

Water Vole (*Arvicola terrestris*)



Water vole
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Once common and widespread, this species has suffered a dramatic decline in both numbers and distribution. Numbers have fallen by an estimated 89% since 1939 ⁽¹⁾. This decline continues and is the most significant for any British mammal, with a projected possible extinction early this century.

The water vole is the largest British vole. Despite its name, it is not particularly well-adapted to an aquatic existence, as its fur is prone to waterlogging and it lacks webbed feet. However it swims and dives well, an important trait that helps it avoid many predators.

Water voles live in colonies extending along watercourses. The voles construct complicated tunnel systems in the banks with entrances both above and below the waterline.

Water voles are herbivorous, feeding largely on the stems and leaves of waterside plants.

Water voles seem to prefer slow-moving watercourses less than 3 m wide and around 1 m deep, with lush bankside vegetation and no extreme water level fluctuations. Canals, water meadows and ponds are also used. In urban situations sub-optimal areas are often inhabited, where the lack of predators can compensate for reduced bankside cover.

Main Habitat(s): Rivers and streams; canals; farmland ditches, ponds

National status

The pre-breeding British population is currently estimated at 1.2 million. The water vole is a Priority Species in the UK BAP because of its declining population. In 1998 the species received some legal protection in Schedule 5 of the Wildlife and Countryside Act 1981. Section 9 (Part 4) now protects its places of shelter, but not the animals themselves.

Regional status

Water voles are found in all the counties of North West England. They are still widespread and locally common in Cheshire. Merseyside is a stronghold. They are, however, rare in Cumbria. Elsewhere in the region their status is largely unknown.

Local status

There have been no published surveys of the species in Lancashire. Anecdotal evidence suggests that the species was common and widespread in many parts of the county but has declined dramatically over the last three decades.

Martin Mere, Mere Sands Wood and Leighton Moss are all known to hold breeding populations. A 1999 survey of north Merseyside⁽²⁾ revealed good populations in several areas adjacent to West Lancashire. In West Lancashire itself unpublished data⁽³⁾ from a survey of 54 sites show that 42 (78%) had signs of water voles presence indicating that this district may be particularly important for this species.

Current factors affecting the Species

Loss, fragmentation and degradation of habitats are thought to be the most important reasons for decline⁽⁴⁾. Suitable waterside habitats have been lost as a result of in situ development, engineering works and the inappropriate management of bankside vegetation (the most notable problems being the timing and severity of cutting). These factors destroy actual or potential breeding areas, resting places and refuges. Fragmentation causes the loss of interconnecting river corridor habitats and suitable ditches.

Predation by feral mink is known to have caused local declines in south west Lancashire, most notably at Martin Mere. Mink appear to be more efficient predators of water voles than their native predators and have undoubtedly caused the extinction of vulnerable populations. However, mink are unlikely to have caused declines of water voles without other factors already putting the voles at risk⁽⁴⁾.

The inadvertent poisoning of water voles by rodenticides is an issue in many urban fringe areas⁽⁸⁾. The target species is brown rat. Again, the extent of this problem in Lancashire is unknown.

Current Action / Mechanisms

The Vincent Wildlife Trust carried out national surveys in 1989-90 and in 1997-98⁽¹⁾. There is on-going research by the Environment Agency (EA) and the Oxford University Wildlife Conservation Unit (Oxford WildCRU) into water vole ecology. The water vole is one of the focal species of the Wildlife Trusts.

Nationally, action is co-ordinated by the UK Water Vole Steering Group; chaired by the EA. The Steering Group produced a national Species Action Plan in 1997. The Oxford WildCRU has produced three publications on water vole conservation, with backing from the EA and English Nature (EN)^(3,4,5). EN has published and distributed guidance for planners and developers in 1999 following the species gaining legal protection under Schedule 5 of the Wildlife and Countryside Act 1981: Section 9 (Part 4)⁽⁶⁾.

Locally, EA are reviewing their water course management regimes where water voles are known to occur.

EA and the Wildlife Trust (WT) have nominated staff to respond to enquiries. These staff meet at least three times a year to coordinate surveys and manage any issues arising from them.

A water vole survey of Merseyside and Lancashire was started by the Wildlife Trust in 1999 under the guidance of the partnership, with part-funding from EA, Lancashire County Council and others. The Alt 2000 River Valley Initiative has played a major role in the survey of the Alt catchment. Other RVIs in the Mersey Basin Campaign Area may be able to assist in future survey work.

The survey work involves training volunteers to identify water vole signs and asking them to survey their local area. Survey results present opportunities for press releases to raise the species' profile.

Under the present Biological Heritage Sites Guidelines sites may qualify (under Guideline Ma1) due to the presence of water vole populations.

