

The vertebrates of the River Foss: an historical review



Burbot, from Rev William Houghton's British Fresh-water Fishes, Volume 2 (1879)

A report for the River Foss Society

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1. INTRODUCTION

This report was commissioned by the River Foss Society to review historic wildlife data associated with the river. It is one of three similar reports, the others covering flora and invertebrates. A wide range of literature has been searched, including the publications of the Yorkshire Naturalists' Union (e.g. *The Naturalist* and *Transactions of the Yorkshire Naturalists' Union*), synopses of the fauna of the York area (e.g. Grabham, 1906, 1907a & b) and papers relating to key species. The unpublished record books of the now-defunct York & District Field Naturalists' Society (YDFNS) have also been consulted. Fisheries data was requested from the Environment Agency but only two sets of results from electro-fishing surveys were made available. Some general information was also provided by City of York Council.

2. MAMMALS

The mammal species most closely associated with the River Foss are Water Vole and Otter. A number of other mammals will be more loosely associated with the river corridor, riparian habitats being important for foraging bats, for example.

Water Vole

Records from the archives suggest that Water Vole populations in the Vale of York increased greatly during the early 20th century but underwent phases of decline thereafter, with an accelerating reduction towards the end of the century. In 1911, it was noted in the YDFNS record book that, "*Water Voles are rapidly becoming ubiquitous, most of the little becks with which the Vale of York is so plentifully supplied providing asylum for innumerable colonies of these interesting and prolific rodents*". However, numbers were reported to be declining around York in 1935 (Bramley, 1936).

Peter Walls speculated that the 1972 Foss widening scheme would impact upon local populations (Fife & Walls, 1973); he was possibly correct but any effect of changes in habitat quality was soon masked by intense predation by American Mink, the factor which drove a catastrophic decline in Water Vole populations nationwide from the 1970s onwards.

By the early 1990s, populations on the Foss were small and vulnerable. An adult was seen at New Earswick in July 1990 and one was removed from a garden pond on Haxby Road where it had taken up residence (and begun to devour ornamental plants) in July 1991. A few were present on the heavily polluted Tang Hall Beck tributary at St Nicholas Fields in the early months of 1994.

During the second half of the 1990s, there was evidence of localised recovery of populations on the Foss. In 1995, Michael Thompson reported sightings at Strensall Bridge, Earswick and Huntington, mostly referring to individual animals. In 1997-99, field signs or sightings were reported from Strensall, Towthorpe, Haxby, Lock House, Haxby Landing, Earswick, Lock Cottage (New Earswick), Meadowfields and Yearsley Bridge¹.

Episodic predation by Mink, as well as natural population cycles, may explain the 'boom and bust' nature of Water Vole populations on the river today. In some years there are scarcely any reports; in others, robust and healthy populations appear in varying locations. During our walks in summer 2017, we noted active burrows upstream of Towthorpe Bridge and a much larger population extending over about a kilometre of the river immediately upstream of the Outer Ring Road at Earswick. Here there were high densities of burrows on both banks. A survey of the former tannery site (now Foss View) at Strensall in May 2015 recorded four Water Vole latrines on the northern bank of the river (per N. Rolls, City of York Council).

The resilience of Water Vole populations on the lower Foss may be influenced by the presence of large numbers on Strensall Common. Here they inhabit tussocky wetland habitats with latrines and feeding stations found in hummocks of Purple Moor-grass and Common Cotton-grass or stands of Common Reed. High densities of Water Voles seem able to persist in such non-linear mire habitats, presumably because they are less attractive to water-based predators and provide more abundant refuges.

Otter

Twenty-five years ago, it would have been reasonable to assume that Otters had long since disappeared from the Foss, never to return. The recovery in the fortunes of this iconic - though not universally popular - river mammal has been remarkable, with evidence of activity from Oulston reservoir all the way downstream into York. Because the Otter has such an intimate association with the River Foss, it's worth re-tracing its story in detail.

In 1902, the *Yorkshire Evening Press* reported the shooting of a pair of Otters at Haxby Lock, adding that, "*There are many anglers in York, more perhaps than in any town of similar size, and few of them will regret that the number of otters in the River Foss has been decreased by two*".

