

Why do Water Voles need my help?

In the past you could find Water Voles on almost any slow flowing watercourse on the British mainland. Sadly, their numbers have declined with alarming speed and results from a recent national survey suggest they have disappeared from more than 89% of the sites occupied 60 years ago.

This is one of the most rapid and serious declines among British mammals. The decline is due to population fragmentation and isolation caused by a number of factors, the main ones being habitat loss and inappropriate management, exacerbated in recent years by an expanding feral American Mink population which has accelerated the decline.

East Anglia is known to be a stronghold for Water Voles. In Norfolk, The Broads is the main stronghold with high rates of occupancy on the River Ant and in Broadland dykes. Other important areas include the fens in the extreme west of the county, the north Norfolk coast, the River Wensum and the south Norfolk claylands.

How do I recognise a Water Vole?

- smaller, lighter & shorter than a rat with a body length up to 20 cm
- rounded body with thick chestnut-brown fur (a black colour form also occurs & some show white patches)
- blunt snout & round, 'chubby' face with tiny, 'beady' eye
- short, rounded ears almost hidden by fur
- hair-covered tail (about 60% of the head & body length)



Water Voles swim and dive well and when disturbed splash-dive into the water with a loud 'plop'.

Where do Water Voles occur?

Water Voles occur on rivers, streams, canals, ditches, dykes, lakes, ponds and in reedbeds. They appear to favour permanent slow flowing or still freshwaters, with water levels that do not fluctuate greatly. Banks for burrowing into, refuge areas above winter flood levels and year-round availability of food are important factors. Rich bankside and emergent vegetation is extremely important for the provision of food and concealment from predators. Water Voles avoid excessively shaded sites with overhanging trees and shrubs, as these usually lack appropriate tall, dense vegetation.

Water Voles burrow into banks where they create extensive tunnel systems. These contain nest chambers above the water table and usually have underwater entrances as secure routes for escape if danger threatens. Where water levels fluctuate, Water Voles prefer a high, steep or stepped bank profile with good vegetation cover that they can use as a temporary refuge during periods of high water. At sites where banks are absent and the water table permanently high, Water Voles may weave nests above ground within tall vegetation, such as in sedges and rushes.

What do Water Voles eat?

Water Voles are herbivores - they eat a wide variety of aquatic and marginal plants (227 plant species have been identified in their diet). In winter, Water Voles store food underground and will eat roots and tubers when surface vegetation has died down.

How do I know if Water Voles are present – what are the best signs?

Burrows

Water Voles excavate narrow burrows (5-8 cm wide) at or just above the water line, with others up to 3 metres from the water's edge.

Rat burrows are slightly larger and are not always at the water's edge. Often there is a heap of excavated earth at the entrance. Rats produce heavily trampled runs forming a network connecting the burrows.



Droppings & Latrines

Water Vole droppings are a reliable field sign for indicating presence. The droppings are cylindrical, 5-12 mm long and rounded at both ends. They are odourless and have the texture of putty, varying in colour from bright green, brown, grey or even purplish. Droppings left in neat piles are called 'latrines'; these indicate territories, which are established during February-November. Latrines are usually at or near the water's edge, often on bare mud near the entrance to a burrow.



Feeding stations

Neat piles of chewed lengths of vegetation, each up to about 10 cm long, are a good sign indicating the presence of Water Voles.

Threats to Water Voles

Habitat loss & degradation

- habitat loss & degradation including inappropriate or lack of management
- insensitive & inappropriate river engineering & maintenance works
- increased urbanisation of the river floodplain
- heavy grazing pressure from livestock – removes food & cover leaving Water Voles vulnerable to predation. Heavy trampling may also lead to poaching & burrow collapse
- heavy boating activity resulting in bank erosion

American Mink

The introduced American Mink is having a severe impact on Water Vole populations, in some cases causing local extinctions. A nursing female mink is likely to locate all the Water Vole colonies within her territory. Water Voles may be less vulnerable to predation where the wetland habitat is expansive and diverse and where it provides dense cover and interconnecting waterways including ditches and ponds. Reedbeds are also thought to provide conditions that lessen the impact of mink.

Fluctuating water levels

Water levels that fluctuate widely and frequently can flood the burrow systems and may drown Water Voles. During flood conditions, refuge areas (high banks and backwater pools) are essential. Drought conditions can be equally detrimental, leaving burrows exposed to terrestrial predators such as stoats and weasels.

Poisoning

Both accidental and intentional poisoning by rodenticides (used in the control of rats) has occurred in the UK. Ensure that the rodent in question is correctly identified before any controlling measures for rats are implemented - if in doubt seek advice from Norfolk Wildlife Trust.

Legal status & protection

The Water Vole receives full legal protection under the Wildlife & Countryside Act 1981 (as amended). As part of this protection it is an offence to intentionally kill, injure or take a Water Vole; intentionally or recklessly damage, destroy or obstruct access to any structure or place used by Water Voles for shelter and protection or to disturb Water Voles while they are using such a place.

