

Current Status - UK and Local

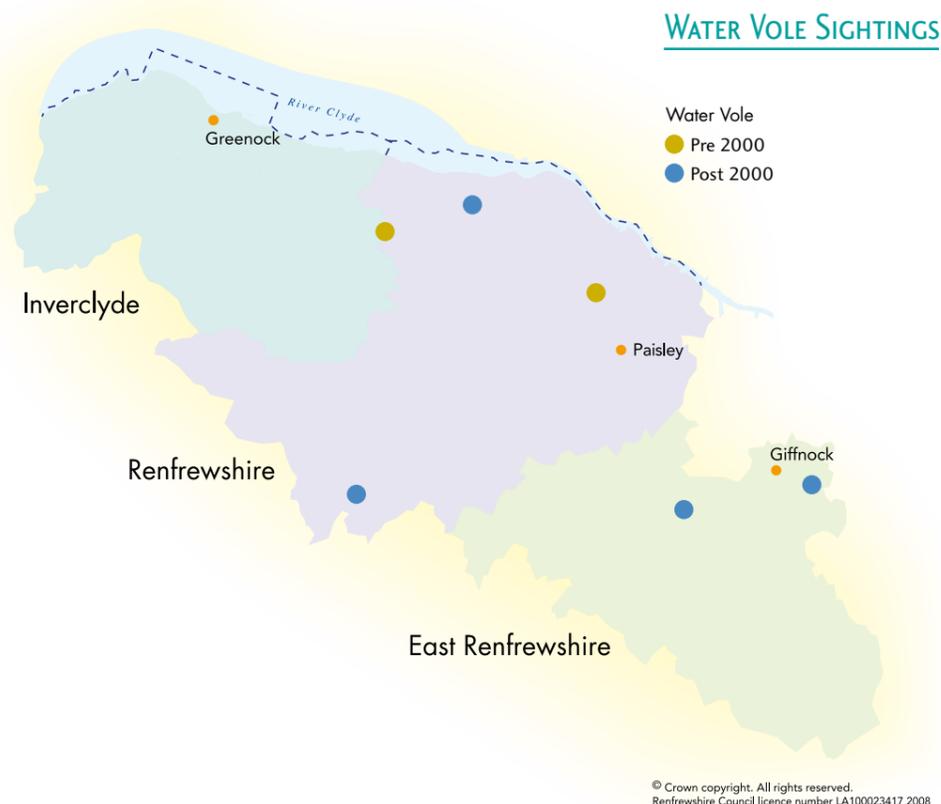
UK Biodiversity Status: UK Priority Species

LBAP Partnership: Local Priority Species

Habitat and individuals are protected under the Wildlife & Countryside Act, 1981, as amended

The Water Vole was once widespread throughout Britain but the species has suffered a significant decline in recent years. It is estimated that field signs have disappeared from 94% of previous sites. Studies have indicated that population densities are lowest in Scotland. Surveys carried out in Scotland have shown that the Water Vole has vanished from entire catchments in the north-east.

Currently information about the distribution of Water Voles in the LBAP area is rather patchy. There are historical records from the 70s and 80s for the mammal on the Black Cart Water near Inchinnan, Renfrewshire and at Glen Moss Nature Reserve on the border of Inverclyde and Renfrewshire. A recent survey found that East Renfrewshire seems to be the remaining stronghold for these mammals with evidence of their presence on the Aurs Burn and at Woodfarm. There was further evidence of their presence at Barr Loch, Lochwinnoch in Renfrewshire and ecological surveys for the redevelopment of the Royal Ordnance Factory in Bishopton found the mammals to be present on the Dargaval Burn and in associated ditches.



Ecology and Management

Water Voles are herbivorous, feeding on a variety of waterside plants. 227 different species of plant were identified from feeding stations throughout Britain in 1993. Their diet changes depending on the seasons. In winter roots and bark of trees become a large part of their diet. In autumn, the Water Vole will consume the fruits of trees that drop their fruit at this time of year.

A single Water Vole has a series of burrows. The burrows consist of residential burrows which, in turn, are made up of many entrances and interconnecting tunnels, food storage chambers, nest chambers and bolt holes which consist of short tunnels that end in a single chamber. In wetlands, sometimes the Water Vole will weave a nest as a large ball of vegetation into the bases of sedges and reeds.

When they are not in the burrow, the Water Voles' activity is usually confined to runs in dense vegetation found within two metres of the water's edge. This diurnal animal depends on dense vegetation, not only for food but also for cover from predators. Water Voles live in colonies, usually spread out along a watercourse. The voles are separated by social status. Separation is established by the breeding females and reinforced by frequent interactions between individuals. The length of the watercourse they inhabit determines the size of the home range. It can range from 30 – 150 metres for females and 60 – 300 metres for males. The greater lengths are usually when the habitat is poor.

