RED DEER CONTROL - GALLOWAY

By E J S Michie, Forestry Commission

Summary

During the course of the last 40 years red deer have re-established themselves in Galloway alongside the resident roe deer population and have increased in numbers to the extent that serious damage has been experienced in the expanding forestry plantations. Efforts have been made since 1965 to limit deer numbers, restrict their range and reduce their damage.

History

The history of red deer in Galloway, although reasonably well documented, paints a contradictory picture. Some historians maintain that deer became extinct by the mid 18th century and that the present population emanates from escapees from deer parks during and following the 1939-45 war. Others disagree and are of the opinion that the indigenous lowland red deer lingered in secluded areas within the Galloway Hills to later interbreed with park escapees. Certainly the outcome was a deer that grew fast in size and in numbers. Some maintained that there was North American Wapiti blood in the new generation; this too is challenged following an examination of genetic variation in Scottish red deer which looked at enzyme structure in muscles. This is a method similar to blood typing in humans and which has shown that the nearest relationship to the Galloway deer is that of the Rhum population.

In 1954 a red deer survey by Fraser Darling counted 415 deer on a 40,500 hectare area of central Galloway. By 1965, on 81,000 hectares, the population was considered to be in the region of 1,500; there were no deer fences. It is not surprising therefore that with 30,000 hectares being afforested between 1950 and 1965 and in almost ideal breeding conditions with shelter, ample food and little disturbance, the red deer population increased explosively giving rise

to severe damage in the young plantations and bringing to a head the need for the immediate introduction of an effective method of control. Accordingly, in 1965, the Galloway Red Deer Control Scheme was brought into being with 4 objectives:

1. To do no deer fencing
2. To control, with minimum expenditure, the Galloway red deer population at a level where damage was acceptable.
3. To prevent the spread of red deer outwards to other areas in southern Scotland
4. To conserve and, if possible, improve the quality of the deer.

It was decided that, in order to achieve a co-ordinated approach, members of the new Control Scheme should cover not only Forestry Commission managers but managers from the Private Forestry Sector, from the Red Deer Commission, the British Deer Society, the Nature Conservancy Council and the Forestry Commission Wildlife Research Branch. This group have, since its inception, met annually to promote appropriate control policies and to publicise the results of efforts made.

In 1973 the management objectives were updated and amended with the following major addition:

> By research and observation to establish the ecology of red deer and to determine in what ways, if any, alteration to the habitat may reduce damage

Research

The forming of the Control Scheme highlighted the fundamental need for information on deer numbers in order that management decisions could be more soundly based. This was no easy task and entailed setting up a series of projects and a system for collecting the relative data; in this the Forestry Commission Wildlife Research Branch played an important role. Projects were initiated to find out more about the rate of development, the breeding potential and the movement patterns of

the Galloway red deer and to what extent these could be manipulated; damage surveys also were carried out together with an investigation into methods of improving both natural vegetation cover and deer glades.

Local management was heavily involved. It initiated a system of vantage point counts to assess deer density; that is sample counting, morning and evening, from fixed locations over periods of not less than 2 hours during the months of April and May. The sites chosen for this exercise were varied and had a vista coverage of between 80 and 120 hectares. Sightings were recorded of sex, time and direction of movement and at the end of the count period the number of deer were related to the area under observation and expressed as a density per square kilomentre of forest land; this produced figures of between 6 and 8 deer per square kilometre. Another project on deer movement patterns was set up. This ran for 8 years from 1966 to 1974 and entailed the marking of calves by ear tagging; the outcome of the experiment was to demonstrate that in forest conditions there was little movement of hinds from their home range; in the hard winter of 1982/83 a 13½ year old hind was shot within several yards of where it had been tagged as a calf. It will not surprise anyone however to know that stags were not found to be so territorial.

By far the most important problem to be tackled however was a means of arriving at the correct deer population level from which a realistic culling figure could be set. This assessment is relatively easy on the open hill; within the forest it is much more difficult. A method nevertheless was devised by the Forestry Commission Wildlife Research Branch which entailed collecting data over a period and recording the number of deer born in a particular year from the ages of the deer which had been shot. This method is explained in detail in the Forestry Commission Bulletin No. 71 "The Management of Red Deer in Upland Forests". Suffice to say that it is an immensely valuable deer management tool and as such is strongly recommended to deer managers.

