

ROYAL ORDNANCE, BISHOPTON



REMEDIATION AND RECLAMATION EARTHWORKS

ENVIRONMENTAL STATEMENT

APPENDIX 14.10 UPDATE ECOLOGICAL SURVEY 2006

October 2006

**Bishopton Ordnance Factory
Protected Species Update**

1. Introduction

A series of surveys were carried out in spring and summer 2006 to update records of protected species known to use the Bishopton Royal Ordnance Factory. The extent of the survey work and methodologies is outlined in Table 1 below.

Survey Work	Methodology
<p>Mammal survey</p> <p>Badger <i>Meles meles</i></p> <p>Otter <i>Lutra lutra</i></p> <p>Water Vole <i>Arvicola terrestris</i></p>	<p>Previously recorded setts were all visited to ascertain if still in use. Evidence of Badgers at each site was noted: pathways made by Badgers in and out of the grassland, wood and scrub, droppings, footprints and digging and bedding at setts.</p> <p>The line of the new proposed fence around the Environmental Testing Facility was also surveyed and Badger paths marked on the map. This will enable decisions to be made about siting Badger tunnels in the fence.</p> <p>All signs of Otter were recorded: tracks, spraints and couches and also possible Otter holts. Particular attention was paid to the islands and large boulders in mid-stream. A concentrated search was carried out for areas suitable for a holt especially around the three fire ponds where Otter activity had appeared most concentrated.</p> <p>During the otter survey signs of Water Vole presence including latrines, feeding stations, burrows, runways in vegetation and footprints were looked for.</p>
<p>Amphibians</p> <p>Great Crested Newt <i>Triturus cristatus</i></p>	<p>Ponds thought to be suitable for Great Crested Newts near the ETF were visited at night and the torch counting method used. Hunts were also made during daylight hours under possible refuge sites around the ponds.</p>
<p>Reptiles</p> <p>Possible reptiles were considered to be Lizard , Adder <i>Vipera berus</i> and Slow Worms <i>Anguis fragilis</i></p>	<p>Favoured areas were searched such as under piles of logs and stones, in gullies, on well drained south-facing slopes, in grassland, woodland edges, hedgerow bases, sun traps in small open areas and under industrial debris such as corrugated iron sheets. Artificial refuges (sheets of corrugated iron) were put out and searched.</p>
<p>Bird Survey</p> <p>Barn Owl <i>Tyto alba</i></p> <p>Kingfisher <i>Alcedo atthis</i></p> <p>Peregrine <i>Falco peregrinus</i></p> <p>Crossbills <i>Loxia curvirostra</i></p>	<p>An evening visit was made to look for Barn Owls and a search made of a selection of buildings to check for pellets.</p> <p>During the Otter survey, the banks of all watercourses were checked for possible Kingfisher nests.</p> <p>During all visits for other survey work, all protected bird species records were noted. A visit was made to the adjacent Reilly Quarry to investigate this as a possible nest site.</p> <p>A few of the conifer woodlands were visited and Crossbill records noted</p>

2. Results

2.1 Otter

Otter signs were again found to be common around the ponds and on the watercourses on the much of the site. Findings are detailed below in Table 2 and shown on the Otter map.

Table 2. Evidence of Otters

Site	Otter evidence	Description
Dargavel pond A NS 43601 70080 NS 43490 70130 NS 43497 70111 NS 43421 70120 NS 43401 70100 NS 43666 70037 NS 43655 70121 NS 43645 70129	spraints path spraints spraints Footprints, spraints spraints Spraints Path	Track leading from Pond C to Pond A. On roots of old willow On wall of sluice On branches of willow Fresh spraints on old willow Track leading between Pond A and Pond C
Dargavel pond B NS 43446 70129 NS 43414 70167 NS 43414 70167 NS 43406 70259 NS 43563 70288	Spraint and footprints Lying up area Spraint and footprints Spraints, lying up area Spraints, hole	On sluice Hole in hollow of old willow, lots of spraints, smell of Otter. Lots of spraints, old and fresh, a popular lying up area on branches of old willow Lots of spraints, hole under roots of willow, looked like a possibility for a holt
NS 43523 70276 NS 43618 70176 NS 43478 70149	spraints path spraints	On flat branches of willow leading into water Track joining Pond B and Pond C
Dargavel pond C NS 43616 70117 NS 43562 70140 NS 43516 70143 NS 43522 70172 NS 43522 70174 NS 43537 70136	Spraint, couch footprints Lots of fresh spraints path Several spraints Holt	Under large old willow Under willow leading under an old wooden pallet Track leading from Pond C to pond B. Very mature willow with old branches in water. The entrance hole to the holt is close to the water's edge and goes deep under the willow into the bank opening into a chamber. There are a lot of spraints nearby, old and new and food remains. Tracks lead from the holt into the water. Hairs were found

