

Small Mammals Survey

Phoenix Park 2007

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2 Methods

The survey was carried out in July and August 2007.

1 Survey questionnaire administered to Park Staff, a sample of regular visitors and residents seeking information on 15 named taxa (location, time and numbers), on bat roosts, on the respondent and any other relevant comments. The information was collected by informal interview.

2 Field survey for tracks, trails signs and sightings

All wooded areas and areas covered with scrub vegetation were walked by the 7strong survey field team and searched systematically for the presence of each species of interest to the survey.

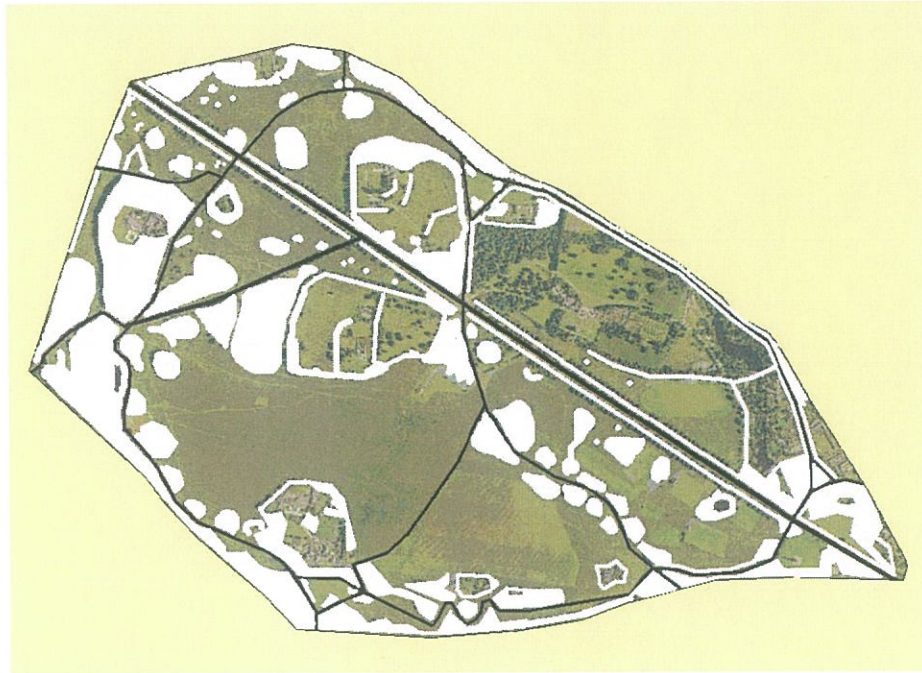


Figure 1: Aerial photograph of the Phoenix Park indicating the areas in which a ground survey has been conducted (highlighted in white)

3 Live-trapping:

Eleven sites within the Park were selected based on habitat type and security, for trapping, under licence, with baited longworth small mammal traps and plastic live-catch mouse traps. In total 50 longworth and 10 plastic traps were used. Traps were set for periods of 3 days and two nights in a session and were checked twice a day. Trap sites are shown in Figure 2.

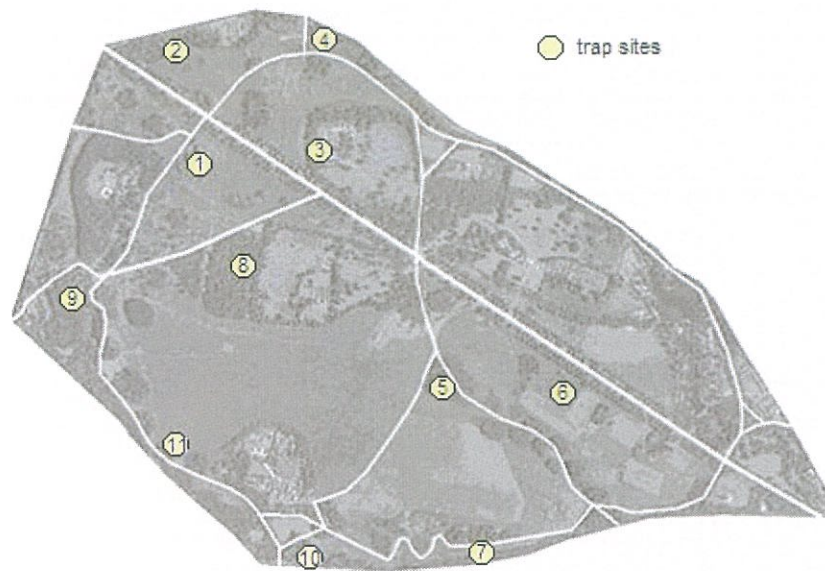


Figure 2: location of small mammal trapping sites.

Each of the sites will be trapped with 5 mink cage traps baited with raw meat. This trapping effort is targeted at hedgehogs, rats, stoats and mink.

4 Baitmarking of Badger territories

Main setts were fed for 4 consecutive days with peanut and chocolate cakes laced with small coloured plastic pellets. Latrines, identified during the field survey are being monitored to determine the range of each clan.

5 Survey of Bats

Forty-three (43) sites were selected and surveyed using a Batbox bat detector for 10 minutes on two separate occasions (see figure 3 for site locations). Surveys were conducted on 6 nights between 10pm and 2 am. Ultrasonic calls were recorded on an

MP3 player for further analysis. This has yet to be completed and will provide a species list and a measure of bat activity at each location.



Figure 3: Locations of bat survey sites.

6. Connectivity - wildlife tunnels (Yet to be completed)

During the ground survey, several tunnels through the external wall of the park and around the outskirts of Áras an Uachtaráin were recorded. Hair tubes will be set to collect hair samples at each of these tunnels to reveal which species are using them.

3 Results:

3.1 Residents and Public sightings of wildlife in the Phoenix Park:

To date, 78 surveys of wildlife sightings have been analysed. In total, sightings of 17 species were reported. The most frequently sighted species included squirrels (95% of respondents), rabbits (54% of respondents), foxes (50% of respondents), rats (50% of respondents), frogs (42% of respondents) and hedgehogs (29% of respondents) (see figure 3). Rarely sighted species included smooth newt (1% of respondents, >10 years ago), otter (1% of respondents, dead body), hare (1% of respondents, 1 recent sightings), Irish stoat (3% of respondents, sightings around OSI grounds 1 – 3 years

ago) and American mink (5% of respondents, recent sightings in Furry glen and crossing road near OSI). A list of species reported in the surveys analysed so far is given in table 2 below. Details of sighting locations, sighting frequency and occurrence (recent/historical) will be given in the relevant section for each species in the final report.

