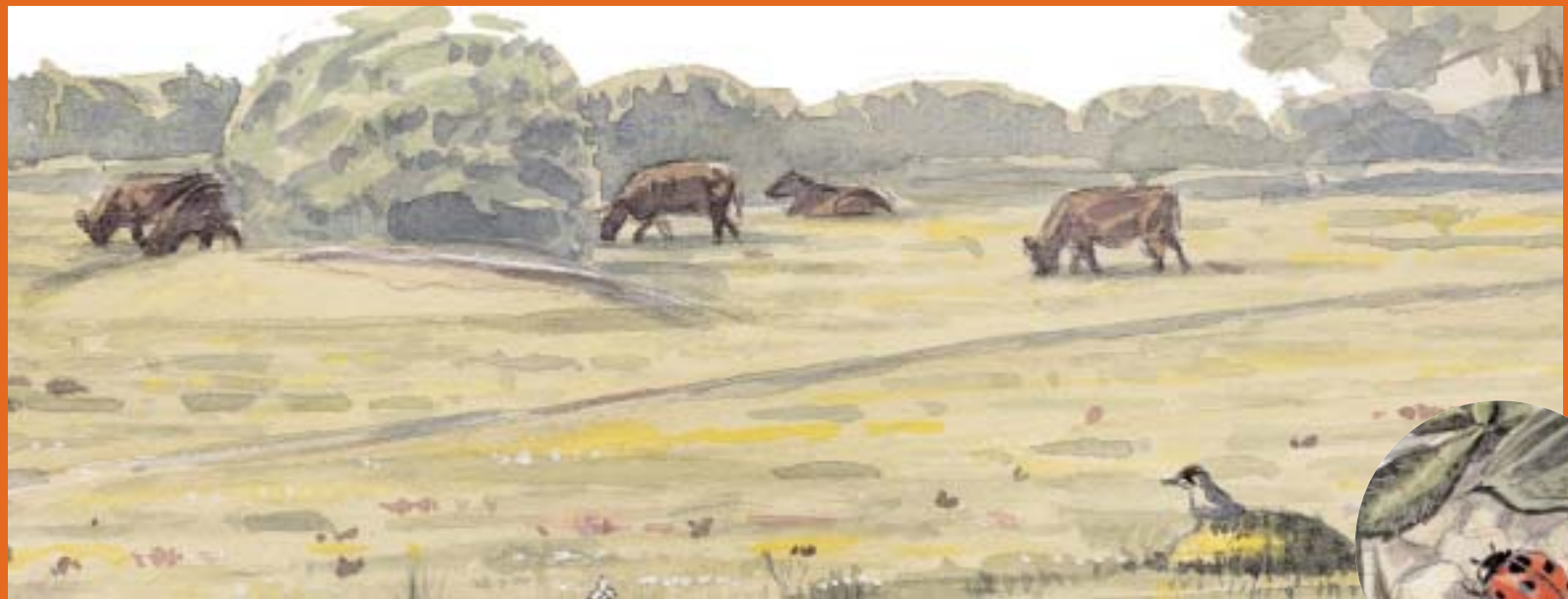


# Illustrated guide to grassland condition

Neutral grassland for plants and animals





## Using the guides

### What are the guides for?

These illustrated guides are to help show you what wildlife needs in terms of grassland structure and condition. The illustrations build on the more formal written prescriptions of agri-environment agreements, to help describe the results expected from these schemes, that will benefit wildlife.

The guides are based on the belief that **you**, the land managers, farmers and graziers, are crucial in achieving wildlife conservation. We recognise that successful conservation relies on harnessing your detailed knowledge of your land and livestock, together with your observations of the subtle effects of seasonal variations of the climate from year to year. We believe that these new guides will help combine your skills as land managers with our increasingly detailed understanding of the ecological requirements of our wild plants and animals.

### What's in the guides?

The guides concentrate largely on describing the **structural features** of a grassland sward (eg variation in height, amount of tussock, open short sward or bare ground). This structure is crucial at key times of year, in

determining the wildlife (both fauna and, to some extent, flora) that can live there.

For each wildlife interest, we provide illustrations and descriptions of the grassland at three key times of year:

- spring - just as you are about to put stock on the land as the grass begins to grow,
- early summer - when many wild animals will be breeding and the majority of plants will be in full flower; and
- autumn or early winter - when you may be seeking to take your stock off for the winter.

