Llywodraeth Cymru
Welsh Government

Sustainable Farming Scheme (SFS): Habitat Photo Guide

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1. Introduction

This document is a visual guide to help you check and confirm the habitats on your holding. The description and images provided are examples of each habitat classification.

The requirements for each habitat classification are detailed in Section J5 of the SFS – Universal Layer: Guidance and the location and extent of each habitat classification currently mapped for your holding will be shown on the SFS Map via your RPW Online account.

In many cases you may be able to confirm the habitat classifications are correct based on historic farming practice. However, in some cases you may need to check against our latest aerial photography and use the habitat descriptions provided to determine which classification applies to a specific area.

For the purposes of the Sustainable Farming Scheme:

- **Semi-natural habitat land is defined as land with less than 25% cover of ryegrass and white clover or other agriculturally sown species**.

- Agricultural improved land is land with more than 25% ryegrass and white clover or other agriculturally sown species.

When reviewing aerial photography, semi-natural land generally has a pale green, yellow or brownish colour and will often appear different to the agriculturally improved grasslands which has a bright green colour. However, please note, recently topped habitat or haymeadow aftermaths can have a flush of green growth after cutting as can many semi-natural habitats in the spring.

If a mixture (or mosaic) of different habitats are present within a field parcel which might be complex to map into individual habitat classifications, these should be mapped using the dominant habitat classification (i.e. with the greatest cover over the whole area).

Habitat Baseline Review (HBR)

The Habitat Baseline Review will be your final opportunity to confirm, add, remove, or amend the mapped areas of semi natural habitat for the Universal Layer. This includes:

- Existing habitat as defined under UA5: Habitat Maintenance: All semi natural habitat must be confirmed as one of the 12 broad habitat classifications.
- Areas of land being used to create Temporary Habitat in accordance with UA6 Temporary Habitat, if required.
- Tree canopy: You will need to confirm areas of woodland or trees canopies on your holding, including established broadleaf woodland of 0.1ha or greater which will count towards UA9: Woodland maintenance.

Full details are available at Section L of the SFS – Universal Layer: Guidance

2. Broad Habitat Classifications

2.1. Coastal Saltmarsh

Saltmarshes form when plants colonise sheltered mud between the lowest high tide level and the highest high tide level. They are therefore generally found in sheltered estuarine locations.

Vegetation consists of grasses, sedges, rushes, and specialist salt tolerant plants with different zones of vegetation reflecting the frequency of inundation with sea water, the upper saltmarsh may appear similar to semi-natural dry grassland.

They can be extensive covering large areas of the coast or just small fragments within the tidal range of estuarine river systems.

Image: Saltmarsh - low grazing

Image: Saltmarsh – more heavily grazed

Image: Saltmarsh – a relatively narrow strip of ungrazed saltmarsh with abundant sea purslane

2.2. Coastal Sand Dune and Shingle Beach

Sand dunes include a range of semi-natural coastal vegetation types growing on sand. They can form dynamic systems with areas of bare sand, coarse marram grass, finer grasses and herbs and heathland. Seasonal pools may form further back from the coast in the dune slacks.

Coastal vegetated shingle occurs where specialist plants colonise coarser material such as pebbles or gravels together with sand and finer sediment. Coastal vegetated shingle may also stabilise over time and support grassland or heathland.

Image: Sand dune and coastal vegetated shingle – an extensive sand dune complex.

2.3. Lowland and Coastal Heath

Lowland heath is identifiable as clearly semi-natural land usually at least 25% cover of heathland dwarf shrubs particularly heathers (heather, bell heather, cross leaved heath), western gorse and sometimes bilberry, occurring in a mix (or mosaic) with grasses, rushes, sedges and mosses (depending on hydrology) over mineral or shallow peat soils (less than 50 cm of peat).

Lowland heathland can have a very variable appearance. Its structure can range from sparse, wind and exposure pruned heather with abundant bare ground in maritime heaths on cliffs, to dense cover of heather and western gorse dominate coastal and dry heaths to wet heaths where dwarf shrubs may be supressed under purple moor grass or give way to deer grass.

