

# **Report to Sustainable Forestry**

## **Tree Protection: Programme progress Annual report 2003/04.**

**WEB SCHEDULE 31**

**R.C Trout  
Woodland Ecology Branch**

**March 2004**

## Tree Protection Report

Report to: Dr S. Gregory, Sustainable Forestry, HQ.

Project: Annual report on Tree Protection Programme

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Report prepared by: Dr R C Trout  
Woodland Ecology Branch

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## **1. Drafting of fencing leaflet**

This was the major project for the year. A draft was produced in late October, incorporating 33 pages of text and 10 pages of draft diagrams. It was circulated for comment within the Branch, to Policy Group, a Forest District Manager, the FC H&S officer, Training Branch and a private fencing practitioner who also advises deer farms. The last respondent returned their comments in early March. No major omissions were identified and the suggestions were in most cases able to be incorporated. The final draft text and tables have been completed and, with draft figures, been submitted to the Head of Branch. Detailed drawings of draft figures, and the range and number of photographs needed remain to be finalised before the document progresses towards final page formatting for publication. There are a number of topics where current changes and improvements are continuing (as always); some of these e.g. wood preservation treatments, use of vanadium high tensile steel may be added during the final stages of producing the booklet, so as to be as up to date as practicable. There are also judgements to be finalised about identifying appropriate tools of adequate specification and generalist or specialist suppliers.

## **2. Field study on the impact of temporary deer fencing for coppice restoration.**

Forestry Commission (England) Policy includes encouraging the management of neglected coppice, and in part it aims to achieve this through Woodland Improvement Grants (WIGs). However a decline has been noticed in WIG grant applications and this is partly due to the prohibitive cost of fencing. The costs of construction and dismantling of deer fencing, even reusable low cost fences published in Forestry Commission Practice Note 9 are apparently still preventing its acceptance for use in coppice restoration. It has been suggested that cheaper fencing may reverse this trend. Pen trials with high deer pressure have historically showed electric fences to be inadequate at keeping deer out. Because of this the FC are not currently able to give grant assistance for this type of fence. This fencing may give the required standard of protection cheaply at low densities of deer for the short term protection of small areas.

East of England Conservancy contributed to research to establish whether the partial protection from using electric strand and temporary fencing against low to moderate levels of Roe or Muntjac is sufficient to meet the suggested needs of the FC. It is hoped that the development of less expensive FC approved systems of protection around coppice regeneration coupes will stimulate an increase in WIG applications - this will help the FC to meet its Policy targets.

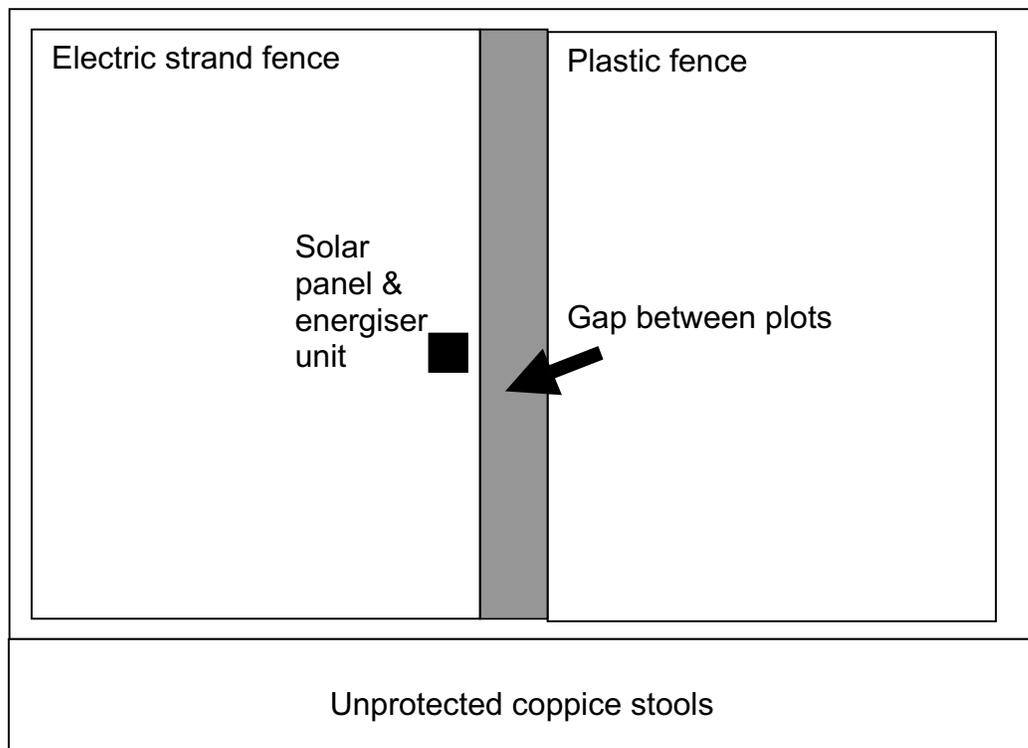
In response to the more favourable light conditions following coppicing, cut hazel stools should produce rapid re-growth that is at its most profuse during the first year. This attracts browsing animals, particularly deer, and it is critical that the growth be

