

Habitat Mapping: Phase 1 NVC UKHab



Structure

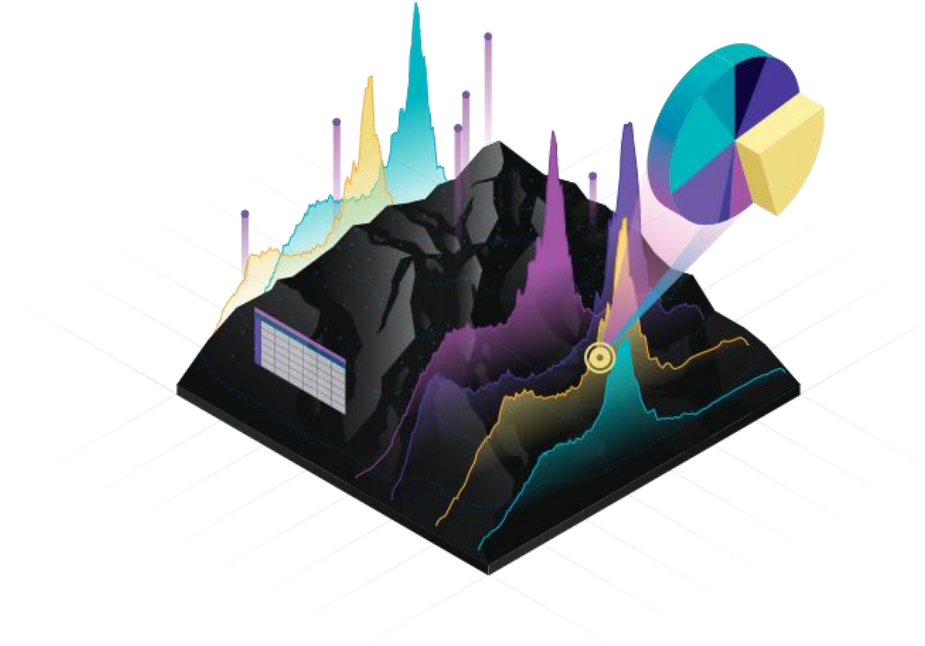
Week No	Date	Theme	Tutor
1	31/01/24	Introduction to module and Management Plans	AF
2	7/02/24	Phase 1 Habitat Surveys and National Vegetation Classification (NVC)	AF
3	14/02/24	Natural Flood Salt March – Cwm Ivy	AF
4	21/02/24	Flood risk, climate change and building resilience	AF
5	28/02/24	Habitat Classification	AF
6	6/03/24	LiDAR (theory and application)	AF
7	13/03/24	Near-census GIS (SfM)	MD/AF
8	20/03/24	Habitat Creation	AF
	27/03/24	Easter Break	
	3/04/24	Easter Break	
	10/04/24	Easter Break	
9	17/04/24	Google Earth Engine (the cloud!)	AF
10	24/04/24	Biodiversity on degraded landscapes	AF
11	1/05/24	Course Recap & assignment drop in 'surgery'	AF
12	8/05/24	Assignment Presentation	AF

Icebreaker

- **Can you find an example of a riparian management plan?**
- **How have they used GIS to highlight any relevant points?**

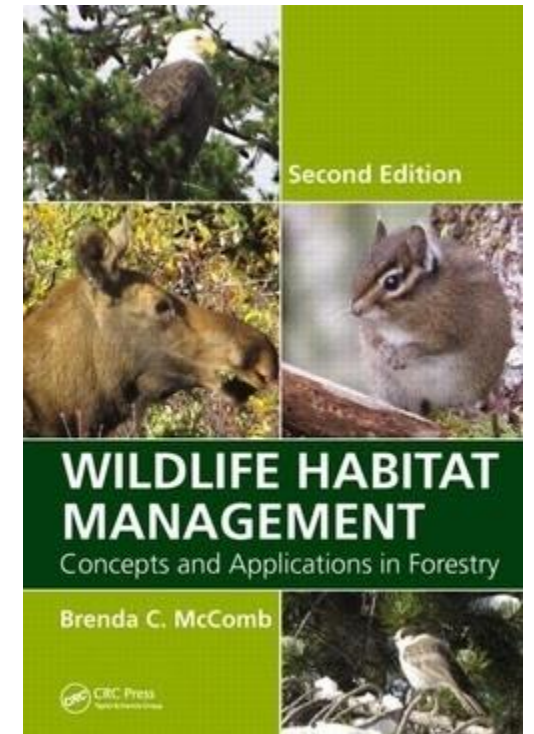
Outline

- **Recap of skills and content from last week**
- Introduction – Why map habitats?
- Phase One Habitat Mapping
- NVC
- UKHab
- Saving Files and Map making



