

## Water Vole *Arvicola amphibius/terrestris*

### Background

Water voles are a priority species of conservation concern in Wales having declined by over 90% in Wales since the 1980s. Key populations remain across mid and north Wales but they are now largely absent from south and west Wales. Genetic studies have revealed unique populations surviving on Anglesey and parts of North Wales more closely related to animals in Scotland (*Arvicola terrestris*) than their counterparts in the rest of Wales (*Arvicola amphibius*).

Water voles have simple biological needs including a safe resting site, usually burrowing into a soft bankside or sometimes making above ground nests in tussocky vegetation safe from predation. They need a food supply close to the nest site that is available throughout the year (shoots, leaves, flowers in summer and roots, rhizomes, bulbs, corms and bark in winter).



Photo © Rob Strachan

Water voles are short-lived animals, surviving for 2 – 3 years. There is high over-winter mortality, but colonies can quickly recover as the animals are able to breed prolifically. In large areas of good habitat, there may be a single continuous colony, but often the species operates as a meta-population, comprised of a set of small populations with frequent dispersal between them. They are particularly vulnerable to predation by the introduced American mink.

### **Status in Wales**

Range	An assessment of range in 2010 showed 69 x 10km squares occupied.
Population	Sample site monitoring between 1990 and 2008 has confirmed that water voles had declined in Wales by 90% through population fragmentation driven by habitat loss and mink predation

### **Threats**

- Habitat loss / degradation: Infrastructure development - Housing infrastructure
- Habitat loss / degradation: Management practice - Inappropriate ditch management
- Invasive/non-native species: Predation (American mink)
- Natural disasters: Storms / flooding

Source - 2008 BAP reporting <http://ukbars.defra.gov.uk/plans/national.asp>

**Legal Status**

Wildlife & Countryside Act 1981(as amended 2008), Schedule 5  
 Natural Environment and Rural Communities Act 2006, s42

**BAP**

UK Biodiversity Action Plan Priority Species

Species of principal importance for the conservation of biological diversity in Wales

Lead Partner – Natural Resources Wales

**Wales BAP targets (*Arvicola amphibius* Aa)**

Targets reviewed in 2011 BAP reporting

<http://ukbars.defra.gov.uk/plans/national.asp>

Code	Target type	Target	Units	2010 *	2015	2020	2025
AaT1	Population range	Maintain the current range of water vole in Wales. 69 occupied 10km squares in 2015	Occupied 10 km squares	69	69	69?	69?
		Monitoring: Annual surveys can be carried out at the network of National Key Sites but Countrywide surveys should be instigated every 5 years to inform the BAP review process					
AaT2	Population range	Achieve an increase in range by 21 new occupied 10km squares in Wales by 2015 from 69 to 90 by 2015.	Occupied 10 km squares	69	90	95	100
		A twin track approach of proactive habitat and mink management will be required to encourage a natural range expansion into adjacent unoccupied 10km squares. Where natural recolonisation is unlikely, restocking through captive bred releases should be considered.					

(\* baseline data 2010)

**Actions**

Code	Action Type	Action	Action Lead	Ecosystem Groups	Delivery Agents
Aa A1	Survey and Monitoring	Continue and extend the National Key Sites for water voles initiative. Identify Regional and Local Key Areas for water voles following agreed methodologies. (Clusters of point survey records have been buffered and linked to provide probability maps for	NRW (Rob Strachan)		NRW, WTW, LBAPs

