



Breeding Bird Survey

Guidance for Habitat Codes

The Habitat Codes used by the BTO are based in work carried out by H Q P Crick and his paper: *A bird-habitat coding system for use in Britain and Ireland incorporating aspects of land-management and human activity.*

These codes have been used since 1992 and are vital to maintaining consistent habitat data through surveys and through time. The idea of the habitat coding is to make recording as easy as possible for all, even without expert botanical knowledge!

The codes incorporate human activity as well as natural habitats, both of which are important when assessing bird populations and changes in abundance or distribution.

Attempting to classify habitats is no easy task because, in reality, so many categories can intergrade with another. Very basic habitat types e.g. 'Woodland' or 'Grassland' does not give enough detail to be of much use in analysis with bird data. It is necessary to record slightly more detail, but at the same time, keeping it simple!

Here are the requirements the Habitat Coding system fulfil:

- to require no expert botanical knowledge;
- to be based on the structural aspects of bird habitats in Britain but including simple floristic categories within the broad habitat types;
- to be used in conjunction with detail on location and altitude;
- to include aspects of land management and human activity;

This habitat coding system has been used throughout the Breeding Bird Survey, and indeed, across the BTO. It is a consistent way of monitoring habitats on BBS squares.



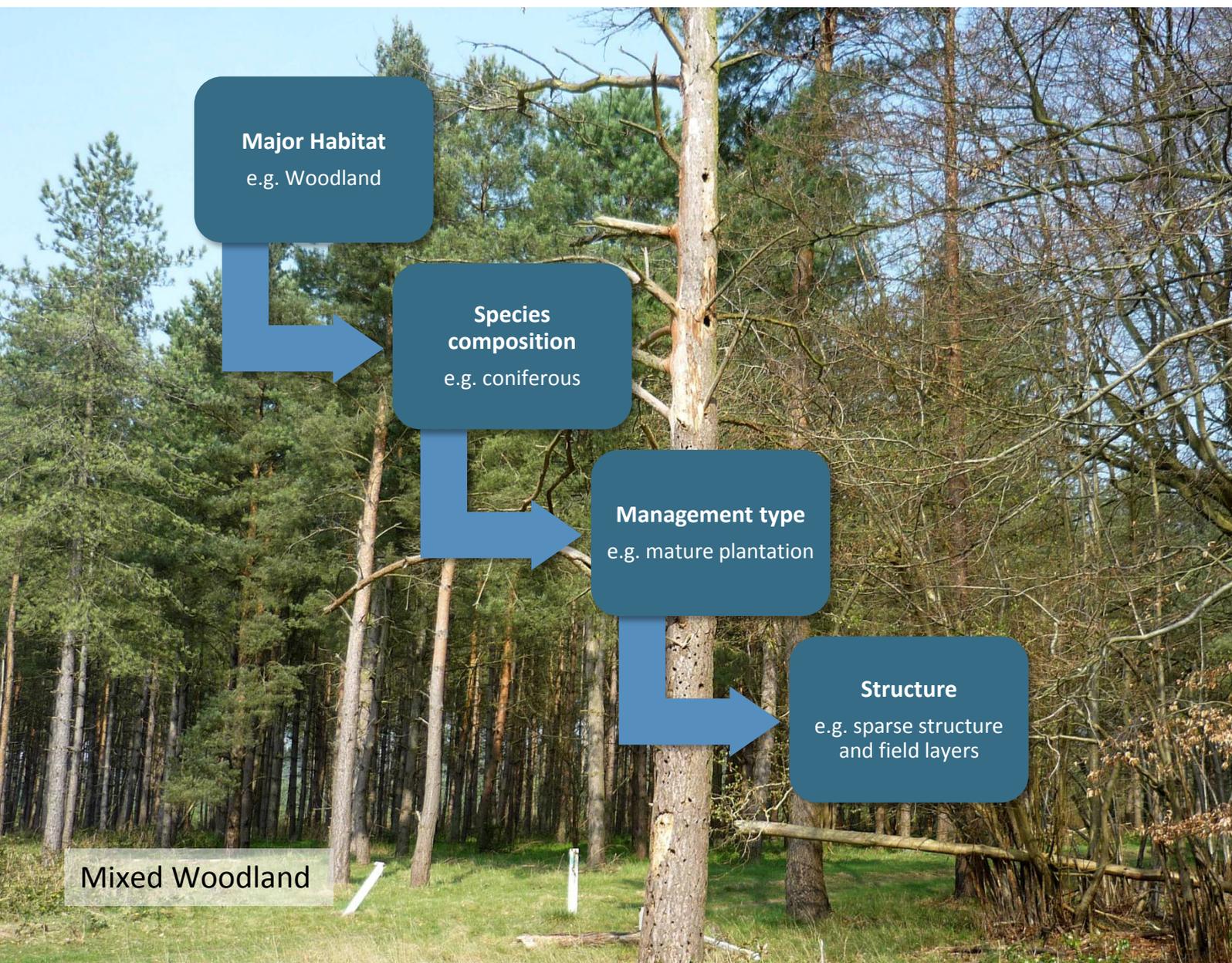
Bell Heather

The structure starts very simply with 10 major habitat types, followed by a three further levels providing additional data. Levels 1 and 2 are most important but where possible, you can enter two options for levels 3 and 4. Level 2 is mutually exclusive, but in levels 3 and 4, two options can be selected.