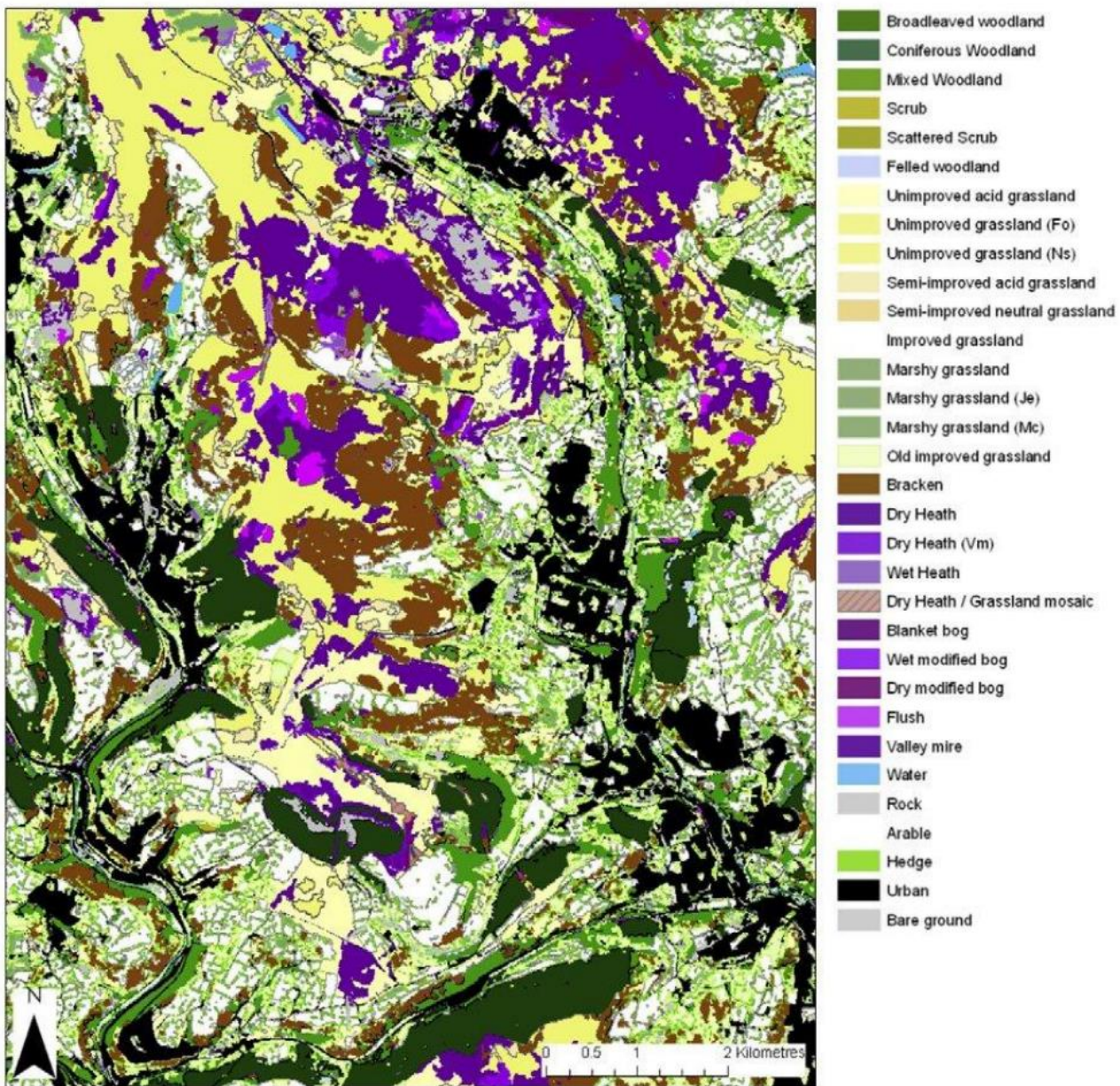
Why?

- Why do we map habitat?

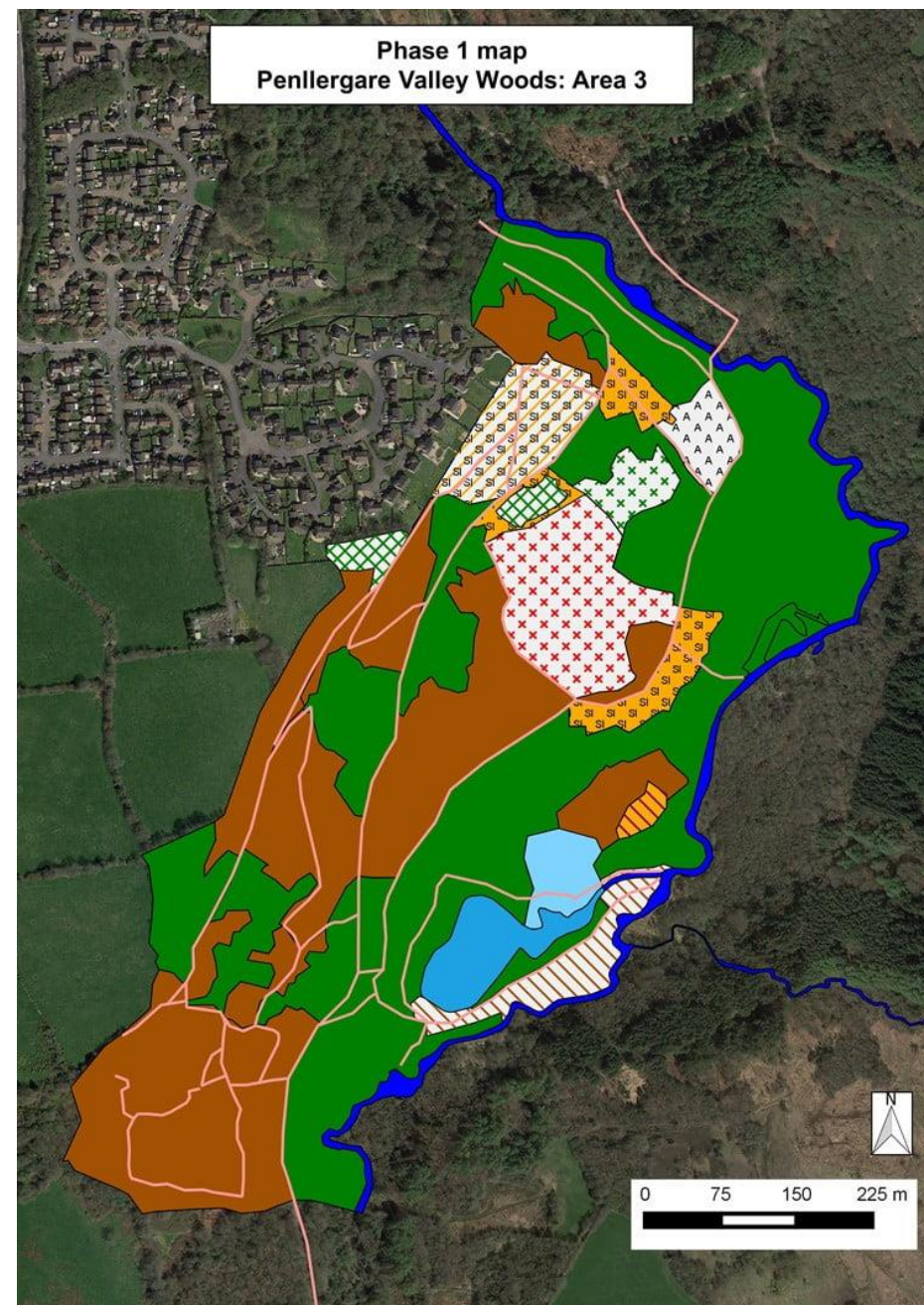


Phase 1 Habitat Classification





Detailed classification of Phase 1 habitats focusing on the Blanaevon World Heritage Site (For Phase 1 codes, see Table A.1).