Wet heath may appear similar to some types of wetland and can also have less than 25% cover of dwarf shrubs but areas with at least one heathland dwarf shrub and one or more of the following species present: sphagnum moss, bog asphodel, common cotton grass or deer grass and where the underlying peat is less than 50 cm deep should be mapped as Lowland and coastal heath.

Dune and shingle heath should be classified and mapped as Sand dune and shingle beach.

Please see the Scrub classification description to help differentiate between heathland and scrub.

Image: Heather dominated lowland dry heath with western gorse

Image: Undermanaged dry heath with dense western gorse (yellow flowers and low cushion-like form), heather (light purple flowers), and bell heather (reddish/purple flowers)

Image: Good condition maritime heath

Image: Poor condition dry heath should still be mapped as Lowland and coastal heath; this is not scrub

Image: Humid heath with purple moor grass and western gorse

Image: Wet heath with purple moor grass, heather, and cross-leaved heath

2.4. Enclosed Wetland and Marshy Grassland

Enclosed wetland and marshy grasslands include a wide range of habitats including bog, fen, flush, swamp, reedbed, marshy grassland and rhos pasture.

They will usually be readily identifiable as clearly semi-natural damp or wet ground with a high cover of rushes, purple moor grass, cotton grass, sedges, reeds, and/or mosses usually with much less than 25% ryegrass and white clover.

Image: Enclosed wetland and marshy grassland - rush dominated marshy grassland

Image: Enclosed wetland and marshy grassland - Blanket bog while mainly upland can occur in the lowlands, note the high cover of heather species

Image: Enclosed wetland and marshy grassland – lowland raised bog with purple moor-grass and hare's tail cotton grass

Image: Enclosed wetland and marshy grassland - Modified bog with cattle grazed purple moor grass

Image: Enclosed wetland and marshy grassland – lowland acid mire (fen)

Image: Enclosed wetland and marshy grassland – Lowland fen (wetland) on deeper peat with fringing rush pasture (marshy grassland) on thinner peat

Image: Enclosed wetland and marshy grassland – with reeds and tall sedges

Image: Enclosed wetland and marshy grassland – water table is more permanently close to the surface in wetlands (above) compared to marshy grasslands

2.5. Enclosed Semi-Natural Dry Grassland (managed as either pasture or hay meadow)

While flower-rich unimproved grasslands may be easily identified as habitat, species-poor grassy swards may need to be assessed to confirm whether they are semi-natural or agriculturally improved.

Land that has not been recently ploughed or reseeded and does not receive high levels of inputs and is more extensively grazed is more likely to be semi-natural.

Grassland previously entered into agri-environment low or no input options or haymeadow options is also more likely to be semi-natural.

Grasslands with scattered tussocks of soft rush with dry grassland in between may also be included in this category. However, if the site is predominantly rush or purple moor grass then it should be mapped as enclosed wetland and marshy grassland.

There are four main forms of dry unimproved grassland ~~are~~ present in Wales.

i. acid grasslands, (unimproved)
ii. neutral grasslands
iii. calcareous grasslands
iv. calaminarian

The presence of the first three depends mainly upon levels of soil acidity (pH).

The fourth, ‘calaminarian’ is a very rare grasslands, and occurs on soils rich in heavy metals.

i. Acid Grasslands

Acid grasslands occur on acid soils with pH levels generally below 5.0. They are mainly found in grazed pasture in the upland fringes but can occur down to sea level.

In most lowland dry acid grasslands fine grasses such as Sheep's Fescue and Common Bent are abundant.

Characteristic herbs include Heath Bedstraw and Tormentil. Other occasional frequent flowers include Common Lousewort, Common Dog-violet, Harebell and Betony.

Image: Dry acid grassland with abundant Heath Bedstraw

Image: Heath Bedstraw

Image: Tormentil

On soils which are thinner or more prone to droughting, Sheep's Sorrel is very characteristic, along with an abundance of mosses and lichen.

