

## Historical records of some mammals of the Whitby district and adjacent areas of Cleveland and the North York Moors

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The following notes, collations of historical information and bibliography are presented as a background to monitoring historical trends in the mammal fauna of Whitby and adjacent areas of Cleveland and the North York Moors.

The first attempt to plot the distribution of this region's terrestrial mammals at a 10km scale was undertaken between 1965 and 1970 and published by Corbet (1971), followed by Arnold (1978) and updated in 1984 and 1993. The first project to collate local records at a 1km scale was undertaken by the Yorkshire Naturalists' Union, its members and affiliated societies through the 1970s and early 1980s, the results appearing in Howes (1983). This was updated and had the interpretative advantage of plastic overlays including river systems and altitude in Delany (1985). The project was updated by the Yorkshire Mammal Group (YMG) after a 20 year gap and with the benefit of digital mapping technology in Oxford *et al.* (2007).

### **INSECTIVORA**

#### **Hedgehog** *Erinaceus europaeus*

A pioneer in the study of Hedgehog road casualties across the region was Ian Massey (1939-2008), late curator of Woodend Natural History Museum in Scarborough, who undertook a public participation survey gathering the dates and locations of Hedgehog road kills in the Scarborough district from 1966 to 1971. These included many records from across the North York Moors. His graphs illustrated the seasonality of Hedgehog winter hibernation versus summer activity periods and his locality records showed a strong urban correlation. Even in rural areas casualties were associated with villages and isolated farms (Massey, 1972).

From 1990 to 1993 the YNU organised a survey designed to compare Hedgehog population levels in the different geographical regions of Yorkshire using the mean number of road casualties per 100 miles on 20+ mile transects on A, B or C roads during sample survey months of July, August and September. 16 transects covering 522 miles across the North York Moors region encountered 28 Hedgehog casualties, giving a relatively low mean frequency index of 5.36 per 100 miles. Adjacent geographical regions recorded higher indices of 10.11 in the Vale of Pickering, 10.80 in the Vale of York/Mowbray and 12.58 on the Wolds. The most frequent associated habitat/land-use types were urban and grassland, each registering 34%, arable and woodland, each registering 12% and the lowest being open moorland registering 8% (Howes, 2002c).

#### **Water Shrew** *Neomys fodiens*

Live trapping by YMG caught two specimens of this seldom-encountered mammal in Cropton Forest in 1986 and three more at Rievaulx Terraces in 1987 (see Table 1). Capes (2002, 2013), also using Longworth live mammal traps, found it at Nunthorpe in 2002 and at Great Ayton in 2002 and 2003. Capes (2005, 2007, 2013) made significant strides in the study of the Water

Shrew in and around the North York Moors using the bait tube and scat analysis technique devised by Churchfield *et al.* (2000) in association with the Mammal Society National Water Shrew Survey, confirming its presence at Ingleby Greenhow, on the River Leven at Kildale and Stoup Beck at Fylingthorpe in 2004 and Mill Beck at Liverton, Easington Beck at Staithes, West Beck at Goathland and Danby Dale in 2005, where positive signs had been identified in the latter at the head of the dale during 1986.

#### **Mole** *Talpa europaea*

Preliminary studies suggest that Moles appear to favour deeper fertile soils of permanent pasture in the region. An investigation into the effect of soil type/land management on Mole occurrence in the Whitby and North York Moors region (Scalby Mills to Staithes and Thornton le Dale to Sleights) was carried out in April 1977. 245 permanent pastures were sampled and 62% were occupied by Moles but only 8% of 140 arable fields were occupied. Interestingly, only 30% of grassland and 5% of arable fields that had been improved from moorland soils were colonised (Howes, unpublished). The use of calcareous hardcore in road construction has affected the soil chemistry of moorland road verges, enabling enhanced soil faunas including Moles to colonise grassy roadside verges across the otherwise acid podzolised soils of peatland, heather moors and coniferous forestry, which would otherwise have been unsuitable for them (pers. obs.).

One notable feature of the population, as revealed by local mole catchers, is the frequency of abnormally coloured specimens. These are usually some shade of yellow, ranging from almost white through cream and yellow to bright apricot; other variants are cinnamon, slate and smoke grey. It has been suggested (Massey, 1973) that Moles exhibiting recessive pelage colouration are less rigorously 'weeded out' than in surface-living mammals because of their relative freedom from avian predators. The majority of documented Yorkshire records are centred on the upper Esk Valley. Fifteen sandy/apricot-coloured specimens were trapped from January to April 1972 in Danby Dale and Westerdale. Similarly coloured specimens had been caught in Westerdale and Commondale during the 1920s and two cream-coloured animals were caught there and seven near Lealholme in 1936 (Massey, 1973; Howes, 1986).

#### **CHIROPTERA**

The Lesser Horseshoe Bat *Rhinolophus hipposideros* was thought to occur in the Newtondale area in the 19th century and was proved to occur around Helmsley Castle, Duncombe Park and the potholes known as the Windypits from 1921 to 1944. The discovery of droppings thought to be from this animal in the Windypits in 1983 possibly indicated its continued survival in the region (Howes, 1985a). Historically the Barbastelle Bat *Barbastella barbastellus* occurred in the Helmsley Castle/Duncombe Park area with confirmed records from 1919 to 1955 (Howes, 1985b). Currently nine species of bat are known to occur in the study area. Detailed studies of roosts and records of Common Pipistrelle *Pipistrellus pipistrellus*, Noctule *Nyctalus noctula* and Brown Long-eared Bat *Plecotus auritus* are provided for Cleveland south of the Tees (Wardhaugh, 1992, 1993 & 1994) but, with further fieldwork since the early 1990s, an improved knowledge of the UK bat fauna and the availability of more advanced ultrasonic bat detectors, Whiskered Bat *Myotis mystacinus*, Brandt's Bat *M. brandtii*, Daubenton's Bat *M. daubentonii*, Natterer's Bat *M. nattereri*, Soprano Pipistrelle *P. pygmaeus* and Nathusius' Pipistrelle *P. nathusii* have been added to the local list, their Cleveland distribution shown in the tetrad distribution maps in Bond (2012).

