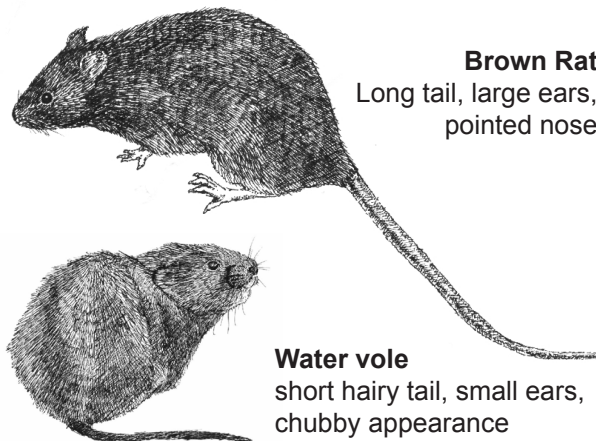


A guide to water vole ecology and field signs

Since April 6th, 2008, it has been illegal to trap, harm, kill, injure or disturb water voles *Arvicola amphibius* in their natural habitat. But despite full legal protection the species has still declined by as much as 95% across much of Britain, highlighting the importance of survey work to locate surviving populations and inform projects to restore them to their historic range. Habitat destruction used to be the major cause of extinctions, but now it is predation by non-native North American mink *Neovison vison* that is responsible for much of this accelerated decline.

Identification

The water vole is the UK's largest native vole, weighing between 140-350g (males being generally larger than females) and measuring 20cm long (head and body) with a 10cm long tail. The next largest vole, the field vole *Microtus agrestis*, is a mouse sized rodent weighing only 35-50g. Brown rats *Rattus norvegicus* are the most likely animal to be confused with water voles so it is important to know the features that distinguish these two species (see right).



Brown Rat
Long tail, large ears,
pointed nose

Water vole
short hairy tail, small ears,
chubby appearance

Habitat and ecology

Water voles prefer sites with wide strips of vegetation along the banks or in the water. This provides useful cover from predators, as well as an abundant supply of food throughout the year. They are almost entirely herbivorous so this lush vegetation is essential. They also thrive in areas which have relatively soft, but stable, banks for their burrows. The preference is for steep, tall banks so that nest chambers can be situated above high water. Hard engineered water courses with concrete or metal reinforcement are extremely difficult to colonise unless there are regular holes or gaps to allow access to the natural bank material behind.

Water voles are not strong swimmers and tend to be very buoyant, especially when young, which makes water courses with strong currents difficult to navigate. They are therefore more likely to be found in slow moving rivers and streams, or water-bodies such as ditches, dykes, ponds and moats. However water voles have been known to colonise the lower freshwater reaches of tidal rivers with quite extreme water level fluctuations. While they will happily populate the brackish waters of coastal borrow dykes, they are not as common in estuarine habitat or salt marsh except where there are relatively stable, reed fringed lagoons.

Water vole colonies have been found in the leachate ditches of landfill sites or in roadside ditches next to busy trunk roads, where rubbish and surface water runoff is regularly deposited. What effects this pollution has on their breeding success has not been adequately studied, so clean, good quality water should always be considered the ideal.

Where water channels dry out completely, voles are exposed to increased chance of predation and may either be killed directly, or choose to relocate to more optimal habitat nearby. Rapid depopulation of dry channels is almost always the result. Colonies are also vulnerable to flooding and although adults can escape from rising water, it may be impossible for mothers to remove young to safety if the whole burrow system becomes inundated.



Russell F Spencer

KNOW YOUR VOLE

Brown rats and water voles are often mistaken for each other as they are similar sized animals, often found living in the same habitat.

While rats are generally larger than water voles, weighing up to 500g, medium sized rats and adult water voles overlap in size so this cannot be used as a reliable, distinguishing feature.

A water vole's tail is short and hairy, only half the length of its body, the ears are almost invisible under its fur and the face has a generally rounded, chubby appearance.

In contrast, the brown rat's hairless, scaly tail is as long as its head and body combined, it has very obvious large ears and a sharp, pointed nose.

