314**	Other fence	P		***to add unique codes in each***	
217	Hedgerow		**321**	Hedge > 50% hawthorn	P		***Square, therefore certain***	
222	Larch		**322**	Hedge > 50% other	P		***codes will not be listed here***	
225	Pine - Scots		**323**	Mixed hedge	P			
228	Unspecified conifer		**331**	Stone bank	P			
231	Alder		**332**	Earth bank	P			
232	Ash		**333**	Grass strip only	P			
233	Beech		**341**	> 2m high				
234	Birch		**342**	1-2m high				
235	Bramble		**343**	< 1m high				
236	Elder		**351**	Stockproof				

Appendix IV: LUSE Codes

WLF	**Woody linear feature (hedge)**
AN	**Agriculture/Natural Vegetation**
CF	**Coastal Feature**
FO	**Forestry**
FOU	**Forestry Use**
IL	**Inland Physiography**
IW	**Inland Water**
RE	**Recreation**
ST	**Structures**
TR	**Transport**
AC	**Agricultural Crops**
FOF	**Forestry Feature**
GS	**Grass Strip**
B	**Bank**
F	**Fence**
W	**Wall**
US	**Un-surveyed/Missing Data**
AGU	**Agriculture/Natural Vegetation Use**