Here are the level 1 options:

- A. Woodland
- B. Scrubland
- C. Semi-natural grassland and marsh
- D. Heathland and bogs
- E. Farmland
- F. Human Sites
- G. Water-bodies (freshwater)
- H. Coastal
- I. Inland rock
- J. Miscellaneous

Below is a schematic illustration detailing how the increasing detail is recorded within the successive levels of the classification.



Code list and explanations

All codes are available on the reverse side of the BBS Habitat Recording Form. Here, confusion codes are given along with some explanatory notes to assist with habitat coding choices during BBS. Please use this alongside the BBS Habitat recording Form:

(A) Woodland

Dominated by trees generally greater than 5m tall.

- Level 2 **Mixed**: containing at least a 10% mixture of broadleaved trees in coniferous woodland or visa-versa.
- Level 2 **Waterlogged (Broadleaved/Coniferous/Mixed)**: swamp woodland on permanently or near-permanently waterlogged land. This term covers swamp woodland dominated by Alder and willow (including the 'carrs' of East Anglia) as well as pine woodland on the edge of bogs or where plantings have been made unsuitable areas.
- Level 3 **Mixed-aged or semi-natural**: containing trees of different ages mixed together, including ancient woodland and abandoned coppice, but not plantations with blocks of different aged trees.
- Level 3 **Coppice**: the practice of cutting broad leaved trees on a short rotation, typically 8-30 years, to promote regrowth of pole-like timber from stumps; '**standards**' are trees which are left to provide larger timber.
- Level 3 **Parkland**: large often over-mature, trees spaced widely across grassland.
- Level 3 **Disturbance from people (High-medium/Low)**: any human disturbance that might affect the birds in the area (such as ramblers or game-keeping).
- Level 4 **Shrub layer (Dense /Moderate/Sparse)**: refers to woody plants less than 5m tall.
- Level 4 **Field layer (Dense/Moderate)**: refers to non-woody plants, usually less than 1m tall; including grass, forbs or herbs, nettles, Bramble, Bracken.
- Level 4 **Dead wood (Absent/Present)**: this includes fallen or standing dead trees which are left to decompose and dead wood that is still attached to living trees.

(B) Scrubland

Dominated by woody shrubs or young trees less than 5 m tall; several terms are explained under Woodland e.g. 'Field Layer'.

- Level 2 **Downland**: occurring on chalk or limestone geological formations.
- Level 2 **Heath scrub**: occurring on heath areas (e.g. gorse and broom scrub).
- Level 2 **Young coppice**: without the presence of 'standard' trees.
- Level 2 **Other**: for use when unsure which category is appropriate.



(C) Semi-natural grassland and marsh

Dominated by grasses, or wet communities dominated by rushes *Juncus*, sedges or reeds, etc, not apparently managed intensively for farming (i.e. probably no herbicides and probably no, or very low, direct fertilizer inputs).

- Level 2 **Chalk downland**: dry grassland occurring on chalk or limestone geological formations.
- Level 2 **Grass moor, unenclosed (Without Heather/Mixed with Heather)**: typically occurring on upland, hill-grazing land on peaty, acidic soils and not enclosed by fences, walls, hedgerows, etc.
- Level 2 **Machair**: a grass-covered, flat sandy plain, containing marshy areas, found on the coasts of west Scotland, Orkney and Shetland and, especially, the Outer Hebrides.
- Level 2 **Other dry grassland**: of a type not covered by other categories.
- Level 2 **Water-meadow/grazing marsh**: land periodically flooded with fresh water and usually grazed by livestock.
- Level 2 **Reed swamp**: consisting of dense beds of tall, semi-aquatic plants, especially reeds *Phragmites* or reedmace *Typha*.
- Level 2 **Other open marsh**: water-logged marsh or fen not grazed by livestock.
- Level 2 **Saltmarsh**: land periodically flooded with salt water.
- Level 3 **Montane**: this cannot be defined simply. Montane vegetation occurs at lower altitudes in the North and West than in the rest of the UK. Montane vegetation consists of a dense, wind flattened carpet of ground-hugging plants, with a substantial proportion of mosses and lichens. It occurs above the altitude at which woody scrub can grow.
- Level 3 **Disturbance from people (High-medium/Low)**: any human disturbance that might affect the birds in the area (such as walkers or game-keeping).
- Level 4 **Ungrazed**: light grazing tends to produce tussocks of unpalatable grasses, heavy grazing produces a very short sward. The time-scale over which the grass is to be considered as ungrazed depends upon how the habitat information will be used.
- Level 4 **Other grazers**: either wild or domesticated.
- Level 4 **Hay**: tall grass normally mown in June/July. Where the grass has been improved (i.e. fertilized and reseeded with just one or two species) then it is classed as 'farmland'; silage is made from improved grass and is cut earlier than hay, in May/June.