In 1906, Oxley Grabham wrote that Otter was "*By no means uncommon...[and] has bred in the Foss, right in the City*" (Grabham, 1906). The same author recounted that, around 1904, "*...a nest of young cubs was found actually within the city boundaries of York behind an old dam on the Foss. Two of these were reared by Mr Reynolds...*" (Grabham, 1907b). Around

¹ Records from Environment Agency, Yorkshire Wildlife Trust and Yorkshire Mammal Group surveys.

this time there was a regular holt in the old lock wall downstream of New Earswick, though Otters were often hunted by the workers building the village (Fife & Walls, 1973).

In 1912, Otters were present on the Foss at Stillington (YDFNS record book). The next year, Otters bred in a culvert under the *Yorkshire Herald* offices as well as on Tang Hall Beck and the Foss itself (YDFNS). In 1914, four young were raised in a holt in the river bank near Huntington (YDFNS). In 1915, a pair raised four young in an old willow stump in Sydney Smith's garden on Huntington Road (Smith, 1916). The following year, the first road casualty was noted near Yearsley Bridge – considering the relatively tiny number of motor vehicles on the roads at that time, this must attest both to the numbers of Otters and their vulnerability to traffic.

In September 1922, Smith recorded that,

“A pair of Otters was disporting in the River Foss at York, directly behind my house on Huntington Road, and I saw and heard them for about a month later, when they departed at their own will. I hear that one adult Otter and three cubs were killed at Huntington...” (Smith, 1923)

Otters remained a familiar sight in the centre of York into the early 1930s, when they could be seen at night on the Ouse around the Guildhall (Woodcock, 1932). Around that time, they again bred close to Yearsley Bridge and stole goldfish from a garden pond. In 1933, they were described as “extraordinarily numerous” around York (YDFNS). Writing in the YNU's *Annual Report* for 1934, W.G. Bramley observed that,

“Otters shew no diminuation of numbers and are abundant round York. A pair brought up a litter of cubs on the Foss at Huntington. On March 19th they had taken a toll of the Roach, whose scales and other remains littered the bank in several places”.

The following year, Bramley recorded that,

“Otters, especially in the York area, are numerous, and many complaints are made by anglers about their destruction of fish. One of 3 ft. 9in. was killed at Huntington on 7th October, it had killed and was eating an Aylesbury Duck. From Mr S.H. Smith's pond in his garden at York, Otters had destroyed many ducks...”

In 1936, Smith again suffered the depredations of Otters:

“On 14th March two Otters in the River Foss at Huntington offered an opportunity for a number of the villagers with sticks and dogs to stage an impromptu hunt. The Otters appeared to enter into the spirit of the hunt and eventually they escaped

apparently without injury. Throughout the year they and, perhaps, some of their progeny have been in evidence, and so far they are still at large. Several times they have visited the pond in my garden at Heworth and successfully cleared out most of the trout” (Smith, 1937).

In 1937, there was another holt on the Foss at Layerthorpe Bridge but the animals were eventually driven off by stone-throwing youths (Gallwey, 1938). In 1938, Otters were reported to have deserted the river following dredging (Gallwey, 1939). In 1943, one took five Pike weighing up to 2 lbs from a pond in the Foss catchment (per Howes, 2009). In 1948, one was killed on the road between Huntington and Earswick and between 1945 and 1971 there were three known road casualties at Yearsley Bridge (Fife & Walls, 1973).

In 1956, Winifred Taylor wrote that a pair of Otters *“had their holt on the River Foss near Monk Bridge when they could frequently be heard whistling after dark”*. The year(s) this observation refers to is not specified.

A severe national decline in Otter numbers began in the late 1950s and by the late '70s only 1.8% of riparian sites surveyed provided evidence of Otter activity. Prior to the recovery of Otter populations during the 1990s, the last confirmed breeding record in the Vale of York was by the Ouse at Overton in 1969 though one took up residence on a large pond in the Foss catchment for three weeks in spring 1972, where it fed on Toads and Moorhens (per Howes, 2009).