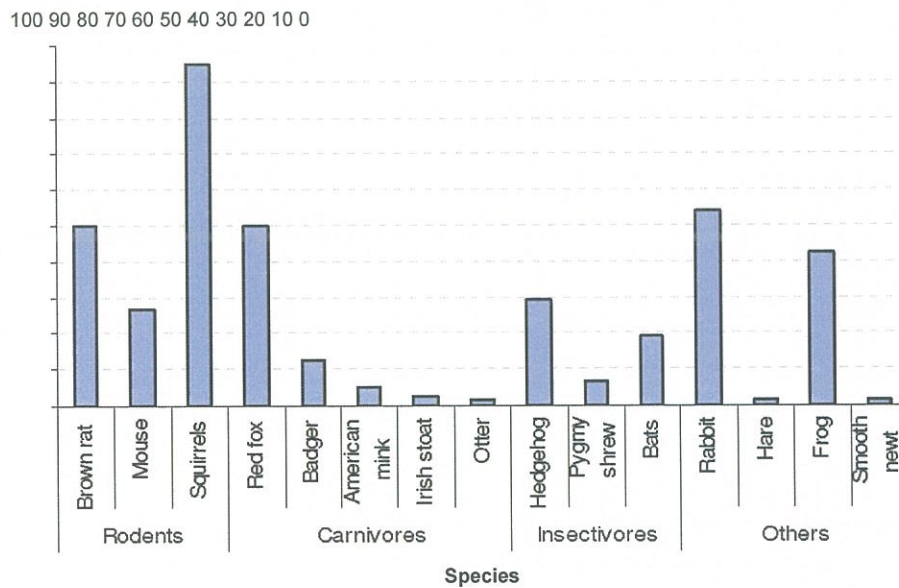


Figure 3: Percentage of questionnaire respondents reporting sightings of each species

Within the last year, species sighted on a regular basis by respondents included squirrels, rabbits and rats (see figure 4). Species only seen once included American mink, Irish stoat and brown hares. No otters or newts were seen within the last year.

3.2 Survey data for individual species

3.2.1 Rodents:

Brown rat (*Rattus norvegicus*)

Survey questionnaire:

The distribution of sighting locations shows that rats are ubiquitous to the park. (Figure 5)

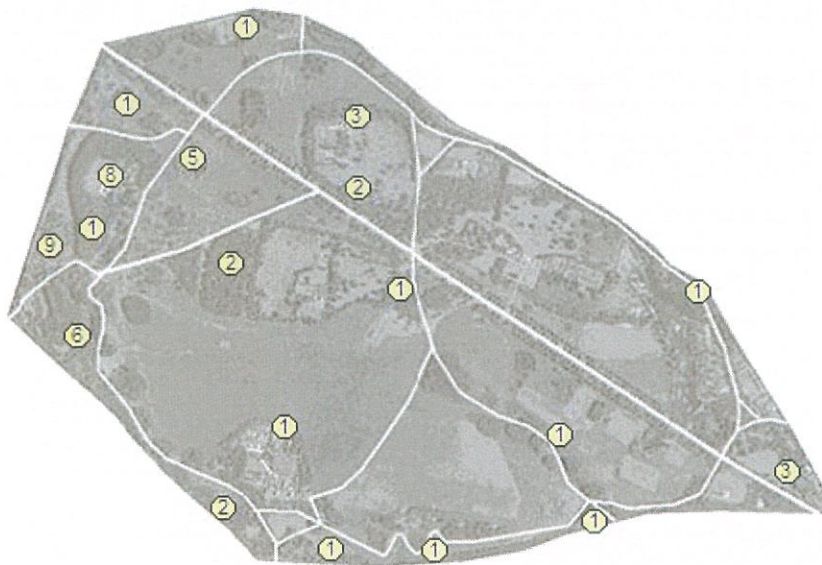


Figure 5: Numbers of respondents reporting rats in various locations in 2006-2007

Field survey:

All wooded/scrub areas of the park were walked and systematically surveyed for signs.. In total, 363 rat holes and 9 sightings were recorded. Rats were concentrated in Ashtown (45 holes) the Ordinance Survey (23 holes), the Furry glen (37 holes), the hawthorns north of the Ordinance Survey (18 holes), south of the Civil Defence buildings (17 holes) and in Deerfield (17 holes)

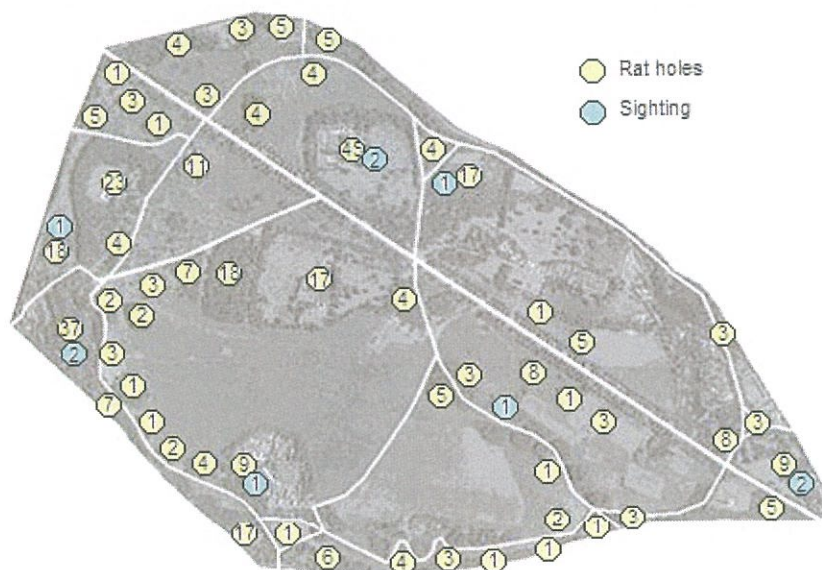


Figure 6: Locations and numbers of rat holes and sightings.