protected throughout this vulnerable period and that protection remains in place for two growing seasons. As further coupes are cut within the wood in succeeding years, the general area becomes more favourable for deer and pressure on new growth is likely to rise.

**Procedure:**

Six sites were identified in East Anglia ready for constructing fences in early spring 2003. Ownership of trials sites in East Anglia Region included public, private, an NGO and a charity. We ensured the site had been coppiced and any planned felling of standards undertaken and material cleared off site. A private fencing company constructed twin fenced areas, each covering approximately half the open area, one electric and the other lightweight plastic enclosing up to 1 Ha. in total.

**Stylised plan of experimental plots.**



The electric fence was constructed according to the specification of Gallagher Ltd., including a solar panel charging unit and a vandal-proof security box. The lightweight fence of high tensile plastic TENSAR was constructed with some wood and some metal corner posts with wood intermediate stakes. Wire tiebacks were used to retain the tension of corner posts. The plastic mesh was clipped onto line wires and lapped and pegged out. A sufficient number of unfenced coppice stools were left to demonstrate deer pressure outside the fences. Five sites were completed in early spring 2003 and the sixth finally completed in early May. The Technical Development Branch of Forest Research undertook a study of the relative costs. The

electric fence was more expensive due the costs of the solar panel and energiser; but cheaper on a metre for metre basis.

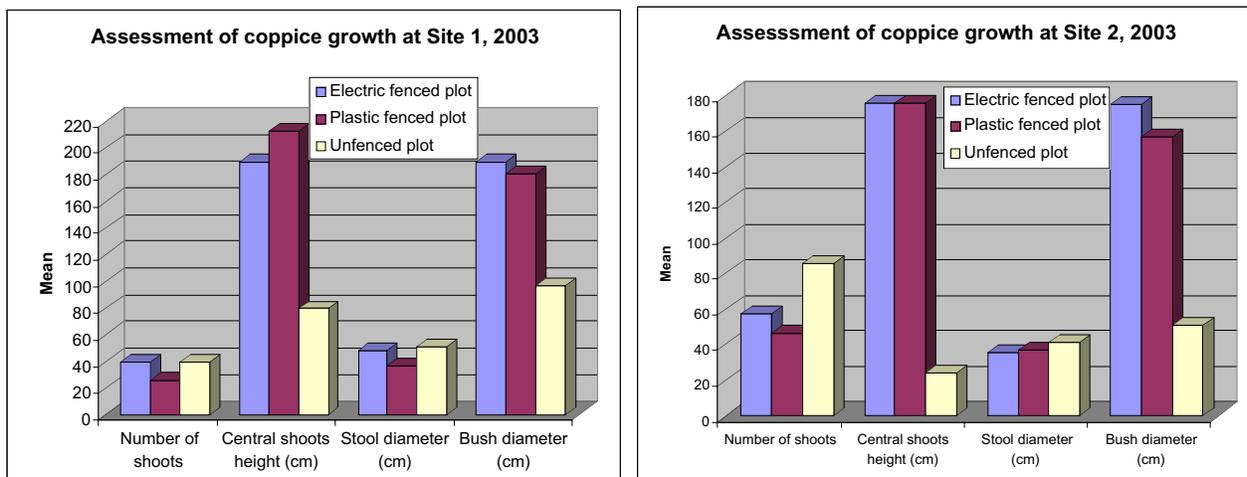
### Site Monitoring.

TSU staff were trained to monitor each fenceline monthly for damage and to check the electric fence efficiency. Records have been made of any problems with the fences and the time taken on site. An index of deer was made twice per year [November + March] by dung transects or trackway counts. Coppice growth is monitored [ number of shoots; height of central shoots; stool base diameter; bush diameter; the % of 20 stools browsed and the degree of severity of browsing] within the two fenced plots and outside the fences twice per year, August [to look at impacts during the growing season] and March [to evaluate any winter browsing before the growing season].