## **LAGOMORPHA**

### **Rabbit** *Oryctolagus cuniculus*

Henderson (1997, 2003) shows that successive Ice Ages of the Pleistocene eradicated the Rabbit from Europe east of the Pyrenees, leaving the residual population confined to the Iberian peninsula. The Romans, recognising its value for meat, fur and sporting potential, re-introduced it to Italy where the practice of rabbit warrening was developed. By the Middle Ages rabbit warrening was being practiced in Spain, France and Germany and was exploited by the Normans, who brought the practice to Britain shortly after the Conquest.

It was established in the Yorkshire region by the early 1300s and, within a century, rabbit warrening in a range of forms was established across the county. Detailed studies and distribution maps of those on the North York Moors area are in Harris & Spratt (1991) and Henderson (2003). Medieval examples at Rievaulx, Medieval/post-Medieval examples at Broughton, Spaunton Moor, Levisham Moor and Nunnington and post-Medieval examples at Guisborough, Kildale, Ingleby Greenhow, Faceby, Scugdale, Bilsdale, Hutton-le-Hole, Lockton Warren, Staindale, Dalby, Dalby High Rigg, Ellerburn, Nabgate, Flainsey, Whitecliffe Rigg, Scambridge, Cockmoor Dykes, Hutton Buscel, Baker's Warren/Mt Misery and High Langdale End. All refer to tightly managed and guarded enclosed populations, though court proceedings record disputes from time to time between farmers and land-owners (warreners) over Common land being lost to warrening and crops being depleted by escaping Rabbits. The Black Death and the English Civil War would inevitably have enabled Rabbits to escape captivity, though it is likely that escapees would have been trapped out by the beleaguered human population. Curiously, there is no evidence of the long term establishment of feral populations until the 19th century, when warrening became marginal to the rural economy and game laws favoured the feral Rabbit, which soon assumed pest proportions (Henderson, 2003). The Rabbit became a major grazing competitor of the Brown Hare and the Water Vole, which had substantial terrestrial populations until that time. Rabbits were so abundant and ubiquitous that they became the preferred prey for predators, notably Red Fox and Stoat. However, the flea-borne disease *Myxomatosis* reached local Rabbit populations even in remote moorland valleys by 1954, exterminating the majority of the population. For a period, grazing pressure was reduced enabling hay meadows and grassy verges to bloom more spectacularly than in living memory. Stoats almost died out, Weasel numbers increased through reduced competition from the larger Stoat, and Red Fox diets diversified (Tapper, 1992).

### **Brown Hare** *Lepus europaeus*

During the 1876-77 hunting season the Harriers at Whitby killed 23 Brown Hares in 34 days, giving a mean kill rate of 67 per 100 days hunting ('B.A.', 1877). The 6,000-acre shooting estate of Wilton was remarkable in Yorkshire for the numbers of Brown Hares it produced. Shooting bags of 150 were normal but five guns accounted for 247 Brown Hares on 4 October 1905 and 255 on the following day (Bonnett, 1912). A Mr Wilson of Mayfield Place, Whitby had two leverets "that were suckled by a cat and which used to follow him about and run in and out of the house like dogs" (Grabham, 1907). After *Myxomatosis* decimated Rabbit numbers in the 1950s, estate game registers showed that Brown Hare numbers temporarily rallied (Tapper, 1992).

## RODENTIA

The invention of the Longworth live trap and the development of field methods and techniques associated with its use revolutionised small mammal studies, enabling specimens to be examined, marked, released back into the population and re-trapped. This opened the way to investigations of territoriality, home range, seasonal movement, dispersal, weight variation and a range of breeding cycle and demographic studies.

16 trapping sessions at 11 sites around the North York Moors region were undertaken from 1977 to 2007 by members of the YMG. This work collectively resulted in the trapping of 540 small mammals of seven species. An outline of the results is presented in Table 1 involving the following small mammals, their numbers and relative frequencies: Wood Mouse *Apodemus sylvaticus* 229 (42%), Bank Vole *Myodes glareolus* 168 (31%), Field Vole *Microtus agrestis* 14 (3%), Common Shrew *Sorex araneus* 120 (22%), Pygmy Shrew *Sorex minutus* 1 (0.2%) and Water Shrew 7 (1%), with other incidental catches including Weasel 1 (0.2).

Table 1: Small Mammal Trapping by the Yorkshire Mammal Group in the North York Moors and adjacent areas.

Site/ OS Grid ref.	Date	No. of Traps	Wood Mouse	Bank Vole	Field Vole	Common Shrew	Pygmy Shrew	Water Shrew	Weasel	Source
Ashberry Pastures SE5685	Sep 1992	50	8							Oxford (1993)
Ashberry Pastures SE5685	Sep 1993		3			2				Hanson (1994)
Ashberry Pastures SE5685	Sep 1997	25	6	7						Hanson (1998a)
Chafer Wood SE8993	Sep 1994		8	9		11				Hanson (1995)
Cropton Forest SE79	Oct 1986	100	11	14	8	41		2		Thompson (1987)
Dalby Forest SE8587	Aug 2007	50	20	7	1	5				Hanson (2007)
Ellerburn Bank SE8494	Oct 1977	96	75				1			Wooding (1977)
Garbutt Wood SE5083	Sep 1991	73	5	2	1	1			1	Oxford (1992)
Great Ayton NZ5711	Jun 2002	12	3	12	3	1		2		Capes (2002)
Great Ayton NZ5711	Aug 2002	12	6	18		2				Capes (2003)
Ingleby Greenhow NZ5704	Jul 2002	12	2	13		4				Capes (2003)

Site/ OS Grid ref.	Date	No. of Traps	Wood Mouse	Bank Vole	Field Vole	Common Shrew	Pigmy Shrew	Water Shrew	Weasel	Source
Mount Grace Priory SE4498	Jul 2005	50		6		1				Hanson (2005)
Mount Grace Priory SE4498	Jul 2003	50	40	20		25				Hanson (2003)
Rievaulx Terraces SE5784	Sep 1997	100	23	30		9				Hanson (1998b)
Rievaulx Terraces SE5784	Jul 1987	72	19	29		18		3		Thompson (1988)
Troutsdale SE9187; SE9288	Jun 2004	20		1	1					Mortimer (2004)

### Red Squirrel *Sciurus vulgaris*

The Red Squirrel was once widespread across the region but in steep decline during the 19th century. Although squirrel pox and mange were implicated, mass starvation through widespread deforestation, particularly the removal of mature fruiting Scots Pines *Pinus sylvestris*, was probably a more realistic cause. A sudden immigration of Red Squirrels in the isolated plantations of the Fylingdales Moor area was thought to have resulted from heavy removal of timber from the Newton House woodlands and to the destruction of “some hundreds of acres of Scots Pine in the Sneaton Plantations in consequence of a ... tornado” (Barry, 1907).