(House mouse (*Mus musculus*), Wood mouse (*Apodemus sylvaticus*))

Survey questionnaire: Sightings of mice were reported by 21/78 respondents. Two reported house mice and 8 wood mice. Within the last year (16), 38% of respondents observed mice frequently; the remainder saw a mouse on less than 5 occasions. (figure 7).

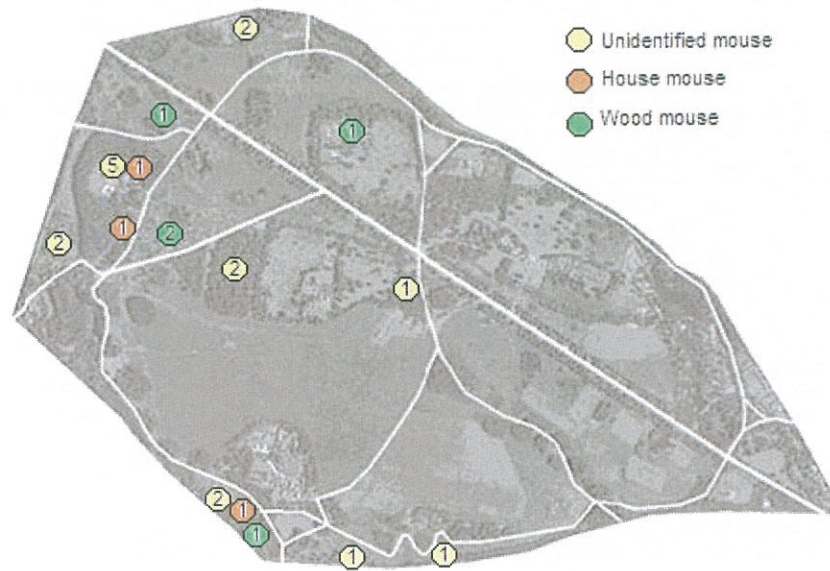


Figure 7: . Numbers of respondents reporting mice in each location for 2006-2007.

Ground survey: In total, 106 mouse holes and 3 sightings were recorded. Two wood mice seed caches were also recorded. Mouse holes were found throughout the park (see figure 8).

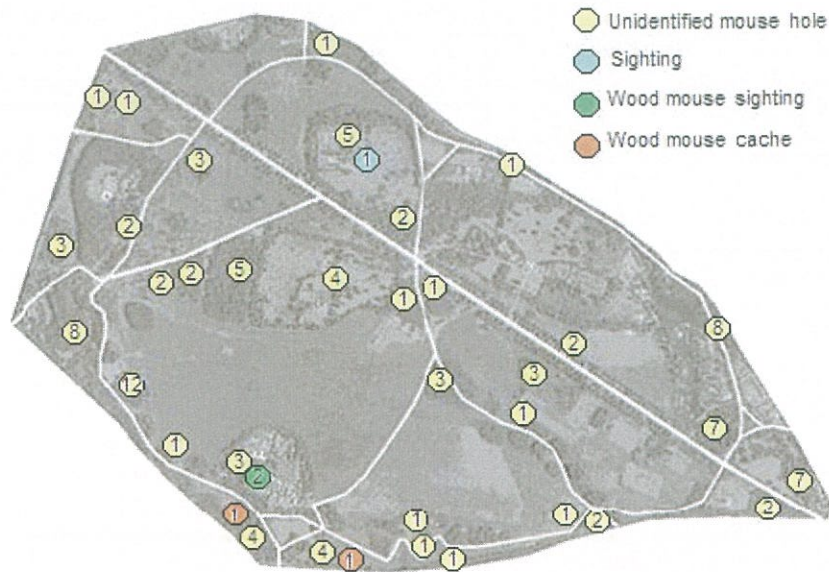


Figure 8: Number of mouse holes/sightings in an area found during field survey.

Trapping To date, 9 locations within the park have been trapped. No house mice were caught. Wood mice were caught at 8 of the 9 sites. None were caught at site 4.



Figure 9: Locations used for small mammals trapping.

The highest densities of wood mice were in the hawthorns near the Garda ground and along the park wall below the car parks for the football fields. The habitat at each of these sites consisted of hawthorns with a thick grass undergrowth and Scot's pine with a thick grass/scrub undergrowth respectively. No wood mice were caught near the Ashtown gate. This area borders the edge of the park and feral and domestic cats are frequently seen here

Grey squirrels (*Sciurus carolinesis*), Red squirrels (*Sciurus vulgaris*)

Survey questionnaire: Sightings of squirrels were reported by 74/78 respondents. Seven respondents remembered seeing red squirrels within the park: 6 stated that their last sighting was more than 10 years ago. The last locations of red squirrels were the Furry Glen (1) and Ashtown (1). Five respondents could not remember the location of their last sighting. Of those reporting sightings within the last year (43), 93% of respondents observed grey squirrels frequently with the remainder having seen a squirrel on less than 5 occasions. When asked for a sighting location, most respondents reported seeing grey squirrels all over the park. Grey squirrels were noted in all areas surveyed. Squirrel abundance in various locations within the park is currently being measured in the Phoenix Park Grey Squirrel Project.

Carnivores:

Red fox (*Vulpes vulpes*)

Survey questionnaire:

Sightings of foxes were reported by 39/78 respondents. The distribution of sighting locations indicates that foxes are seen throughout the park (see figure 10).

