

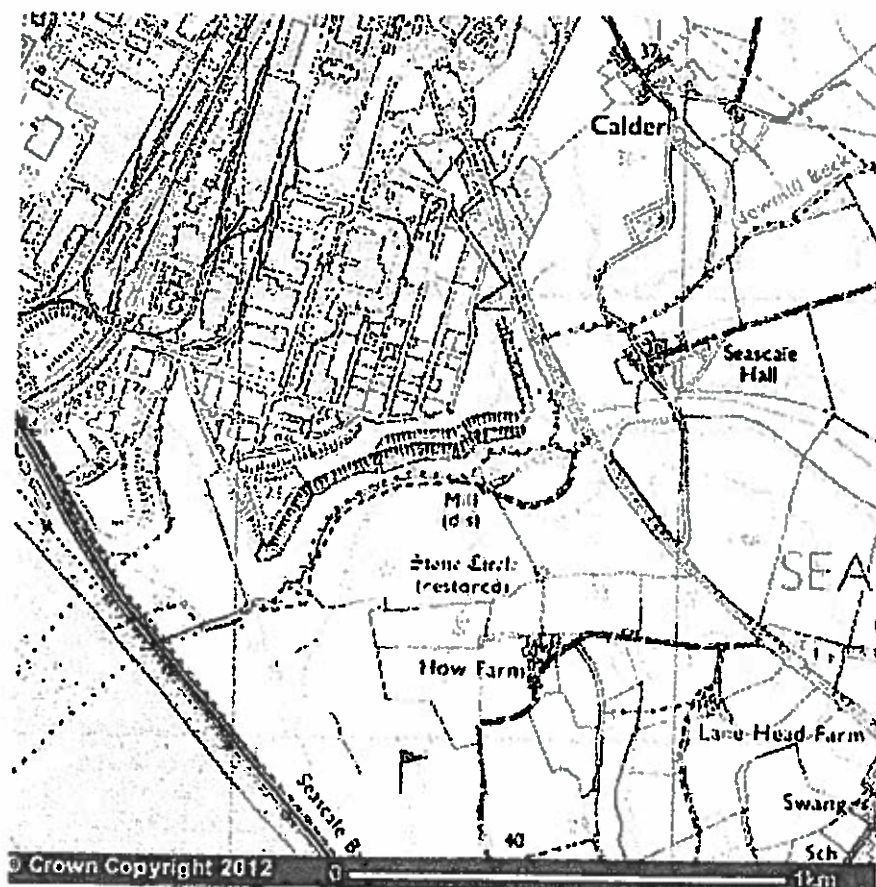
Sellafield – Roe deer in the Caldergate Field Pond Sector

Preliminary Report September 2012

1] Background

The power generation and nuclear re-processing facility at Sellafield, Seascale, Cumbria is in the process of enlarging the securely fenced boundary of the site by including within the secure perimeter the area of amenity planting and embankment on the south east corner of the site known as the Caldergate Field Pond Sector.

The area in question is bounded by the Newmill Beck to the south, the Caldergate access road to the east, the boundary with the golf course to the west and the present industrial facility to the north. It is roughly an L-shaped parcel of land with the larger limb extending to some 0.8km in a north-east to south-west direction and the shorter limb to some 0.4km in a north to south direction. At the widest point the piece of land is no more than 0.3km wide. In total the enclosed area appears to represent approximately 15ha and is shown at the centre of the map below.



The grid reference at the centre of the area in question is

The erection of the new security fences appears to be enclosing several roe deer, which have been resident on the site for some time. When the fence is completed there will be a double fenced boundary with a sterile zone within, a hard access road within the inner fence and a second hard roadway for surveillance purposes on the elevated ground. Deer have been regularly seen in this area, although sightings have reduced since intensive landscaping, road construction and fencing have been undertaken.

Through the agency of the Deer Initiative the authors of this report were engaged to visit the site and to assess the possible persistence of the roe deer on the site and the options for removal of the deer.