Records published by the YNU from the 19th century and up to the First World War include Arncliffe Wood 1881, Langdale Rigg 1887, Kildale 1890, Kirkbymoorside 1893, Ingleby Greenhow 1899, Eskdale and Mulgrave Woods 1900, Wykeham 1901, Harwood Dale 1904, Loftus 1905 and Great Ayton 1913. One shot in the Whitby area in 1886 was sent to the taxidermist J.H. Wilson and a domestic cat suckled a nest of young (Red) squirrels at Bridge Farm, Staintondale in 1898 (*Yorkshire Evening Post* 27 Apr. 1898).

After the establishment of the Forestry Commission (FC) in 1919 records were from Mulgrave Woods and the Helmsley area in 1923 but they had been seldom seen at Egton Bridge since 1914. Numbers temporarily rallied during the 1930s, possibly due to the development of the new Forestry Commission plantations. They were again being noticed at Egton Bridge in 1930 and had been seen at Osmotherley in 1931. Flintoff (1931) noted that “It is the general opinion... that the Red Squirrel is more numerous than it was a few years ago” in the Goathland area and Bramley (1933) noted a “welcome increase ... from the Whitby area” though cautioned that several had been found dead with disease. It is now known that the introduced Grey Squirrel, newly arrived in the Whitby region, is the vector of the squirrel pox virus for which the Red Squirrel has little resistance. One was killed on the road at Cloughton Plantation in 1939 and one was seen on Silpho Moor in 1940. The last records in the Whitby region seem to have been a small population noticed in Harwood Dale from 1942 to 1945 (Hazelwood, 1946) and one was seen at Kirkbymoorside during the YNU excursion in 1959. During the national squirrel survey of

1944-45 it was only reported to occur in 26 (18%) of surveyed parishes in the North Riding, none in the Whitby area (Shorten, 1946).

**Grey Squirrel** *Sciurus carolinensis*

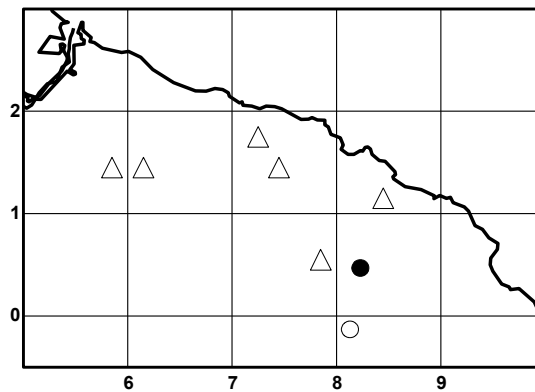
36 animals from Woburn Abbey were released at Scampston Park in June 1906 (St Quintin, 1907) and a further 30 in October 1914 (Sheppard, 1915). Other releases which may have helped to form the basis of the current feral population across the North York Moors and the Cleveland Hills were at Bedale in 1913 and Darlington in 1914-15 (Middleton, 1931). By 1923 it was already "fairly common" around Helmsley (Booth, 1923) and established and "common" at Kingthorpe and Thornton Dale in 1930 (Flintoff, 1931). Early feral records close to Whitby were first noted by Mr A.S. Frank in Arncliffe Woods in 1925, where one was shot by the keeper a month or two later, and others were shot in 1930. Three were caught in a stoat trap in Egton Grange Woods in 1927. It was first seen in the woods in Glaisdale in 1930 and was already "common" at Golden Grove. James Patterson reported it from Wheeldale Lodge in 1930 and specimens were being shot in the woods around Newton House, to which the opinionated Flintoff (*l.c.*) noted that "it is spreading rapidly over this district in spite of efforts by game preservers to prevent it" and "that this 'wretched rat' should extend its activities in our direction is most regrettable."

**Hazel Dormouse** *Muscardinus avellana*

The following records from Howes (1984, 1985c & 2010) document the last known allusions to the Dormouse in the Whitby region from the 19th and 20th centuries before its evident local extinction in the 1970s. It was listed for the Cleveland area by J. Graves as early as 1808, though no specific dates or localities are given. At Pinchinthorpe one was found by R. Lofthouse in the spring of 1881. Thomas Nelson regarded it as "not numerous" in the Redcar area and G. Page described it as being "rather scarce" near Guisborough. A specimen captured some years before 1884 at Loftus was examined by J. Carter. G. Abbey watched one emerging from its nest at Grinkle Park, his only sighting of one during a lifetime in this locality. In 1877 the naturalist 'B.A.' saw a locally caught specimen in the workshop of a Whitby taxidermist [possibly John H. Wilson of Baxtergate (Marshall, 2007)]. T. Stephenson did not consider the Dormouse to be a common animal in the Whitby area during the 1880s, though W. Lister and J. Braim reported that "a few are found at Glaisdale". Specimens in Whitby Museum, mentioned in the literature in 1884 and 1907, were said to be from nearby Mulgrave Woods.

On 9th July 1909 the gamekeeper James Patterson took Mr Oxley Grabham, then Curator of the Yorkshire Museum in York, to a small wood surrounded by grouse moorland near Goathland where he knew that three or four pairs of Hazel Dormice bred annually. Though the site's name was never revealed it is likely to have been one of the woods along the West Beck, possibly the isolated Hazel Head Wood on the south-facing escarpment near the shooting box upstream of Nelly Ayre Foss. A nest containing six half-grown young was located, on which Grabham (1909) based his celebrated series of photographic studies. In 1910 the colony was said to be steadily increasing, a claim presumably based on a visit to the site, when Patterson showed Grabham and E.W. Taylor (Chairman of the YNU Vertebrates Section) a nest containing three half-grown young. Grabham and Taylor again found an occupied nest in the same part of the plantation in 1911, though at a later date (pre-1956) Taylor, accompanied by Mr Adam Gordon (gamekeeper at Duncombe Park), failed to re-find a specimen. Brown (1980), ecologist with the North York

Moors National Park Authority, identified tracks in the Esk Valley in 1978 and in 1979 in the same area he claimed at least one sighting and the finding of a mandible of a Hazel Dormouse in a Barn Owl *Tyto alba* pellet.