Another project undertaken and which has helped to clarify the picture of breeding potential of forest bred animals, was the collecting by Rangers of ovaries and embryos during the hind cull. These showed that some 15 month old hinds were fertile and that most of the 2 year old hinds were pregnant by their second birthday. This remarkable fecundity of Galloway red deer is a major factor which had to be taken into account when examining population dynamics.

The investigation into possible vegetation improvement found little new information to that already known. Various fertilisers were used to "sweeten" the natural vegetation and indeed did give a boost for up to 5 years but few deer were drawn to the trial area. The main beneficiaries were feral goats!

As part of the basic data collection, damage surveys were carried out during the 1970s to obtain information about the susceptibility of different tree species to damage by deer and the relative importance of the types of damage, be it browsing, bark stripping or fraying.

The results confirmed that Lodgepole pine, planted widely in Galloway in the 1950s and 1960s, often in mixture with Sitka spruce, suffered severe damage with, in places, 50-90% being browsed or stripped. The average figure for Lodgepole pine, however, was about 30% but even that was unacceptable as it represented a major financial loss. Norway spruce damage was in the region of 4% with larch at 2.5% Sitka spruce, lower at 1-2%, suffered more serious damage in pockets causing alarm at the potential threat in view of the huge post war plantings. There was further concern that Sitka, being the principal tree of the area, might be subject to bark stripping, as Norway spruce is, which in turn would jeopardise sawlog production and complicate management by the possible consequential invasion of fungal diseases such as Fomes annosus or Stereum sanguinolentum. These fears, thankfully, have been partly allayed with the culling increase, particularly in the central area, reflecting a lowering of deer damage.

To date, as this is primarily a discussion paper on red deer, I have not mentioned the other deer species found in Galloway namely roe and fallow but, in order to complete the picture I will touch briefly on their importance and status.

The fallow are a very small, contained herd and do not give rise to any concern over damage levels. Roe, on the other hand are widespread and numerous; they are troublesome during the replanting of felled woodlands and for some 5 to 7 years thereafter. Because they are smaller, they are able to invade plantations at a younger and more vulnerable stage of growth. They are more localised, more prolific and start to breed at an early age normally bearing twins. The damage done is normally browsing and fraying, as apart from stripping, but if an area can be protected either by shooting or fencing until the trees are between 4 and 5 feet, damage levels fall dramatically and consequently the need for ongoing protective measures diminish. The number culled annually is in the region of 1,600 animals.

Control Measures

Returning to the question of red deer where the collection and build up of knowledge had been crucial; it was recognised that without the Rangers acceptance of the situation, management would fail. The process of educating Rangers to this new appreciation of deer populations was critically important, for without being convinced, greater culling effort would not be forthcoming. To assist Rangers therefore in their task much effort was expended to ensure that they were competent in the use of firearms and that they were properly equipped with suitable rifles fitted with telescopic sights, good binoculars and had proper transport. The use of All Terrain Vehicles was introduced to speed up the recovery of deer and increase the time for stalking; it helped also to minimise the most strenuous part of a Rangers job. With well equipped deer larders the overall effect was one of more efficiency and better hygiene.

In addition management further examined the possibilities of deer glades, night shooting and a re-organisation of Rangers beats. Deer glades, although they had been used in the past, had not been a major part of the armoury but now, following the recommendations included in the Forestry Commission Leaflet No 86 "Glades for Deer Control in Upland Forests", more emphasis was placed on their proper design and siting. These glades were not created as feeding areas, as is the continental practice, but rather as areas to attract deer and give better and safer opportunities for culling. It is ironic to think that the better the establishment of a forest the more difficult it is now to manage and control deer. In many cases no natural openings exist which can be used for deer control; consequently we have now to actively consider clear felling areas to create open spaces and re-instating these sites with grasses and hardwoods if we are to achieve meaningful control.

Another management opportunity, to reduce deer numbers and damage, was to consider the possibility of night shooting. This is often an emotive subject and has, in the past, been heavily criticised. Sticking closely to the Red Deer Commission's code of practice and liaising with the local police, night shooting nevertheless was introduced in 1982/83. It has proved most effective and a very humane method of culling animals as they can be taken at close range standing quite still. Prior to commencement many Rangers expressed doubts as to its effectiveness but now none have any qualms. The percentage of animals taken by this method varies between 14% and 16% of the total.