We have steered clear of giving detailed advice on stocking rates, as you are likely to be the best judge of the management needed to achieve these results. The only exception to this is where research has clearly shown that stocking rates over a certain critical level lead to high losses of the eggs and chicks of ground nesting birds through damage by trampling.

### How to use the guides

The guides should be used in conjunction with a visit from a Conservation adviser. The adviser will help you identify which particular fields the guides are relevant to,

and discuss with you how to get the best for wildlife from your grassland. They are intended for use on grasslands that already have some conservation value.

**We ask you to manage your stock so as to try to ensure that the sward in your field(s) looks as close as possible to that illustrated in the guide at each of these three key times.** A copy of the guides should be kept as a reference so that over time they will help you to check on the improving wildlife value of your grassland.

### Your help needed

These illustrated guides are a trial approach, and we would greatly appreciate feedback about the usefulness, technical content, style and format of the guides. Please send any comments you have to Christine Reid, English Nature, Northminster House, Peterborough, PE1 1UA, or feedback through your Conservation Adviser.

We hope that you benefit from using the guides and that they will help you enjoy more of the wildlife that occurs on your land.

July 2002.

*These guides have been written and produced by TellTale (peter@telltale.co.uk) on behalf of English Nature. Illustrations: Dan Powell. Design: cda.*

**DEFRA**  
Department for  
**Environment,  
Food & Rural Affairs**

helping deliver your  
agri-environment scheme agreement

# Neutral grassland for plants and animals – April

**Insects (and other invertebrates), many small birds and small mammals require grassland with a varied structure with small areas of bare ground. Insects also need a flower rich grassland.**

## April: Key Points

### What will grassland wildlife be doing in spring?

Birds such as skylark will be setting up breeding territories and invertebrates will be emerging from hibernation and will be seeking food. The nectar and pollen from early flowering plants are crucial for insects at this time of year.

### Sward structure

Try to avoid a uniform close cropped sward. Aim instead for a varied structure with a scattering of small clumps and occasional tussocks. It is important to allow as many plants to flower as possible, whilst not letting the grasses become so dense that they swamp out smaller plants.

### Stock

Cattle, sheep and ponies can all be used to create the appropriate structure. Sheep however are more likely to selectively graze off the flower heads of herbs. It would therefore be better not to introduce sheep until later in the season. In order to achieve the desired amount of flowering and sward structure, a lighter than usual stocking rate will be needed. The appropriate timing of grazing will vary according to the weather conditions and the productivity of your site.

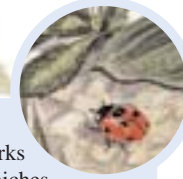
## Watch out for...

Early spring flowers of species such as celandine and cowslip. Insects seeking early pollen and nectar from hawthorn flowers. Birds such as skylark singing to proclaim their territories.

Queen bumble bee searching for nest site in tussock



Ladybird in old hoof print



Insects feeding on early blossom

## Bare ground

Last winter's hoof marks provide germination niches for plants and sunning spots for invertebrates. By the spring up to 20% bare ground in little hoof sized patches scattered throughout the site is helpful for wildlife. Plants will gradually cover the bare patches through the summer.

Landscape view



Too short



Ideal structure



Too rank for main area of field

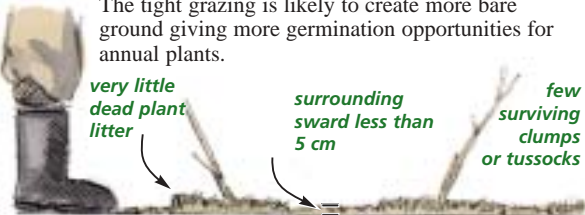
### How much of the field should look like this?

Less than 20%.

### Effect of this sward on wildlife?

This is too tightly grazed to allow spring flowering herbs to flower. This will have serious implications for nectar seeking insects. There is little or no cover for invertebrates.

The tight grazing is likely to create more bare ground giving more germination opportunities for annual plants.



more than 85% short sward less than 10% clumps or tussocks

### How much of the field should look like this?

Aim for more than 75%.