### Results 2003.

Only one major incursion into an electric fence plot was reported; a deer may have pushed down 3 posts and caused a complete shorting of the system but no damage. At 4 sites single wires 'jumped' out of the slots on the posts. It is not possible to confirm whether this was animal induced. One energiser circuit board failed. Vegetation management [manual strimming, not herbicide] was required under the electric fences on all sites, the time inputs required were measured. Some sites had more luxuriant vegetation than others.

At four sites the beneficial effect of both types of fencing was self-evident on coppice regrowth in comparison to the unprotected stools. Two examples are shown below.

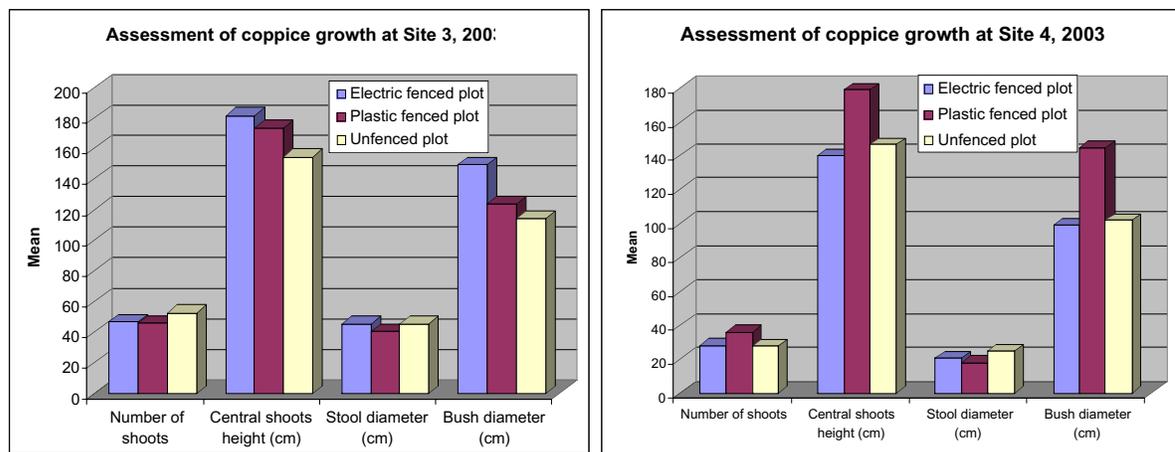


Whilst the mean stool size and mean number of shoots produced were similar, the height and bush diameter were significantly greater in the protected areas. This is an excellent positive result, suggesting that both forms of fence were successful at providing protection against the densities of the deer species present.

On two sites, the evidence was less clear.

[a] At site 3, there is no obvious explanation for the results. It would appear that there may be little browsing pressure outside from deer, but some rabbit evidence was noted in the plastic fence enclosure. Statistical analyses of the plot results will show whether the differences between the plot results are significantly different.

[b] At site 4, the last site to be fenced, the growth of stools inside the electric fence was identical to the unprotected area, suggesting that only the plastic netting was working adequately. However the level of browsing inside and outside the electric plot, measured in autumn, was identical. The explanation may be that since this electrified plot was the last of all the 6 sites in the study to be completed [almost a month late because timber had not been extracted from that plot], it is possible that the delay allowed the early removal of shoots by deer before the electric fence was operational. The early damage may have resulted in the subsequent restricted growth, similar to that outside area.



Analyses will be completed once the post winter monitoring has been completed but the initial results for the growth of the coppice appear excellent.

The sites will be assessed in 2004 as in 2003. During late winter fences will be removed and if possible re-erected in a nearby area that has been coppiced. Technical Development Branch will provide information of the relative costs of removal and reconstruction. This will be an essential part of the study. If both fences perform similarly in the second year the relative costs will assist managers to choose a version that is applicable to their situation. Outputs will include inclusion of advice at field meetings, in popular articles seen by managers of coppice woodland and alerting the administrators of the England Woodland Grant Scheme of any suitable option[s]. We would also propose that further trials – possibly wider than East Anglia, including other specifications of fence and including heavier deer pressure are contemplated for initiating next year (2006/07). This trial also has wider potential implications for short-term/low-cost protection in forests with CCF or natural regeneration and consideration should be given to including such trials in forthcoming CCF/regeneration research areas where deer are a problem and temporary protection is suitable.

