

## Habitat coding scheme and identification of agricultural crops & habitats

This habitat coding scheme was originally used in the BTO/JNCC Winter Farmland Bird Survey which ran from 1999/2000 to 2002/2003 and was modified from that developed by Humphrey Crick for other BTO surveys so that the emphasis is on the winter farmland habitats visited in this survey. Each habitat code is composed of three 'LEVELS'. LEVEL1 identifies the habitat type that most appropriately describes the fields, e.g. grass (M) or stubbles (P). LEVEL2 and LEVEL3 then describe the field in greater detail. This degree of habitat recording is essential if we are to identify the

habitats that are important to farmland birds and the types of land use they prefer. All codes should have a LEVEL1 code, and a LEVEL2 code; they can have up to three LEVEL3 codes. This is to allow you to record three equally important features of a field. For instance, a field of wheat stubble with weeds would be P 01 02 (LEVEL1=P, LEVEL2=01 and LEVEL3=02), but if that field also had chopped straw on the ground and piles of manure it would be P 01 02 06 08 (LEVEL1=P, LEVEL2=01 and LEVEL3=02, 06 and 08).

## Notes on the identification and coding of agricultural habitats

The notes below are given as a guide to the identification of some of the agricultural habitats likely to be seen in winter. Notes are set out under headings as found on the coding sheet. Here, dots in an example code indicate numbers are missing.

### M - GRASSLAND

#### Improved grass (M01)

Improved grassland has been regularly treated with artificial synthetic fertiliser, possibly drained and / or reseeded. It appears bright green, is lush, dense and often of an even texture. Most grass fields in lowland Britain are now improved.

#### Unimproved grass (M02)

Unimproved grassland has not been treated with artificial synthetic fertilisers. The sward can appear rank and uneven in growth, often with more dead material and usually not so bright green as heavily fertilised improved grassland.

#### Recently sown grass (M03)

Sown grass is usually planted in the autumn for grazing or silage in the following year. It may be planted in rows like cereal crops or by scattering the seeds randomly. Grass sown in rows can look more like a cereal crop but should be distinguishable by its lack of tramlines, narrower leaves (less than 8mm wide) and dark green colour.

#### Has the grass been recently grazed? (M..02)

Some grassland may be grazed during the winter months and stock animals will be present. Others may have been grazed during the previous months and should be coded as recently grazed (M..02). In such cases animals will be absent, but the uniformly short vegetation and presence of (old) dung will be an indication of the recent grazing.

#### Grass height (M..09, M..10 or M..11) – why code height, and which code to use?

Use these codes to describe the average height of the grass so that we can see whether certain species have any preference for different levels of grazing. There is no need to measure the height, just estimate - roughly speaking, is the grass lower than the toe of your boots (M..09), does it just cover the top of your boot toe (M..10), or is it much higher (M..11).

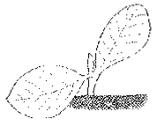
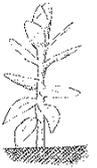
### N - CROPS

#### Cereal crops (N01 - N03)

Wheat (N01), barley (N02) and canary grass (N03) may be present during the winter months. Identification of wheat and barley during the winter is difficult - barley often grows with a spirally twisted leaf and is typically paler green than wheat. We recommend that you ask the farmer when gaining access permission, but if you are not sure code as 'Unknown / other cereal' (N04).

### Linseed / flax crops (N05)

Linseed crop grows in quite dense rows and consists of a small pale green plant with narrow elliptical leaves. The leaves are arranged in opposite pairs up the stem, and there is often a tight bud of unopened leaves at the tip (image to right).

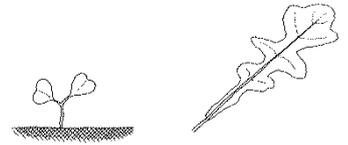


### Bean crops (N06)

Beans are planted in widely spaced rows and emerging plants are shorter than they are wide. The leaves are round, fleshy and bright dark green in colour (image to left).

