

Water Vole (*Arvicola terrestris*) Release Project:Disease Screening Protocol

Water voles (*Arvicola terrestris*), the largest of the British voles, have suffered a significant decline in numbers and distribution over the last few decades. They are now legally protected under Schedule 5, section 9(4) A & B of the Wildlife and Countryside Act (Revised (1998)). Attempts are under way to release captive-bred and wild caught voles back into various British riparian habitats.

Before any release can be made, measures must be taken to safeguard the health and welfare of the individual voles and also to prevent the introduction of pathogens to the resident water vole populations. Measures should also be taken to combat the threats to the voles at the release sites, primarily those posed by habitat loss and mink. In addition, the range of infectious agents and parasites carried by any resident voles at the release sites should be identified in case these might cause disease in the naïve released population.

Examination of the minimal literature available on the health problems of and diseases carried by water voles has suggested the following screening plan.

- Veterinary checks of all voles to assess fitness before release (in most cases this would be a brief examination, but a more detailed examination would be required for a proportion of the population)
- Veterinary checks of any sick voles and post-mortems of any dead voles
- Regular weighing and monitoring of body condition, plus examination for ectoparasites of all wolveroles
- Faecal sampling: basic screening for parasites and also culture.
- Blood sampling: serology to screen for specific diseases e.g. *Francisella tularensis*.

The following screening plan allows testing for those diseases which, in the literature at least, are most likely to pose a threat to the water vole populations.

Screening Plan:

Faeces- these may be collected from the latrines in each pen (each pen containing no more than one breeding pair of voles) or cage.

Tests: Screening for **helminths** (e.g. cestodes such as *Hymenolepis nana* / *diminuta*)

Protozoa (e.g. *Cryptosporidium parvum*, *Giardia* spp.)

Culture for *Campylobacter* spp

Salmonella spp.

Yersinia pseudotuberculosis / *enterocolitica* / *pestis*

Shigella spp.

Bloods- blood sampling is carried out prior to release. The procedure needs to be carried out under general anaesthetic. 2.5% of the voles to be released are sampled.

Tests: Serology for *Francisella tularensis*

Leptospira spp.

Blood smears to screen for *Babesia microti*

External parasites – regular examination and testing (by culture of hair plucks) if required for ringworm (*Microsporum persicolor* or *Trichophyton mentagrophytes*) and ticks. (The latter are known to carry *Babesia microti* and *Borrelia burgdorferi*, both of unknown significance in this species).

Post mortems – 2.5% of the voles to be released are euthanased and post mortemed to check for any abnormalities/ signs of disease