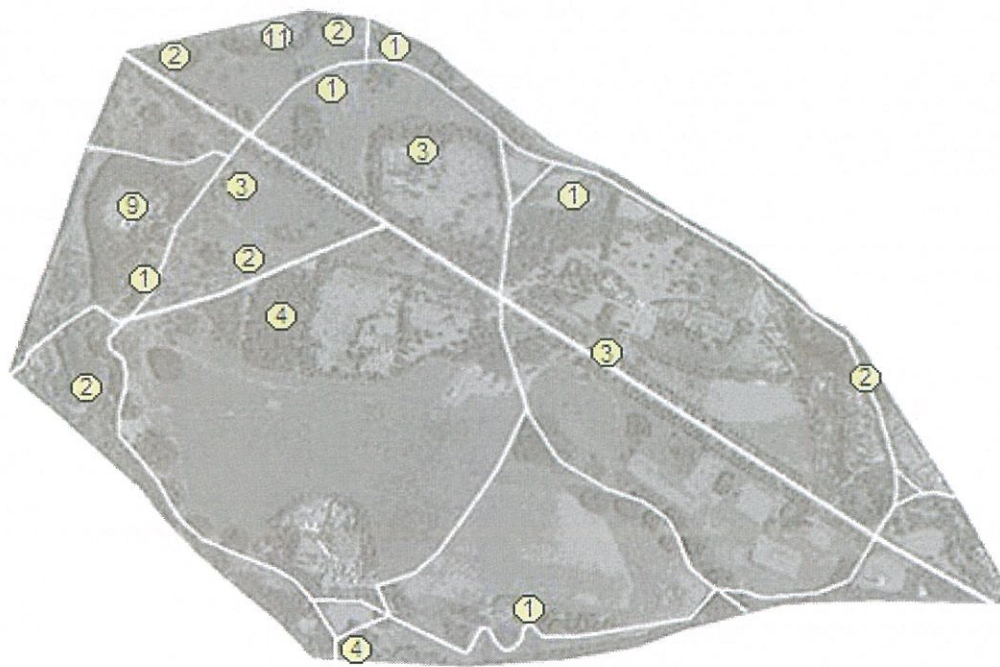


Figure 10: Numbers of respondents reporting foxes in various locations in 2006-2007

Ground survey:

All wooded/scrub areas of the park were walked and systematically surveyed for signs of foxes and sightings of individual animals. In total, the location of 9 dens, 5 sightings, 4 feeding signs, 6 footprints and 15 scats were recorded (see figure 11). Both the questionnaire and ground surveys indicated that fox activity is largely centred in the north-west of the park.

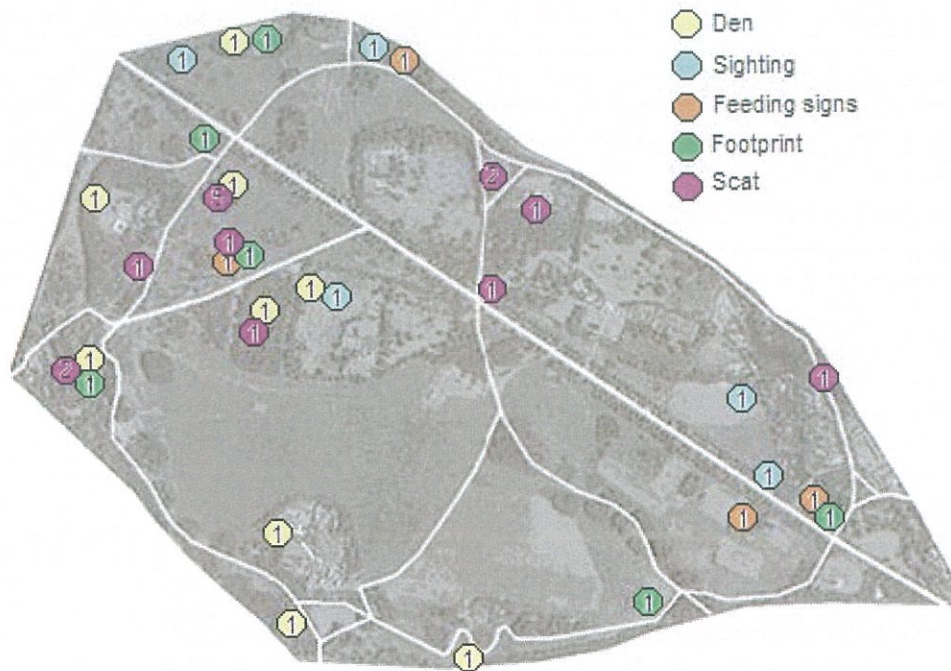


Figure 11: Distribution of field signs of foxes in 2006-2007

Badger (*Meles meles*)

Survey questionnaire:

Sightings of badgers were reported by 10/78 respondents. Sighting locations are concentrated in the northern half of the park (see figure 12). Sightings of badgers are unlikely to give a good representation of their presence due to their nocturnal nature.

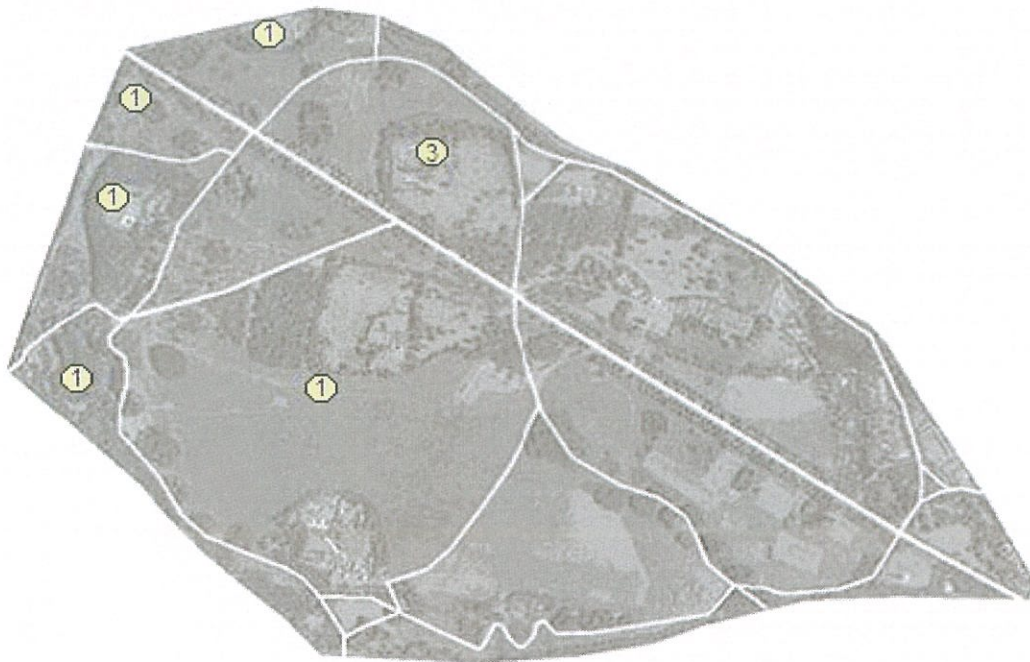


Figure 12: Numbers of respondents reporting sightings of badgers in 2006-2007

Ground survey:

All wooded/scrub areas of the park were walked and systematically surveyed for signs of badgers and sightings of individual animals. In total, the location of 6 main sets, 16 other sets, 3 remains of dead badgers, 2 sightings and 38 latrine locations were recorded (see figure 13). The quantity of badger activity recorded during the ground survey indicates a large population within the park. Activity is mainly around the outskirts of the park with 5/7 main sets found within 200m of the park boundary. An attempt, using bait-marking techniques, to determine the number of family groups present in the park is currently underway.

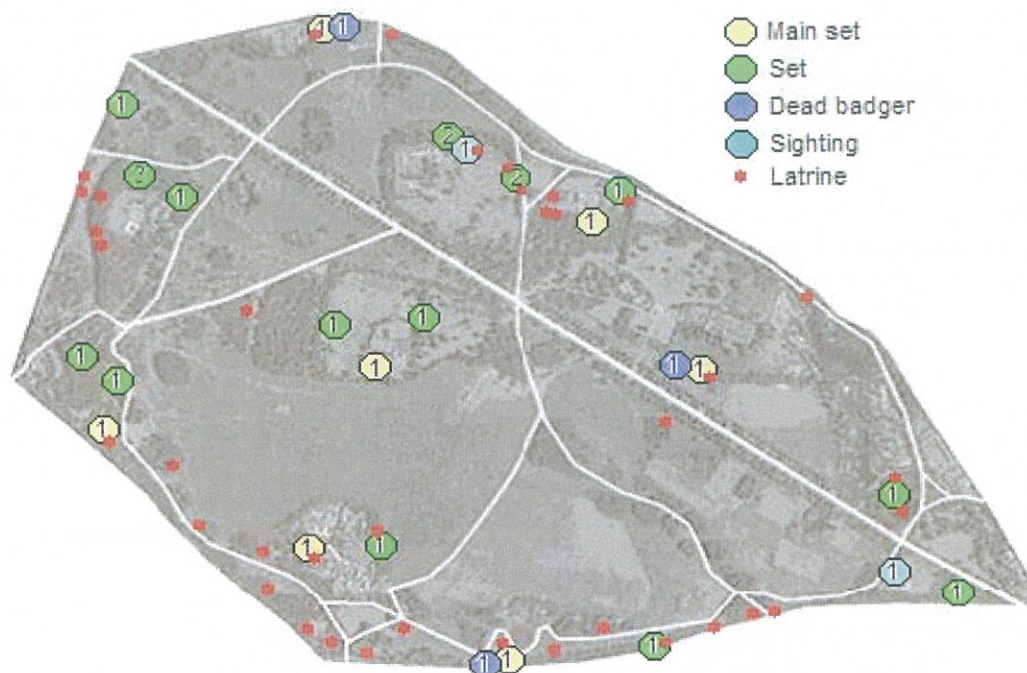


Figure 13: Locations of field signs of badgers in 2006-2007

*American mink (*Mustela vison*)*

Survey questionnaire:

Sightings of mink were reported by 4/78 respondents. Mink are now present in the Furry Glen (see figure 14). This is supported by the report during this survey of a dead mink on the road outside the gate of the park in the Strawberry Beds area. The timing of sightings indicates that mink have recently begun to invade the park.

Ground survey:

All wooded/scrub areas of the park were walked and systematically surveyed for signs of mink. Mink footprints and potential dens were recorded in the Furry Glen (see figure 14).

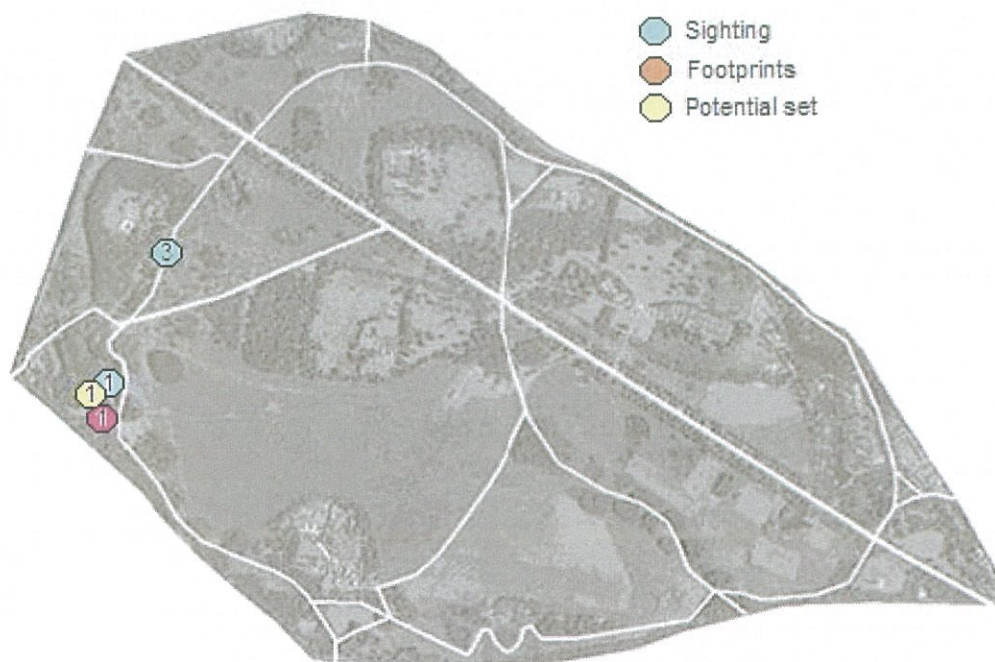


Figure 14: Locations and numbers of signs and sightings of mink in 2006-2007

Irish stoat (Mustela erminea)

Survey questionnaire:

Sightings of mink were reported by 2/78 respondents. The most recent sighting (2006) occurred in the Ordinance Survey grounds and the other sighting occurred in the Furry Glen within the last five years (see figure 15).