Objectives, targets and proposed actions for water vole in Lancashire

Broad Objective:	A. Determine the current distribution and abundance of water voles in Lancashire.			
Operational Objective	Action Required (Priority)	Partners	Time-scale	Type
1. Complete a countywide population and distribution survey by 2004.	1. Plan strategic, district-based countywide population and distribution surveys by end of 2000. (High)	WT, EA, LAs, EN	S	RM
	2. Secure funding for rolling five-year survey programme by end 2000. (High)	WT, EA, LAs, BW, EN	S	RM
	3. Design survey methodology for Lancashire's large freshwater areas. (High)	WT, EA	M	RM
	4. Design survey methodology for Lancashire's canals. (High)	WT, EA, BW	M	RM
	5. Train a network of volunteer surveyors to carry out surveys. (High)	WT, EA	O	RM
	6. Collate results and produce final countywide report by end of 2004. (High)	WT, EA,	L	RM
2. Encourage the public to send in informal records.	1. Organise training days and interpretative walks focusing on water voles. (Medium)	WT, EA, LAs, BW, S2S, MBC	M	RM

	2. Produce simple survey forms in paper and electronic media and publicise. (Medium)	WT, EA, S2S, MBC	M	RM
	3. Disseminate results of formal surveys through press releases, internet, etc. (Medium)	WT, EA, S2S, MBC	M	RM
3. Create a water vole database.	1. Create a database of water vole records (incorporating informal public records and mink population & distribution information). (Medium)	WT, EA, Museums, BW	M	RM

Broad Objective:		B. Maintain viable populations at known sites		
Operational Objective	Action Required (Priority)	Partners	Time-scale	Type
1. Assess threat from mink and, if necessary, take measures to reduce mink numbers.	1. Gather data on mink abundance and distribution during water vole survey. (High)	WT, EA	M	RM
	2. Assess threat posed by mink to major populations of water vole in each district. (High)	WT, EA	L	P
	3. With landowner agreement, implement mink control measures if required to protect important populations. (High)	LAs, land-owners, EA	O	LM
2. By 2005 ensure that management is sensitive to water vole requirements in all EA-maintained watercourses	1. Incorporate water vole population data and conservation prescriptions into appropriate Local Environment Agency Plans. (High)	EA	O	P

where voles are present.	2. Ensure that contract specifications and work programmes for the management of the bankside vegetation of watercourses takes account of water vole requirements in areas where populations are known to occur. (High)	EA	O	LM
	3. Reduce use of herbicides and pesticides in the vicinity of dense populations of water vole. (Medium)	EA	L	LM
3. Safeguard key populations from adverse impacts due to development or engineering works.	1. Continue to identify sites that qualify as Biological Heritage Sites due to the presence of water vole populations. (High)	LCC, WT, WWT	O	SS
	2. Ensure that planners are informed of the location of all BHSs that qualify. (High)	LCC, LAs	S	SS
	3. Encourage the inclusion of policies relating to water voles and their habitats in all relevant Local Plans and local authority strategies. (High)	LCC, LAs, EA, WT	O	P
	4. Encourage developers and engineers to adopt best practice in relation to avoidance of adverse impacts on water vole populations. (Medium)	EA, EN	M	A
	5. In the water vole database (see A.3.1) include details of planning outcomes and relevant mitigation works for water voles. (Medium)	WT, EA	M	RM

4. Seek to secure sympathetic management of terrestrial habitat in vicinity of water vole populations.	1. Liaise with landowners and land managers to achieve positive habitat management / remedial work where populations are known to exist / have existed. (Medium)	BHSP, FWAG, EA	M	A, LM
	2. Include water voles and their habitats in agri-environmental schemes and conservation agency grants. (Medium)	MAFF	M	P
	3. In the water vole database (see A.3.1) include details of advice given and grants applied for by land managers for water voles. (Medium)	WT, EA	M	RM
5. Counter the threat to water voles from rodenticide use.	1. Discourage the illegal use of rodenticides in areas supporting water voles. (Medium)	MAFF, EA	O	LM
	2. Where use is legal, work with land managers to eventually eliminate applications in riparian habitats where water voles would be at risk. (Medium)	EA	M	LM
	3. Initiate sample survey of the extent of rodenticide mortalities in urban water vole populations in Lancashire. (Low)	EA	L	RM
Broad Objective:	C. Ensure that water voles are present throughout their 1970s range by 2015.			
Operational Objective	Action Required (Priority)	Partners	Time-scale	Type
1. Identify 1970s range	1. Investigate old records of water vole to establish range within Lancashire in 1970. (Medium)	LCC, WT, EA	M	RM

2. By end of 2005 develop a strategy to re-establish viable populations in areas from which they have disappeared.	1. Examine the feasibility of creating or restoring suitable habitat to encourage expansion of existing populations into areas that were formerly occupied. (Medium)	EA	M	RM,LM
	2. Consider translocation of populations, in line with the National BAP, to areas from where they have been lost but where the relevant threats have been removed. (Medium)	EN	L	RM
	3. Revise this plan in 2005 to take account of above findings. (Medium)	WT, EA	L	P
Broad Objective:	D. Promote the water vole as a flagship species in the Lancashire BAP			
Operational Objective	Action Required (Priority)	Partners	Time-scale	Type
1. Promote water vole as an indicator of wetland biodiversity.	1. Work with community-based groups to raise awareness of water vole conservation issues amongst general public, landowners and wetland managers. (Medium)	WT, MBC, S2S, land-owners, land managers	O	PR
	2. Encourage public participation in surveys and monitoring. (See A.2 above). (Medium)	WT, EA	S	PR
	3. Include information about the water vole in press releases, newsletters and leaflets. (Low)	WT, EA	O	PR

Related Action Plans:

- Rivers and streams HAP
- Arable farmland HAP
- Reedbed HAP
- Otter SAP
- Great crested newt SAP

References & additional reading:

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7. English Nature (1999) Guide to developers on water voles.
8. UK Biodiversity Steering Group (1995) Biodiversity: The UK Steering Group Report. Volume 2: Action Plans. HMSO, London.

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