### **3. Issues of fencing specifications.**

1. Minor problems concerning the current FC wide fencing materials contract have been addressed with headquarters staff and the relevant manufacturers.
2. There have been several discussions with the two main manufacturers of hexagonal rabbit netting in the UK concerning rabbit netting specifications. Talks are continuing. Consultancy staff involved with Highways Agency and Defra have been brought in to be included in the technical aspects. Manufacturing decisions of course remain firmly for the manufacturers.
3. Discussions have continued with devising a muntjac fence. A trial length of mesh but containing thicker material than perhaps necessary has been manufactured and erected in the muntjac enclosure at Alice Holt. No animals have become trapped or escaped and the net is undamaged. Finer gauge material from the same company was produced for inspection and a meeting arranged for Defra and Highways Agency consultants to comment.
4. New regulations based on an EU - wide decision on the pressure preservative treatment of fencing is due to come into force in June 2003. This bans the use of CCA for sawn materials including domestic building materials, sawn fenceposts and for round posts in many situations. Forestry has not been included in the list of exempted activities allowed to continue with the current CCA treatment. Many processors apparently are or have already moved to the new materials. CCB [boron] and other materials will be substituted in FC fencing, though they are more expensive. Suitable information, provided by FC Scotland, has been included in the draft Forest Fencing booklet.

### **4. Deer fencing in Capercaillie areas**

This work is divided into work directly undertaken by FR, where fencing issues and adaptations concerning a BAP species are inter-related, and related work wholly supported by the LIFE Project.

#### **A. Monitoring the integrity of construction of marked fences.**

##### ***Monitoring existing fences marked by FR.***

This comprised the monitoring of existing fences marked in a variety of ways at three sites located in Highland, Grampian and Perth Conservancies, for technical or mechanical failures. The first two involve visiting replicated fence marking systems including chestnut paling of differing types, sawn wooden droppers, bamboo canes (in an exposed area) and fixings of different types. Three other sites involve monitoring demonstration plots of the large range of materials and fixing systems that were used under the original Scottish Executive Challenge Fund. No serious problems in attachment or materials have yet been encountered or reported on any sites, though slippage of individual pieces of timber and bamboo and occasional breaks of battens at knots have been noted. The visit in early March 2004 as a post-winter check again

found no major problems. One length of the lower twisted wire assembly [c. 5 metres] of poorly manufactured chestnut paling had sloughed – this mirrored some material observed near Loch Lomond in 2003. Fencing at two sites marked in 2003 were not visited in early 2004 because of heavy snowfall at the time of the visit.

### ***Developing specifications for new fences in areas with woodland grouse.***

New fences are still needed for [re]afforestation in some areas close to capercaillie habitat areas. The objective is to incorporate the features to safeguard the protected capercaillie ('friendliness') into the initial build, as an alternative to erecting 1.8 metre deer net fencing and then marking it. Thus the fence must be sufficiently strong to be, and remain, deer proof for approximately 10 -15 years. Visits to sites willing in principle to trial options and several discussions has led to an iterative process of developing specifications. At a site in Grampian Conservancy, lengths of experimental specifications were erected early in spring 2002. While that fence has not been breached by deer and the estate is content, discussions with other foresters has indicated that they would be happier with a reduced distance centre-to-centre for the woodwork of 25cm for red deer, rather than the 30cm centres used when marking existing fences. There was also a consensus that the bottom section should continue to be stock mesh – this could always also be marked in particularly important sections [e.g. likely woodland grouse flight paths]. However some estates wish to pursue erecting 1.8m. paling fencing, which is expensive and heavy to handle. Trials lengths of the novel design using 31mm square section treated softwood were constructed in Scotland using the fence making machine run by the Laggan Trust [though delivery was several months late]. A 300m. length has been substituted in an existing deer fenceline that regularly has snowfall. Inspection with 1.2 metres of snow indicated that the design was stable, though one stainless steel clip had been lost. The second area to be fenced was on an adjoining estate. Unfortunately, this had to be fenced and planted before the test fence material was ready for delivery and so the site could not be used. Another set of small sites had been agreed at a site in Highland Conservancy as a substitute, but has been delayed within a larger grant application and also as a consequence of other considerations. Short lengths will also be placed at the 3 demonstration sites as circumstances allow. The changes in sawn timber treatments allowed under EU regulations will impact on the form of materials used in future.

