

North York Moors National Park Authority

Water vole

Species action plan



North York Moors National Park
Water Vole
Species Action Plan
2008–2012

Water Vole (*Arvicola terrestris*)

Our objectives for water vole are:

1. To increase the range of the water vole within the National Park.
2. To increase the population density of the water vole within the National Park.

Introduction

The water vole (*Arvicola terrestris*) is the largest species of vole in the UK. It is occasionally called a water rat, but unlike a rat it has a furry tail, rounded ears, a blunt face and a vegetarian diet. Water voles like tall lush bankside vegetation for shelter and food. They need to consume 80% of their body weight daily and are known to feed on over 200 species of plants, both terrestrial and aquatic. Water voles can live for about two years, building nests in burrow systems on the banks of watercourses, ponds and lakes or within dense vegetation clumps in wetlands. In favourable conditions they can breed several times a year, with an average litter size of six.

National Status

The water vole was once common throughout Britain. Since the 1900s its numbers have been declining as its wetland habitats have been lost and fragmented because of changes in land use and more intensive land drainage systems. Over the last thirty years studies by the Vincent Wildlife Trust have shown that this decline has worsened into a serious 'crash'. The species has disappeared from 94% of its habitual sites and remnant populations are scarce and fragmented. The water vole population crash coincided with the establishment of mink along many of Britain's waterways. The water vole's natural strategies for protection from predators are to hide in its burrow or dive into the water. American mink can be small enough to follow it into the burrow and they can swim well.

Lowland rivers and wetlands were once the water vole's stronghold, but many of the colonies in these habitats have disappeared. In upland areas, the voles maintain clusters of small colonies, moving around in response to climatic pressures. The importance of these more nomadic water vole populations has been recognized. Conservation strategies in the uplands must therefore take account of all suitable habitat (whether currently inhabited or not), to allow for migration.

The water vole is a priority species in the UK BAP, with the Environment Agency (EA) identified as the lead partner.

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Local Status

Surveys in Yorkshire during the 1950s and 1960s showed water vole numbers to be high, but by 1985 they had undergone a dramatic decline. The highest vole densities in the National Park were recorded on the upper Derwent, Scalby Beck and Burniston Beck area. Signs were also noted on the Rivers Rye and Seph. Studies on the River Esk between 1992 and 1997 revealed few signs and in the period between 1998 and 2000 none were found. Surveys were also carried out on the stretches of the Derwent that lie within the National Park boundary between 1999 and 2000 and these also turned up very few signs of vole activity.

Although the species is now rare in the National Park, it is thought to be present on all of the major river catchments. The healthiest known water vole populations in the North York Moors are found in the uplands at the head of catchments, often in habitat that might usually be considered sub-optimal.

Legal Status

Since 1998 the water vole has received limited legal protection under Schedule 5 of the Wildlife and Countryside Act 1981 (as amended) in respect of Section 9(4) only. This made it an offence intentionally or recklessly to damage, destroy or obstruct access to any structure or place which water voles use for shelter or protection. It also made it an offence to disturb water voles while they are using such a place.

On 6th April 2008 this protection was upgraded to make it an offence to kill or disturb water voles.

Links to other action plans

Habitat Action Plans:	Species Action Plans:
Rivers and Streams*#	Small pearl bordered fritillary*#
Lowland wetlands*#	Otter#
Moorland*#	White-clawed crayfish*#
* = Local Species Action Plan	Freshwater pearl mussel*#
# = UK Species Action Plan(s)	

Threats

Habitat Loss

The loss and fragmentation of the riparian and wetland habitats the water vole needs for shelter and food have played a very important role in the species' decline, in extreme cases wiping out entire populations. Loss of habitat has had a number of causes:

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- Changes in agricultural management (such as land drainage, the ploughing of arable grasslands, heavy grazing and erosion of banks).
- Increased tree cover along watercourses (often natural regeneration by trees such as alders, but also commercial forestry).
- Heather-burning around watercourses and wetlands and the links between them. This limits the ability of water voles to move, isolating populations and making them vulnerable to extinction.
- Flood defences can reduce suitable habitat and cause disturbance.
- Increased occurrences of drought and/or flooding due to climate change may compound these losses of suitable habitat, as isolated populations find themselves stranded in the affected areas.
- Water voles do not hibernate, so need a food supply and suitable cover all year. Wide-scale measures to control rushes for grazing and wading birds can therefore have a negative impact on local water vole populations.

Predators

- Poor habitat can increase the impact of predators.
- Vegetation clearance and dredging of watercourses damages both habitat (which gives cover from predators) and food sources.
- Predation has dramatically increased following the release of the introduced American mink from fur farms. Mink are very adept generalist predators and, unlike native predators, are both accomplished swimmers and small enough to enter burrows.

Chemicals

- Water voles have been mistaken for brown rats and poisoned with rodenticides.
- Polluted water could be a problem. Not enough is known about the impact of chemicals in our watercourses, including fertilizers and pesticides running off farmland, and paints, oils and medicines poured down drains.

Requirements

- Ideal conditions include slow-flowing watercourses less than three metres wide, around one metre deep and without extreme fluctuations in water levels.
- Permanent water is essential during low-flow periods in summer.
- Bank type required for burrowing is predominantly earth or clay with a stepped or steep bank (usually vegetated rather than bare).
- Dense stands of riparian vegetation provide cover and food.
- Water meadows and expanses of wetland with tussocks of grass, sedge, rush or common reed can provide more refuge from predators than linear features.

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- Ponds with suitable banks and habitat can also be remote from American mink populations and provide valuable refuge areas.
- Willow stands provide a valuable winter food source.
- It is vital to maintain links between known sites (whether or not they are currently inhabited), as most water voles in the uplands probably exist as a meta-population, with small fragmented populations dependent on movement between sites for the overall viability of the water vole colony.

Current Action

- Surveys were carried out from 2002 to 2005 in areas where strongholds had previously been recorded in order to identify viable water vole populations. Any sites with water voles still present were mapped on GIS.
- Work to survey water vole populations and enhance water-vole habitats has been part-funded by the Environment Agency for several years now on an annual basis. This work is developing into a partnership project between the NYMNP, EA and Forestry Commission, and is one of the key delivery mechanisms of many of the water vole actions undertaken in the Park. As part of this project a water vole strategy for part of the Upper Derwent catchment was written in 2007. The strategy is now being implemented, focusing on linking the identified fragmented populations of water vole by carrying out effective mink control where required, and restoring and enhancing vegetation corridors along watercourses.
- The water vole features in the Action Plans of the Forestry Commission, the Environment Agency and the Yorkshire Wildlife Trust, all of which operate in the National Park.
- YWT give advice to landowners on habitat enhancement, comment on water vole and wetland-related issues and carry out surveys.

Opportunities

- Enhance habitat quality, and establish and maintain habitat networks within the core area (and elsewhere), using environment agency funding and targeting the Defra Environmental Stewardship Scheme.
- Targeted control of American mink, as a means to enhance water vole populations.
- Design of wildlife ponds to provide suitable conditions for water voles.

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What you can do to help

- Report water vole and American mink sightings to the National Park using the online recording form on the National Park's website: www.moors.uk.net/recording
- Never pour toxic chemicals such as car oil and paint down the drain.
- If you are a landowner, or land manager, seek advice from the EA or the National Park on how to best manage your watercourses and riparian habitats to benefit water voles.