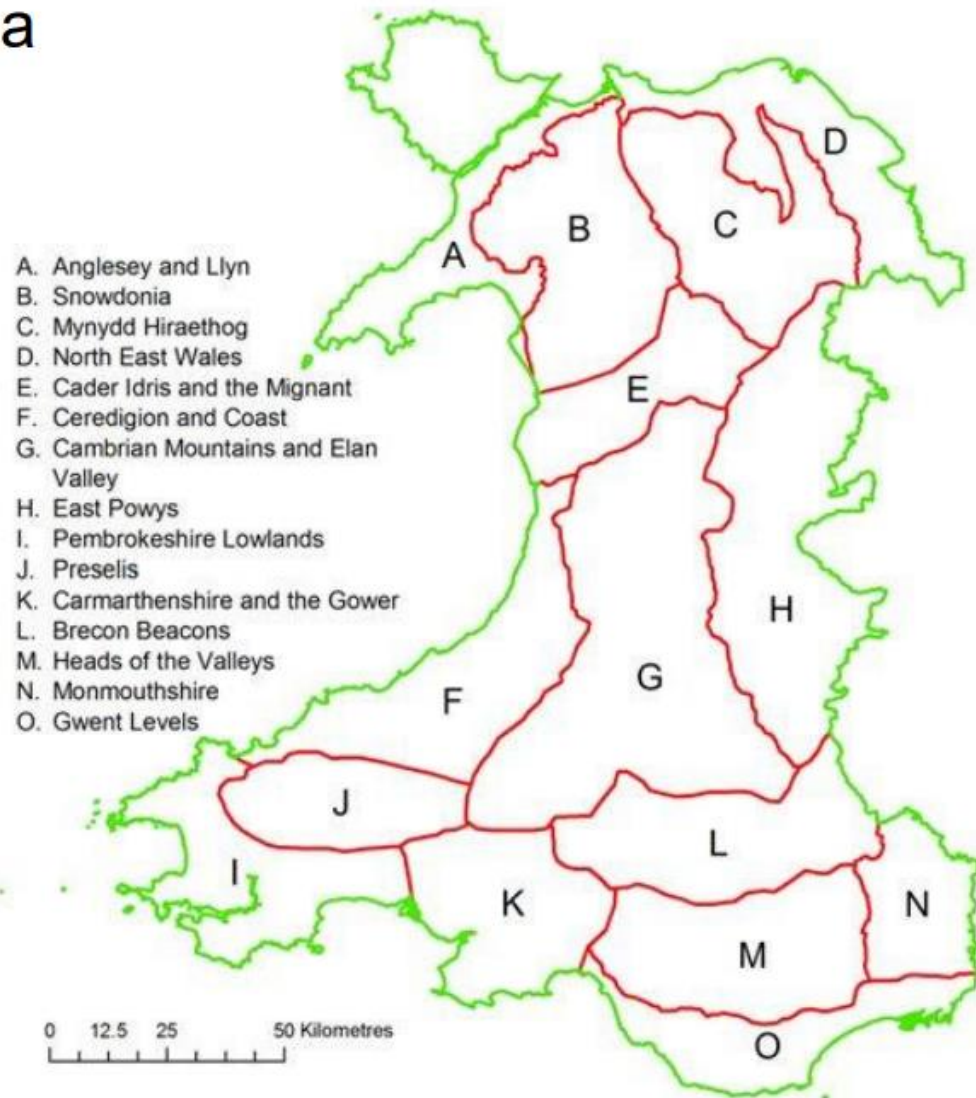
Phase 1 Habitat Types

Phase 1 classification comprises 10 (A-J) broad high level categories:

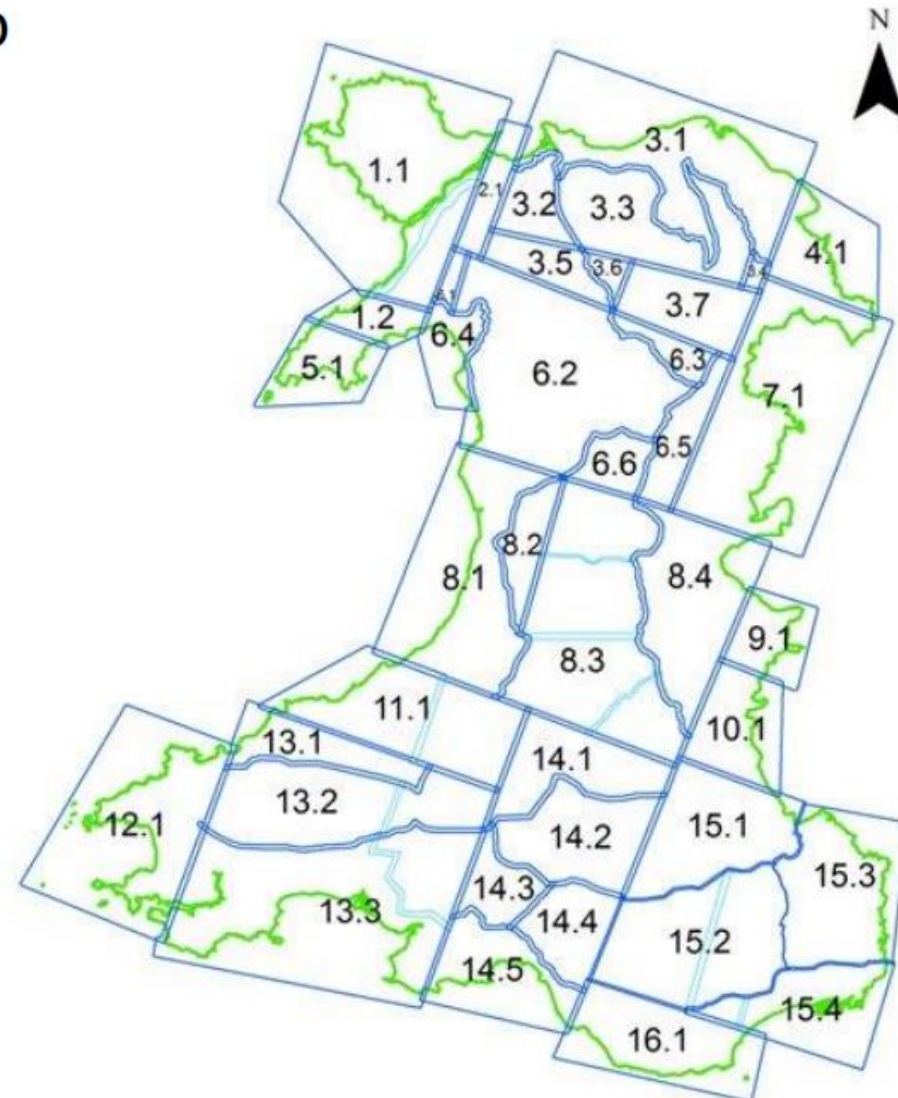
- The Phase 1 classification comprises ten (A-J) broad high level categories:
- A: Woodland and scrub - Green
- B: Grassland and marsh – true green
- C: Tall herb and fen - purple
- D: Heathland - orange
- E: Mire – purple / magenta
- F: Swamp, marginal and inundation – sky blue
- G: Open water - indigo blue
- H: Coastland - black
- I: Exposure and waste - red
- J: Miscellaneous – canary yellow
- **You will use these to build your map and classify the polygons**