Image: Drought-prone acid grassland with abundant Sheep's Sorrel (red flowers), mosses and lichens

Image: Sheep's Sorrel

ii. Neutral Grasslands

Neutral grasslands occur on soils that are neither strongly acidic nor alkaline, but low in soil nutrients such as phosphorus and nitrogen. They are usually rich in colorful herbs and contain several different grass species and occur on flat or gentle slopes, in lowland grazed pastures or hay meadows.

Common grass includes Crested Dog's-tail, Sweet Vernal Grass, Red Fescue and Yorkshire Fog

Flowering plants include Common Bird's-foot Trefoil, Black Knapweed, Red Clover, Yarrow, Ribwort Plantain, Ox-eye Daisy and 'Dandelion family species' such as Common Cat's-ear and Rough Hawkbit. Hay meadow examples often have frequent Hay Rattle and Eyebright.

Image: Unimproved neutral grassland in a hay meadow, with frequent Red Clover, Ox-eye Daisy and Rough Hawkbit (yellow flowers)

Image: Common Bird's-foot Trefoil

Image: Black Knapweed

iii. Calcareous Grassland

Calcareous grassland occurs on calcareous soils with pH above 6.5, mainly in the limestone areas of north and south Wales. They can be found from flat ground to steep slopes, usually with patchy outcrops of limestone rock, and are generally grazed as pasture.

Common grass includes Sheep's Fescue and Quaking Grass.

Lowland calcareous grasslands are very rich in herb species, the most distinctive of which include Rockrose, Wild Thyme, Salad Burnet, Small Scabious and Lady's Bedstraw.

Image: Calcareous grassland with frequent Wild Thyme (purple flowers) and Common Rockrose (yellow flowers), with patchy limestone rock outcrops

Image: Common Rockrose

Image: Wilde Thyme

iv. Calaminarian Grasslands

Calaminarian grasslands are very rare in Wales, being found on soils rich in heavy metals such as lead and zinc. The most distinctive form has frequent Spring Sandwort, while other forms are very rich in mosses and lichens.

They occur on abandoned metal mine sites and are usually grazed as pasture. They occur in both the lowlands and uplands. Most sites are in either north-east Wales or Ceredigion.

Image: Calaminarian grassland with abundant Spring Sandwort (white flowers) and mosses

2.6. Upland Open Habitats (including ‘mosaics’ of heathland, peat bogs, and extensive grasslands)

Upland is defined as land above the upper limit of enclosure (approx. 300m).

All upland open habitats and habitat mosaics, including heathland, wetland (bog, fen, flush and swamp), marshy grassland and dry grassland including small area of improved land, should be mapped as Upland open habitats. Confirmation that a parcel is upland and predominantly habitat is sufficient for this classification.

To note, care is needed dwarf shrub heathland species such as Western gorse and heathers are not classified as Scrub.

Image: Upland open country - heathland and acid grassland (showing the impact of grazing level) in the foreground and montane habitats in the background

Image: Upland boundary – semi-natural unenclosed land (Upland open habitats) above the enclosed fields

2.7. Traditional Orchards

Applies to semi-natural land and agriculturally improved land with traditional orchard trees.

These are areas with apple, pear, cherry, plum, damson, walnut trees, or cobnut plats usually on grassland managed by grazing or cutting. The tree stocking density depends on the species of tree:

- For apple, pear, and cherry this will usually be less than 150 trees/ha. (approximately 8 m spacing between the trees),
- For other species such as plum and damson this density may be higher.

Trees should be standard or half standard size, for apple trees this means they would be more than 3m tall at maturity.

Young trees and newly planted orchards that are managed in a low intensity way are also included in the definition.

Intensively managed commercial orchards should not be included. These often are easily identifiable from the modern very short dwarf varieties of trees planted (approx. 2m height) grown over herbicide strips of bare ground.

Image: Traditional orchard - with over mature trees, lightly grazed

Image: Traditional orchard - more heavily grazed

Image: Commercial orchards with herbicide strips and irrigation. These should not be mapped as Traditional orchards

2.8. Dense Bracken

Dense bracken cover is classified as a habitat in their own right. Bracken at high cover levels over a dense litter of dead bracken can be mapped as dense bracken. However, if the underlying habitat is clearly identifiable under the bracken the whole area should be mapped as the underlying habitat.