Water vole field signs

Droppings and latrines

Piles of droppings (latrines) are used as territory markers by females during the breeding season. Water vole droppings are usually 8-10mm long, with virtually no odour and a very distinctive cylindrical shape with rounded, or blunt ends (similar in size and shape to a 'tic tac' mint). They can be various colours from green and brown to black or even purple depending on the fruit or vegetation eaten. Rat droppings are foul smelling, often quite slimy and have a distinct tail, or point at one end.

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

Burrows nests and lawns

Burrows can be confused with other species such as small mammals, rats, crayfish or kingfishers but even genuine water vole burrows can persist, long after the animals have ceased to occupy them.

Vole burrows are generally oval shaped, usually 5-8cm wide, often seen along the water's edge but with some under the waterline used as bolt holes. There is sometimes an obvious fan of mud around the burrow which may have feeding signs or a latrine on. Burrows at the top of the bank may have a distinctive cropped 'lawn' surrounding them, especially where a pregnant female has been feeding close to home.

Water voles will also burrow into tussocky vegetation such as sedge, rush or grass. However in areas with no suitable burrowing habitat, such as the flooded interior of a reedbed, they can weave a football sized nest into the taller stems above the water line, resembling a huge harvest mouse nest.

Tracks and footprints

Prints are usually about 15-25mm from toe to heel but are easily confused with brown rat prints. As with other rodents the fore print has four toes arranged in a star shape and the hind has five with the outer toes splayed.

For further information on water voles and survey techniques please contact your local County Wildlife Trust.

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Water vole photo © Russell F Spencer

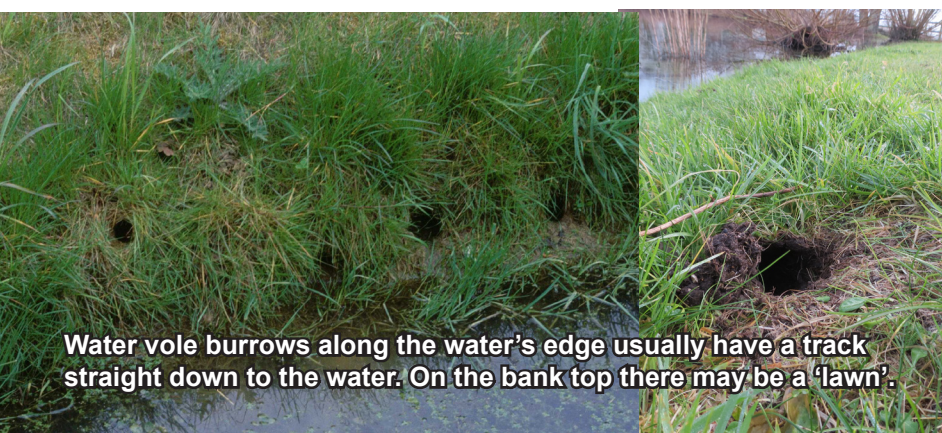
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Latrines are piles of droppings often found along the water's edge.

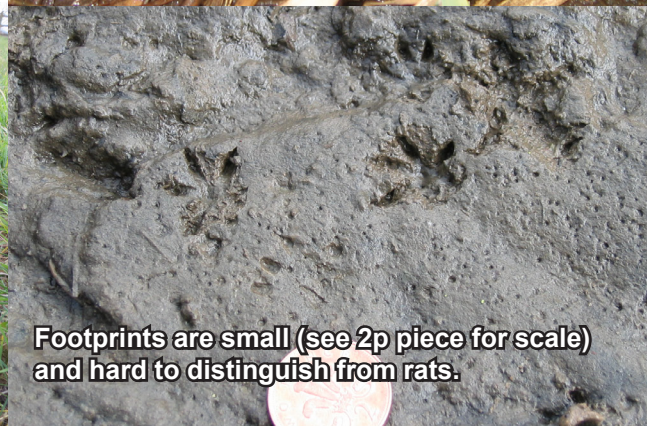


Feeding stations consist of cut vegetation, usually with a characteristic 45° angle (see inset).

The pointed tips of reeds are often left where water voles have been feeding.



Water vole burrows along the water's edge usually have a track straight down to the water. On the bank top there may be a 'lawn'.



Footprints are small (see 2p piece for scale) and hard to distinguish from rats.