**Figure 1:** Historical records of Hazel Dormouse showing the locations of occurrences from the 19th century to 1979 across the study region. Symbols: Triangle = 19th century, Open circle = 1900 to 1910, Solid dot 1978 and 1979 (based on Howes, 2010).

Whilst searching for field evidence of Hazel Dormice in the form of characteristically chewed hazel nut shells, in 1993, the author and members of the YMG visited six woodland sites within the study area, each with a good Hazel *Corylus avellana* understorey. After 4½ hours of searching 887 fallen Hazel nut shells were found. 776 had been opened by vertebrates, 762 (98%) by Squirrels and 14 (2%) by Bank Voles but none by Hazel Dormice (Howes, 2010).

#### **Water Vole *Arvicola amphibius***

Pioneering work on the ecology, predation and status monitoring of the Water Vole was undertaken in the North York Moors region during the 1980s (Woodroffe, 1988; Woodroffe *et al.* 1990a, 1990b). This influential work directed early attention to the collapse of the animal's status and highlighted the role played by excessive predation of riparian populations by the feral American Mink. The survey methodology of quantifying Water Vole burrows, lawns and latrines formed the basis of a veritable industry in the production of parochial, river catchment and national Water Vole surveys.

An examination of the mitochondrial DNA of Water Vole tissue samples in museums from round the UK showed that the post-glacial re-colonisation of the United Kingdom had been undertaken by pioneers from two distinct phylogenetic groups or clades. These have formed two geographical distributions, a Scottish clade which seems to have originated in the Iberian peninsula and an English/Welsh clade which seems to have originated in eastern Europe (Pierny *et al.*, 2005). To refine the geographical boundary between the two groups, the Environment Agency examined Water Vole droppings collected in a wide range of sites in 2008, including some from the North York Moors and Cleveland region. These proved to belong to the Scottish clade (Bond, 2012) whereas material in the 2005 study from Scarborough belonged to the English/Welsh clade indicating that the Whitby district is on the boundary between the two main UK phylogenetic populations.

## CARNIVORA

Early documentary records of bounties paid for certain mammals, mainly Carnivora, have been obtained for seven local townships and parishes, mainly in the form of churchwardens' accounts held at the North Yorkshire County Record Office (NYCRO) in Northallerton. These include records of Polecat *Mustela putorius* from 1724, Stoat from 1748, Weasel from 1776, Badger from 1797, Otter from 1745 and Red Fox from 1672. Details of numbers, locations and sources are presented in Table 2. Parishes elsewhere contain records of Hedgehog and Mole. Further archival searches may reveal such records for the Whitby district.

Table 2: Carnivore bounty records from Parishes in the North York Moors and adjacent areas (from Lovegrove, 2007, Howes, 2009). Figures in square brackets indicate relative frequency on a scale of 1 (very infrequent) to 5 (very numerous) (Lovegrove, 2007).

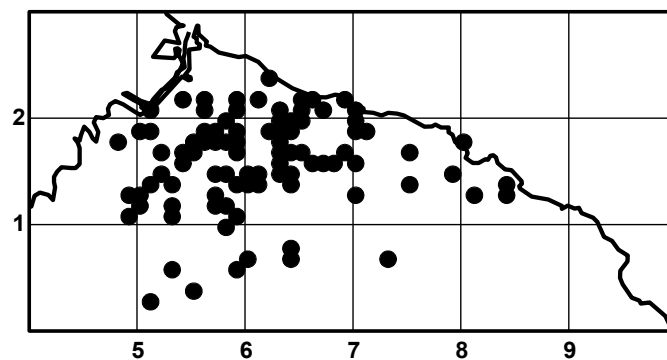
Parish/ Township	Sources & NYCRO archive codes	Archive Date Range	Polecat	Stoat	Weasel	Badger	Otter	Fox	Total
Brompton-by-Sawdon	PR/BRO Mic. 1084	1748-1851	149	6		2	1	2	159
Fylingdales	PR/FY Mic. 1338-41 (Lovegrove, 2007)	1762-1833				[1]		[1]	
Great Ayton	PR/AYG Mic. 1202	1734-1815	224		2		4	45	275
Helmsley	PR/HEL Mic. 995	1671-1785	1					619	620
Hilton	PR/HIL Mic. 1205; 09	1761-1858	18					5	23
Lastingham	PR/LAS Mic. 1976; 85. (Lovegrove, 2007)	1693-1894				[1]		[1]	
Lythe	PR/LY Mic. 1396. (Lovegrove, 2007)	1704-1840			[1]			[3]	
Scarborough	Clarke (1892)	1774-1776	37		1				38
Stainton-in-Cleveland	PR/STC Mic. 1205; 07-08	1769-1848	306					5	311
<b>Totals</b>			<b>735</b>	<b>6</b>	<b>3</b>	<b>2</b>	<b>5</b>	<b>676</b>	<b>1,427</b>
<b>%</b>			<b>51.6</b>	<b>0.4</b>	<b>0.2</b>	<b>0.1</b>	<b>0.3</b>	<b>47.4</b>	<b>100</b>

### Red Fox *Vulpes vulpes*

The earliest evidence of the Red Fox in the region, earlier even than from churchwardens' accounts, is from the histories of the local fox hunts. For the Staintondale Hunt there is a tradition that George Villiers, the second Duke of Buckingham, hunted both Red Fox and Red Deer here in the 13th century by royal warrant. Tradition tells of the Buckingham Stone near 'Chop Yat' on the North York Moors marking where the Duke's horse collapsed and died after a severe three hour pursuit of a Fox. It is also claimed that Red Foxes have been hunted on the Sinnington Hunt territory since the 13th century and that organised fox hunting has operated here since 1680. Allusions to 10 packs of foxhounds have been traced in the Whitby, Cleveland

and North York Moors area, each operating within its own defined territory. A brief account of their histories and descriptions of their hunting territories is in Howes (2009).