Image: Dense Bracken – in the Autumn

Image: Dense bracken - in Summer (foreground)

2.9. Scrub

Scrub is vegetation dominated by shrubs which are usually less than 5 m tall when fully grown. Scrub can be made up of a wide range of species, with the commonest being gorse, blackthorn, hawthorn, elder, bramble and willow.

Scrub cover is classified as a habitat in their own right. However, if the underlying habitat is clearly identifiable under the scrub (i.e. the scrub is scattered and open with underlying grassland), particularly where grazed, the whole area should be mapped in line with the underlying habitat.

To note, care is needed to map areas with dwarf shrub heathland species such as Western gorse and heathers as heathland and not scrub (see Lowland and Coastal Heath for pictures of western gorse).

European gorse (see images below) should be mapped as scrub. It tends to be much taller than western gorse which is often around knee height at maturity. Western gorse often has a dense cushion like form rather than European gorse which can be somewhat straggly.

Non-native invasive species, such as rhododendron, should not be mapped as scrub, and managed as set out in the requirements of the SFS Regulatory Baseline.

Image: Dense scrub - mixed European gorse and thorn scrub

Image: Scattered bracken and scrub - European gorse, bramble, and willow scrub. However, as the underlying habitat can be identified the area should be mapped as Enclosed wetland and marshy grassland

2.10. Wood Pasture

Wood pasture has ~~a~~ tree cover of less than 30%, occurring as scattered trees. However, trees may be clumped to produce a higher cover than 30% locally. There should be on average a minimum of 6 trees per ha scattered across the site.

Many of the existing trees are of open grown character, with wide, deep crowns and short trunks. It consists of a grazed landscape and has scattered native but sometimes non-native or ornamental trees over 3 metres tall overlying often rough grassland or heathland frequently in a mosaic with scrub and bracken.

Wood pastures are usually the products of historic land management systems and represent a vegetation structure, rather than being a particular plant community. The most environmentally significant examples can include numerous old trees often referred to as veteran trees.

This classification applies to semi-natural land **only**. Wood pasture on agriculturally improved or arable land is excluded and should not be classified as a habitat.

Image: Wood pasture - grazed with tussocky grass and bracken, veteran trees, and dead wood

Image: Wood pasture - in the upland fringe

2.11. Permanent Wildlife Ponds

Wildlife ponds are defined as areas of open water limited to 1ha or less in size whose primary function is to benefit nature. This does not include features whose primary function is water storage for farming operations e.g. irrigation ponds, storage reservoirs, hydro tanks, sole sources of water for livestock.

Image: Wildlife Pond

Image: Wildlife Pond

2.12. Newly Created Habitat Areas on Improved Land

This category covers areas where work is being undertaken to establish habitats on agriculturally improved or formerly afforested land which initially do not meet the habitat classification and descriptions listed above i.e. the land is not identifiable as habitat.

However, the management will mean the land is likely to change over time i.e. it will move from newly created habitat classification into the most appropriate habitat classification in the future.

Examples of activities that could fall into this category include in-field wildlife corridors and flower-rich areas that provide habitats for various wildlife, supporting pollinators, invertebrates, small mammals, and birds. These features also protect other habitats, like hedgerows and watercourses, while acting as corridors for wildlife movement.

Image: An example of a newly created streamside corridor on improved land

3. Improved Land

Agriculturally improved grasslands with more than 25% ryegrass and white clover and that are intensively managed with high grazing levels or multiple cuts of silage and high inputs of slurry or fertiliser are not classified as habitat land.

Extensively managed agriculturally improved land should not be mapped as a habitat and will be subject to Universal Action 1: Soil Testing. Full details are available at Section J1 of the SFS – Universal Layer: Guidance

Image: Intensively managed improved land - high levels of ryegrass and white clover. Shiny leaves of ryegrass can be visible at field level as in this silage field