NS 43546 70138	Spraint, footprints	within the holt. Spraint on old log, prints leading into pond
NS 43398 70116	spraints	Under bridge
NS 41122 70435	spraints	Where Dargavel enters site
NS 41253 70490	spraints	Under bridge where Dargavel enters the factory site
NS 44102 67887	Spraints and footprints	Under bridge on Dargavel
NS 43934 68098	spraints	
NS 43867 68110	spraints	
NS 45256 67545	spraints	Under bridge where Dargavel leaves site
NS 43776 70199	spraints	Beside bridge, Craigton burn
NS 41464 70266	Spraints and footprints	Under bridge and on ledge
NS 43257 701 04	Spraints, footprints	Under bridge
NS 42888 70419	spraints	Under bridge
NS43006 70202	Spraints, couch	Under bridge

2.1.1 The most concentrated areas of use were found to be the three Dargavel fire ponds, Ponds A, B and C. These have a good food supply as the *Clyde River Foundation* found them to contain high numbers of fish, and there are also high numbers of frogs and toads and also some waterfowl. The tree lined banks and large amounts of dead wood and debris make this an ideal location for Otters. No holt was found initially however as this seemed such a good site a more concentrated search was carried out. Waders were worn to allow access to the waters edge as it is very difficult to reach certain areas of the pond due to thick brambles, thick tree branches and a sharply sloping edge to the pond. During this search a holt was discovered. The large mature willows are of great significance to the Otters at this site. One provides the holt and spraints were found on every mature willow around the ponds. The branches lean into the water providing safe places to hide, quick easy access into the water and many resting up places.

2.1.2 The Dargavel and the Craigton burns continue to show signs of Otters along their entire length. Spraints are found under many of the bridges and there are a number of slides and couches in the vegetation.

2.2 Badger

All the previously recorded setts were still in use. In addition two new outlier setts were added to the list. These are described in Table 3 and shown on the Badger map.

Details of evidence	Grid Ref	Sett category	Entrances	Status	Notes
West Glenshinnoch Sett	NS 41737 70625	Likely Main	6	Active	Hair, latrine, many paths
Sett	NS 41813 70588	Sub	2	Active	Hair.
Sett	NS 419 706	outlier	2	Active	Hair, latrine
Sett	NS 421 706	outlier	1	Active	Hair

Newton Road sett	NS427 712	Likely Main	18 holes	Active	Hair, latrine, banging ?
Sett	NS 426 710	sub	6 holes	Active	Hair, sharing with rabbits
Sett	NS 433 712	outlier	2 holes	Active	Paths lead on and off site may belong to Newton road sett or outsiders
Craigton road sett	NS 423 705	Main ?	4 holes	Active	Hair, latrine paths
Northbrae station sett	NS 423 695	Outlier ?	2 Holes	Active	Hair, latrine
Barochan moss sett	NS 424 684	Main	12 holes	Active	Hair, Latrine, paths into factory and pasture
Sett	NS 425 686	sub	3 holes	Active	
Sett	NS 424 684	sub	4 holes	Active	Hair, latrine
Sett	NS 424 683	Disused sett	5 holes	Inactive	
Sett	NS 424 682	outlier	1 hole	Active	Hair
Sett	NS 424 687	outlier	1 hole	Active	Hair
Dargavel sett	NS 435 692	Main	13 holes	Active	Hair, latrine, active paths
Picrite sett	NS 439 698	Main	11 holes	Active	Hair, latrine, paths
Grey clay sett	NS 449 681	Main	9 holes	Active	Possible disturbance sticks placed over entrance.
Raised road sett	NS 447 677	Main	48 holes	Active	Hair, latrine, extensive collapse due to substrate.
Building sett	NS 437 678	Main	13 holes	Active	Badgers tail found.
Path	NS 43260 70810				Path leading off-site to birch road, possible sett offsite?

Path	NS 43222 70889				Linked to NS 43185 70853
Feeding area	NS 43185 70853				
Trails, feeding signs	Building 25/104				Extensive trails
Sett	NS 43251 71117	Outlier	1 or 2	Active	Path follows fence Building 37/024
Path	At building 24/141				
Sett	NS 42631 71153	Main	18 holes	Active	Hair found, latrine. Extensive digging, possible rabbit warren taken over by Badgers
Sett	NS 42678 71000	Main/sub?	6 holes	Active	Sharing with rabbit warren in old building digging into roof
Possible sett	NS 42678 71000	Possible sub sett	2 holes	Active	One Badger dropping and lots of digging but may be just digging up rabbits.
Sett	NS 43328 69226		2 holes	Active	Under yew tree
Latrine	NS 43304 69211				
Sett	NS 43483 69275	Partial use			Possibly used by rabbits
Sett	NS 34381 69255		13 holes	Active	Connected to 43483 69275 by tracks. Latrine southwest of sett
Sett	NS 43468 69163	Partial use	5 holes	Active	
Sett	NS 43522 69221		4 holes	Active	
Latrine	NS 43101 69797				Large latrine

