



red hind and calf

Introduction

The aim of this guide is to highlight features of the biology and behaviour of Red deer (*Cervus elaphus*) as an aid to the management of the species, it is not a complete description of Red deer ecology (see Further information below). Deer behaviour is not fixed, they will adapt their behaviour to local circumstances, sometimes behaving quite differently from one area to another or over time. This guide links to Deer Biology, Deer Behaviour and Deer Signs guides which should be considered as important associated reading.

Social structure

Red are herding deer. Herd sizes vary according to sex, habitat type/quality, deer density, degree of disturbance, time of year and weather. Very large herds may be the result of high deer densities, continual disturbance, animals gathering on a food source or prolonged hard weather. The sexes are usually segregated for most of the year, stags move into hind areas as the rut approaches. Stag groups tend to have a "linear hierarchy", hinds tend to be matriarchal, led by a dominant female who can sometimes be identified when the group is disturbed. Calves are dependent on their dams until 3-4 months but may suckle for longer. Female calves tend to remain with their dam and her group, hind/calf/yearling groups are common. Young stags disperse after a year or so to join bachelor groups.

Patterns of activity

Use of Habitat

Prefer cover near open areas, especially diverse woodland habitats such as larger areas of deciduous and coniferous woodland near to farmland or open heath/moorland. In many parts of England and Wales found on open heath/moorland. In Forest/woodland, red like to have areas of cover in which to lay up and will often adopt quiet areas as "sanctuaries" where they can remain undisturbed. On open ground often lay up in a sheltered spot preferably where they can see for some distance. Hinds in particular may be "hefted", rarely leaving an area of only a few square kilometres.

Stags tend to range more widely, sometimes up to 40 km throughout the year. Unless there are cooperative agreements to preserve them this can leave them prone to persecution as they cross boundaries. Moorland stags may spend most of the summer on higher ground, partly in an attempt to avoid flies and midges.

Herds may move several kilometres daily from lying up areas to feeding places, the routes may be predictable, or change due to disturbance or forestry/farming patterns.

Movement is affected by time of day, season and weather; some knowledge of how they respond will make them easier to predict, see Deer Behaviour guide.

Feeding

Primarily grazers but can be selective in what they eat. Often use open areas to graze but will spend long periods browsing in woodlands. Stags are better at utilising poorer quality forage than hinds. Average browse height is approx 1.6m

Breeding

Females are polyoestrous (will come into season repeatedly if they do not conceive at first). This may result in occasional births as late as September rather than June/July. In poorer conditions hinds may not conceive at all in some years (yeld hinds) but in most of England and Wales the adult hind pregnancy rate is often 90% or greater. Yearling hinds are often found to be pregnant when conditions are good.

Calving May-June. Hinds temporarily leave the herd to calve, returning when the calf is strong enough to run with the herd. Single calf (exceptionally twins) each year over a breeding life of 10 years or more. Late middle-aged hinds are generally larger and may produce heavier, earlier calves.

Red deer rut in Sept/Oct, stags leave their summer quarters "breaking out" to join the hinds, often in traditional areas. Dominant stags claim groups of hinds as they start to come into oestrus but roaming stags will mate opportunistically if they can. Actively



mixed age hinds

rutting stags virtually stop feeding during the rut and rapidly lose condition, they may struggle to regain condition fully during the winter. Embryo development begins immediately, by November it is usually possible to confirm pregnancy in culled hinds, although the embryo may not be apparent until January for late mated hinds. Survival rate of calves is usually 50-90% but might be lower where deer densities are high. Survival rates improve if high density populations are reduced below habitat carrying capacity (see Cull Planning guide). Most hinds cease lactation by December but some may continue into February.

Distinguishing sex and age

Sex

Calves are difficult to tell apart until males begin to develop pedicles/antlers. Adult males are larger, may differ in colour to females and have a mane during autumn and through the winter. Antlers are usually obvious, except in yearling stags which may only have simple spikes or knobs. Antler-less stags "hummels" may occur, especially in upland regions.

