

# A management protocol for the maintenance of drainage ditches and other water-bodies inhabited by the Little Whirlpool Ramshorn Snail, *Anisus vorticulus*



## Annex B of Licence WML-CL14

### Important Note

This protocol forms part of a licence (WML-CL14) issued by Natural England. Compliance with this protocol is a condition of that licence and the management activities proscribed by this protocol are only lawful if you are registered to act under that licence.

*If you encounter significant problems complying with the protocol, please contact Natural England for advice. In certain circumstances variations from the protocol may be permitted.*

### Introduction

The **Little whirlpool ramshorn snail**<sup>1</sup> is a small (4-7mm across the shell width), rare snail that occurs in parts of the Norfolk Broads, the Arun Valley, and an area centred on the Pevensey Levels as its main UK population centres. It has a few records outside of these areas. Both its presence and continued survival in a ditch indicate an exceptional aquatic fauna, very good water quality, and excellent land and ditch management practices.

The long term future of viable Little whirlpool ramshorn snail populations is closely associated with relatively low intensity stock grazing of marshes, low or no inputs of fertilisers, and occasional, partial and carefully planned ditch clearance.

It is recognised that careful ditch management has historically been carried out on much of the land in these key areas, particularly by landowners and managers with agri-environment and Wildlife Enhancement Scheme (WES) agreements.

The susceptibility of the snail to any deterioration in water quality and to ditch management has led to the species becoming increasingly rare or extinct across much of its historical range. As a consequence, the species has been given special protection by European and UK legislation. This means that any activities that are expected to kill or disturb the snail or lead to damage to its habitat would be an offence unless conducted under the authority of a licence, which include conditions to ensure the populations of the snail are protected in the long-term. Ditch maintenance activities in areas where the snail is present should be conducted under licence to ensure activities are both lawful and provide the best

conditions to prevent the snails from becoming extinct.

A licence, of which this protocol is part, has been issued by Natural England to allow the maintenance of ditches and other water-bodies inhabited by the Little whirlpool ramshorn snail. This protocol sets out how to maintain ditches in accordance with that licence. The licence may only be used by registered persons.

If you know or believe that Little whirlpool ramshorn snail is present on your land you should register to use the licence before commencing any ditch and drainage-channel management. To register to use the licence please contact Natural England. For advice on identifying this species please 'Further Information' section.



*Anisus vorticulus*.  
Picture by G. Faulkner from Terrier et al. (2006)

This protocol is applicable to the management of ditches inhabited by this species in Special Areas of Conservation (SAC), Sites of Special Scientific interest (SSSI), and in the wider countryside.

Before commencing any ditch and drainage-channel management it is also necessary obtain the agreement of Natural England, or the Environment

<sup>1</sup> The Little whirlpool ramshorn snail, *Anisus vorticulus* (Troschel, 1834) is also referred to (including in legislation) as the Lesser whirlpool ramshorn snail

Agency, local Internal Drainage Board, or the Broads Authority, as appropriate, for the planned operation(s). It is acceptable for such agreements to cover either one-off management interventions or long-term rotational plans for a site or a series of sites. On those sites with a healthy population of the snail, this may mean continuing to do what has always been done in the past.

### How to manage ditches inhabited by the little whirlpool ramshorn snail

Little whirlpool ramshorn snail populations are likely to be lost from a ditch or drainage channel if it is cleared completely in a single operation (for example, by removing both weed and sediments). Sympathetic management, which allows the snail to re-colonise cleared stretches of ditches, is characterised by two key elements:

- Ditch maintenance is carried out in stages so that so that sections or parts of the ditch are left untouched during each operation. These 'refuges' will provide a source of snails to re-colonise the cleared sections.
- Ditch management is carried out over a long rotation so that snail populations have time to recover between maintenance operations. Intervals between operations should be as long as possible, ideally, 20 years or more, and should not be more frequent than every seven years.

Unless specifically authorised by Natural England, ditch and drainage channel maintenance must be carried out in accordance with prescriptions 1–4 below. The best practice set out in 5–10 is recommended, but not obligatory.