Chalk downland
with disturbance
from Golf Course



(D) Heathlands and bogs

Several terms are defined under Grassland.

- Level 2 **Heath (Dry/Wet/Mixed)**: dominated by heather *Calluna* and heaths *Erica*. This includes upland heather moors and lowland heaths, which have to be distinguished on the basis of altitude and location. **Wet Heath** contains species such as *Sphagnum* moss, Purple Moor-grass, Bog Asphodel and Cottongrass. If the peat is more than 0.5m deep, the habitat is more likely to be blanket or raised bog. **Dry Heath** contains species such as Bell Heather and Gorse.
- Level 2 **Bog**: consisting of waterlogged peaty areas, often covered with spongy *Sphagnum* moss, with other characteristic species including Purple Moor-grass, sedges and cottongrasses.
- Level 2 **Breckland**: finely mixed heaths and grassland that occur on sandy ground with areas of moss and lichens (occurring in Norfolk, Suffolk and small areas of Lincolnshire).
- Level 3 **Raised bog**: occurs on plains where drainage is limited, usually with a gently undulating surface. It can contain hummocks of vegetation dominated by heather separated by larger wet areas of bog mosses.
- Level 3 **Valley/basin bog**: localized bog that occurs in depressions containing stagnant water, or in small valleys where there is some movement of water.
- Level 3 **Blanket bog**: large continuous areas of bog covering entire landscapes on flat or gently sloping land subject to a very wet climate. Some classic species found here include *Sphagnum* moss, Bog Asphodel and sundews.
- Level 3 **Undetermined bog**: for bogs that cannot be defined with certainty.
- Level 3 **Disturbance from people (High-medium/Low)**: any human disturbance that might affect the birds in the area (such as peat-digging or rambles).
- Level 4 **Ploughed**: including heaths and bogs that have been ploughed in readiness for afforestation.
- Level 5 **Burned**: this includes only heaths that have not substantially regrown after burning.



Dry Heath



Stubble field

(E) Farmland

Defined by fields that are enclosed by hedges, walls, etc.

- Level 2 **Apparently improved grassland**: grass that has been regularly treated with fertilizer and can be distinguished by its bright colour, lush growth and even texture. This includes tilled land that has been reseeded within the last five years (a ley).
- Level 2 **Apparently unimproved grassland**: grass that has not been treated with fertilizers but is usually grazed or mown regularly and may be rank and neglected.
- Level 2 **Mixed grass/tilled land**: areas containing adjacent fields of each (the grass has almost always been improved).
- Level 2 **Tilled land**: ploughed and planted with crops annually.
- Level 4 **Ungrazed**: this includes hay and silage, see notes under Grassland.
- Level 4 **Bare earth/plough**: this includes either furrowed or flat earth.
- Level 4 **Autumn/spring cereal**: These differ sharply in April: autumn cereals are taller or bushier and are darker green than spring cereals which will have only just emerged and may be at the single leaf stage.
- Level 4 **Root crop**: plants with tubers on the underground stem or on the side roots. Members of the root crop family commonly encountered are turnip, carrot and parsnip.
- Level 4 **Oil seed rape**: Oil seed rape crops may be planted from autumn to spring. The first leaves to emerge are a pair of small heart-shaped leaves. These are soon covered by larger, spoon-shaped leaves with wavy edges. The leaves soon produce a complete and thick cover of vegetation across the field. Later in the season the crop develops its distinctive rich yellow flowers. Often rape crops are cut to dry out before being properly harvested.
- Level 4 **Other brassicas**: Brassica is a genus of plants in the mustard family. Crops from this genus are sometimes called cole crops. Members of brassica commonly used for food include cabbage, cauliflower, broccoli, Brussels sprouts, and some seeds.