		occupied water vole habitat. The largest of these are of National and Regional importance (see map)			
Aa A2	<i>Survey and Monitoring</i>	Establish and maintain a national water vole database and GIS. Continue or establish (as appropriate) and maintain a programme of regular monitoring in National, Regional and Local Key Areas and at a sample of other sites.	NRW (Rob Strachan)		LRCs, NRW, LBAPs
Aa A3	<i>Habitat and Site Management</i>	Use agri-environment scheme prescriptions to maintain and, where appropriate extend, the area of suitable water vole habitat, prioritising National, Regional and Local Key Areas. (Glastir target areas capture all water vole Key Areas and Higher tier payments can be used for habitat creation and mink management).	WG	Wetlands, Upland, Freshwater	WG, NRW, WTW, RSPB
Aa A4	<i>Species Management</i>	Set up catchment-scale mink management projects, prioritising action in National and Regional Key Areas (as identified in A1)	NRW (Rob Strachan)	Wetlands, Freshwater	NRW, BASC, LBAPs, TWT, WUF
Aa A5	<i>Communication - advisory</i>	Implement and publicise the revised protection measures for the water vole under the WCA, providing advice on policy and practice	WG		WG, NRW

### Milestones (*under review*)

Code	Date	Milestone	Progress
Aa M1	By 2010	Remove mink and maintain Mink-free status for Anglesey to facilitate natural water vole recovery across the island.	This has been achieved through partnership working between NRW, Menter Mon, RSPB, BASC and landowners.
Aa M2	By 2012-14	Establish a mink removal programme across the Lleyn peninsula (partnership project between EAW, BASC and landowners). Expand initiative to adjacent catchment by 2014	This is currently underway through Green Shoots North Wales (BASC)
Aa M3	By 2012-15	Establish mink removal across North Wales upland areas (Mignient and Hiraethiog) (partnership working between SNPA, NT, EAW, BASC, landowners)	This is currently underway (NT + SNPA)

Aa M4	By 2015	Facilitate range expansion across priority habitats within WFD catchments, Living Landscapes and Futurescapes initiatives	This is currently underway (NRW, WTW, RSPB)
Aa M5	By 2012-15	Establish strategic mink management on the upper Wye and Upper Usk to protect upland water vole populations (partnership EAW, WUF, landowners)	This is currently underway (WUF)
Aa M6	By 2012-15	Establish restored populations of water voles to South East Wales (eg Llangors Lake and Magor Marsh) by captive breeding as demonstration projects and consider sites elsewhere. (EAW, Brecon NPA, RSPB, Wildlife Trusts and landowners)	This is currently underway (NRW + Gwent Wildlife Trust, RSPB)