Ground survey:

No evidence of the presence of stoats has yet been found. However, trapping of small to medium mammals using cage traps has yet to be completed.

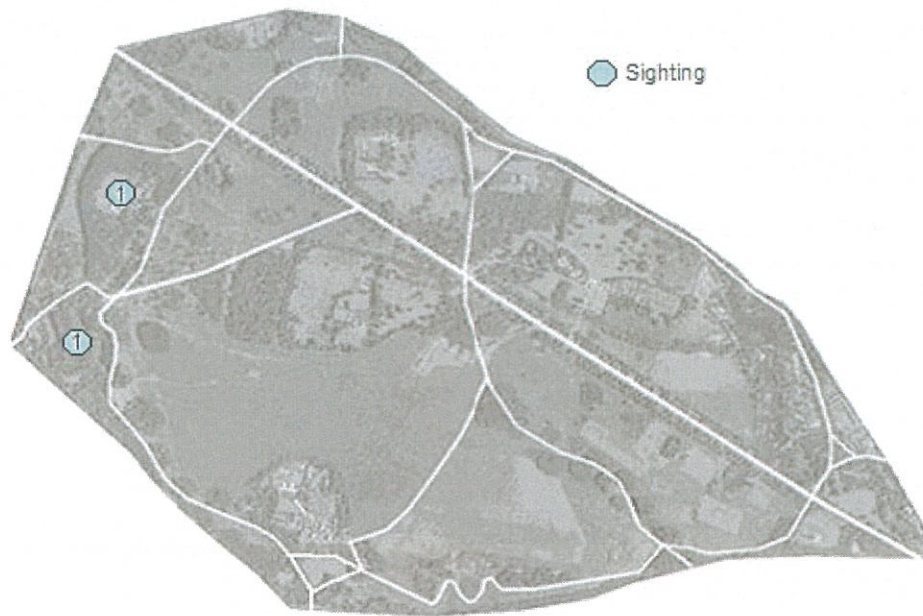


Figure 15: Sightings of stoats

Eurasian otter (*Lutra lutra*)

Survey questionnaire/ Ground survey:

Only one report of an otter was received, that of a road casualty near Island Pond about 2 years ago (see figure 16). No evidence of the presence of otters has been found thus far in the survey.



Figure 16: Site of road-kill of an otter

Insectivores:

Hedgehog (*Erinaceus europaeus*)

Survey questionnaire:

Sightings of hedgehogs were reported by 23/78 respondents. The distribution of sighting locations indicates that hedgehogs are distributed throughout the park (see figure 17).

Ground survey:

Hedgehog footprints were found in one location (see figure 17). No hedgehogs have yet been seen. However, cage-trapping of small mammals has not yet been completed.

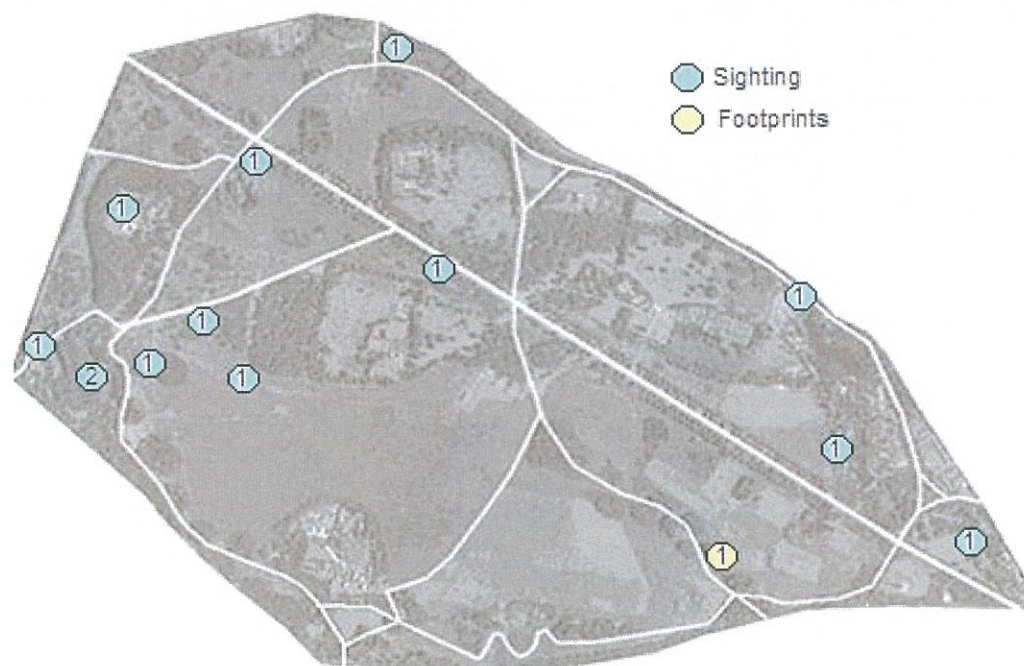


Figure 17: Numbers of sightings and signs of hedgehogs in 2006-2007

Pygmy shrew (*Sorex minitus*)

Survey questionnaire:

Sightings of shrews were reported by only 5/78 respondents. Probably owing to their small size, shrews were only sighted infrequently (see figure 18). Shrews were mainly sighted on the western edge of the park.

Ground survey:

Two dead shrews were found during the ground survey. Trapping using longworth small mammal traps proved ineffective in catching shrews as they are not sensitive enough. Trapping using plastic live-catch mouse traps is ongoing.



Figure 18: Sightings and recovery of pygmy shrews in 2006-2007

Bats

Survey questionnaire:

Sightings of bats were reported by 15/78 respondents and 3 roosts. (see figure 19).



Figure 19: Numbers of respondents reporting bats or bat roosts in 2006-2007

Ground survey:

Forty three (43) sites within the park were surveyed using a bat detector on 2 occasions each. Bats were detected in 54/86 surveys (see figure 20). Analysis of the recordings has yet to be completed. This analysis will provide a measure of bat activity at each site and a bat species list for the park. Bat activity was greatest at the sites close to standing water.