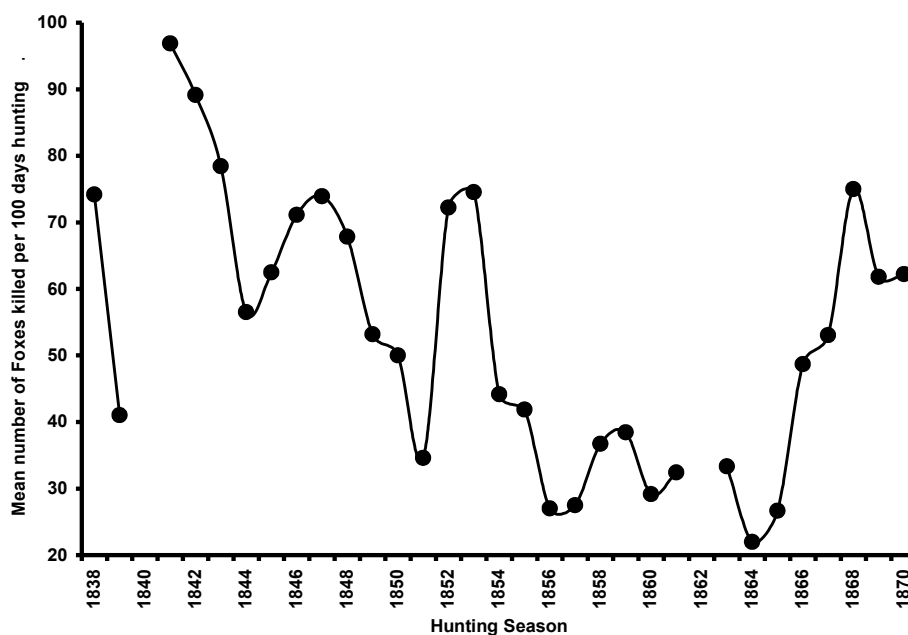
It was to the prowess of hunt masters and the reputation of the hunts to provide exhilarating riding country and the prospect of finding good numbers of healthy Red Foxes capable of producing good 'runs'. The extensive hunting literature provides transcriptions from hunt diaries of former masters describing celebrated runs. Fox 'find' sites recorded by masters of the Cleveland Hunt from 1838 to 1871 (Pease, 1887) have been traced on 19th century Ordnance Survey sheets to generate Figure 2, which provides an impression of local Red Fox distribution in the mid to late 19th century.



**Figure 2:** Locations of Red Fox 'find' sites recorded by the Cleveland Hunt from 1838 to 1871 (data from Pease, 1887).

Since the annual numbers of Red Foxes killed by hunts are likely, to some extent, to be a function of hunting effort (numbers of days in the field), data provided by Pease (*l.c.*) have been used to show the mean number of Red Foxes killed per standard 100 days from 1838 to 1871 (see Figure 3).

This set of calculations shows considerable annual fluctuation but indicates a general decline from a peak of 96 kills per 100 days hunting in 1841 to a nadir of 22 in 1864, followed by recovery to 75 in 1868. Within this pattern are several steep declines as in 1844, 1851 and 1856. Similar sudden declines in other Yorkshire hunts have coincided with reports of debilitating outbreaks of mange. This may indeed have been the case in the Cleveland region, since Blakeborough & Pease (1914) refer back to "the great mange scourge" and that "Badgers, thought to be immune or un-susceptible to mange, were introduced into fox hunting territories to clean mangy earths".



**Figure 3:** Fluctuations in the annual numbers of Red Foxes killed per 100 days hunting by the Cleveland Hunt during hunting seasons 1838/39 to 1870/71 (figures calculated from hunt diary entries in Pease, 1887).

### **Badger *Meles meles***

There is an extensive historical literature on the Badgers of the Whitby region commencing with a field sports perspective in Blakeborough & Pease (*l.c.*). During the 19th and early 20th centuries Badger persecution was rife in north-east Yorkshire and the Cleveland area (Howes, 1988). Blakeborough & Pease (*l.c.*) provide an eye witness account of a successful badger dig in the Pickering area, the final extraction of the Badgers into sacks for later baiting being achieved by the use of metal pincer-like ‘badger tongs’ known locally as ‘clams’. Badger tongs are rare or unrecognised in museum social history collections, though a set collected in the winter of 1985/86 from Thornton Dale is in the Ryedale Folk Museum, Hutton-le-Hole. Blakeborough & Pease (*l.c.*) note that Kirkbymoorside was a “locality in which badgers abound and in which baiting was popular”. The hunting literature shows that Badgers were hunted with fox hounds in woodland around Kirkbymoorside, Duncombe Park, Boltby, Bilsdale and Farndale in the 1860s. However, opinions varied amongst the fox hunting fraternity as to the merits and de-merits of Badgers. Some regarded them as a potential threat to Red Fox cubs and a nuisance for opening up stopped earths in advance of a hunt. Others recognised their value in creating and cleaning out earths. Although Badgers had been exterminated from many estates during the 19th century, Blakeborough & Pease (*l.c.*) recognised their benign and beneficial nature in fox hunting territory and championed their preservation and re-introduction, contrary to the prevailing attitudes. Badgers were regularly killed in the interests of game rearing and stock protection by laying poisoned baits or by gassing setts, particularly since the 1950s. M. Johnson of the Forestry Commission found 7 setts in the Wykeham Forest area inactive due to gassing in 1962.

Knight, Middleton & Paget (1972) reported on the 125 setts which John Knight and others had located in the northeastern (Cleveland, Whitby and coastal) part of the North Riding as part of the Mammal Society National Badger Survey . Findings are reviewed in Table 3.

Table 3: Associated habitats, soil types, site incline and activity level at Badger setts (Knight, Middleton & Paget, 1972).

Habitat	No. of setts	%
Deciduous Woodland	27	21.6
Coniferous Woodland	58	46.4
Mixed Woodland	24	19.2
Copse	7	5.6
Hedgerow	3	2.4
Open Field	4	3.2
Quarry	1	0.8
Others	1	0.8

Soil Type (Only recorded in 96 setts)	No. of setts	%
Sand	66	69.0
Clay	15	15.5
Limestone	7	7.2
Shale	8	8.3

Incline	No. of setts	%
Slope	124	99.2
Level	1	0.8

Activity (Only certain in 107 setts)	No. of setts	%
Active	86	80.4
Non-active (including extinct)	21	19.6

Sixty years after the beleaguered status of local Badgers was described by Blakeborough & Pease (*l.c.*) the topography and habitats of the comparatively numerous Badger setts in the North York Moors region were beautifully described by Paget & Middleton (1974). Currently the North Riding Badger Group undertakes the role of monitoring these setts and recording local Badger road casualties.