### Effect of this sward on wildlife?

Allows for plenty of herbs to flower. It provides a mixture of relatively short turf with little open patches for invertebrates that need open areas, alongside cover for those invertebrates that require it. Grass growth is not too great to swamp the smaller herbs.

### dead plant litter thin & patchy (2 cm max. depth) in majority of sward



70-80% medium height sward (5-15 cm) up to 20% taller clumps or tussocks scattered throughout sward aim for no more than 5% scattered scrub within the grassland sward.

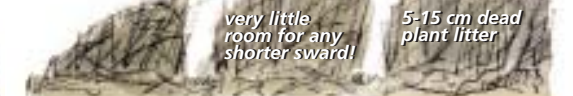
### How much of the field should look like this?

A 1-3m fringe around boundaries and any scrub. Otherwise less than 10%.

### Effect of this sward on wildlife

Long rank grass smothers smaller herbs. However, taller grass around field margins provide important food and shelter for invertebrates, amphibians and small mammals.

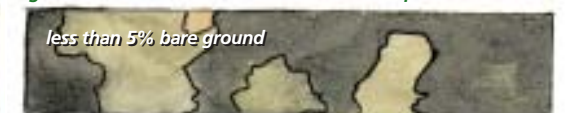
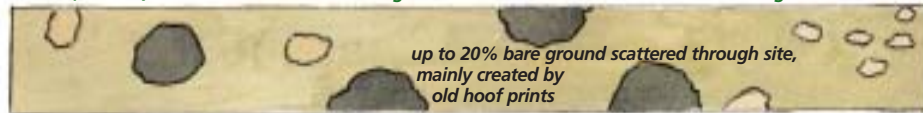
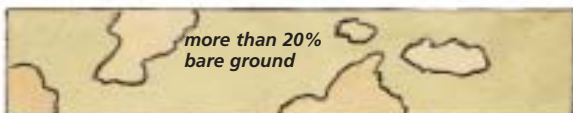
### clumps or tussocks form previous season 30-40 cm



0-5% bare ground less than 50% of sward less than 10 cm more than 40% clumps or tussocks

Cross section

Above



# Neutral grassland for plants and animals – June and July

**Insects (and other invertebrates), many small birds and small mammals require grassland with a varied structure with small areas of bare ground. Insects also need a flower rich grassland.**

## June and July: Key Points

### What will grassland wildlife be doing in June and July?

Most herbs and many grasses will be in full flower. Grasses will have put on their maximum height. Invertebrates will be feeding and breeding. Ground nesting birds such as skylark will have young.

### Sward structure

Aim to maintain a varied structure, on average 5-15 cm high, with a scattering of small clumps. Try to prevent smaller herbs being dominated by grasses without creating a uniform, close-cropped, short sward. Allow as many herbs to flower and seed as possible.

### Stock

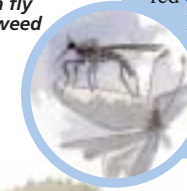
Maintain a relatively low stocking rate through to the end of June to allow as much of the sward as possible to flower. If large amounts of strong-growing grasses are present you may need higher stocking rates to keep them acceptable to livestock and prevent them swamping the herbs.

### Watch out for...

Worker bumble bees foraging for nectar and pollen; red clover is particularly important for them.

Butterflies such as meadow brown. Assassin flies sitting on tall flowers waiting for their prey to pass by. Large numbers of herb species in flower. Skylarks nesting.

Assassin fly on hogweed



Violet ground beetle hunting on bare ground

Whitethroat breeding in hedgerow

Landscape view



Marsh thistle and ragwort due to heavy winter poaching



Butterflies and other insects will feed on nectar in flowers

Cow pats are good for invertebrates



Insect feeding on tall herbs

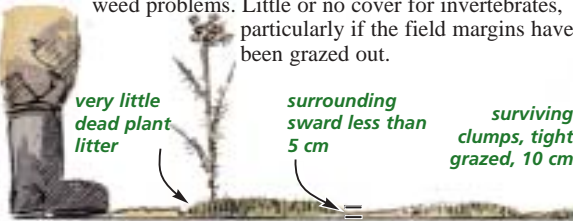
## Too short

### How much of the field should look like this?

Less than 10%.