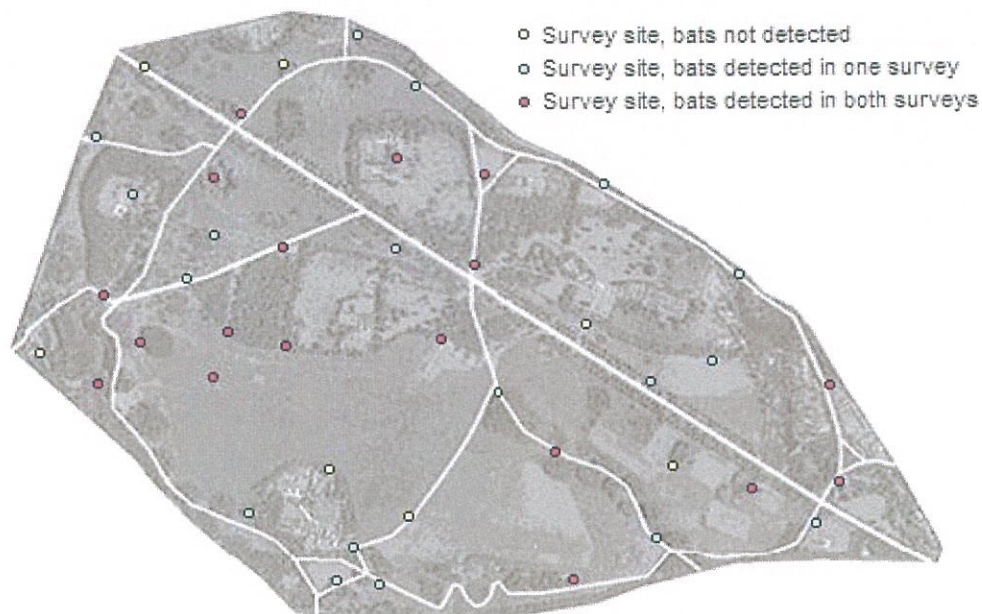


Figure 20: Distribution of bat activity at 43 sites in 2006-2007

Lagomorpha

Rabbit (*Oryctaglos cuniculus*)

Survey questionnaire:

Sightings of rabbits were reported by 42/78 respondents. Sightings were mostly around the Furry Glen/Ordinance survey and Oldtown woods area (see figure 21).

Ground survey:

All wooded/scrub areas of the park were walked and systematically surveyed for signs and sightings. In total, 38 rabbit holes, 6 warrens and 9 sightings were recorded (see figure 22). Taken together, both the ground survey and questionnaire sightings indicate that the largest population of rabbits is found in the Furry Glen area.

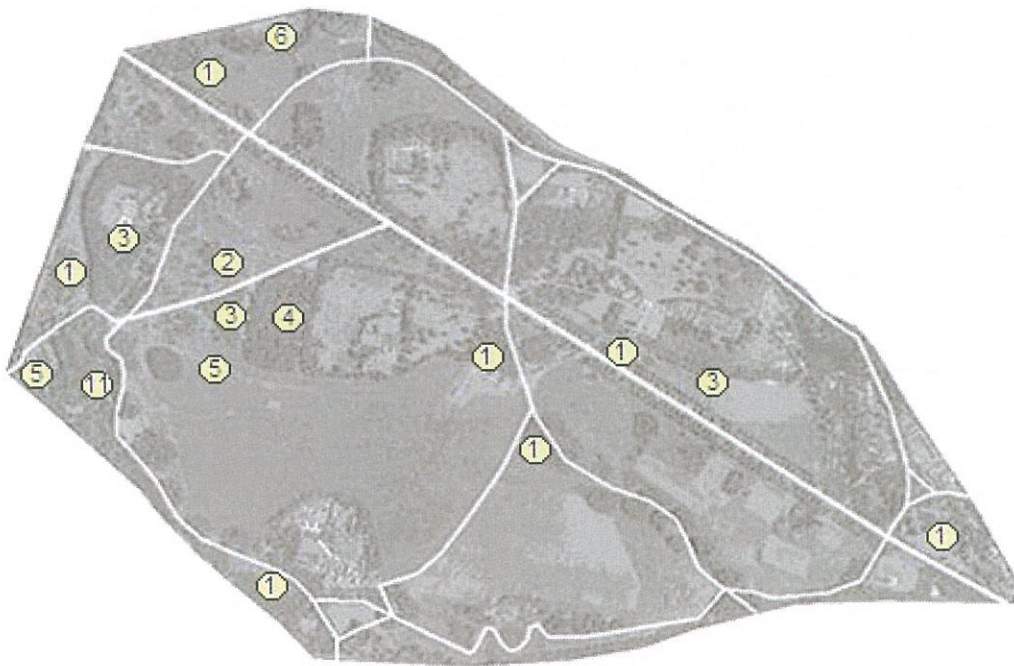


Figure 21: Numbers and locations of sighting of rabbits in various in 2006-2007

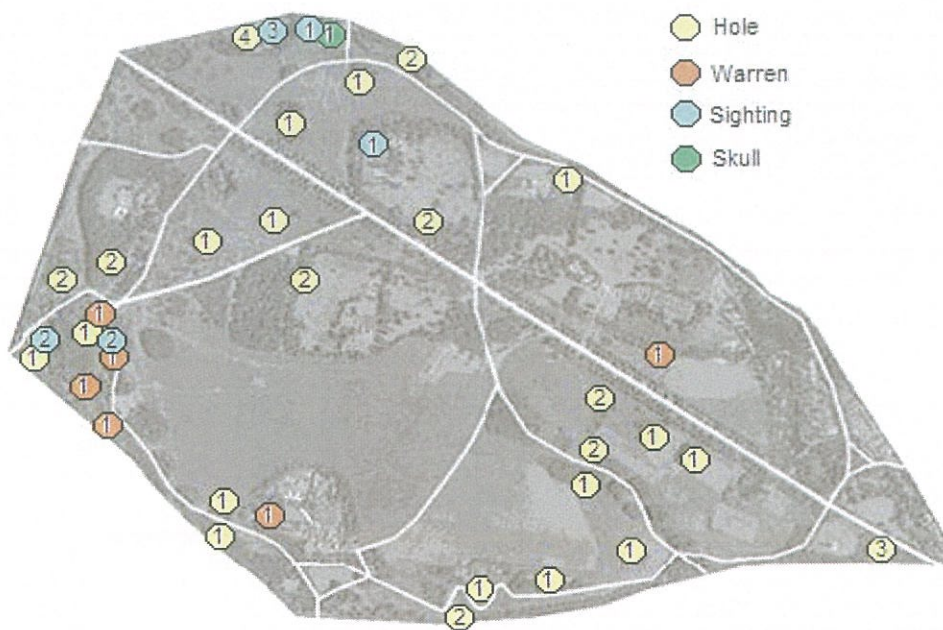


Figure 22: Field signs and sightings of rabbits in 2006-2007

*Irish hare (*Lepus timidus*)*

Survey questionnaire:

Sightings within the past year of an individual hare were reported by 2/78 respondents. Both sightings were in the grassy area south-west of the Oldtown Woods area (see figure 23). Hares are certainly currently in the grounds of Farmleigh and these may be authentic sightings.

Ground survey:

No evidence/sightings of hares were made during the ground survey of the park.



Figure 23: Reported sightings of Irish hare in 2006-2007

Others

*Smooth newt (*Triturus temporaria*)*

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Survey questionnaire:

Sightings of newts were reported by 1/78 respondents. This sighting occurred over 40 years ago and was at the Dog pond near the cricket grounds (see figure 24).

Ground survey:

No evidence of newts was been found during the ground survey of the park. The surroundings of areas of water were checked on several occasions. All loose debris/fallen branches etc. were overturned. Areas surrounding water at which bat surveys were conducted were also lamped for eye-shine but no newts were detected. Taken together, both surveys suggest that newts if currently present are extremely within the park. Live-trapping will be carried out to confirm this.

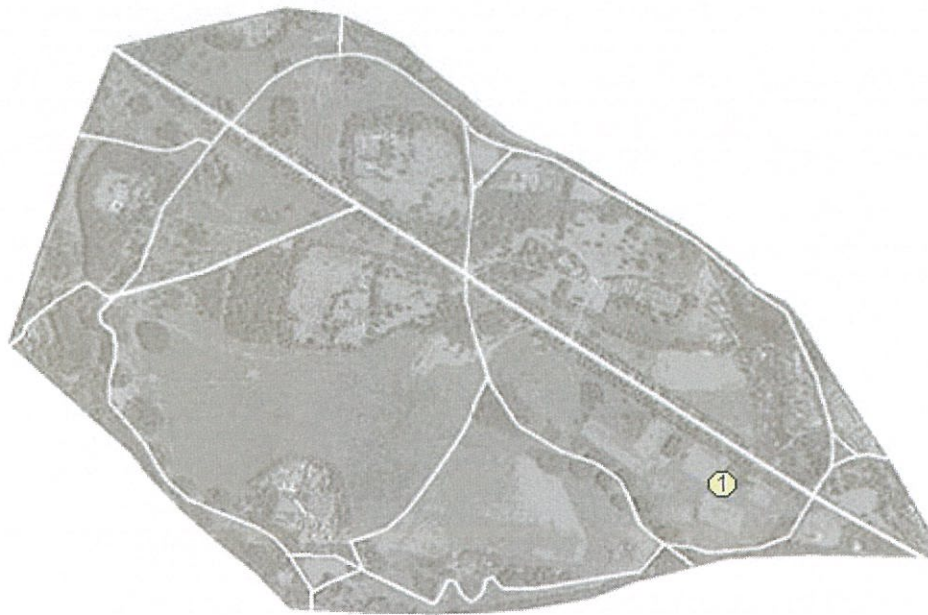


Figure 24: Location of a reported sighting of a newt made during the 1960s

Frog (*Rana temporaria*)

Questionnaire survey:

Sightings of frogs were reported by 33/78 respondents. Sightings were mostly around the Furry Glen/Ordinance survey area (see figure 25).

Ground survey:

Only 2 frogs were recorded during the ground survey of the park (see figure 25). No frogs were seen on the edges of water while searching for newts due to the time of year.

Recommendations (interim)

Overall

Retain deer; Control grey squirrel; Reintroduce Irish Hares; Reintroduce red squirrels; CCTV links to visitor centre; Maintain linkages with adjacent green spaces. Establish sanctuary areas.

Furry Glen:

Install bat boxes, Control Mink. Improve water quality. Construct reed bed behind Rose Cottage to improve water quality.

Ashtown:

Instal bat boxes. Consider conserving built features suitable for bats; Protect badger sett; restrict clearance of understorey vegetation; CCTV feed of badger sett to Visitor centre.

Glen Pond;
Control mink; Install bat boxes

Fifteen Acres:
Maintain deer; Reintroduce hares

Whitefields: Retain building features for bats;

Ordinance Survey
Retain building features for bats

Aras
Manage Aras as a sanctuary area; Retain building features for bats; Reintroduce hares.

Zoo
Rigid control of grey squirrels. Breeding colony of red squirrels with a view to reintroduction.

Table 1

	Interview of Residents	Road survey	Ultrasonic survey	Tunnel traps	Cage traps	Field signs	Visual survey	Artificial refuges	Submerged traps
pygmy shrew	X	X		X					
hedgehog	X	X			X		X		
whiskered bar			X						
natterer's bat			X						
Daubenton's bat			X						
Leisler's bat			X						
common pipistrelle			X						
sporano pipistrelle			X						
Nathusius's pipistrelle			X						
Brown long-eared bat			X						
rabbit	X	X				X	X		
hare	X	X							
red squirrel	X	X							
grey squirrel	X	X				X	X		
bank vole	X	X		X					
brown rat	X	X			X	X	X		
woodmouse	X	X		X					
house mouse	X	X		X					
fox	X	X				X	X		
pine marten	X	X				X	X		
stoat	X	X			X		X		
American mink	X	X				X	X		
badger	X	X				X	X		
otter	X	X				X	X		
fallow deer	X	X				X	X		
viviparous lizard	X	X					X	X	X
frog	X	X					X		X
lesser crested newt	X	X							