

Cattle in conservation

Foraging characteristics

1. Impact on vegetation structure

Cattle are ideal for removing long, coarse grass growth. The tongue is used to pull tufts of vegetation into the mouth, which at low/medium intensity leaves a tussocky appearance.

Cattle are less selective grazers than either equines or sheep, and are likely to graze a vegetation stand or community to a fairly average height, producing a more homogeneous end result. They do not selectively eat flower heads of herbs, unlike sheep. This can be beneficial in a botanically diverse meadow; but may support less variety of invertebrates than a more structured end result.

As ruminants, cattle may spend up to 16 hours a day resting to allow ingested food to be digested by the rumen micro-fauna. They can be quite selective about their resting places and favoured spots can soon show signs of dung accumulation or damage to the turf, but this is generally less noticeable than with sheep or equines. On very large areas, this impact is likely to be significant.

Hoof marks can be very valuable on sites where bare ground is desirable. Heavier animals can cause damage to vegetation and soils around supplementary feeding sites, especially in wet weather or on soft ground.

Cattle have a considerable impact on the vegetation with respect to the trampling of bracken and low scrub, breaking up mats of dead litter and creating pathways through tall, dense vegetation.

2. Feeding preferences

Cattle have a generalised feeding behaviour and broad mouths, making it impossible for them to ingest individual components of the sward by choice. Selection is therefore made on the basis of patches of sward rather than of individual plants. This generalised feeding behaviour is a valuable asset, within extensive systems, for maintaining species diversity of herb-rich swards.

Cattle usually take sedges, along with other herbage, particularly as the grazing season progresses.

Rushes are generally avoided. Control of rush within an area through cattle grazing involves high stocking densities for short periods of time; careful consideration of possible impacts on other aspects of sites importance, such as breeding birds and invertebrates, should also be taken into account if this occurs.

3. Impact on trees and shrubs

Cattle can have quite a significant impact on shrubs and small trees, as they tend to remove leaves and twigs by a tearing action rather than a nipping with their teeth; this can be highly damaging and cause the affected tree/shrub to die.

A broad range of woody species is consumed, with Ash, Sycamore and Oak being amongst the most preferred, whilst Birch, hazel and hawthorn are less favoured.

Horned cattle may cause significant physical damage to scrub, by rubbing against trees and bushes and pushing through them.

4. Social behaviour and its effect on foraging

In general, cattle are social grazers and on large sites will almost always be found in close proximity to each other when feeding. Favoured parts of the site will thus begin to show signs of grazing very quickly, whilst areas where the pasture is less palatable will take longer to show any impact.

However, some breeds of cattle, for example Highlands, appear to form territories with cyclical use of large areas and may travel miles in one day, with individuals quite widely dispersed.

5. Sex and dietary differences

During the production of this hand book, no comments about differences between sexes and diet are offered.

6. Impact of age on foraging ability

Cattle have resilient teeth and seldom lose them with age. Additionally, grazing ability tends to improve with age and animals cope better with a poorer quality diet once the rumen is fully developed at around 18-20 months. Old dry 'cull' cows, now quite rare, were highly sought after for use in conservation situations before the advent of BSE; this improved foraging ability must be balanced against their ability to get about, particularly on arduous terrain.

7. Dunging behaviour

As an adaptation to reducing parasites burdens, cattle avoid grazing within 10-20 cm from the edge of each pat of dung; thus even in tightly grazed situations the sward develops a mosaic pattern of short turf strewn with randomly scattered tufts of tussock where pats have been deposited. If desired, this patchy effect can be overcome by combining cattle grazing with sheep and/or ponies.

Different types of cattle

Nearly all commercially reared bovines in Britain are European domesticated cattle (*Bos Taurus*), with limited numbers of Asian cattle (*Bos indicus*), Water Buffalo (*Bubalus bubalis*) and American Bison (*Bison bison*). Domestication has produced more than 1000 different breeds, of which around thirty are native to Britain. They vary in size, shape, colour, temperament and adaptations for particular environments.

Within the UK, cattle are kept for the production of either meat or milk and in general desired characteristics for beef and dairy cattle are mutually exclusive since resources diverted into milk production are not available for growth of the carcass. Of the two, it is usually the beef breeds that best suit conservation grazing since the production of meat can more easily be sustained on low quality pastures.