### Effect of this sward on wildlife?

Few herbs flowering, so little nectar for insects. The tight grazing may create more bare ground, which will lead to germination opportunities for annual plants and may cause weed problems. Little or no cover for invertebrates, particularly if the field margins have been grazed out.



very little dead plant litter

surrounding sward less than 5 cm

surviving clumps, tight grazed, 10 cm

more than 85% short sward less than 5% clumps or tussocks

## Ideal structure

### How much of the field should look like this?

Aim for more than 75%.

### Effect of this sward on wildlife?

This structure allows plenty of herbs to flower. It provides a mix of relatively short swards with small open patches for invertebrates that need bare ground, alongside cover for those invertebrates that require it. Grass growth does not swamp the smaller herbs.



little dead plant litter

majority of sward 5-15 cm high

scattered clumps or tussocks 15-20 cm (being grazed down)

70-80% of sward 5-15 cm high

up to 20% clumps or tussocks scattered throughout sward

few small seedlings of shrubs such as hawthorn. up to 5% cover of mature shrubs

## Too rank for main area of field

### How much of the field should look like this?

A 1-3m fringe around boundaries and scrub. Otherwise less than 10%.

### Effect of this sward on wildlife

Although smaller herbs will be smothered by grasses, taller field margins provide important food and shelter for those invertebrates, amphibians and small mammals that need them.



very little room for any shorter sward!

height of clumps or tussocks 30-40 cm

5-15 cm dead plant litter

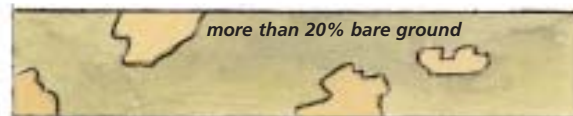
0-5% bare ground

less than 50% short sward

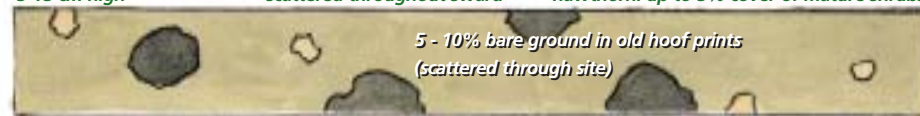
more than 40% tussocks

Cross section

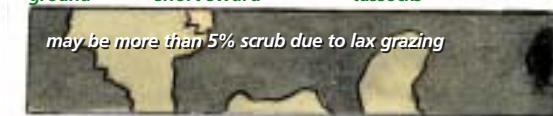
Above



more than 20% bare ground



5 - 10% bare ground in old hoof prints (scattered through site)



may be more than 5% scrub due to lax grazing

# Neutral grassland for plants and animals – October onwards

**Insects (and other invertebrates), many small birds and small mammals require grassland with a varied structure with small areas of bare ground. Insects also need a flower rich grassland.**

## October onwards: Key Points

### What will wild plants and animals of grassland be doing in winter?

Most plants stop growing and many transfer nutrients down into their underground storage systems for the following year. Dormant and dead plant material provide important places for invertebrates to hibernate. Birds such as fieldfare & redwing feed on earthworms in the soil and berries in the hedges; seed eaters such as finches eat the seeds of tall herbs; in some areas wildfowl may graze the grass.

### Sward structure

Maintain a varied sward structure which should include scattered grass clumps and tussocks and occasional dead flower stems of taller herbs and a taller more 'rank' margin around the field boundaries and scrub.

### Wetness

Areas of standing water and damp ground are crucial for many different animal and plant species. These should not be drained.

### Stock

Most types of stock can be used to create the desired sward structure, but sheep may be reluctant to graze mature 'stemmy' herbage.

### Watch out for...

Hibernating invertebrates in old flower stems and grass tussocks. Flocks of fieldfare and redwing feeding on earthworms in the grassland and berries in the hedgerows.

Hunting barn owl



Queen bee hibernating in tussock



### Poaching

Scattered hoof marks create small gaps in the sward. These are valuable, since in the following spring they will provide germination gaps for plants and open patches where invertebrates can sun themselves, hunt for food and find mates. Care should be taken to remove cattle or ponies in very wet winter conditions, since too much poaching will damage the sward and lead to future weed problems.