A. Woodland and scrub
B. Grassland and marsh
C. Tall herb and fern
D. Heathland
E. Mire
F. Swamp, marginal and inundation
G. Open water
H. Coastland
I. Rock exposure and waste
J. Miscellaneous

a



b



Spatial distribution of (a) 15 biogeographic regions (A–O) and (b) these same regions integrated with the satellite image footprints, creating 16 project (42 sub-project) areas

An aerial photograph of a lush mangrove forest. A dark, winding waterway or canal cuts through the dense, green vegetation. The trees are thick and cover most of the land area, with some small islands or peninsulas of forest protruding into the water. The overall scene is a healthy, natural wetland environment.

Phase 1 Habitat Classification

- The Phase 1 Habitat Classification and associated field survey technique provide a standardised system to record semi-natural vegetation and other wildlife habitats.

An aerial photograph of a rural landscape. A wide, muddy river flows through the center of the image. On the left bank, a road runs diagonally, with several small buildings and a bridge crossing the river. The landscape is divided into numerous green and brown fields, some of which are flooded. A large, irregularly shaped island or peninsula is in the middle of the river. The overall scene depicts a typical rural environment with agricultural land and water bodies.

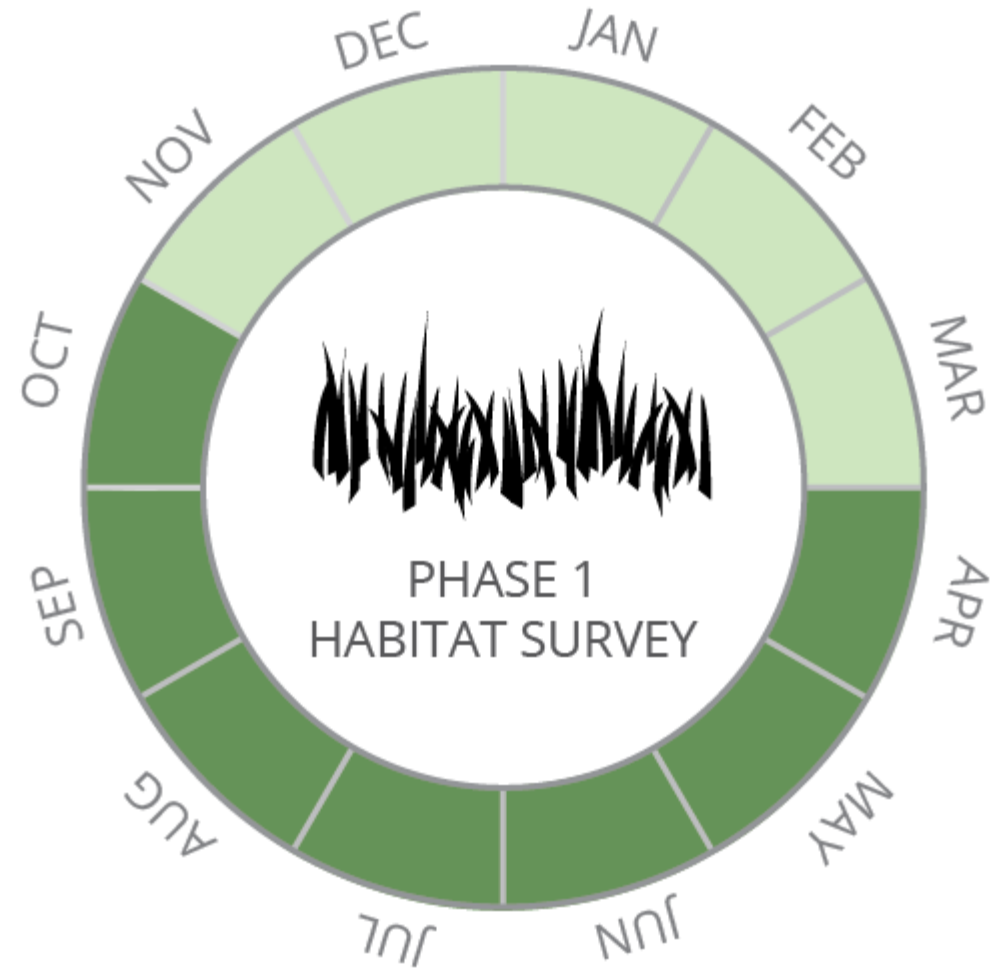
Phase 1 Habitat Classification

- The approach is designed to cover large areas of countryside relatively rapidly. It presents the user with a basic assessment of habitat type and potential importance for nature conservation.

Phase 1 Habitat Classification

- Each habitat type/feature is identified by way of a brief description of its defining features. It is then allocated a specific name, an alphanumeric code, and unique mapping colour.