### **B. LIFE Project: Monitoring of fence strikes.**

A field protocol has been developed for monitoring fence strikes, based on previous work by RSPB and Game Conservancy Trust. A 14km. fence line at in Highland Conservancy has been visited monthly from February to September by TSU staff. Evidence of red grouse, black grouse and capercaillie striking the fence during the year has been recorded [ and feathers collected for DNA analysis]. In autumn the fence was marked [using different methods appropriate to the wind exposure of the location on the fence] to increase the visibility to birds. A 4Km. fence in Grampian has also been monitored and is now marked, some with experimental material. The fences will be walked in the same standard manner during 2004 and any problems in the fencing identified and reported.

### **C. Advice and Technology transfer.**

Advice has been given to the Capercaillie Project Officer, the Woodland Grouse officer in Dumfries and private owners. A site visit was also made to Loch Lomond area, where Forest Enterprise had erected several forms of fencing under the Scottish Executive Challenge fund. A problem of tearing away of the plastic orange mesh was identified as being because it had been fixed incorrectly [firstly across the thin strands rather than diagonally across the stronger intersections and secondly being fixed behind the metalwork with respect to the prevailing wind, not in front of it]. Contacts have been established with the FE Aberfoyle office to provide for future monitoring and to use the correct construction in future.

There has also been a request from a Scottish estate for general advice on preparing a Visual Impact Assessment for a new fence line in a Capercaillie stronghold. The draft Best Practice for Forest Fencing guide refers to siting a fence to reduce impacts in the landscape, but without detailed guidelines. There are certainly important issues of specification, structure and siting for those new deer fences proposed where woodland grouse are involved - and some of this falls within the FR Capercaillie remit (together with inputs from the Capercaillie Project Officer who is part funded by FR). There have already been some difficulties deciding the siting and form of fencing in the Loch Lomond area where Capercaillie may visit. With limited assistance from the VisuLands Viewshed expertise in house, this may form a topic for future advisory material, discussions with landowners and FE managers.

A visit under the EU LIFE project was made to Sweden and Norway to look at capercaillie issues, and included a discussion on planning moose management to achieve the desired habitat effect. Examinations of roadside fencing constructed against deer, including moose, were made and commented back to the UK manufacturer of the netting.

A presentation and written abstract on lowering the bird strike hazard of deer fences was presented at the International Wildlife Management Congress in New Zealand. This resulted in interest from Scandinavia, where game losses in some areas are substantial.

## **5. Tree protection: Advice and Technology transfer.**

Requests for advice have continued to take significant resources across the tree protection spectrum, involving deer, squirrels, rabbits and voles. This will be reported on as another schedule output in spring 2004.

Meetings with the public were organised and presentations given at the Royal Show, to the Welsh Deer Initiative, at a meeting of foresters in Norfolk [coppice experiment] and information passed to TDB for an event in Wales.

In addition, advice has been given to the Environment Agency on fencing against otters in inland fisheries and lakes where this BAP species is starting to cause considerable levels of damage by selectively killing the largest fish present. An output is scheduled during 2004.

## **6. Defra review of Non-native species policy.**

This was published in spring 2003 and comments invited. The Government response was published in December 2003 and the consultation period finished in March 2004. FC and FR were involved in the original subcommittees and may be involved in final discussions.

## **7. Defra review of traps and snares.**

Material was submitted to the Biodiversity Officer, FC England, to collate. Several of the points were incorporated into the FC response. The review could have implications for the trapping of e.g. squirrels as an alternative to poisoning. Further information was gathered later in the year during a visit to New Zealand, where the traditional British spring traps are being banned in favour of new traps constructed to more rigorous and humane specifications [ where the skull was crushed instead of the more typical body holding mechanism]. A meeting took place with the Secretary of European committee on humane traps. It was suggested to FC that we alert Defra to the changing international situation and that FR commence looking at the field efficacy of these new traps for rabbits and squirrels, whilst CSL look at the lab testing protocol required under the Spring Trap Approval Order.

## **8. Defra review of Boar.**

A request to contribute to a Defra led discussion prior to drafting a review of Defra policy on boar on boar was received. A rapid review of the issues to be raised was made and used to assist generation of an initial draft Risk Assessment document, following the general guidelines produced during the Defra 'review of non native species' in 2003, adapted for vertebrates. This was given to the Defra representative at the meeting – which included FC and FE representatives. The draft Defra review is awaited.

## **9. New issues in tree protection.**

This is the subject of a separate schedule, due to be completed in March. Drafts have been circulated within Woodland Ecology Branch for comment by those involved in mammalian pest issues and their management; both for tree protection and, as a result of policy shifts, for FC biodiversity aspirations likely to be affected by pests.

R.C Trout.  
March 2004.