



Guidance for woodland creation where water vole are present September 2015

1. Introduction

Water voles have suffered a significant decline in numbers and distribution. National surveys have shown that the water vole has disappeared from over 90% of its former range in the UK primarily through loss, degradation and fragmentation of suitable habitat and predation by American mink but also because of pollution, poisoning and flooding. Knowledge of water vole distribution in Wales is still limited as not all areas have been surveyed and survey information is not regularly updated. There are good populations on Anglesey and on mainland north Wales and Ceredigion, in both lowland and upland areas. Populations in southern and eastern Wales are more scattered. There have been some recent reintroductions, e.g Llangorse Lake and Magor Marsh, Gwent Levels.

The water vole is a protected species under Schedule 5, Wildlife & Countryside Act, 1981

(as amended). In summary, this makes it illegal to kill, injure, capture or disturb water voles, and to damage, destroy or obstruct access to a water vole's resting place. Planting in habitat used by water voles would damage burrows and disturb voles and should be avoided. The water vole is a feature of some SSSI and some of the larger sites are National Key Sites for water vole, though this is not a statutory designation.

Water vole habitat. Picture - Jean Matthews



2. Biology & Ecology

The water vole is the largest British vole with an average adult body length of 190mm. It has a rounded appearance, small ears, blunt muzzle and the hair covered tail is just over half the body length. The coat is dense, shaggy and often a rich chestnut brown colour.

Water voles are burrowing, semi-aquatic rodents and are predominantly herbivores. They feed on reeds, grasses, rushes, sedges and a wide range of wetland and aquatic plants. They dig extensive underground burrow systems in which they create nest chambers and store food. Burrows can extend several metres and entrance holes be up to 4 metres away from the water's edge.

They live in colonies, often strung out along a linear water course or concentrated in areas of good habitat such as a reed beds or upland marshes. Water voles breed between March and October and can produce 2 – 5 litters a year.

Water voles are not often seen in the field. When out of the water they will dive back in with a characteristic “plop” if disturbed. Water vole presence can be identified from signs, such as droppings at latrine sites, burrow entrances (which are sometimes grazed) and feeding remains, though the signs can be confused with those left by field voles or rats.



Water vole burrow and latrine.

Picture - Jean Matthew

Type of habitat

Water voles occupy watercourses or water bodies such as drainage ditches, ponds, lakes and wetlands, ideally with slow-flowing or still water and a soft bankside substrate for burrowing. Optimum sites have stable water levels of at least 0.3m depth all year round to keep burrow entrances and bolt holes below water and safe from predators, and with banks that are high enough so that some burrow systems remain dry in periods of flooding. In upland areas water voles may also use wet grassland with tussocky vegetation for overground nest sites.

Water voles favour sites with lush, dense bank-side vegetation, especially grasses, herbaceous plants, rushes, sedges and moss. Trees and shrubs can provide an important food resource, e.g. roots and bark of willow are eaten in the winter and pussy willow buds may be taken in the spring. However, dense tree cover too close to the water should be avoided as it can shade out other vegetation and provide cover for predators.

The following types of habitat can be important for water voles (and other biodiversity) and tree planting on these should be avoided:-

Wet, open grassland especially tussocky purple moor grass (*Molinia caerulea*) and soft rush (*Juncus effusus*)

- Wet heath with open pools, drainage ditches or streams
- Bog and mire especially those with abundant moss tussocks
- Marsh, fen or swamp often associated with lake or pond margins
- Wet woodland sites, particularly willow and alder carr

4. Woodland creation schemes in areas identified as important for water vole should include the following measures

- Identify water features in flat or gently sloping areas, suitable topography includes flood plains, valley bottoms, hill top plateaux and basins between hills. Identify suitable habitat within the site; Good habitat will have dense bankside vegetation as described above.
- Avoid establishing scrub and tree cover on any soft riparian banks suitable for burrowing. Leave a buffer of at least 5 metres unplanted on both banks.
- Avoid planting on higher land close to the water course that may be used as a refuge for water voles during floods (e.g. with soft substrate for burrowing).
- Design the planting scheme to avoid fragmenting riparian corridors that link areas of bog, marsh, ponds, ditches, drains and streams.
- Aim to maintain lush bankside vegetation with little or no broadleaf cover close to water vole habitat. Ensure that when the trees are grown they will not shade the watercourse. This can be achieved by planting (choice of species and location) and by future management (e.g. coppicing), also by leaving a greater buffer on the southern side of the water course. Consider having lower density planting at the edge of buffer zone e.g. trees at 3m spacing at the edge closest to the water course. Create open scalloped woodland edge along warm, south facing sides of streams, drains and wet areas to maximise suitable habitat and lush vegetation development.
- Maintain open areas (without cover for predators e.g. copses, large areas of shrubs) close to known water vole colonies. Isolated trees or shrubs provide a valuable food resource but may need maintenance to stop them becoming too tall or dense.
- Include tree and shrub species that will be favourable for water voles at the edge of the planting scheme closest to the water course. These include willow *Salix* species, aspen *Populus tremula*, black poplar *P. nigra*, common alder *Alnus glutinosa*, hazel *Corylus avellana*, field maple *Acer campestre*, rowan *Sorbus aucuparia*, hawthorn *Crataegus monogyna*, crab apple *Malus sylvestre*, bird cherry *Prunus padus*, elder *Sambucus nigra*.

Further Reading

Strachan et al (2011) The *Water Vole Conservation Handbook* 3rdEd, Wildcru, Oxford, provides more information on species identification, habitat management, etc.

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