[Handbook for Phase 1 habitat survey \(jncc.gov.uk\)](http://jncc.gov.uk)



Phase 1 Habitat Classification

Table 1 **Comparison of Phase 1 survey with remote sensing methods**

Phase 1 survey	Aerial photography	Satellite imagery
Complete ground cover possible; not limited by availability of other data	Complete cover exists for 1940s; cover good for 1970s but incomplete for other dates; quality variable	Frequent complete cover exists since 1982 for LANDSAT TM, but cloud obscures many images
Direct recording in the field	Relies on tone and pattern of spectral reflectance	Relies on spectral reflectance in a more limited range of tones, but images have greater contrast than for aerial photography
Accuracy depends on skill of field surveyors; few problems of interpretation	Image accurate but interpretation variable and often difficult	Image accurate; interpretation by specialists essential
Can be used to standardise other methods	Should be calibrated by field survey	Should be calibrated by field survey
No sophisticated or expensive equipment	Needs complicated and expensive equipment	Needs complicated and expensive equipment
Yields complete set of Phase 1 habitat categories	Yields limited set of habitat categories	Yields limited set of habitat categories
Yields maps, descriptive notes and statistical data	Can yield maps and statistical data	Can yield maps and statistical data
Gives information on dominant and other plant species	Little species information	Very little species information
Gives information on canopy and groundlayer	Information on canopy only (unless repeated at different seasons)	Information on canopy only (unless repeated at different seasons)
Data gathering slow, interpretation rapid	Data gathering quick, but interpretation laborious	Data gathering quick, interpretation potentially very fast if fully automated
Target notes give site-related information on species, communities, management, threats, etc for a large number of sites	Site-related information limited; no target notes	Site-related information limited; no target notes
Can be used for conservation evaluation	Limited use for conservation evaluation	Limited use for conservation evaluation

[Handbook for Phase 1 habitat survey \(jncc.gov.uk\)](http://jncc.gov.uk)

Map Projections

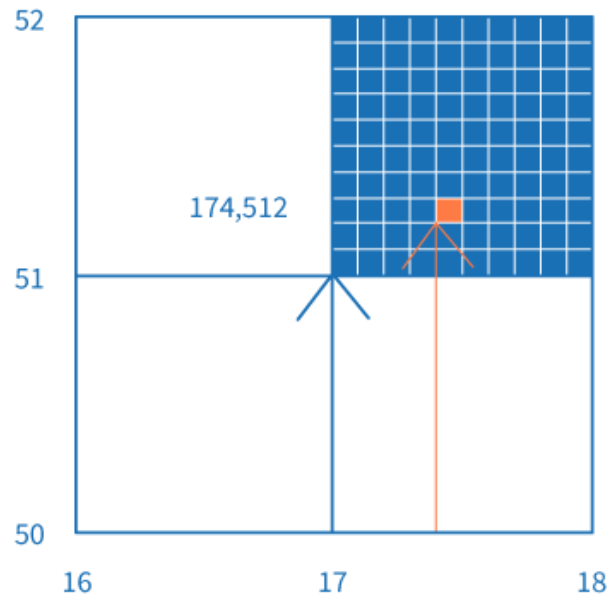


Map Projection

A map projection is a method for mapping spatial patterns on a curved surface (the Earth's surface) to a flat surface.

Grid: OS

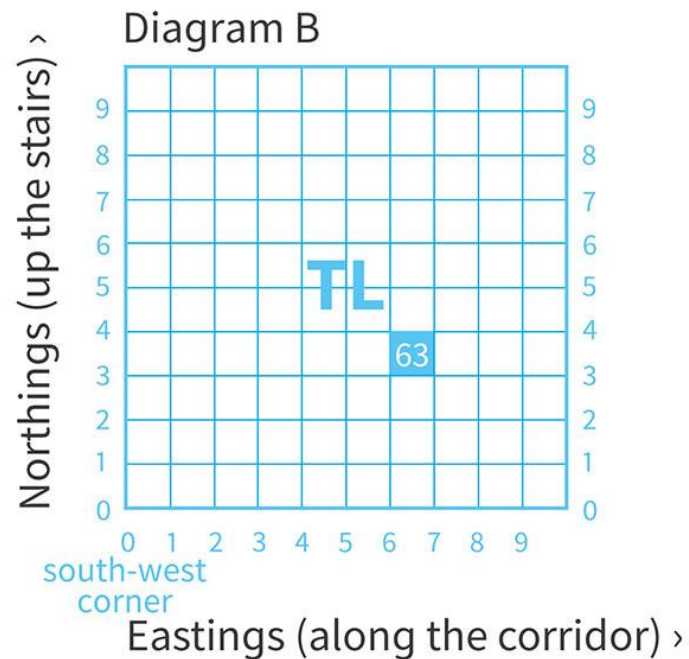
- Ordnance Survey



The grid squares on your Ordnance Survey map are all one kilometre across, which makes it easier to divide them into ten in your head.

By adding an extra number (between 1 and 10) to the easting and the northing, you'll come up with a six-figure reference that pinpoints a place to within 100 metres on the map.

Grid: OS



The grid squares on your Ordnance Survey map are all one kilometre across, which makes it easier to divide them into ten in your head. By adding an extra number (between 1 and 10) to the easting and the northing, you'll come up with a six-figure reference that pinpoints a place to within 100 metres on the map.

Phase 2



Phase 2

A. Woodland and scrub	
A1. Woodland	Dominated by trees >5m high when mature, forming a distinct canopy. Includes broadleaved, coniferous or mixed woodlands, and may be natural, semi-natural or plantation.
A2. Scrub	Dense / continuous or scattered scrub vegetation usually <5m high. Different scrub-communities may predominate on acidic / neutral and basic soils.
A3. Parkland and scattered trees	Tree cover <30%.
A4. Recently felled woodland	Category indicates that future landuse is uncertain (ie. no replanting).
B. Grassland and marsh	
B1. Acid grassland	Often unenclosed, unmanaged areas on higher land.
B2. Neutral grassland	Usually enclosed and managed (except roadside verges).
B3. Calcareous grassland	Often unenclosed; not managed intensively.
B4. Improved grassland	Intensively managed meadows, often drained.
B5. Marsh / marshy grassland	Grasslands and wet meadows with a variety of wetland plants.
B6. Poor semi-improved grassland	Intensively managed, species-poor grasslands.
C. Tall herb and fern	
C1. Bracken	Dominant or extensive patches of bracken.
C2. Upland species-rich ledges	Usually small areas (ledges) with characteristic vegetation.
C3. Other tall herb and fern	Characteristic vegetation species
D. Heathland	
D1. Dry dwarf shrub heath	Dry heaths with significant heather and gorse.
D2. Wet dwarf shrub heath	Heathlands with significant heather, gorse and wetland species.
D3. Lichen / bryophyte heath	Dominated by Bryophytes and/or Lichens; <30% vascular plant cover.
D4. Montane heath / dwarf herb	Montane and snow-bed vegetation types.
D5. Dry heath / acid grassland mosaic	Mixed Dry Heath (D1) and Acid grassland (B1) vegetation types.
D6. Wet heath / acid grassland mosaic	Mixed Wet Heath (D2) and Acid grassland (B1) vegetation types.