There has been a marked recovery in national Otter populations since the early 1990s, bolstered by reintroduction programmes, and the species now occurs on all the Vale of York's rivers. Otters are once again present even on the urban sections of the River Foss, with a holt recorded at Rowntree Wharf and sprainting (territorial marking) at Foss Bank in June 2015 (Nadine Rolls, City of York Council).

American Mink

Feral American Mink were first reported in Yorkshire as escapees from fur farms in the early 1950s; the earliest record from the River Foss was in 1966 with breeding reported at Strensall in 1968 (Howes, 2009). Mink were reported at Oulston reservoir in the latter year (Howes, *ibid*). A small population was believed to be resident on the lower Foss during the 1990s, with one trapped in a riverside garden at Yearsley Weir in early 1991. Occasional reports of Otters from Foss Islands around this time may actually have referred to Mink (Hammond, 1991).

3. BIRDS

A search of archival literature produced little of note regarding birds on the Foss: occasional records appear in Yorkshire Naturalists' Union and York Ornithological Club bird reports but these are generally inconsequential. A search of 'recent sightings' summaries on the York Ornithological Club website for 1998-2014 yielded only a few mentions: 12 Goosanders were noted at an unspecified location on the river in January 2000; a Coot was feeding young on the river at York in June 2000; two drake Pochards were with four Tufted Ducks on the Foss at York in January 2002; a Green Sandpiper was reported near Strensall in September 2006; and 13 Tufted Ducks were on the Foss at York in January 2011.

In 1936, Sydney Smith noted an increase in Kingfishers around York "although I know a lot are killed [by anglers] every year"; a pair had nested at Haxby, presumably on the Foss (Smith, 1936).

In August 2008, a radio-tracked Osprey from Speyside named Beatrice roosted overnight at Oulston Reservoir on her southward migration².

4. FISH

The earliest documentary evidence of fish in the River Foss comes from the King's Fishpool, the first example of a fishpond in England, constructed in 1086-89 and stocked with Pike and Bream (Bonow *et al* 2016 and references therein). Breeding stock of Bream from the Fishpool were granted by King Henry III to Fountains Abbey in 1229 and Byland Abbey in 1245 (Bonow *et al, ibid*).

The Foss was once a haunt of the enigmatic Burbot *Lota lota*, the only freshwater member of the Cod family. This species has not been recorded reliably in Britain since 1969 and is now believed nationally extinct. This cold-water fish, prized by ice-anglers in Scandinavia and Russia, is believed to have colonised eastern England during the last Ice Age via the 'land bridge' which connected Britain to continental Europe. The Burbot may have been an early casualty of climate change though pollution and river engineering certainly sealed its fate.

² <http://www.roydennis.org/o/wp-content/uploads/2011/10/Beatrice-20082.pdf>

time they swam very lively in the Water. The remaining 4 having no Signs of Life upon them, I put them into the same Pail, and before Night they all swam about in it. *Burbots*, being a Fish not frequently met with in the Southern Rivers of *England*, are often found in this County, especially in slow Rivers and standing Waters, as in the River *Foss* in *York*, and also in *Derwent*; but in no Place more frequent, than in the Fen Ditches of the Levels, about four Miles from *Doncast-*

The presence of Burbot in the River Foss was mentioned in the *Philosophical Transactions* of the Royal Society in 1721

Burbot bones have been identified from Anglo-Saxon and Viking era food remains in York (O'Connor, 2000) and the species was reported from the River Foss as long ago as 1721. In the late 19th century, Burbot was still reasonably widespread in the Ouse catchment: Clarke & Roebuck (1881) stated that it was "comparatively common" in the lower Derwent, the Foss and lower Ouse. Marlborough (1970), referencing angling literature, states that it was reported as common in the Foss at York up to 1900 but was wiped out by "gasworks pollution"; Worthington *et al* (2011) also give 1900 as the last reported date for the river. Smith (1933) indicated that the Burbot was still common in the Foss at the beginning of the 20th century but had gone by the 1930s.