#### European Otter *Lutra lutra*

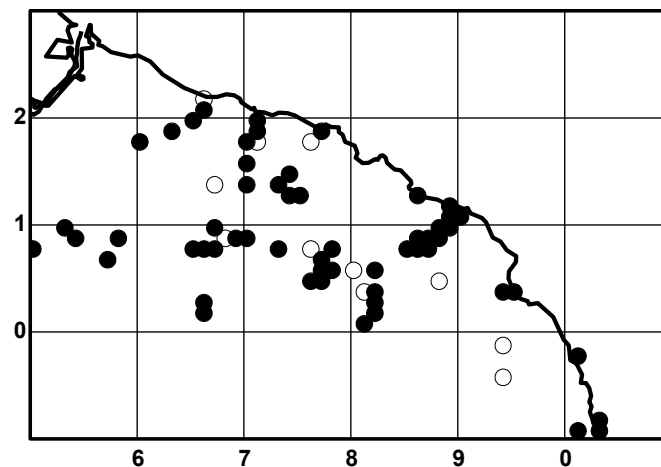
Historical records in *The Naturalist* from the River Esk catchment show that an Otter trapped a few days previously was turned down and killed after a short hunt at Lealholme Bridge in 1894 and a young female was killed at White Hall shipyard in 1894, the preserved specimen being exhibited at Whitby Museum. A female was killed at Glaisdale in 1896 (*Whitby Gazette* 24th Jan. 1896) while a male was killed at Egton Bridge and a male and a female were killed at Grosmont in 1897. One was seen near Sleights Bridge and three were seen at Ruswarp Weir in 1898. One was shot at Ruswarp Weir in 1900 and Otters were regarded as “abundant” in the Esk at Castleton in 1911. They were “not uncommon” at Egton Bridge in 1925 and 1930, while tracks were seen in the snow on the frozen Esk in 1941. *The Northern Echo* of 20 Dec. 1940 gave a lurid

account of a fight between a large, allegedly male, Otter and a seal in the Esk above the dam at Ruswarp. Footprints were seen at Lockwood Reservoir in 1952 and Otters, previously recorded at Lownorth Beck and Jugger Howe Beck on the upper Derwent catchment in 1904, were at Littlebeck in 1972, Ramsdale Beck at Fylingdales in 1976 and Beck Hole on the Murk Esk in 1978.

Woodroffe's (1994) meticulous examination of the records of the Northern Counties Otter Hounds, which regularly worked the Esk and its tributaries, showed that 16 days of hunting from 1933 to 1939 accounted for 15 Otters (0.93 per day) and that 11 days of hunting from 1950 to 1959 produced 12 Otters (1.09 per day). These figures are significant since they provide an index of the Otter population on the Esk immediately prior to the organochlorine pesticide-induced Otter crash of the 1960s.

The series of national otter surveys, which each sampled a standard 25 stretches of the Esk catchment, encountered positive signs at just one site in 1986-88, three in 1991-94, 20 in 2000-02 and 21 in 2009-2010. The Vincent Wildlife Trust introduced four Otters into the area between 1990 and 1993 (Jefferies *et al*, 2000) and the large increase in positive sites noted in the 2000-02 survey is probably due to these releases (Crawford, 2005).

The annual mammal reports of the Whitby Naturalists' Club noted that Otters were back on the Derwent/Esk catchment in 1994 and there have been many reports since (see Fig. 4).



**Figure 4:** Approximate locations of Otter records from the River Esk catchment and minor becks opening onto the shore and adjacent coastal habitats from Saltburn to Scalby Mills. Open circles = 1790-1979. Solid dots = post 1980.

Historical records from the Cleveland coast show that Otters were present in the beck at Saltburn in 1790, in Roxby Beck at Staithes in 1896, at Liverton Mines in 1904, at Loftus in 1905 and in the Waitel Beck in 1905. During 1997 and 1998 Winter (2002) made investigations of Otters' use of the minor becks opening onto the shore and adjacent coastal habitats at sites from Saltburn to Scarborough. Otters were known to frequent the lower reaches of Scalby Beck which emerges onto the rocky shore at Scalby Mills and Otters on the Esk were known to visit Whitby Harbour. Spraint was located above Mean High Water mark on the boulder-strewn

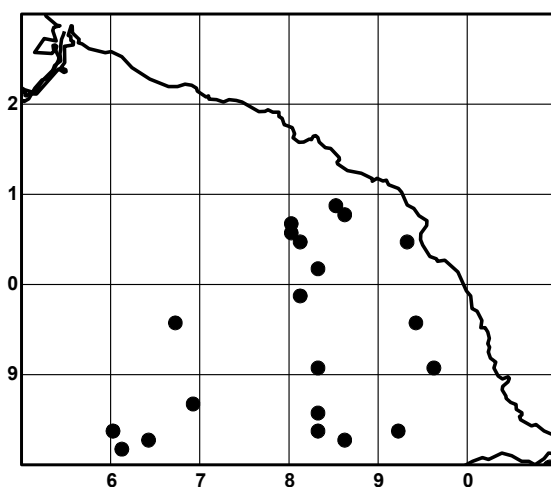
shores at Scalby Ness and Hayburn Wyke in 1989, the Scalby Ness samples containing fish bones and the carapaces of small crabs. Signs were identified by the stream emerging onto the sandy shore at Sandsend in 1997 and at Stoup Beck, which emerges onto the shore of Robin Hood's Bay, in 1998. The only other positive coastal site was at Saltburn-by-the-Sea where Saltburn Gill and Skelton Beck merge before emptying onto the cobble beach.

**Stoat *Mustela erminea***

In 1930 and 1934 John R. Flintoff (1873-1941) of 'Water Ark', Goathland, undertook a questionnaire survey of gamekeepers and estate managers, requesting the numbers, sexes and pelage forms of Stoats trapped on shooting estates. Replies were readily provided from 51 estates across Yorkshire and into adjacent counties, including 20 from the North York Moors and adjacent areas on the northern edge of the Vale of Pickering. Flintoff's pioneering survey provided an invaluable legacy of raw data, anecdotes and a preliminary interpretation on the subject of winter whitening (ermine pelage) (Flintoff, 1933, 1935 & 1936). These have enabled levels of occurrence of ermine pelage to be compared at different altitudes and in different geographical regions across Yorkshire and adjacent counties (Howes, 2002b).