E. Mire	
E1. Bog	Includes Blanket bogs, Raised bogs, Wet modified bogs and Dry modified bogs. Modified bogs contain little or no sphagnum.
E2. Flush and spring	Includes Acid/neutral flush, Basic Flush and Bryophyte-dominated spring. Associated with moving water.
E3. Fen	Includes Valley mires, Basin mires and Flood-plain mires.
F. Swamp, marginal and inundation	
F1. Swamp	Transitional area between open water and land. Tall emergent vegetation.
F2. Marginal and inundation	Includes Marginal vegetation lining watercourses and unstable communities which are periodically flooded.
G. Open water	
G1. Standing water	Includes lakes, reservoirs, canals, pools, water-filled ditches and brackish lagoons.
G2. Running water	Rivers and streams.
H. Coastland	
H1. Intertidal	Region between tidal extremes.
H2. Saltmarsh	Saltmarsh and dunes.
H3. Shingle / gravel above high-tide mark	Often unvegetated.
H4. Rocks / boulders above high-tide mark	Often unvegetated.
H5. Strandline vegetation	Characteristic vegetation species.
H6. Sand dune	Includes dune slacks, open dune and a variety of dune vegetation communities (grassland, heath, scrub).
H7. Lagoon	Permanent and temporary lagoons.
H8. Maritime cliff and slope	Includes hard and soft cliffs, ledge vegetation, coastal grassland and coastal heathland.
I. Rock exposure and waste	
I1. Natural rock exposures (inland)	Includes inland cliffs, scree, limestone pavements, caves and other rock exposures.
I2. Artificial exposures and waste tips	Includes quarries, spoil, mines and refuse tips.
J. Miscellaneous	
J1. Cultivated / disturbed land	Includes arable, amenity grassland, ephemeral/short perennial and introduced scrub.
J2. Boundaries / hedges	Includes hedges (intact and defunct), hedgerows with trees, species-rich hedges, walls, ditches and earth banks.
J3. Built up areas	Includes buildings, caravan sites and artificial sea walls.
J4. Bare ground	Any type of bare ground not covered previously (cf. bare peat, intertidal, etc).
J5. Other habitat	Catch-all for undescribed habitat types



Phase 2 Upland Survey Data

- Phase 2 Upland Surveys
of Wales |
DataMapWales
(gov.wales)

UKHab





UKHab

- The UK Habitat Classification System (UKHab) is a recent, hierarchical approach to classifying terrestrial habitats which may be found across the UK.
- It is most frequently used to support baseline assessments of habitats, including baseline Biodiversity Net Gain (BNG) assessments.



- The benefits of UKHab over Phase 1 may be summarised as follows:
- Greater accuracy of habitat identification with less room for disagreement
- Significantly better workability between UKHab and Biodiversity Net Gain
- **Improved translation to priority and other high-value habitats.**



UKHab

- UKHab (UK Habitat) is a new habitat classification system that is designed to provide a simple and robust approach to carrying out habitat surveys.
- It covers a wide range of terrestrial and water-based habitat types and assists the humble ecologist in identifying, recording and categorising habitats on development sites.
- [Phasing out Phase 1; Welcoming in UKHab - ECOSA](#)

UKHab

Table 1.1 – The UK Habitat Classification Primary Habitat Hierarchy – Summary Change Log

Level in Hierarchy	Coding	Description	Changes from UKHab v1.1
Level 1	N/A	Major ecosystem, currently covering terrestrial, freshwater and coastal ecosystems.	No structural changes. Minor updates to definitions: <i>See individual habitat type definitions</i>
Level 2	g - grassland w - woodland h - heathland f - wetland c - cropland u - urban s – Sparsely vegetated land r – Rivers and lakes	9 ecosystem types, based upon the Mapping and Assessment of Ecosystems and their Services (MAES) typology and corresponding with major habitat types within the EUNIS classification.	No structural changes. Minor updates to definitions: <i>See individual habitat type definitions</i>

UKHab

Level in Hierarchy	Coding	Description	Changes from UKHab v1.1
	t – Transitional waters		
Level 3	g1, g2, g3 & g4 w1 & w2 h1, h2 & h3 f1 & f2 c1 u1 s1, s2 & s3 r1 & r2 t1 & t2	20 broad habitat types, corresponding directly with UK Biodiversity Action Plan Broad Habitats and closely to EUNIS.	No structural changes. Minor updates to definitions: <i>See individual habitat type definitions</i>
Level 4	<i>see individual ecosystem view in Section 2</i>	85 habitats, including 46 UK Biodiversity Action Plan Priority Habitats, and further splits of Level 3 habitats.	Addition of 6 new habitat types g2c Other calcareous grasslands h3j Willow scrub h3k Juniper scrub u1f Sparsely vegetated urban land r1f Temporary water bodies r1g Other standing water Deletion of 1 habitat type: ~~u1a Open mosaic habitats on previously developed land~~ (moved to secondary code 80) Modification of naming convention: w1g Other broadleaved woodland h1a Lowland heathland h2a Upland heathland h2a Native hedgerow h2b Non-native and ornamental hedgerow h2c Sea-buckthorn scrub f2c Upland flushes fens and swamps f2f Other wetlands u1d Suburban mosaic of developed and natural surface s2a Maritime cliffs and slopes s3a Sand dunes r1d Aquifer-fed naturally fluctuating water bodies Updates to definitions: <i>See individual habitat type definitions</i>