2) Site Visit

The site was visited on the morning of Friday September 21st at 9am. Present during the visit were:

Ecologist
 Ecologist
 Ecologist
 Site Manager
Deer Initiative
 Veterinary Consultant

The site was walked and inspected to assess evidence of the presence of deer, the suitability of the habitat to support deer and the possible methods by which the deer might be removed. This inspection revealed that the site can be divided into several distinct areas, in terms of deer habitat:

i) The densely wooded bank running parallel to the Calder Road in the north of the site consisted of an amenity planting of mixed deciduous and evergreen trees with a good understorey of bramble and other dicotyledonous plants. The woodland occupies the top and northern facing bank of a bund that was probably spoil from the original development of the greater facility. There were numerous bryophytes and some monocotyledons thriving on the woodland floor. There was no evidence of deer presence or impact. The western edge of this woodland strip is bounded by a stock fence.

ii) In the corner of the two arms of the L-shaped piece of land is an elevated area of open grassland and sparse shrubs, with abundant umbellifers and sporadic sea buckthorn.

iii) The longer arm of the L-shaped piece of ground is densely covered on the southeastern aspect by immature deciduous scrub, with a very thick understorey of bramble. This scrub woodland is impenetrable. The woodland extends down to the Newmill beck, but has been divided by a new gravel/stone road that runs parallel to the boundary fence in an elevated position. There are several newly felled rides running perpendicular to the road giving open



aspects towards the fence. There will be a new road below this scrub woodland, running within the inner security fence.

iv] The elevated centre of the longer arm of the L-shaped area is a habitat of open grassland scrub, descending on the northern aspect to a steep embankment facing the larger industrial area. This open grassy scrubland has numerous small individual ash, sycamore, willow and oak trees and bushes scattered across a typical northern acid grass sward. There are many grass covered anthills.

v] At the southwest extremity of the site there is a raised plateau of grassland with shrubs bounded by dense goat willow thicket and leading to an embankment facing the golf course and the sea

3] Evidence of deer

No deer were seen during the visit, but there was ample evidence of their presence. The thick impenetrable immature woodland on the south east facing embankment [iii] had a number of roe deer racks and tracks through the dense thicket. There was some evidence of browsing of stools alongside the new gravel road. The more open grassland and scattered scrub on the elevated top of the longer arm of the L-shaped site [iv] showed considerable impact from the deer. Many of the ash, sycamore and oak trees were heavily browsed into typical tight pyramids; there was evidence of fraying of saplings and signs of a roe ring were seen around a willow bush. There were obvious deer racks, both through the grassland and into the dense undergrowth. This pattern of habitat impact was repeated on the north facing embankment and on the open plateau of grassland at the southwestern end of the elevated ground [v], where racks and tunnels into the willow scrub were obvious.


There was no evidence of deer activity in the north east facing strip of woodland running parallel to the Calder Road [i], but on the open area at the junction of the two arms of the L-shape [ii] there was evidence of browsing on sea buckthorn, which is normally an unpalatable plant.

4] Conclusions

4.1.] Likely presence of deer

Roe deer are remarkably tolerant of disturbance, provided there is sufficient food and cover for them to eat and to be able to couch down in seclusion. There is no reason to suppose that the fact that fewer deer are being seen is an indication that they have migrated out of the site. It is far more likely that the increased activity of machinery and presence of workmen and vehicles has simply made the deer more nocturnal. The woodland is extremely dense and provides excellent cover and browse for roe deer. The impact upon the saplings and shrubs in the open scrubland indicates that a number of deer have been present for several seasons.

Roe deer density and territory size is mainly a factor of the availability of food in the summer; the habitat in this small site at Seilafield is excellent, both in terms of productivity and shelter. Whilst the territory [home range] of an adult buck may vary from 4 -10 ha, the density of all the roe deer in such habitats is likely to be in the region of one deer per 1.5 to 2 hectares, since



does and juveniles account for a significant proportion of the population. It is therefore likely that the L-shaped site at Sellafield has supported between 6 and 10 deer. Some of these may have migrated out, but there will certainly be a number remaining.

4.2] Feasibility of live capture and removal

Removal of the roe deer cannot begin until the security fence is completed, as deer will inevitably move back into the site if the fence is incomplete. Once the fence is secure and continuous deer removal can be considered.

Inspection of the site reveals that there is no possibility of live capture and removal.