Age

Straightforward to age into the four broad age classes, calf, yearling, adult, old (see Ageing Deer guide). Older animals tend to be stockier and broader across the back. Older hinds have longer faces. Stags may appear older than their age during the rut. Juvenile third pre-molar is lost at around 27-28 months and full adult dentition is achieved by 29-30 months although the last cusp of the third molar may not come into wear until past 36 months (see Ageing by Teeth guide). Most wild Red are younger than 14 years old.

Size and form of antlers is some indicator of age, yearlings usually having simple spikes. Brow, bey and trey tines typically develop from the second head onwards and multiple top points (crown) appear soon after. The antlers of very old stags may decline in size. In general pedicles will be shorter on older stags.

Condition Coat colour change normally April/May and Sept/Nov, youngest first. Antlers are cast from March (oldest and in best condition first) and become clean from August. Very late antler growth or coat change may be an indicator of poor health. Late born or poor calves and poor adults may appear fluffy and



Red stag with hinds . Stag has lost weight during rut

ginger haired. Lactating hinds can lose a good deal of condition but usually recover to breeding weight prior to the rut, stags may be in poor condition following the rut. The peak of winter mortality occurs in early spring, survival rates increase after the spring flush of vegetation.

Culling

When settled, herds are fairly predictable but can move over large areas and may change their behaviour in response to disturbance, sometimes becoming almost wholly nocturnal making culling during the day very difficult.

Because red deer are herding animals care is needed when culling selected individuals to avoid injuring



Young adult stag in velvet, summer coat

other deer.

Usually culled using a combination of stalking and sitting out (in high seats and other vantage points), mainly in the early mornings and late evenings although in mid winter Red may be on the move at any time of day. Moving red to static rifles can also be productive (see Moving Deer guide).

When culling hinds, the welfare of their calves must be taken into account. Culling hinds without young avoids the issue, but these are likely to be a minority of those that have to be culled. Where possible dependent calves should be culled before or immediately after their dams, especially early in the season before the calves become more independent. If a dependent calf is unintentionally orphaned strenuous efforts should be made to cull it. If this is not possible immediately, the calf will normally be found with the herd later and should be culled then if it is likely to lose condition. If the hind and calf were alone, the calf will often return to the shot hind within the hour. Later in the season orphaned calves are far more likely to do well but, if practical, continue to cull calves with their dams. Calves in poor condition should normally be culled as a matter of course.

When culling on a landscape scale some general principles apply:

- ◆ Keeping the herd as settled as possible is key to success, red may become unpredictable when disturbed.
- ◆ Try to leave some areas where the deer feel safe, this makes them more predictable, but this should not be at the expense of creating “sanctuaries” where numbers are allowed to get out of control, thus affecting the outlying areas.
- ◆ Especially early in the season concentrate on isolated family groups, preferably on the boundaries and away from resting areas, this reduces the risk of disturbing large numbers of deer at once and increases the chance of culling calves/yearlings with their dam.
- ◆ It sometimes pays to try to get the more awkward animals first, leaving the easier ones till later, this applies both to the harder to get at groups and to the flightier animals within a group.
- ◆ By preference tackle larger herds later in the

season. Having fired the first shot(s) do not chase the herd just to get one more, leave them to settle.

- ◆ It is wise not to always stalk the same areas and in the same way, or too frequently.

When disturbed, a herd may leave en-masse and not return for long periods, such behaviour often takes them across man-made boundaries and out of an individual stalker's influence. Because of this it is usually more efficient to approach Red management on a landscape scale by cooperating across boundaries (see Cross Boundary liaison guide).

Red hinds may become more visible as the winter progresses but they also become more and more wise to being culled. It may require ever changing tactics on the part of the stalker to maintain the pace of the cull.

Stags will often be seen sitting out in arable crops in pre-harvest, this can be a good opportunity to view stag groups. Rutting stags are easy to detect through their roaring and it may be tempting to shoot stags as they rut but this can have the effect of putting too high a selective pressure on the adult stags and disrupting the normal behaviour of the hinds just as their season opens. Sometimes young stags can be culled on the periphery of the rut without undue disturbance.