UKHab

Level 5	<i>see individual ecosystem view in Section 2</i>	119 habitats, including 72 Habitats Directive Annex I habitats and further splits of Level 4 habitats.	Addition of 10 new habitat types g3a6 Other lowland meadows h2a5 Species-rich native hedgerow h2a6 Other native hedgerow c1c8 Arable fields – pollen and nectar c1c9 Arable fields – cultivated for annual flora r1d5 Turlough (H3180) r1d6 Fluctuating meres r1d7 Blow wells r1f5 Mediterranean temporary ponds (H3170) r1f6 Other temporary ponds and scrapes Deletion of 2 habitat types: ~~w1g6 Line of trees (moved to secondary code 33)~~ ~~w1g7 Other broadleaved woodland types~~
---------	---	--	---

iii



Level in Hierarchy	Coding	Description	Changes from UKHab v1.1
			Modification of naming convention: h3c5 Dunes with sea-buckthorn (H2160) h3c6 Other sea-buckthorn scrub f2a5 Calcium-rich fen dominated by great fen-sedge (H7210) c1a5 Arable field margins – tussocky c1a6 Arable field margins – pollen and nectar c1a7 Arable field margins – cultivated annually c1a8 Arable field margins – wild bird mix c1c6 Arable fields – wild bird mix Updates to definitions: <i>See individual habitat type definitions</i>

UKHab

Grassland Ecosystem Primary Hierarchy

Level 2 Code	Level 2 Name	Level 3 Code	Level 3 Name	Level 4 Code	Level 4 Name (Priority Habitats in Bold)	Level 5 Code	Level 5 Name (Including Annex 1 Habitats)
g	Grassland	g1	Acid grassland	g1a	<u>Lowland dry acid grassland</u>	g1a5	<u>Inland dunes with open grasslands (H2330)</u>
						g1a6	<u>Other lowland dry acid grassland</u>
				g1b	<u>Upland acid grassland</u>	g1b5	<u>Montane acid grasslands (H6150)</u>
						g1b6	<u>Other upland acid grassland</u>
		g2	Calcareous grassland	g1c	<u>Bracken</u>		
				g1d	<u>Other lowland acid grassland</u>		
				g2a	<u>Lowland calcareous grassland</u>	g2a5	<u>Dry grasslands and scrub on chalk or limestone; lowland (H6210)</u>
						g2a6	<u>Dry grasslands and scrub on chalk or limestone; important orchid sites (H6210)</u>
				g2b	<u>Upland calcareous grassland</u>	g2b5	<u>Alpine and subalpine calcareous grasslands (H6170)</u>
						g2b6	<u>Species-rich grassland with mat-grass in upland areas (H6230)</u>
						g2b7	<u>Dry grasslands and scrub on chalk or limestone; upland (H6210)</u>
				g2c	<u>Other calcareous grassland</u>		
		g3	Neutral grassland	g3a	<u>Lowland meadows</u>	g3a5	<u>Lowland hay meadows (H6510)</u>
				g3b	<u>Upland hay meadows</u>	g3b5	<u>Mountain hay meadows (H6520)</u>
				g3c	<u>Other neutral grassland</u>	g3c5	<u>Arrhenatherum neutral grassland</u>
						g3c6	<u>Lolium-Cynosurus neutral grassland</u>
						g3c7	<u>Deschampsia neutral grassland</u>
						g3c8	<u>Holcus-Juncus neutral grassland</u>
		g4	<u>Modified grassland</u>				

UKHab

Woodland Ecosystem Primary Hierarchy

Level 2 Code	Level 2 Name	Level 3 Code	Level 3 Name	Level 4 Code	Level 4 Name	Level 5 Code	Level 5 Name
w	Woodland and forest	w1	Broadleaved and mixed woodland	w1a	Upland oakwood	w1a5	Western acidic oak woodland (H91A0)
				w1b	Upland mixed ashwoods	w1b5	Lime-maple woodlands of rocky slopes (H9180)
				w1c	Lowland beech and yew woodland	w1b6	Other upland mixed ashwoods
						w1c5	Beech forests on acid soils (H9120)
						w1c6	Beech forests on neutral to rich soils (H9130)
						w1c7	Yew-dominated woodland (H91J0)
						w1c8	Natural box scrub (H5110)
				w1d	Wet woodland	w1d5	Alder woodland on floodplains (H91E0)
				w1e	Upland birchwoods	w1d6	Bog woodland (H91D0)
				w1f	Lowland mixed deciduous woodland		
						w1f5	Dry oak-dominated woodland (H9190)
				w1g	Other broadleaved woodland	w1f6	Oak-hornbeam forests (H9160)
						w1f7	Other Lowland mixed deciduous woodland
		w2	Coniferous woodland	w1h	Other woodland; mixed	w1h5	Other woodland; mixed; mainly broadleaved
				w2a	Native pine woodlands	w1h6	Other woodland; mixed; mainly conifer
				w2b	Other Scot's Pine woodland	w2a5	Caledonian forest (H91C0)
				w2c	Other coniferous woodland		

Heathland and Shrub Ecosystem Primary Hierarchy

Level 2 Code	Level 2 Name	Level 3 Code	Level 3 Name	Level 4 Code	Level 4 Name	Level 5 Code	Level 5 Name
h	Heathland and shrub	h1	Dwarf shrub heath	h1a	Lowland heathland	h1a5	Dry heaths; lowland (H4030)
						h1a6	Dry coastal heaths with Cornish heath (H4040)
						h1a7	Wet heathland with cross-leaved heath; lowland (H4010)
						h1a8	Wet heathland with Dorset heath and cross-leaved heath (H4020)
				h1b	Upland heathland	h1b5	Dry heaths; upland (H4030)
						h1b6	Wet heathland with cross-leaved heath; upland (H4010)
				h1c	Mountain heaths and willow scrub	h1c5	Alpine and subalpine heaths (H4060)
						h1c6	Mountain willow scrub (H4080)
		h2	Hedgerows	h2a	Native hedgerow	h2a5	Species-rich native hedgerow
				h2b	Non-native and ornamental hedgerow	h2a6	Other native hedgerow
		h3	Dense scrub	h3a	Blackthorn scrub	h3a5	West coast blackthorn scrub
				h3b	Hazel scrub	h3a6	Other blackthorn scrub
						h3b5	Atlantic hazel
				h3c	Sea buckthorn scrub	h3b6	Other hazel scrub
						h3c5	Dunes with sea buckthorn (H2160)
				h3d	Bramble scrub	h3c6	Other sea buckthorn scrub
				h3e	Gorse scrub		
				h3f	Hawthorn scrub		
				h3g	Rhododendron scrub		
				h3h	Mixed scrub		
				h3j	Willow scrub		
				h3k	Juniper scrub		