Not all UK Stoat populations have the gene which gives rise to the winter whitening process. This tends to be absent in the southeast of Britain and present in the northwest (McDonald & Harris, 1998). With 'Watsonian' Yorkshire being on the boundary of these two zones, Flintoff's survey provided revealing data on the geography of the winter whitening phenomenon in the UK. 197 (7.6%) of the 2,584 stoats killed on estates in the Whitby and North York Moors region exhibited some degree of winter whitening. This compared with 15.3% for adjacent counties to the north of Yorkshire, 10.5% for the Yorkshire Dales, 5.1% for the Wolds and Holdernss, 5% for the southern Pennines, 3.4% for the Vale of York and 3.5% for adjacent counties to the south. With chill air temperatures suppressing the production of melanin in the autumn moult, a re-working of Flintoff's data showed that Stoats from shooting estates with land above 1000ft exhibited a greater incidence of ermine pelage (Howes, 2000b).

20 local estates and correspondents provided records to Flintoff's survey. Their locations provide in Figure 5 an impression of local Stoat distribution from 1931-34.



**Figure 5:** Locations of shooting estates on the North York Moors and the northern edge of the Vale of Pickering from where Flintoff received statistics of 2,584 Stoats killed 1931-34 (from Flintoff, 1933, 1935 & 1936).

### **American Mink** *Neovison vison*

This versatile riparian predator which feeds on a wide range of waterside and aquatic vertebrate and crustacean prey was first imported into Britain from Canada and Alaska in 1929 to be farmed for fur. Yalden (1999) ascribes the origins of this commercial episode to surviving military officers returning from the First World War investing their pensions in the new industry of fur farming. The close association between British and Canadian forces for training and joint combat purposes no doubt provided the necessary contacts and inspiration for subsequent peacetime commercial ventures. The industry expanded considerably after the Second World War and by 1962 the number of mink keepers in the UK had peaked at around 700 with 79 established in Yorkshire, at least 7 in and adjacent to the North York Moors region (see Table 4). On 1 January 2003, the Fur Farming (Prohibition) Act 2000 (Commencement) Order 2001 came into effect, after which it was illegal to keep animals in England and Wales solely or primarily for slaughter for the value of their fur.

Table 4: Evidence of mink farms in or adjacent to Whitby and the North York Moors region (from Howes 2009).

<b>Locality</b>	<b>Grid ref.</b>	<b>Date</b>	<b>Stock</b>
Eskdale, Sleights	NZ8608	1973	11 ♂ & 53 ♀
Alma Fur Farm, Pickhill, Thirsk.	SE3483	1973	60 ♂ & 240 ♀
Bondgate, Helmsley.	SE6183	pre-1970	4 ♂ & 15 ♀
Pottergate, Helmsley	SE6183	1960	
Wood Cottage, Brompton-by-Sawdon.	SE9482	pre-1968	50 breeding Mink
Hilton Mink Farm, Hilton.	NZ4611	1960	c.250 ♂ & 960 ♀ in 1962
Yarm	NZ41	1960	

Land-owners and estate workers were generally oblivious to the presence of American Mink on their land, even in riparian situations, but following awareness training provided by ADAS staff and experimental trapping sessions associated with the newly launched MAFF bounty scheme, American Mink were regularly encountered and reported. This trapping-based eradication scheme was instigated in 1965 but abandoned in 1970, when it was accepted that Mink were too well established and widely distributed for eradication by this means. Riparian landowners and occupiers have been encouraged since 1970 to undertake trapping where necessary to protect vulnerable stock (poultry, ornamental wildfowl and fish). The first records on river systems in the Whitby region, though not necessarily of established populations, were from the Esk catchment where their spread was rapid. First noticed in Westerdale in 1965, individuals had reached Ruswarp, in excess of 16 miles downstream, by 1967. They were in the Rye catchment at least by 1967 and the Upper Derwent catchment by 1968. Recently they have been photographed successfully hunting fish in coastal rock pools at Whitby and Saltwick Nab. It is likely that in future they will meet with intra-guild competition from re-colonising Otter populations across the region.

### **Wildcat *Felis silvestris***

A rock shelter site identified as “possibly ... a wildcat den” at Pifflehead Wood in Newtondale was excavated by Simms (1972) and contained the bones of a small Beaver *Castor fiber* amongst other prey remains. The earliest positively-dated Wildcat evidence is a single bone from an early Iron Age village site dated 2,500-2,400 b.p. on Castle Hill, Scarborough (Rutter, 1956). What is regarded as the last record of Wildcat in Yorkshire was one trapped by Mr John Harrison on his farm at Murton near Hawnby one winter around 1840 (Howes, 2002a).

### **ARTIODACTYLA**

#### **Roe Deer *Capreolus capreolus***

Evidence from a range of Yorkshire cave and fissure sites shows that Roe Deer formed part of the early post-glacial (Flandrian) fauna of the North Yorkshire region, indeed at the Mesolithic hunting camp at Star Carr in the eastern Vale of Pickering, dated at 9,500 years b.p., Roe Deer was the second most frequent quarry, being outnumbered only by Red Deer. Roe deer were evidently common in the medieval landscape. It was hunted, or harvested, in the Forest of Pickering, where £5 was paid for cord to make nets to catch Roe Deer in 1322 (Mitchell, 1985). Roe venison featured in the banquet at the archiepiscopal palace at Cawood to celebrate the enthronement of George Neville as Archbishop of York and Chancellor of England in 1466 (Clarke & Roebuck, 1881).

After an absence of documentary records or, indeed, evidence of any description for about four centuries, Roe Deer again appeared in the North Yorkshire region in the 20th century. The formation of the Forestry Commission in 1919 quickly gave rise to the establishment of extensive areas of softwood plantations, largely in the North York Moors/Cleveland uplands and mainly in the region of what is now the North York Moors National Park. By the 1930s these early forest blocks were reaching the 'thicket' stage of development, a habitat stage known to be highly attractive to Roe Deer colonisation. The first modern encounters with Roe Deer took place in the Dalby Forest in 1936 and populations were present throughout the Forestry Commission and Duchy of Lancaster Forests in the north-east Yorkshire/Cleveland uplands within a decade (Simpson, 1969).

