

Water Vole Volunteer Field Pack

A practical guide to help with your surveys



Water Voles in the Tees Valley



Water Voles were once a familiar sight across lowland sites in Britain, with many canals, rivers and lakes adorning the water vole. However since a nationwide survey was taken out during 1990 to assess the numbers of water voles present in our lowland sites, there has been a very sharp decline in numbers. Since then the water vole has been given a priority status in the Tees Valley Biodiversity Action Plan. The reason for this decline, both nationally and throughout the Tees Valley, are complex but are mainly due to loss of bankside habitats, drastic changes in water courses and predation by the American mink. There is hope however as many water voles in the Tees Valley seem to thrive in urban becks around Middlesbrough, Stockton and Darlington.

Why we need your help

Our current Water Vole surveys are rather old and desperately need updating. In helping with the surveys we can not only draw a bigger picture of Water Vole populations but we can assess the state of lowland sites and how we manage them. From there we can seek patterns between the state of our watercourses and varying water vole populations to see why water voles have disappeared from some areas whilst staying in others.

The Environmental Records Information Centre have kindly passed on previous water vole surveys so we can compare the new surveys against the old ones. Once we have compiled the new surveys we will send them to ERIC who will add them to their database.



Our survey will comprise of several elements; firstly we will look for the water voles themselves, signs of activity such as lawns, burrows and latrines. Secondly we'll look at the type of area they are inhabiting, such as bordering land use, types of water course and bankside vegetation. Lastly we'll be looking at aspects which could potentially effect water vole populations such as pollution and invasive species, both in the water and on the bankside

Water Vole Habitat

Water Voles mainly occur along well vegetative high sided banks along rivers, becks, ditches, dykes, canals and lakes. The suitability of these banks are dependant on the height of the bank for burrowing, refuge from high water levels in winter and the availability of food all year round. Slow moving water courses which provide a permanent source of water throughout the year are favoured by water voles. Long varying types of vegetation are key to a water voles habitat for feeding, cover and nest making. Vegetation can include reeds, rushes and sedges for dry nest making and grasses, water plants and wildflowers as a great source of food. Sites with a large population of trees and scrub are not favoured by Water Voles due to the excessive shading on the bankside, which will prevent vegetation growth.

Threats to Water Voles

Habitat Loss and Degradation

The main reason for the declining numbers of water voles nationally and within the Tees Valley is down to habitat loss along the water courses and the banksides. These are down to two main reasons;

- **Poor Management**

Heavily mowed banks and waterside footpaths will lead to the reduction in food sources and loss of predation cover. Overgrazing from livestock also results in the large loss of vegetation, the constant trampling of the bankside will have dire degradation effects on the water voles habitat. Undermanaging a site can also have negative effects on water vole habitats, by allowing watercourses to be blocked with silt and banksides to be over grown with dense scrub can result in the watercourse drying out altogether.

- **Construction**

Maintenance works for de-silting, bank protection and river engineering all play a large part in the destruction of habitats. Building on floodplains can result in total habitat destruction along with contamination of water courses and large vegetation loss.

Population Fragmentation

With habitat degradation on the rise this ultimately leads to habitat isolation and the total loss of local water vole populations. With varying breeding successes and the large chance of genetic restrictions due to breeding within small populations, the fragmentation will only increase. The main solution would be to increase connectivity between colonies encouraging the free movement of water voles, this is best carried out by restoring habitats near to present colonies.

Pollution

As well as surveying the general population of the water voles, we are also interested to find out if there is a link between declining water vole numbers and pollution. Pollution can occur in many different forms such as house hold waste dumped in rivers, run off from agriculture and waste such as oil and cleaning products being poured down storm drains which ends up in our rivers.

Water Levels

Fluctuations in water levels will effect the amount of vegetation, cover from predators and the burrows along the bank. Flood control systems and land drainage can impact on the water levels. To combat high levels of water; backwaters and ponds should be installed to provide an area for refuge if the water levels rose significantly. Droughts can also be just as detrimental, if water courses dry out then it will expose burrows which in turn will be vulnerable to predation.

Predators

The American Mink is the main predator to the water vole, any foraging female mink will seek out colonies and individuals. Rats may pose a possible risk to young voles as well as a competitor for food sources. Rats also cause an involuntary effect due to extensive poisoning in urban areas by local authorities trying to control the urban rat population.

Water Vole Signs

Burrows

Burrows will be found in the banks of rivers, becks and streams. These are typically 4-8cm in diameter and are wider than they are taller, such as a squashed tennis ball.



Two Burrows

As well as digging burrows on the water side of the bank, water voles will also dig an 'escape route' towards the top of the bank, which is used to access the safety of the bank when water levels rise rapidly.



Latrines

Latrines are a pile of dropping which water voles use as a mark of territory when breeding. They typically use the same spot and will pile up droppings time after time. Latrines can typically be seen on rocks and branches protruding from the bank, as these are most noticeable to potential invaders.



Droppings

As water voles are herbivores, their droppings generally consist of a dark green/brown/black colouring. They are approximately 8-12mm long and 4-5mm wide of symmetrical shape and are blunted at the ends, similar to a tic tac sweet. Droppings also have no odour and have a putty texture when wet. Dry droppings can be broken up revealing concentric rings of plant material.



Lawn

Burrows will typically have 'mown' lawns around them. These occur when the females are breeding and want to feed without straying from the nest.



Footprints

The front foot is star shaped with four toes, the back foot has five toes with the outer ones splayed and measuring 26-34mm from heel to claw.



Nests

Water voles will take bedding underground to line nest chambers within the burrow. These nests consist of grasses and reeds, and are the size of a rugby ball, and can also be found above ground, woven into the bases of rushes, sedges and reeds.



Feeding stations

These are piles of chopped up vegetation cut into neat lengths of about 8-10cm, often with a distinctive 45° cut at one or both ends. Sometimes incisor marks can be seen. In reedbeds look for the cone like tops of the reeds which water voles leave after they have finished eating the stem.

While field voles may leave similar feeding piles, these are typically 2-3cm long, and only contain thin grasses or small herbs, not the larger, more robust plants such as reed, rush and sedge.



Rats

Many people confuse water voles with rats as they share the same water space. It is important to try and distinguish the difference between rat signs and water vole signs.



Droppings

Rat droppings are between 15-20mm long, black or grey in colour and have a foul smell. A rats droppings are usually found singly or scattered.

Never touch rat droppings!



Burrows

Rats burrows are slightly bigger than a water voles, and commonly have a spoil heap near by. Rats travel in runs going towards the burrow and along the bank, not into the water.



Further reading

Water Vole Conservation Handbook
Water Voles by Rob Strachan
How to find and identify mammals by
Gillie Sargent and Pat Morris

Pictures
Kenny Crooks