Wetland Ecosystem Primary Hierarchy

f	Wetland	f1	Bog	f1a	Blanket bog	f1a5	Blanket bog (H7130)
						f1a6	Degraded blanket bog
				f1b	Lowland raised bog	f1b5	Active raised bogs (H7110)
						f1b6	Degraded raised bog (H7120)
						f1b7	Other degraded raised bog
		f2	Fen marsh and swamp	f2a	Lowland fens	f2a5	Calcium-rich fen dominated by great fen sedge (H7210)
						f2a6	Hard-water springs depositing lime; lowland (H7220)
						f2a7	Calcium-rich springwater-fed fens; lowland (H7230)
						f2a8	Transition mires and quaking bogs; lowland (H7140)
				f2b	Purple moor-grass and rush pastures	f2b5	Purple moor-grass meadows (H6410)
				f2c	Upland flushes, fens and swamps	f2c5	Alpine pioneer formations (H7240)
						f2c6	Hard-water springs depositing lime; upland (H7220)
						f2c7	Calcium-rich springwater-fed fens; upland (H7230)
						f2c8	Transition mires and quaking bogs; upland (H7140)
				f2d	Aquatic marginal vegetation		
				f2e	Reedbeds		
				f2f	Other wetlands		

Why?

- Different classification strategies

Table 2

Two example habitats and how they are classified according to some different protocols classification schemes used in the UK classify them. Many of these are hierarchical; some strictly so (e.g. EUNIS and CORINE), although not all subdivisions are nested (e.g. BBS; Breeding Bird Survey).

Habitat Example	BBS ¹	NPMS ²	JNCC Phase 1 ³	NVC ⁴	EUNIS ⁵	CLC ⁶	UKHab ⁷
Oak woodland, with understorey	A. Woodland; 1. Broadleaved; 1. Mixed-aged or semi-natural & 8. Low disturbance; 1. Dense shrub layer & 9. Dead wood present	1. Broadleaved woodland; Dry deciduous woodland; canopy species Oak, shrub species = blackthorn, hawthorn, hazel	A. Woodland and scrub 1. Woodland 1. Broadleaved 1. Semi-natural	W10 – <i>Quercus robur</i>-<i>Pteridium aquilinum</i>-<i>Rubus fruticosus</i> woodland	G. Woodland, forest and other wooded land; G1. Broadleaved deciduous woodland; G1.A1 Oak-ash-hornbeam woodland on eutrophic and mesotrophic soils; G1.A11 Mixed Atlantic bluebell oak forests	3. Forests and semi-natural areas; 3.1 Forests, 3.1.1 Broadleaved Forest	W Woodland and forest; w1 broadleaved mixed and yew woodland; w1f Lowland mixed deciduous woodland; w1f5 Dry oak-dominated woodland
Grazed pasture, with no hedges	E. Farmland; 1. Apparently improved grassland; 4. Other field boundary (wall, ditch, etc.); 3. Sheep	4. Lowland Grassland; Neutral pastures and meadows; list species present grasses (e.g. Crested Dog's-tail) and herbs e.g. buttercups, Oxeye daisy, red clover	B. Grassland and marsh 2. Neutral Grassland 2. Semi-improved	MG6 – <i>Lolium perenne</i> <i>Cynosurus cristatus</i> grassland	E. Grasslands and lands dominated by forbs, mosses or lichens; E2. Mesic grasslands; E2.1 Permanent mesotrophic pastures and aftermath grazed meadows; E2.12 Ditch-broken pastures	2. Agricultural areas; 2.3 Pastures; 2.3.1 Pastures	G Grassland; g3 Neutral grassland; g3a Lowland meadows or C Cropland; c1b temporary grass and clover leys

¹ Breeding Bird Survey - Crick (1992); ² National Plant Monitoring Scheme - https://www.npms.org.uk/sites/default/files/PDF/NPMS_Survey%20Guidance%20notes_WEB_2ndEd.pdf; ³ Joint Nature Conservation Committee, Phase 1 habitat survey - <https://data.jncc.gov.uk/data/9578d07b-e018-4c66-9c1b-47110f14df2a/Handbook-Phase1-HabitatSurvey-Revised-2016.pdf>; ⁴ National Vegetation Classification – Rodwell (2018); ⁵ European Nature Information System – Davies et al. (2008) <https://eunis.eea.europa.eu/>; ⁶ CORINE Land Cover - <https://land.copernicus.eu/pan-european/corine-land-cover>; ⁷ UK Habitat Classification System – <https://ukhab.org>

Creating a Phase 1 Habitat Map



Lets get our own data

- Instructions:
 - Click on: [Handbook for Phase 1 habitat survey – a technique for environmental audit \(2010\) | JNCC Resource Hub](#)
 - Click on XLS for relevant habitat codes

Phase 1 Habitat Survey Style download

- Instructions:
 - Click on:[qgis_resources/styles/PH1HS at master · clairebirnie/qgis_resources · GitHub](https://github.com/clairebirnie/qgis_resources/tree/master/qgis_resources/styles/PH1HS)
 - Download the QGIS styles for Phase 1 Habitat Survey
 - Lines.qml file
 - Points.qml file
 - Polygons.qml file

Instruction Handout on Moodle

- Instructions: [GIS 2 Creating a Phase 1 Habitat Map.pdf \(uwtsd.ac.uk\)](#)
- Go at your own pace!

Create OSGeo

- Instructions:
 - Click on: [OSGeo Services UserID – OSGeo](#)
 - Create a UserID by clicking here: [OSGeo UserID registration](#)
 - Explore the interactive map content.