### Oil seed rape (N07) and other brassica crops (N08)

Oil seed rape is the only young brassica likely to be found in winter. It is planted in rows and the first two leaves are small and circular (near right). Subsequent leaves are cabbage-like (far right). In winter some mature brassica crops (cabbages, kale, brussels sprouts, cauliflower etc) may still be standing and these should be recorded as 'Unknown/other brassicas' (N08).



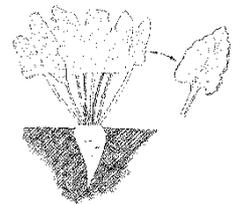
### Maize / sweetcorn crops (N09)

Maize or sweetcorn is grown for human food or animal fodder, some of which may be standing in winter. It is tall (1.5-3m) with a single thick stem with large leaves arranged up either side. The stem is crowned with a feathery flower head and the cob is positioned about half way up the side (see left).



### Sugar beet crops (N10)

Sugar beet is harvested during the winter so will probably change through the survey. Mature crops have large glossy dark green leaves which form an almost complete covering over the field. On closer examination the leaves are borne on short thick stems radiating from the beet itself - a large swollen root which is white/brown in colour (see right).

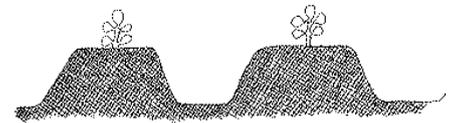


### Fodder root crops (N11)

These are mostly turnips or swedes and are bulbous roots near the soil surface with large lobed leaves. Some may be grazed, in which case use code '11' or '12' from LEVEL3.

### Potatoes (N12)

Potatoes, even if they have not emerged, are obvious because the soil will be heaped up into ridges (see right). Q0201 (bare soil - ploughed) may appear similar but the ploughed earth forms large lumps of soil whereas potato ridges have the appearance of being smoother and with higher peaks and deeper troughs.



### Carrots (N13)

Mature carrots may be covered by straw (N1304) to protect them during the winter. Emerging carrots are typically covered with polythene sheeting (N1305). If not covered by either, the thin feathery leaves (see left) of carrot should be apparent, in which case record simply as N13.



### Game cover crops (N17) – what are they?

Farmers plant game cover crops to provide cover for Pheasants and partridges, though they can also provide food and shelter for other farmland birds. Cover crops are usually planted as narrow strips along the edge, or in-between fields. The two main types are Maize / millet mixture (N1706) (identification as for Maize / Sweetcorn above) and Kale (N1707). Kale is a brassica (cabbage family), and is tall with large dark green (often bluish) cabbage-shaped leaves. In its second year it has a taller seed head extending above the leaves. If you see game cover strips that do not conform to these descriptions use N1708 for 'Other game cover'.

### Crop Height (N..01, N..02 or N..03)

Code crop height in the same way as grass height (above).

## P - STUBBLES

After harvest plant remains are left in the field as stubble – these remains can be used to identify the stubble. Stubbles of root crops (sugar beet & potatoes) can be identified from leaves and roots on the surface. Non-root crops (cereals etc) can be identified from the size of stems protruding from the ground and remains of seeds and seedpods or ears.

<b>Cereal stubbles (P01-P04)</b>	Stems medium thickness, looking like typical straw, and may contain cereal ears and spilt grain.	
<b>Linseed / flax stubbles (P05)</b>	Narrow, thin brittle stems (less than 5mm in diameter) and small brown, spherical seedpods.	
<b>Bean / pea stubbles (P06)</b>	Remains of large pods (more than 10mm wide, see right).	
<b>Oil seed rape stubble (P07)</b>	Stems thick (10mm in diameter), smooth, bamboo-like and widely spaced. Seed pods are long and very narrow (less than 5mm wide, see right). Seeds are small, spherical and black.	
<b>Maize stubble (P08)</b>	The thickest stems (20mm diameter) and these are often tall, up to 30cm above the ground. The ground is littered with leaves, broken stems and pieces of cob.	
<b>Sugar beet stubble (P09)</b>	Remains of dark green broad leaves and broken pieces of sugar beet.	
<b>Potato stubble (P10)</b>	Remains of broken roots, small leaves on long stems, and spilt potatoes.	