### **Ecosystems approach and enhancing species resilience**

The key issues are

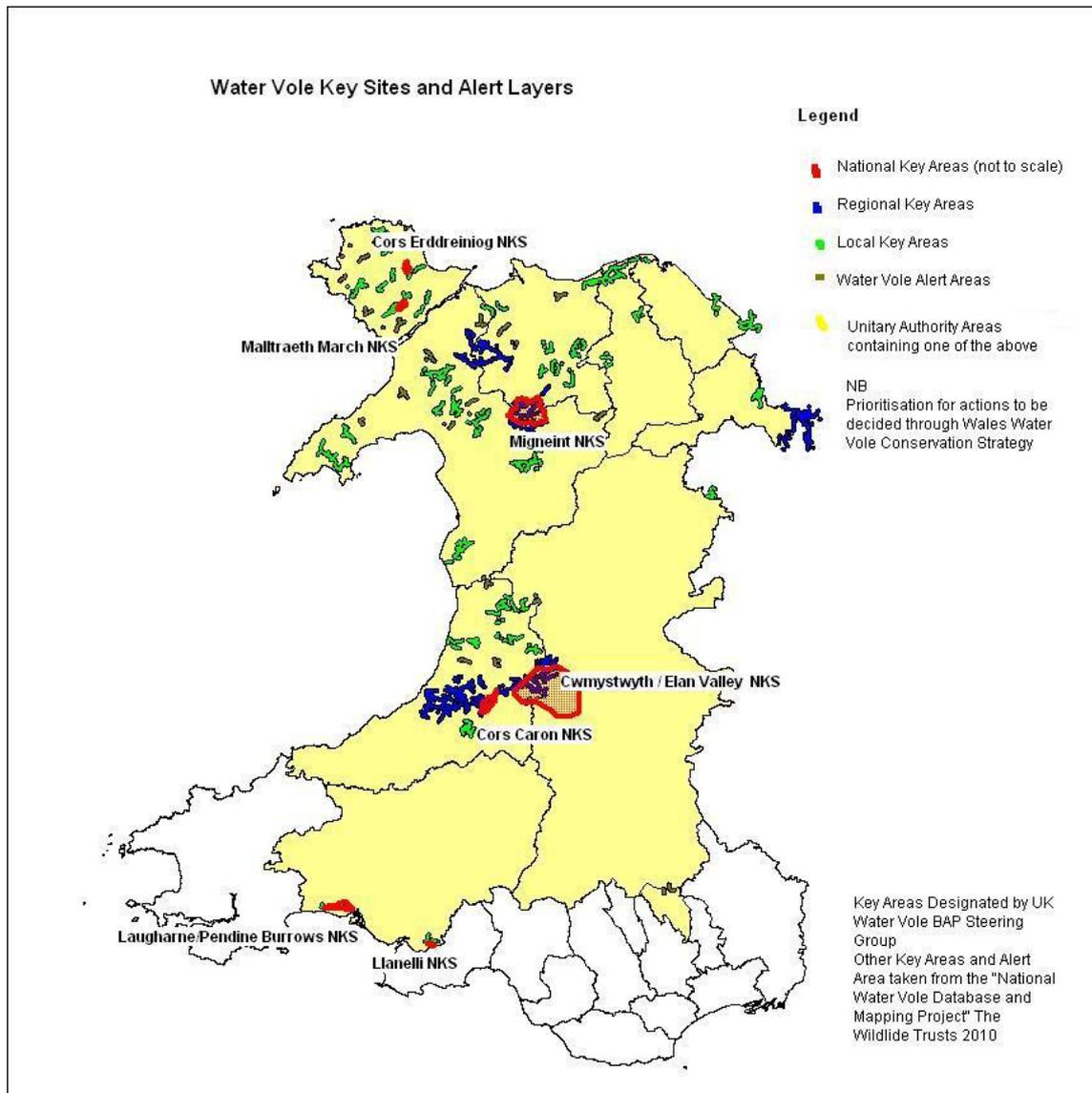
- Restoration of habitats/habitat quality. The water vole is reliant on aquatic habitats and is also affected by management of adjacent land. Effective conservation of the species needs to be considered at the landscape level across different ecosystems (freshwater, wetland, upland, lowland farmland, brownfield/urban).
- Habitat fragmentation. Identifying key areas at local and regional levels and incorporating these into the planning system should help to address fragmentation and make populations more resilient.
- Mink control is necessary in the long term to maintain current population strongholds and allow water voles to return to areas where they have been lost.
- By improving the capacity of habitats and species populations to respond to environmental change, in particular climate change, dispersal into adjacent favourable habitats will be possible. Examples include the creation of habitat connectivity so that there are minimum distances between occupied sites for species. Habitat management may also include mink control in a buffer zone around a site to encourage range expansion.

### **Issues affecting implementation**

- Lack of available funding mechanisms to ensure long term mink control at catchment scale
- Lack of effective prioritisation / targeting of habitat management

### **Water Vole Key Sites and Alert Layers**

Prioritisation areas are shown below



*Note that Yellow Areas show Unitary Authority Areas containing National, Regional or Local Areas, or sites on the Alert Layer.*

Prioritisation areas by Unitary Authority include Anglesey, Gwynedd, SNPA, Conwy, Denbighshire, Flintshire, Wrexham, Powys, Ceredigion, Carmarthen and Gwent. These counties will be the focus of proactive measures to encourage the recovery of the water vole.

#### References/Links

People's Trust for Endangered Species: <http://www.ptes.org>

The Mammal Society: <http://www.mammal.org.uk/>