With all the other changes introduced management took the opportunity also of examining and reassessing Rangers beats according to workload, and Rangers were encouraged in certain circumstances to work as a team to increase efficiency.

In spite of all these changes in methods, working conditions and equipment, however, Rangers still had to be shown and convinced that their estimate of deer population

bore no relation to the actual numbers on the ground. Accordingly, using Research Branch data and following the annual spring assessment of densities and vantage point counts, local staff set cull targets. These were defined by beats to take account of the varying proportions of forest cover.

The immediate response by Rangers in 1980/81 was a cull increase of 73% over the previous years figures. Many thought that this would be a "one off" cull but the figures were continuously repeated. The average total for these culls was 600 animals and it was suggested by both the Red Deer Commission and the Forestry Commission Wildlife Research Branch that this was likely to be sustainable given that, with an estimated population of between 3000 and 3500 red deer, it would appear to be at the 20% maintenance cull level necessary to prevent further expansion of the Galloway population; but more of that later. Certainly the effort put in to turn round the management and control of the red deer in Galloway has had the effect of bringing the damage levels within the realms of acceptability.

The Future

But what of the future? Where do we go from here? The forest manager is far more concerned with population trends than absolute numbers. In spite of the advances made in assessing population dynamics more improvements are necessary to refine census work. He must know, as early as possible, whether deer numbers are rising, remaining stable or falling and whether he can control the population with his current ranger staff. It is critical that he should know this, to enable him to amend his culling methods to keep deer numbers at a level appropriate to the available feed without inflicting damage to his forest investment.

I can hear you say "Knowing what is happening to a deer population is one thing, but actually controlling deer in Scotland's dense upland forests in an entirely different matter". Certainly the pre 1980s plantings were designed for the maximum of trees with the minimum of open space and were not the most helpful to rangers. We have learned from these past mistakes and are now more conscious of the need for planned open space aimed at putting deer where they are accessible to the

ranger and where they will do the least damage. We have also the opportunity, when the time comes for crops to be clearfelled and replanted, of righting past wrongs and redesigning the forest for our future needs. This period is now upon us as far as the immediate post war plantings of the 1940s and 1950s are concerned and must not be missed. Careful forward planning is essential if the problems of yesteryear are not to be repeated, for good forest management involves taking active measures to keep the right environmental balance. This must involve training linked to policy initiatives in order that the will and resources available are working in tandem. Which brings me to the recent setting up , by the Forestry Commission, of a Training Centre for Red Deer Management at Torlundy near Fort William. This is for rangers and managers. There a management package for all levels of staff has been produced and which will be followed up with visits by the Training Personnel to Forest Districts in order that ideas may be tailored to local requirements. This is a completely new concept and one which it is hoped to offer to the private sector at the earliest opportunity.

In Galloway there is a further problem to be faced and this is likely to apply elsewhere. As explained earlier it would appear that the control of the deer population may have been achieved now in the central area but questions, as to whether there is a build up in the Private Forestry Sector's young plantations on the periphery, have yet to be answered. Certainly the adoption of a "hefted hind" policy by one forestry company as a means of attracting stags, which subsequently can be used to enhance the sporting revenue, is not a course of action which the Galloway Red Deer Control Scheme can endorse yet. We have learned, from bitter experience, that we must first be in full control of the deer population and for this every effrot must be put into reducing the number of breeding hinds; to do otherwise would be to negate the substantial efforts made in the past. Once complete control have been achieved, however, and indications are that this may well be the case in the central area, it will open the opportunity to consider limited licenced shooting within that zone only. In this context it is interesting to note that since 1981 four of the best gold medal trophy heads have come from Galloway.

In conclusion, I would say from our past experience in Galloway that there are no easy solutions but with singlemindedness, training and dialogue with all interested parties, it is felt that a way forward can be found to produce good commercial timber without having to embark upon the elimination of all red deer from woodland - something no-one wants even if it were possible. Indeed the Forester's objective of multiple land use includes the conservation of woodland deer within the forest habitat and the ultimate goal is peaceful co-existance.

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