The traditional type of British cow, with short legs, squat body, large abdomen (barrel) and tendency to put on surplus fat has now declined in popularity due to the demand for faster growing, leaner and larger animals, typified by the breeds from continental Europe. These 'improved' features have now been introduced into many of the indigenous UK breeds by crossing with foreign breeds to enhance their commercial appeal. The resulting animals, although preferred for marketability, are often not as good for conservation as the native type because they have less of the original's ability to convert low quality forage to meat productions.

The following table represents a categorisation of breeds according to commercial important to conservation grazing and relevant to the breeds within that category, listed for each. Whilst the commercial categorisation of breeds is a straightforward matter, the assignation of characteristics such as 'hardy' and 'thrifty' to groups of animals is more difficult. Breeds such as the Aberdeen Angus for example, may easily be as 'hardy' or 'thrifty' as breeds such as the Beef Shorthorn; whilst a breed, such as the Kerry, when not in milk production is particularly well-adapted to grazing coarse vegetation. Thus the following table is offered as guidance only, with the caveat attached that the categorisation offered is dependent on the way in which breeds are used.

Upland Beef

Examples include: Highland, Galloway, Welsh Black, Beef Shorthorn and Vaynol (Welsh)

Special characteristics and suitability in conservation situation:

1. Hardy, thrifty breeds well suited for use in a wide range of conservation grazing situations.
2. Small-medium size and weight, thus less likely to damage sensitive swards and soft soils.
3. Some breeds may be flighty and difficult to handle.
4. Slow growing and late maturing, thus less likely to be able to finish within current 30 month time period, unless given supplementary feed or time on improved grazing.
5. Moderate- good conformation (carcass quality); keepers of these breeds will often have developed local or niche markets for meat.

Lowland Beef

Examples include: Hereford, Aberdeen Angus, Sussex, South Devon and Lincoln Red.

Continental examples include: Limousin and Charolais.

Special characteristics and suitability in conservation situation:

1. Moderately hardy and moderately thrifty breeds, thus suitable for use in many conservation situations, where some good keep is included within the area grazed.
2. UK breeds medium size and weight, thus suitable for grazing a range of conservation sites. Continental breeds large size and weight, thus less suitable for grazing on sensitive swards or wet ground.
3. UK breeds have placid temperament, thus easy to handle. Continental breeds tend to be excitable and more difficult to handle.
4. UK breeds fast growing and early maturing, thus possible to finish within 30 month timescale without too much supplementary feed. Continental breeds fast growing but late maturing, thus likely to require considerable supplementary feed to finish if kept on conservation grazing.
5. UK breeds have good conformation (carcass quality); continentals have very good conformation, thus highly marketable.

Dairy

Examples include: Holstien, Ayrshire, Jersey, Guernsey and Kerry.

Special characteristics and suitability in conservation situation:

1. Reliant on high quality pastures for milk production, thus of limited use within conservation situations. However, some breeds within this category (e.g. Jersey, Kerry) not in milk production can be very effective grazers of coarse vegetation and some are also very hardy (e.g. Kerry)
2. Great range in size. Smaller breeds (e.g. jersey 350kg) can be very useful on sensitive swards or wet sites; larger breeds (e.g. Holstien 700kg) are of extremely limited use within conservation.
3. All breeds generally adapt well to handling and become placid; young stock may be flighty.
4. Likely to require supplements or plenty of good grazing to allow condition to be maintained if kept on conservation sites.
5. Generally poor conformation (carcass quality)

Dual Purpose

Examples include: Red Poll, Shetland and Dexter

Continental examples include: MRI (Holland), Simmental (Germany).

1. Generally hardy, thrifty breeds, which when not being kept for milk production, are well suited to use within conservation situations.
2. Fair range in size and weight, although most seem to fall within small medium category; examples include 360kg (Dexter) to 450kg (Red Poll).
3. Generally adapt well to handling and become placid.
4. Moderate/good growth rate: fatten well on good grass; some breeds may finish within 30 months off conservation grazing with little supplementary feed. Those used for milking produce moderate-high milk yields.
5. Moderate – good conformation (carcass quality)