Latrine	NS 43997 68871				Large latrine under Larch tree
Sett	NS 42252 69425			Active	Hairs, bedding and latrine also found
Sett	NS 42165 69432			Active	Sharing with rabbits
Hole in perimeter fence and Badger path	NS 41477 69718				
Path	NS 41231 69925				Very well used path at side of spruce plantation.
Dropping, Badger hairs	NS 41896 70178				Lots of trails, smell strongly of Badger, suspect sett is nearby

2.2.1 Badger paths were common on the route of the proposed ETF fence especially near to setts. These paths are shown on the Badger paths/ETF fence line map. Badger gates should be placed at many of the paths at regular intervals.

2.3 Water Vole

A few signs of Water Vole were recorded mainly in similar areas to before and this species appears to still be present in low numbers. These are described in Table 3. below and shown on the Water Vole map.

Table 4. Water Vole Evidence

Location	Evidence
NS 42971 70274	Burrows, runs, feeding remains and latrine
NS 43257 70155	Burrows, runs, latrine
NS43823 70341	Burrows, runs and latrines
NS 43401 69268	Burrows, runs, latrine

2.4 Great Crested Newt

Two ponds near to the ETF appeared the most suitable for this species. The pond ranged from approximately 120 cm deep to much of it drying up, there were suitable refuge areas around, water plants and no fish recorded. However no Great Crested Newts were recorded and only Palmate Newts *Triturus helveticus* were found.

2.5 Reptiles

Despite what would appear to be very suitable habitat, no reptiles have been located.

2.6 Barn Owl

In previous years Barn Owl has been shown to be breeding on site, perhaps up to three breeding pairs. No nest site was found however only a selection of the buildings were searched. Barn Owl pellets were found in the following buildings shown in Table 5. Pellets are also shown on the Barn Owl pellet location map. Birds seem to vary their roost site and a mixture of fresh and old pellets have been found in the various buildings. Anecdotal records from site security guards show that birds are most frequently seen to the north west of the site near to the Reilly Road.

Table 5.

Building	Grid Reference
28/206A	NS435 682
28/107A	NS 424 700
29/104	NS422 703
30/506	NS428 707
22/115	NS427 709
22/109	NS426 709
28/222	NS441 681
37/025	NS429 712
80/002	NS418 698
32/208	NS425 689

2.7 Kingfisher

Kingfisher, also a Schedule I species has been recorded in the past, however it is in the opinion of Starling Learning that it is more likely to nest on the River Gryfe. There are records of a nest site near where the Dargavel joins the Gryfe outside the site and part of the bird's breeding territory may be inside the site, however no birds or nests were recorded during the survey.

2.8 Peregrine

Peregrine has not been recorded nesting on site but there is a possibility due to the suitability of some of the buildings as nest sites. These buildings also have the possibility of acting as a roost site. Although the adjacent Reilly Quarry is noisy during the day, at night it has the possibility of acting as a roost site. One bird was recorded hunting over the site in July 2006, and it is believed that the main use of the site is probably as a hunting ground.

2.9 Crossbill

Birds were recorded frequently in several of the conifer plantations.

3. Discussion

3.1 The most important site for Otters within the factory appear to be the three Dargavel ponds. The holt is located on the banks of Pond C and they are all vital to the Otters in terms of food and shelter. The thick vegetation should be retained on the banks and the dead trees retained in the water and 'tidying' of burn edges and ponds would be detrimental to Otters. It is recommended that access around the ponds should be limited as much as possible. The existing pathways through the ponds could be severed and turned into islands to deter fishermen and dog walkers. Recreation on the ponds should be discouraged or be of low impact e.g. (bird hide). The watercourses remain important feeding areas for them. Large-scale demolition of the site may cause the Otters to abandon the site in the short term. Areas of bankside vegetation such as the Bramble,

Hawthorn, Blackthorn and tall herb meadow are important in giving Otters confidence to move freely around the site.

3.2 The site remains an important stronghold for Badgers and from the increase in setts and anecdotal evidence from security guards it appears that they have increased their range and numbers in recent years.

3.3 Water Voles appear to be present in low numbers. There is scope for enhancing the site for this species.

3.4 Concern for Kingfishers is low and even if the birds use the site as part of their breeding territory it will be at the south end of the site well away from the proposed development area. It is difficult to ascertain the exact use of the site by Peregrine. They do not appear to be nesting but may be roosting but this would be difficult to prove. Birds are certainly using the site for feeding. The number of Barn Owls is also difficult to ascertain. It seems inevitable that the birds will breed on site as the habitat is very suitable and use of the buildings as roost sites is widespread. All buildings should be checked for possible roosts before demolition. It is recommended that some conifer plantation habitat is maintained for this species.