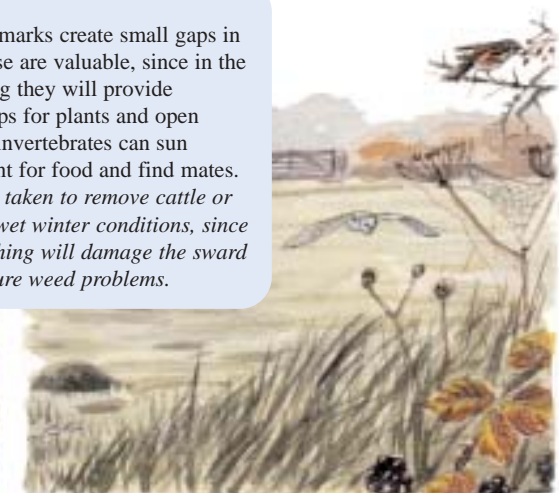
Landscape view



Too short



Ideal structure



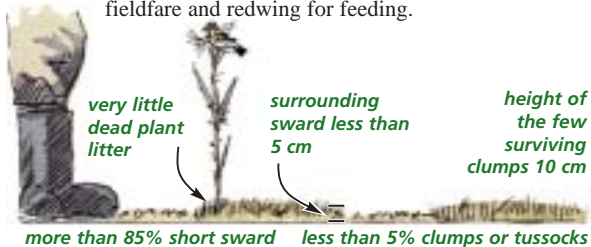
Too rank for main area of field

### How much of the field should look like this?

Less than 10%.

### Effect of this sward on wildlife?

There is no cover for invertebrates, amphibians & reptiles or small mammals to over winter. Short grassland may be used by lapwing or golden plover for feeding or roosting and by fieldfare and redwing for feeding.



Cross section

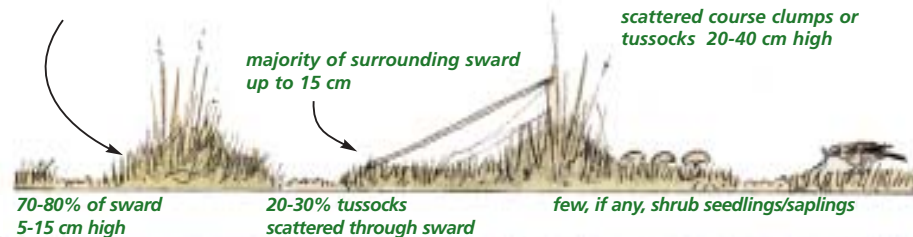
### How much of the field should look like this?

Aim for more than 75%.

### Effect of this sward on wildlife?

Plenty of opportunities for invertebrates or small mammals to over winter in tussocks, but sward not too long to swamp growth of wildflowers in spring.

*thin (1 cm max. depth) and patchy dead plant litter. Dead flower stems of taller herbs are valuable for invertebrates*



scattered course clumps or tussocks 20-40 cm high

majority of surrounding sward up to 15 cm

70-80% of sward 5-15 cm high

20-30% tussocks scattered through sward

few, if any, shrub seedlings/saplings

### How much of the field should look like this?

A 1-3m fringe around boundaries and scrub. Otherwise less than 10%.

### Effect of this sward on wildlife

See notes for spring. Tall vegetation provides crucial places for invertebrates to hibernate. However, if the main field is left too rank through the winter smaller herbs will be swamped the following year.

*very little room for short sward!*



tussocks 30-40 cm

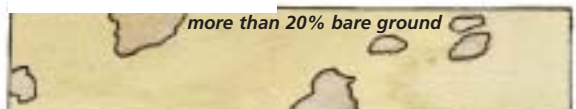
5-15 cm dead plant litter

0-5% bare ground

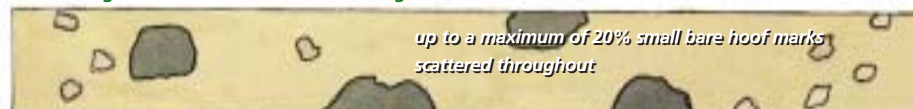
less than 50% short sward (less than 10 cm)

more than 40% clumps or tussocks

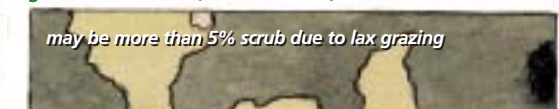
Above



more than 20% bare ground



up to a maximum of 20% small bare hoof marks scattered throughout



may be more than 5% scrub due to lax grazing