



Deer Red Deer *Mating Behaviour*

Deer farmers hold diverse opinions about how red deer should be managed and handled. Some go to lengths to ensure that "natural" behaviour patterns can occur. Others may treat their deer much as they do their sheep and cattle.

At mating time in the wild, red-deer stags attempt to round up hinds into harems from which they exclude other stags. The result is that a few big stags hold most of the hinds while the rest of the stags move around searching for hinds, trying to steal them from harems and, occasionally, challenging a harem master. Most mating is performed by the harem masters.

The influence of management practices imposed on farmed red deer during mating upon these features of behaviour in the wild, and upon the reproductive performance of farmed herds, has been studied at Invermay and on commercial farms.

Behaviour during the breeding season

In farmed herds, the patterns of behaviour that influence the mating success of stags in the wild also occur but, in many cases, they are much more pronounced.

At Invermay, stags start to roar and round up hinds near the end of March. Mating does not begin until mid April, reaches a peak in the last week of April and declines during May. Roaring declines in early May, the harems disperse and stags spread amongst the hinds. Thus, the occurrence of roaring and herding of hinds does not indicate that mating has begun, nor does its decline necessarily mean that it has been completed.

The restrictions to movement and high stocking rates imposed on farms allow some stags to form very large harems. When fewer than 6 stags were present in herds of up to 200 hinds in small paddocks (less than 10 ha), a stag in each herd held nearly all hinds in a harem over the peak of mating. This stag was dominant over all other stags in the herd and while he retained his harem he performed all observed matings. The subordinate stags entered the harem on occasions, but were chased out if they showed interest in hinds or challenged the harem master. Over most of the

mating period they remained well away from the harem and the dominant stag.

When 6 or more stags were present the prominence of the dominant stag was less marked. In a herd with 6 stags the second ranked stag held a harem as well as the dominant stag, while in another herd with 12 stags harems could not be maintained because of interference from the large number of subordinate stags. All stags in this last herd were spread amongst the hinds yet the dominant stag still performed most of the mating.

Thus, under the conditions imposed on farms, dominant stags in large herds were able to cover large numbers of hinds; far more than is possible in the wild. During a single breeding season, some stags that held large harems sired more than 70 calves before they were deposed by rival stags or removed from the herd.

In contrast, the most successful stags in a Scottish study of wild deer sired only 12 calves in a year. More importantly, most farmers join 1 stag for every 10 or so hinds. This practice obviously does not fully utilise the mating capacity of the stags.

Sexual behaviour

When it comes to the actual mating of a hind a stag generally spends little time on preliminaries. He chases her for a few metres and, if she stops, he mounts and serves her with little delay. The service action involves a single vigorous thrust during which the back feet of the stag leave the ground and his head is thrown up in the air. The hind is pushed forward by the thrust and the stag lands clear of her. Once the service is completed the stag and hind show no further interest in each other, at least for the time being. Most hinds are, reportedly, served only once.

If the stag is fresh and the hind fully receptive, the sequence of events from start of chase to dismount takes less than 5 seconds. Fresh stags serve most times they mount. Less potent stags may sniff and lick the hind's vulva briefly before mounting, will stay mounted for longer (5–10 seconds) and serve only during every second or third mount.



Fig. 1: Deer mating.

Stags nearing sexual exhaustion spend considerable amounts of time nosing the vulva of oestrous hinds, do not mount at all opportunities and mount many times without ejaculating. Hinds on heat remain around such stags, and rub against and mount them as well as each other. Attempts to overcome this problem by introducing a fresh stag without removing the tired stag will only be successful if the tired stag is deposed from his dominant position. Consequently, whenever fresh stags are to be introduced the dominant resident should be removed.



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