The venison of stags in rutting condition becomes “tainted” by their scent. By preference take stags early in the season, well before the rut, or when the bulk of the hinds have been culled.

Culling seasons for hinds (1 Nov – 31 Mar) and stags (1 Aug – 30 Apr) overlap but it is important that, when trying to achieve the female cull, stags are not accepted as a substitute to “make up numbers”. Dependent stag calves may have to be culled for humane reasons and potentially make up a substantial part of the stag cull, thus relieving culling pressure on the older stags.

It is important to cull sufficient females to prevent over population, Red hinds can live a long time and produce 12 calves or more. Culls of 20% of the population may be required to keep many populations stable and the majority of these should be hinds. See Census and Cull Planning guides. In many herds there is a preponderance of females, with ratios of as few as 1 stag to 10 hinds, this is partly because survival rates are lower in stags. Such



low stag:hind ratios will not prevent hinds from becoming pregnant. In such cases the proportion of hinds in the cull will have to be even higher.

There is often concern about apparently low numbers of mature stags in red deer populations, good cooperation across boundaries should help to ensure that these stags are not culled too heavily. In general the quality of antlers will be best when overall numbers of deer are lower and where restraint is exercised when culling stags.

In good habitats adult carcass weights (empty, skin on, head and feet off) should average around 60kg for hinds and between 55kg - 150kg for stags depending on age.

Damage

The most significant impact is caused by grazing and browsing. In woodland grazing/browsing may adversely affect woodland regeneration, damage commercial tree plantings, and affect the structure and composition of the understory. Acceptable impact levels will depend on site specific circumstances and objectives.

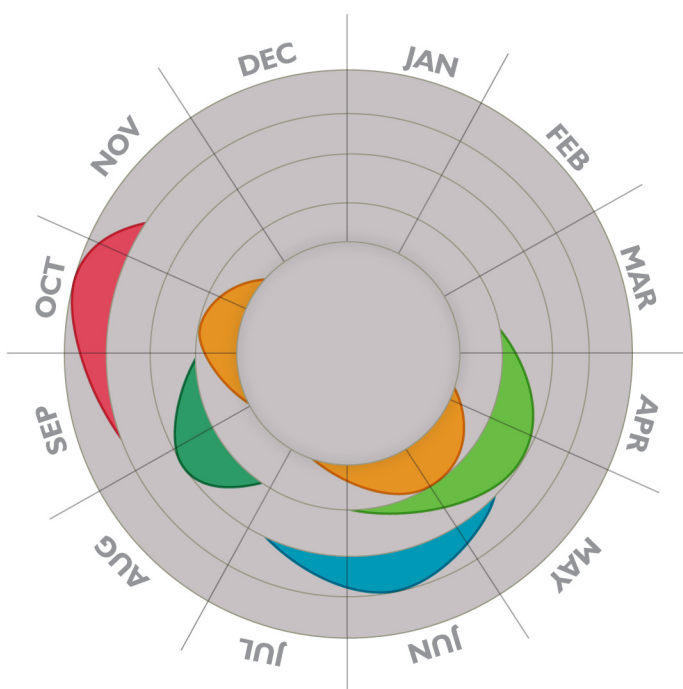
Red will lay up in cereal crops, which can open the crops out to wind-blow, they can cause extensive bark stripping especially on hardwoods and soft barked conifers such as Douglas Fir, Larch and Scots pine, usually in winter.

Stags may cause serious damage by fraying and thrashing trees and shrubs.

Hybrids

Sika and red deer may hybridise. There is a wide range of normal variation within each species and the vast majority of non-pure animals go un-noticed, tending to look like one of the parent species. There may be occasional individuals that shows signs of hybridisation, some of the signs are:

| Sika-like animals | Red-like animals |
|---|--|
| Unusually leggy/tall | Unusually stocky |
| Presence of any form of bey tine on antlers | Absence of bey tine (also seen in pure reds) |
| | Persistent spots on flank in adult summer coat |
| | Black colour on centre of tail (dark border around rump patch is normal) |
| | Light coloured hock gland |



Further Info

Prior, R. (2007) Deer Watch. 2nd Ed
British Deer Society, Deer Identification sheet

