

Water voles in the Highlands – a myth or an undiscovered refuge?

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For many of us who enjoy walking and climbing in the Scottish Highlands, much of pleasure gained from a long day on the hill comes not just from attaining the goal of reaching the summit(s), but also from the wildlife that may be encountered on the way. The sight of a golden eagle soaring over a distant ridge or the eerie call of a black-throated diver on a remote loch may add just that extra vital ingredient that makes for a 'perfect day.'

Ask a hill walker which British wild birds and mammals he/she might hope to see during a foray into the hills and I expect few, if any, would mention the water vole.

For most people, the water vole, made famous as 'Ratty' in Kenneth Grahame's 'Wind in the Willows,' is an animal of lush, willow-fringed meandering rivers in lowland Britain.

The image of voles living in barren peat-hags and narrow peaty burns in the Scottish Highlands does not generally spring to mind. William MacGillivray, in his 1855 book 'The Natural History of Deeside and Braemar' describes water voles as being '*generally distributed; but local; not frequent along the Dee; mostly on grassy banks of the larger tributaries.*'



Many Scottish water voles are all black.

While this may have formerly been the case, recent studies have shown that they are now restricted to the headwaters and some of the upper tributaries, but nevertheless,

appear to be able to thrive, albeit in low numbers, in some of the most extreme habitats in Britain.

The Atlas of British Mammals shows most of the Highlands as being largely devoid of water voles, but recent evidence increasingly suggests that this may not be the case and that the species' apparent absence from large tracts of the uplands is more likely to reflect the lack of biological recording in these areas.



Water vole habitat on Mar Lodge Estate, Cairngorms

The fact that water voles can occur at altitudes in excess of 900 m has been known for many years. What perhaps may not have been appreciated is the potential importance of these populations and the possibility that they may be much more widespread than we think. Few biologists have devoted much effort to finding water voles in the uplands and those that have done, understandably have tended to concentrate their efforts in limited areas. The difficult terrain and sheer extent of the ground that must be covered to fill in the large gaps in the known distribution, effectively prohibits a systematic professional survey, as the necessary manpower and resources would be immense.

Why the interest in water voles you may well ask. The fact is that

water voles are now one of Britain's most threatened native mammals. The species has undergone a dramatic decline over the past few years, with two national surveys showing that voles have been lost from many areas where they were formerly common. In most of the areas where they survive, numbers are low and many local extinctions predicted to occur in the near future. The main reason for the decline is commonly cited as the spread of the introduced American mink – a highly efficient predator of water voles. While mink predation is undoubtedly a major problem, it is not the only reason for the vole's decline – loss or degradation of good bankside habitat along many watercourses is also thought to be a major contributory factor.

Perhaps fortunately for upland-dwelling water voles, mink tend to be scarce in open moorland and mountainous terrain, seeming to prefer the greater cover and abundance of prey that is to be found in the lower-lying parts of many rivers. For many river systems this means that voles are now absent from most of the main stem and the larger tributaries and are restricted to the headwaters and smaller tributaries in the upper parts of the catchment, where mink seldom go.

In these remote, often boggy areas, the voles live in isolated small colonies of rarely more than 10 individuals. With such low numbers, these colonies are always at risk of being wiped out by chance events such as sudden extreme flooding or the occasional foray into the area by a transient mink. Despite this, provided there are other colonies reasonably close

by, recolonisation can take place and life can continue. If not, then the species is doomed to extinction in that area, leaving any surviving colonies, elsewhere, even more isolated.



Water vole burrow entrances in rough grassland.

One of the problems facing conservationists is that we don't know where all the best areas for water voles are.

We know where *some* of them are, but with such incomplete information on the species' distribution in Scotland, there are likely to be several (perhaps many), as yet undiscovered, important upland refugia for this species which walkers, particularly in the remoter parts of the Highlands, are well-placed to come across. With a more complete picture of water vole distribution, it should then be possible to identify the most important areas of the country where resources can be best targeted, in order to conserve as

many surviving colonies as possible.

What to look out for.....

As water voles are often active by day, you may be lucky enough to catch a glimpse of one. If so, remember that many Scottish animals have black fur rather than the brown colouration usually associated with this species. However, as with many mammals, you are more likely to encounter their field signs rather than see the beasts themselves.

Water voles need reasonably soft ground in which to excavate their burrow systems. Consequently, in upland terrain (i.e between c.300 and c.1000 m), areas with a thick layer of peat are often favoured.



Water vole droppings on a peaty 'platform'.

The voles tend to avoid the larger fast-flowing 'torrential' burns, preferring instead, the small slower-flowing burns and peaty backwaters that are to be found on gentle slopes and on the flat marshy ground which is often found close to a river's source.

Similarly, the upper reaches of a glaciated valley where a small burn

meanders across a high altitude floodplain may also provide suitable conditions for voles. Lush (but not necessarily tall) bankside vegetation appears to be important, hence areas with a dense growth of sedges and rushes are likely to be favoured.

Water vole burrows are usually distinctive; they are typically slightly wider than high, with a diameter of between 4-8 cm and may go horizontally into a peat bank or vertically down from the surface. In the latter case they are usually located within 2 m of watercourse and, if recently occupied, are surrounded by characteristic grazed 'lawns'.

There may also be droppings near these entrances and at various points along the edge of the watercourse, e.g on flat stones or on areas of bare peat along the margins and within the channel itself, on prominent flat stones.



Water vole latrine by the water's edge.

Often, the signs are not immediately obvious and it becomes necessary to part the bankside vegetation and have a very close look in order to spot

concealed droppings or other evidence of the voles' presence.

The droppings are the most distinctive field sign and are usually deposited in small groups known as 'latrines'. They are cylindrical with blunt ends, about 8-12 mm long and 4-5 mm wide and vary in colour from greenish (usually when fresh) to brown or black. Amongst the bankside vegetation, within 2 m of the water's edge, water vole runs may be visible as low tunnels pushed through the vegetation. These are 5-9 cm wide and often branch many times, some leading to the water, others linking burrow entrances.



Feeding station showing chopped up sections of grass/sedge.

Sometimes, feeding stations can be found. These are located along the vole's runs and haul-out platforms along the water's edge. At a feeding station, neatly chopped food items - commonly pieces of sedge or rush up to 10 cm long - can be found. Other signs to look out for are footprints in soft mud or peat. Water voles are not very active above ground during the winter months, so signs of their presence are usually only visible during the spring and summer.

How can you help?

Scottish Natural Heritage is currently compiling as much information as possible on the current distribution of water voles *throughout* Scotland (not just in the Highlands). You can help by looking out for their signs and passing on the details of any colonies that you find to the author at the address below.

The information we would appreciate is:-

- a 6 figure grid reference
- the name and contact details of the observer
- as much detail as possible on the site and the evidence of water vole presence
- the date of the record (if known)



Burrow entrances showing the characteristic grazed 'lawns.'

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*Photographs courtesy of P and V Reynolds,
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