It may be possible to differentiate between wheat stubble (P01) and barley stubble (P02) by looking for spilt grain or damaged ears on the ground. Wheat grains are orange / brown and elliptical (far left), whereas barley grains are yellow and elongated, pointed at both ends (near left). Ears of barley (far right) have long awns whereas those of wheat are usually unawned (near right). If you cannot tell which cereal type the stubble came from use P04 for 'Unknown / other cereal stubble'.



### What are clean (P..01) and weedy (P..02) stubbles?

Clean stubble fields contain only the remains of the crop whereas weedy stubble fields have crop volunteers (germinating seeds from the previous crop) and true weeds. This means that from a distance, a clean stubble field is mainly yellowish-brown while a weedy stubble field has patches of green vegetation.

### Undersown stubbles (P..04)

Undersowing is where a vegetation cover (usually grass, clover, another legume or 'stubble turnips') is planted so that it grows up once the main crop has been harvested. The undersown vegetation may then be grazed. Undersown stubbles have a clear cover of green vegetation, but differ from stubbles with weeds or crop volunteers in that the undersowing emerges more uniformly across the whole field and grows in rows between the crop stubble. Undersowing is rare, so if you are uncertain, ask the farmer.

### Presence of chopped straw (P..06)?

When cereal / linseed / rape crops are harvested the straw may be baled up and taken away or chopped finely and scattered over the field. Where straw is chopped, the surface of the field is clearly littered with pieces of straw and other crop remains, whereas if it is baled the ground is relatively clean – you can see the soil surface. This is quite obvious and will be apparent as you walk across the field.

### Set-aside – why is there no set-aside code?

Farmers enter some of the field in the Set-aside Scheme to reduce over-production, and to qualify for incentives. Since set-aside is the scheme, and not actually a habitat, we are not asking you to identify set-aside fields. Instead, any fields known to be 'set-aside' should be coded as the appropriate habitat type (usually a stubble, grass or fallow).

## **Q - OTHER**

### **Pig field (Q01)**

Only code patches as pig fields if they are open-air, 'free-range' type pig farms - not pigs housed in sheds.

### **Bare soil (Q02) - ploughed (Q0201) or harrowed (Q0202)?**

Ploughed earth (Q0201) is clearly furrowed (troughs and ridges) whereas harrowed earth (Q0202) is more uniformly level and more finely tilled.

### **Fallow (Q03)**

Fallow fields are simply fields that have been left uncultivated so may be bare or weedy, possibly including some self-seeded crop plants. Differentiate these from stubbles that clearly have the remains of the previous crop in evidence.

### **Farmyard (Q04) - what to include?**

A patch coded as farmyard should include the yard itself and any farm buildings, including the farmer's house and gardens (but no other gardens should be included or surveyed).

### **Poultry (Q08)**

Code any open-air areas used for rearing chickens, turkeys, ducks or geese as 'Poultry' (Q08). Do not code battery poultry sheds - these need not be visited.

### **Supplementary animal food present**

Animal food (hay, silage, pellets or grain), whether for livestock or pheasants can attract birds so please note its presence using the code in LEVEL3 from the appropriate broad habitat type (e.g. M..12 for grass, N..13 for crops etc).

### **Flooding**

If the winter is very wet some fields may be flooded which can affect the bird species seen. Note the presence of flooding using the code in LEVEL3 from the appropriate broad habitat type (e.g. M..07 for grass, N..09 for crops etc).

Acknowledgement - This document has been reproduced from the BTO/JNCC Winter Farmland Bird Survey 1999/2000 to 2002/2003.

**END OF INFORMATION**