(F) Human sites

- Level 2 **Urban**: densely built-up areas and town centres.
- Level 2 **Suburban**: inhabited areas that border rural ones or contain large gardens, municipal parks or recreational areas.
- Level 2 **Rural**: areas without any buildings or containing just a few scattered houses or other buildings.
- Level 3 **Municipal parks/recreational areas**: these include public areas with regularly mown lawns, playing fields, golf course fairways etc.
- Level 3 **Sewage works (urban)**: positioned in a built-up area, generally without large areas of open water. (Rural sewage works are found under 'Water-bodies'.)
- Level 3 **Gardens (Large/Medium/Small)**: areas containing lawns and beds of flowers or ornamental shrubs etc. (N.B: a tennis court measures c.220m² or 10m x 22m, so a 'large' area is greater than two tennis courts, a 'medium' area is between a half and two tennis courts, and a 'small' area is less than half a tennis court in area.)

(G) Water-bodies (freshwater)

- Level 2 **Lake/unlined reservoir**: this category includes lakes formed from mining subsidence.
- Level 2 **Lined reservoir**: lined with concrete or other material and generally lacking emergent vegetation.
- Level 3 **Disturbance**: any human disturbance that might affect the birds in the area.
- Level 3 **Sewage processing (rural)**: containing waterbodies in a semi-natural environment.
- Level 4 **Eutrophic**: usually situated in lowland farmland where high nutrient inputs promote the production of green algae and water-weeds. The substrate is usually soft and muddy.
- Level 4 **Oligotrophic**: clear water with low productivity of plants and algae, the substrate is usually stony. Water that is occasionally discoloured by algae (i.e. mesotrophic) should be classified as oligotrophic.
- Level 4 **Dystrophic**: 'black' water, i.e. stained with peat and found in areas of (acidic) bog.
- Level 4 **Marl**: very clear water that contains large water-weeds. Found in chalk and limestone areas.

(H) Coastal

- Level 3 **Fully vegetated**: the vegetation type can be described by using the appropriate codes (for grassland, for example) in addition to the coastal codes. Saltmarsh has been classified under 'grassland' because it is more similar in structure and avifauna to grassland than to rocky shores and many other of the coastal habitats.
- Level 4 **Dune slack**: a wet area with marshy vegetation within a dune system.
- Level 4 **Disturbance**: any human disturbance that might affect the birds in the area (such as windsurfing or climbing).



(I) Inland rock

- Level 3 **Montane**: see notes under Grassland.
- Level 3 **Disturbance (High/Medium/Low)**: any human disturbance that might affect the birds in the area.

(J) Miscellaneous

For habitats that do not fit into the classification A—I above.

The above is not an extensive list of all the options provided on the Habitat Recording Form nor is it all the options denoted by Crick. Rather, this is a selection of the more variable or hard to classify options available for use in recording habitats on BBS squares.



Inland rock outcrop

Altitude and location will be used in analysis of habitat data in order to classify whether a given habitat 'upland' or 'lowland' in type. Upland-type habitats are found at lower latitudes in UK at more northerly latitudes; they can be even found near sea-level in Orkney and Shetland. It is up to the analyst to decide the criteria for distinguishing upland from lowland records to suit the particular needs of each individual study. There is no clear-cut boundary in vegetation characteristics between 'upland' and 'lowland' habitats and it would be wrong to impose an arbitrary distinction on the basis of altitude in the generalised habitat classification system of the sort outlined in this Habitat Recording method.



Two habitat sections can be described per transect section when birds are likely to use more than one habitat in the area or where one habitat influences another. For example, a transect might have woodland on one side and farmland on the other, both would influence the birds inhabiting the area, so selecting two habitats allows both major habitats to be recorded for a given section.

One of the strengths of BBS is that it covers all habitat types. It is essential habitats are recorded on every square each year, even if the habitat is the same as previous years. Habitat data helps with all sorts of research carried out using BBS data, from estimating populations by assessing detectability through to studies on the reasons behind bird population change.

We advise that habitat details are recorded on a reconnaissance visit or following a count, this is to prevent distractions during the bird counts.

Thank you for taking part in the BBS.

For assistance with habitat coding, please contact your Regional Organiser or bbs@bto.org for assistance.

The BTO/JNCC/RSPB Breeding Bird Survey (BBS) is the main scheme for monitoring the population changes of the UK's common breeding birds. It is a national volunteer project aimed at keeping track of changes in the breeding populations of widespread bird species in the UK. The BTO/JNCC/RSPB Breeding Bird Survey is run by the BTO and jointly funded by the BTO, JNCC and RSPB.

This system of habitat recording was designed and explained in **Crick, H.Q.P.** (1992) A bird-habitat coding system for use in Britain and Ireland incorporating aspects of land management and human activity. *Bird Study* **39**: 1-12.

Images used in this document are thanks to: Dawn Balmer, Sarah Harris, Jill Pakenham, Moss Taylor, Mike Toms and the BTO image library.