Spring stimulates the breeding season which lasts from March to October. During this season home ranges are marked by discrete latrine sites found close to burrows and at boundaries. These consist of flattened piles of droppings with fresh droppings on top. These latrines are scent-marked by territory holders. Females produce 2 to 5 litters each year, each consisting of 5 to 8 young. Most young reach sexual maturity after their first winter but it is thought that young born before July may breed that autumn. These mammals need to produce lots of young because mortality rates are very high, particularly in winter when the loss of individuals can reach 70%.

The presence of Water Voles can be detected by field signs, for example burrows, latrines containing cylindrical faeces with blunt ends, feeding remains and pathways in vegetation. Field signs may be difficult to find where population densities are low. Field signs almost vanish in the winter months as Water Voles spend the majority of their time underground.



Inverclyde
Renfrewshire
East Renfrewshire
LBAP



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WATER VOLE (Arvicola terrestris)

The Water Vole is a rodent, belonging to the subfamily Arvicolinae along with other voles, lemmings and muskrats. It has a typical vole-like appearance with a rounded body, blunt muzzle and short round ears which are almost hidden by the thick fur around the vole's head and nape. The Water Vole is commonly mistaken for the Brown Rat (*Rattus norvegicus*) but the Water Vole is smaller with a shorter furry tail.

Factors causing loss or decline

The main reasons for the substantial decline in numbers include;

- ★ Direct habitat loss
- ★ Habitat fragmentation
- ★ Predation by American Mink (*Mustella vison*)
- ★ Pollution

Habitat loss and degradation is thought to be a major factor in the decline of the Water Vole. This can occur from insensitive river engineering, bank protection and maintenance work, for example de-silting operations. Also urbanisation of a floodplain is a direct cause of habitat loss and can lead to sparse vegetation along the watercourses. It is not just a problem in urban areas. Heavy grazing pressure from domestic livestock strips the riparian vegetation and livestock also trample the banks, making it untenable for Water Voles. Vegetation is also drastically reduced through inappropriate management by mowing or strimming of the banks. This also makes the voles more susceptible to predation.

Fragmentation of populations can also increase the rate of local decline. Small isolated populations may be vulnerable to genetic restriction. The only way that survival can be ensured is by increasing the connectivity between the various populations which allows expansion and dispersal of the Water Voles. This can be achieved through habitat enhancement and restoration projects.

The Water Vole has many predators but the American Mink poses a particular threat. The American Mink was introduced to the UK for fur farming in 1929. As the fur farming industry declined Mink were released into the wild and they were first recorded breeding in 1957 on the River Teign in Devon. The female Mink is small enough to fit inside a Water Vole burrow and can kill entire colonies at once. Water Voles appear to be more tolerant of disturbance by people than Mink, a factor which may allow Water Voles to survive better on waterways near paths.

Another factor thought to be causing the decline of the Water Vole population is pollution. Contaminants of the freshwater and riparian habitats include organo-chlorine insecticides and their metabolites, alkylphenols, polychlorinated biphenyls, heavy metals and farm waste pollution. The effect of these contaminants on Water Voles remains unknown and may have had a direct effect in the past, but improved environmental legislation, monitoring and enforcement of discharge consents and the diminished use of most of these contaminants have led to improved water quality throughout Britain.

Opportunities and Current Action

There are basic principles when it comes to conserving Water Voles which include ensuring habitat connectivity exists between colonies, maintaining abundant riparian vegetation and also minimising the possibility of Mink colonisation. Water Vole management varies depending on the habitat. In upland habitats, management should focus on reducing grazing levels in catchment areas either through reducing stock levels or fencing the banks, introducing riparian corridors in woodland schemes and protecting known habitats from burning of moorland. In lowland habitats management should focus on fencing banks and maintaining bank-side vegetation. In urban areas it is growing increasingly important for developers and planners to look beyond the boundary of a particular site for successful maintenance of the overall metapopulation.

Mink control alone cannot be regarded as a solution to declining Water Vole populations although evidence suggests that targeted control in key areas within a river catchment has been an effective tool for maintaining current populations of Water Vole. At the moment there is little information on the level of trapping that would be required to allow recolonisation by Water Voles. It is unlikely that Mink control will be a viable option in the LBAP area, as the main focus of the limited resources will be habitat protection and enhancement.

Objectives and Targets

Objective 1	Establish baseline status (abundance and distribution) of Water Vole populations.
Objective 2	Maintain the current population of Water Vole in the LBAP area.
Objective 3	Implement appropriate management of existing and potential Water Vole habitat.
Objective 4:	Promote awareness of Water Voles to stakeholders and the general public.

We will achieve these Objectives by:

Action	Actioned by	Timescale
Update survey information to identify current population distribution and status	SNH Biodiversity Officer	2009-2012
Ensure current populations are recognised and given appropriate protection from detrimental effects	LAs SEPA	2009-ongoing
Identify sites with potential for appropriate habitat management	LAs SNH	2009-2010
Identify sites with potential for appropriate habitat creation	LAs SNH	2009-2010
Implementing habitat management and/or creation projects	LAs SNH	2011
Raising public awareness	SEPA Biodiversity Officer Urban LBAP Group	2009-ongoing

Links with other Local Biodiversity Action Plans

Otter, Rivers and Streams, Urban Area