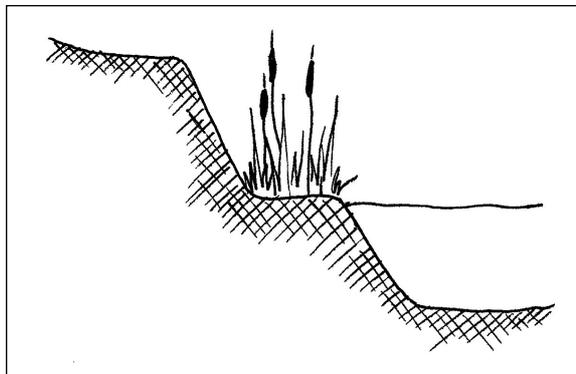
How can I help Water Voles?

Habitat enhancements

The management of vegetation is critical in determining habitat quality. The habitat can be enhanced where suitable banks exist for Water Voles by providing a broad swathe of bankside cover. Below are some possible habitat enhancement techniques for Water Voles:



- **Fencing off the banks** to allow natural regeneration of vegetation and prevent poaching by livestock. This can be a narrow strip (see below under *Riparian buffer strips & zones*) or a meander in the river where only a limited amount of fencing is needed



- **Re-profiling** steep-sided ditches to provide wet berms and shelves along one or both banks will stimulate the development of emergent and marginal vegetation. If Water Vole burrows are already present special measures may be necessary and the work should not be undertaken without first seeking expert advice – contact Norfolk Wildlife Trust

- **Riparian buffer strips & zones** - a vegetated strip of land 1-50 metres wide adjacent to rivers, streams, ditch networks and other watercourses will enhance the habitat for Water Voles. These can be permanent features or managed as part of an arable crop rotation
- **Ponds, oxbows, backwater channels & ditches** provide wetland diversity and enhance the connectivity of wetland habitats. Sited adjacent to main rivers and streams, they also provide refuge areas for Water Voles during flood conditions

Routine management & maintenance - best practice

The following management practices are recommended on watercourses needing routine maintenance work where Water Vole colonies are already present.

Firstly, some general principles

- Vegetation cover is tremendously important for Water Voles so as much as possible should be retained at all times
- For all three operations below, the frequency and extent of the work are at least as important as the timing *i.e.* too frequent routine maintenance, encompassing all available Water Vole habitat, is likely to be detrimental

- Ideally, reduce frequency of management and never manage all available Water Vole habitat at the same time (phase the operations) - where possible, leave a wide fringe of vegetation at the water's edge
- Some nearby watercourses should be left untouched as refuges for Water Voles from which they can later re-colonise the disturbed sections once vegetation has re-established
- At least one third of the ditch should remain untouched, ideally working on alternate 50 metre sections. If this isn't possible/practical, vegetation cutting and re-profiling work should be limited to one bank only, leaving the other intact to act as a refuge
- Work in an upstream direction to enable downstream colonisation of dislodged vegetation

De-silting by slubbing/dredging

Ideally undertaken during November-February or in very early spring *i.e.* March or early April but other times are acceptable provided vegetation cover on the banks is not affected.

Too frequent de-silting is likely to be detrimental – every 5-7 years is ideal (longer in some situations). The bank profile and vegetation cover should not be affected and there should be an operational exclusion zone for heavy machinery of at least 3m from the water's edge. Dispose of spoil sensitively, away from the bank and do not use it to in-fill damp or wet hollows elsewhere (these too are valuable habitats).

Managing & cutting vegetation

Can impact upon Water Voles depending on season *i.e.* cuts should not be undertaken at times when vegetation is dormant and regrowth will not occur. Ideally undertaken in July followed, if necessary, by a cut in September. Cuts should retain at least 150mm (6") of vegetation height.

Avoid cutting in early spring when Water Vole activity increases and breeding commences and in late autumn so that areas supporting core overwintering populations are not left devoid of vegetation (which decreases their chances of survival over the winter period).

Re-profiling

Can impact upon Water Voles if undertaken too frequently and depending on the season. Ideally undertaken in late September-October at the end of their breeding season (however, bear in mind late litters during warm autumns). The pre-breeding period March-early April and *particularly* the wintering period December-February should generally be avoided (overwintering individuals are crucial to colony survival).

Provide profile variety including stepped areas, berms and gradual transitions.

Mink control

Conservation effort to maintain and enhance Water Vole populations will benefit from sustained mink control.

Mink trapping should only be undertaken using live cage traps fitted with an Otter guard to prevent the inadvertent capture of a young Otter. Traps can be sited on land or on a floating raft. The optimal times to undertake mink trapping are in February-March and August-November. Norfolk Wildlife Trust can provide detailed information, advice and trapping guidelines.

For further details contact:

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