The undergrowth is far too dense to permit organised beating into long nets, which is the optimum way of catching roe deer. Beaters would simply be unable to penetrate the thorn and dense bramble thickets in a coordinated line, maintaining close formation. This would inevitably mean that deer would remain couched in the thickets and allow the beaters to pass, or would be roused and would double back through the disorganised beating line.

The site is also unsuitable for darting the deer; there is insufficient open landscape and virtually no places where the deer could be darted far enough away from cover to be certain they would succumb to the anaesthetic before returning to cover. Darted deer will run many metres before collapsing and the habitat would provide dense cover within a very short distance from any darting site. The prospect of having to search for an anaesthetised, unconscious deer within the thick bramble and thorn renders this an unsatisfactory option.

It is therefore clear that deer will have to be removed by humane culling by means of rifles.

5] Proposals


The size of the area and the nature of the habitat mean that there will be no short or medium term welfare problems if deer are enclosed within the fence. The enclosed area can support 10-15 roe deer easily, especially as there are clearly areas where deer have not recently been resident. The population, would however, soon increase to a size that generated welfare issues.

Each doe usually has two kids in May or June. Given a nominal population of 8 adult deer with a 1:1 male female ratio in summer 1, the 4 nominal does would produce a further 7-8 kids in summer 2, giving a second summer population of 15-16. If half of these kids were themselves females and bred as 2 year-olds, by the end of summer 4 there could theoretically be as many as 40 deer in the population, although some natural die-off and infertility would limit this increase.

The management at Sellafield must therefore consider how to manage the deer within this area. There are two possible ways in which this management can be achieved.

5.1] A long term deer management plan

The population could be allowed to remain within the fenced area and regular culling of the deer could be undertaken in season. This would permit an appropriate level of large herbivore impact



upon the habitat, which would benefit from deer opening up the understorey and grazing the open grassland. This in turn is a benefit to other vertebrates and invertebrates that thrive in open woodland pastures. Without such grazing the area will in time become dominated by the dense thicket, which may or may not pose security threat to the larger site and will certainly reduce the biodiversity of the habitat.

An added advantage of the maintenance of some deer as long-term residents of the area is that deer are excellent bio-indicators and sentinels of environmental contamination. Because of their extremely rapid and efficient deposition of minerals in bone, they are recognised as important sources of data in respect of heavy metal and radionuclide accumulation. Given the nature of the industrial work at Sellafield, the regular sampling of deer bone and liver tissue might be an attractive prospect for those responsible for environmental monitoring at the site.

A deer manager could be engaged to visit the site regularly and to formulate a cull plan appropriate to the area and habitat. The Deer Initiative would be pleased to assist with such arrangements.

5.2] Complete removal of the deer in the short term

If all the enclosed deer were removed with the foreseeable future and subject to seasonal restrictions upon culling, there would be no need for on-going deer management. Such removal would mean an intensive cull using several rifles sited in temporary high seats. Some scrub clearance would aid the cull and provide appropriate shooting arcs and corridors. Again, the Deer Initiative would be pleased to assist in arranging this.

5.3] Necessary preliminary work

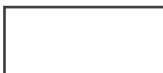
Whether the deer are managed long-term, or removed completely, it will be essential to gain an estimation of the population enclosed within the fence. This is best achieved by means of surveying with thermal imaging equipment at night. Because of the density of the thicket, woodland and scrub, such a survey would not be possible until the deciduous trees and shrubs have shed their leaves. Experience also shows that the best assessments of deer numbers are made in mid to late winter when the deer are forced out into the open to seek food. We therefore propose that such a survey be scheduled for January / February 2013. There will be no welfare issues in respect of the deer before that time.

6] Summary

- The L shaped site at the Caldergate Field Pond Sector at Sellafield shows abundant evidence of the continuing presence of roe deer.
- There will be no short-term compromise of the welfare of the deer by enclosing them within the fence.
- Live capture, removal and release of the deer is not possible at this site.
- Complete removal of the deer, or long term management of the deer will necessitate humane culling by means of shooting.



- A thermal imaging survey of deer numbers in January and/or February 2013 is recommended. Two visits would be necessary to achieve a reliable assessment of deer numbers.



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P.P.



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