Whether these deer originated from an un-noticed residual north-east Yorkshire population or had moved down from the Durham/Northumbrian region is difficult to establish. However, the North Yorkshire population expanded markedly during the 1940s, 50s and 60s, with visitors to the National Park routinely enjoying encounters with groups of deer crossing rides or public highways. Sadly, the combination of an increased deer population and a greatly increased volume of traffic movements has given rise to road traffic accidents at a rate over 100 per year in the North York Moors/Cleveland region (Gordon Simpson, pers. Comm.).

#### **Red Deer *Cervus elaphus***

Red Deer were a prime quarry in the Forest of Pickering. Incidents of poaching regularly featured in the Forest Assize records of the 14th century, Rimington (1956) noting that seven men were caught taking a stag at Ellerbeck with bows, arrows and greyhounds in 1307. An enquiry into the state of the forest in 1503 claimed that 200-300 Red Deer were present. The examiners and eight helpers then entered the woods and within two hours encountered 140-160 animals. Another survey of the mid-16th century showed evidence of 263 Red Deer

including 54 stags. By 1608 the number appears to have fallen to 15 or 16 stags and a survey of 1619-21 records that there were few Red Deer left, confined to Newtondale and woodland at Hackness (Rimington, *l.c.*).

Following the escape of the 350-strong herd from Duncombe Park at Helmsley during the Second World War, sightings were reported widely throughout the Hambleton and Cleveland Hills and in the Forestry Commission plantations north of the Vale of Pickering. Two stags were seen in the Dalby Forest in 1946, Red Deer were present in the Wass Woods area in 1947 and there were reports from woods between Ampleforth and Rievaulx in 1951 and from the Helmsley area in 1953. A feral population had become established in the conifer forests north of Allerston, where breeding was proved in 1950, and in 1969 Red Deer were present along the Hambleton escarpment (Howes, 1984).

Table 5: Deer Parks which may have provided the basis of past or present populations of feral deer in the Whitby, Cleveland and North York Moors region (from Howes 1984)

<b>DEER PARK</b>	<b>Earliest date traced</b>	<b>Historical maps and deer species reported</b>
<b>Blansby Park</b>	fl.1547	<b>Saxton's map 1577; Speed's map 1610; Shirley (1867)</b> Fallow
<b>Crayke Park</b>	fl.1530s	<b>Leland 1530s-40s; Shirley (1867)</b> Fallow
<b>Duncombe Park</b>	fl.1517	<b>Saxton's map 1577; Speed's map 1610; Shirley (1867)</b> 600 Fallow in 1717; <b>Whitaker (1892)</b> 320 Fallow, 300 Red; <b>Victoria County History (1912)</b> 350 Fallow, 350 Red; <b>Whitehead (1950)</b> Fallow
<b>Gilling Park</b>	Emparked 1374	<b>Shirley (1867)</b> Fallow
<b>Helmsley Park</b>	fl.1577	<b>Saxton's map 1577; Speed's map 1610; Shirley (1867)</b> Fallow
<b>Kirkbymoorside Park</b>	fl.1577	<b>Saxton's map 1577; Speed's map 1610; Shirley (1867)</b> Fallow
<b>Mulgrave Park</b>	fl.1577	<b>Saxton's map 1577; Speed's map 1610; Shirley (1867)</b> Fallow; <b>Whitaker (1892)</b> 30 Fallow; <b>Victoria County History (1912)</b> 30 Fallow
<b>Newborough Park</b>	Emparked 1382	<b>Shirley (1867)</b> Fallow +
<b>Scampston Park</b>	fl.1892	<b>Whitaker (1892)</b> 100 Fallow; <b>Whitehead (1950)</b> Fallow
<b>Sinnington Park</b>	fl.1577	<b>Saxton's map 1577; Speed's map 1610; Shirley (1867)</b> Fallow
<b>Thornton Park</b>	fl.1577	<b>Saxton's map 1577; Speed's map 1610</b>
<b>Whorlton Park</b>	fl.1577	<b>Saxton's map 1577; Speed's map 1610; Shirley (1867)</b> Fallow
<b>Key</b>	fl.	Flourishing = deer park in operation
	*	Deer or Park mentioned
	+	Park extant at time of writing (Shirley 1867)

#### **Chinese Muntjac** *Muntiacus reevesi*

Introduced into the animal collections at Woburn Abbey, Bedfordshire, around 1900, specimens escaped into the adjacent countryside and established a feral population during the 1920s. It expanded its range naturally to adjacent counties, arriving in Derbyshire by the 1970s and South Yorkshire by 1992. Its early occurrences in the Yorkshire region were reported simultaneously

from widely discontinuous sites from the Doncaster, Rotherham, Wetherby, Calverley and Bingley regions, raising suspicions that these easily trapped deer were being caught and translocated by shooting interests to woodland shoots around the county (Howes, 1993). In north-east Yorkshire it was first noticed in the Middlesbrough area in 1999 and Bond (*l.c.*) reported sightings from Errington Wood in 2008 and Wiley Cat Wood in 2011.

#### **Fallow Deer *Dama dama***

Table 5 shows that Fallow Deer were kept in all 12 of the local deer parks with up to 600 present at Duncombe Park in 1717 (Shirley, 1867). The Duncombe Park herd escaped into the adjacent woodlands and new Forestry Commission plantations during the Second World War. They were recorded at large in Dalby Forest through the mid-1940s, small numbers were present in Wass Wood in 1947, some were in the Kirkbymoorside district in 1951 and in the vicinity of the old park at Helmsley in 1953. A small herd was seen near Rievaulx and colonisation of Allerston Forest was confirmed in 1956 and Fallow Deer were being observed in the Goathland district by the early 1960s (Howes, 1984).

These historical notes and bibliography covering the terrestrial mammals of the Whitby area will form a basis for future mammal studies within this diverse and fascinating region.

#### **Acknowledgements**

I would like to dedicate this review to the late Ian Thackrah, Mammal Recorder 1994-2004, and to all the mammal recorders of the Whitby Naturalists' Club past and present.

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