A search of the angling press and local club archives would probably yield useful information on the status of other fish in the Foss. However, regional natural history publications provide little. Grabham (1907) mentions a 4.5 lb Perch caught at Monk Bridge some years previously and refers to Silver Bream, *Blicca bjoerkna* as being a very local fish in Yorkshire, found in the Ouse and Foss. There do not appear to be any recent records of Silver Bream from the Foss, so it is possible this species has been lost.

The fish species currently known from the River Foss are summarised in Table 1. Ruffe *Gymnocephalus cernua* was present in the early 1990s (National Rivers Authority data per Hammond, 1991) and presumably still occurs. It has been speculated that Brook Lamprey *Lampetra planeri* may occur in the upper reaches of the river (Environment Agency, 1998) but there do not appear to be records to confirm this. Minnow *Phoxinus phoxinus* is likely to be present in the upper and middle reaches of the river. Fife & Walls (1973) stated that Crucian Carp *Carassius carassius* had been introduced to the river by York Amalgamation of Anglers but there are no recent reports.

Table 1: fish species known to be present in the River Foss

Scientific name	English name	Source	Comments
<i>Abramis brama</i>	Bream	angling websites	Lower reaches; monitored at Foss Barrier fish screens (Wood <i>et al</i> , 1994)
<i>Alburnus alburnus</i>	Bleak	RFS website	Monitored at Foss Barrier fish screens
<i>Anguilla anguilla</i>	European Eel	EA data	
<i>Barbatula barbatula</i>	Stone Loach	EA invertebrate sampling data	At Lilling Green in 2009; probably widespread in middle reaches (In 1973, said to be increasing downstream of Haxby Lock by Fife & Walls but occurring no further upstream than Huntington Church Bridge).
<i>Barbus barbus</i>	Barbel	angling websites	Stocked By York & District Amalgamation of Anglers
<i>Cottus gobio</i>	Bullhead	2017 RFS survey	Below Oulston Reservoir in 2017; also in EA invertebrate sample at Marton Abbey in 2013
<i>Cyprinus carpio</i>	Carp	RFS website	lower reaches
<i>Esox lucius</i>	Pike	angling websites	Castle Mills well known for Pike fishing
<i>Gasteroceus aculeatus</i>	Three-spined Stickleback	2017 RFS survey	Lower river; in EA invertebrate sample at Lilling Green in 2013
<i>Gobio gobio</i>	Gudgeon	EA data	
<i>Leuciscus cephalus</i>	Chub	2017 RFS survey; EA data; angling websites	Abundant in middle to lower reaches; monitored at Foss Barrier fish screens
<i>Leuciscus leuciscus</i>	Dace	EA data; angling websites	Monitored at Foss Barrier fish screens
<i>Oncorhynchus mykiss</i>	Rainbow Trout	RFS website	Escapees present
<i>Perca fluviatilis</i>	Perch	angling websites	Monitored at Foss Barrier fish screens
<i>Pungitius pungitius</i>	Nine-spined Stickleback	EA invertebrate sampling	At Lilling Green in 2013 and 2015; probably widespread
<i>Rutilus rutilus</i>	Roach	EA data; angling websites	Monitored at Foss Barrier fish screens
<i>Salmo trutta</i>	Brown Trout	RFS website	In faster water u/s Strensall
<i>Tinca tinca</i>	Tench	angling websites	Lower reaches

There is relatively little data from electro-fishing surveys: in June 2010, a survey at Lilling Green yielded 63 Chub, 28 Dace, seven Roach and two European Eels; another at the same location in July 2012 produced 30 Gudgeon and an Eel (Environment Agency data).

The historic presence of Burbot, Silver Bream and Ruffe in the Foss is notable since these fishes are believed to be indigenous only to the river systems of eastern England, having colonised Britain before the submergence of the 'Doggerland' bridge severed our physical connection to continental Europe around 7,500 years ago (Wheeler, 1977). Where surviving

populations have not become significantly inter-bred with farmed stock, they may be of genetic importance as ancient but locally-adapted lineages.

5. REFERENCES

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