1. Ditches should **only** be maintained when it becomes necessary – for example when sediment or dead vegetation is seriously impeding water flow and / or when the water depth is insufficient to act as an effect 'wet fences' for livestock, or there is a threat of livestock mistaking dense weed coverage for solid ground, or to provide clear drinking water for livestock.
2. To tie in with the snail's lifecycle, ditch maintenance should, wherever possible, be undertaken in the autumn.
3. The same section of drainage ditch or water-body is not to be completely cleared (ie clearing both sides of the channel, removing both weed and sediments) at intervals less of than seven years unless the conditions described in prescription 1 (above) apply. Ideally, silt removal should be less frequent (i.e. no less than every ten years).
4. Ditches must be cleared using **one or more** of the following techniques.

- a. **Staggered clearance:** For ditch lengths in excess of 100m in length, a series of alternating cleared and un-cleared sections of 10 – 15 metres length are to be created. An example of this approach is shown above.
- b. **Clearing one-side of ditch/channel only:** Clearing only one side of a ditch. This is only suitable for the mechanised clearance of channels greater than 4 metres width.
- c. **Leaving adjoining ditches or 'spurs' untouched:** 'spur' and longer ditches or pools connected directly to an occupied ditch, but which are not cleared, can provide a source of snails (and other wildlife) to re-colonise the main ditch after maintenance. New 'spur' ditches must be created at least one, but ideally two, years before the main ditch clearance to allow the new site to be colonised.
- d. **Leaving ends of ditches untouched:** For short sections of ditch (ie less than 100 m) it is acceptable to clear the channel leaving a 10 – 15 metre untouched section at each end of the ditch. This approach can be used for longer channels in combination with un-cleared connected ditches, spurs or sections (of at least 10 – 15 metres length). The maximum distance permitted between un-cleared sections or source populations of snails is 80 metres.



Photo by Dr M J Willing, Amberley Wild Brooks SSSI

### Best practice

5. **Minimise ditch shading:** in general, it is best if ditches are not shaded by overhanging and tall emergent vegetation. This allows sunlight to warm ditch waters allowing the growth of a greater variety of aquatic vegetation, which in turn encourages more diverse invertebrate populations. Small lengths of scrub or tall water plants are acceptable.
6. **Maintain ditches with shallow water margins and reduce any steep bank margins:** shallow marginal areas warm quickly and are beneficial to many aquatic invertebrates. If banks are too steep, grazing animals are prevented from

reaching the ditch margins to graze and drink, and do not keep the margins open.

7. **Avoid over-deepening ditches:** when ditches are cleared it is best to profile them to create a gentle gradient with water depth no more than 1m in the centre-channel.
8. **Keep grazing animals in fields adjacent to ditches:** moderate numbers of grazing animals, especially cattle, are important in the maintenance of poached ditch margins and to minimise ditch shading. Much of the potential benefit gained from the presence of grazing animals is lost if ditch margins are fenced.
9. **Avoid fencing ditch margins:** fencing prevents animals from grazing emergent vegetation and from poaching ditch margins important in creating shallow water areas.
10. **Protect water quality through careful application of manure and fertiliser:** any applications of fertiliser must be aligned with any management agreement or HLS prescriptions entered into with Defra for the land. If the land is not covered by an agreement, then you are required to observe a 3m stand-off from the ditches, and apply no more than 100kg/ha/yr total nitrogen, or no more than 50kg/ha/yr organic nitrogen to the adjacent fields.

Some of the management activities listed above require consents and authorisations to be in place before you start. To check this, please contact Natural England or the Environment Agency for advice.

### Environmental Stewardship options

The following options may be suitable for Agreements covering areas with ditches and drainage channels inhabited by the little whirlpool ramshorn snail.

#### Higher Level Scheme

- **HB14** Management of ditches of very high environmental value. This option is aimed at the management of ditches that support target species and sensitive management for their benefit. Relevant associated grassland options are **HK6-8**.
- **HLS capital items**
  - **DR** Ditch, dyke and rhine restoration
  - **WDC** Creation of ditches – rhines and dykes

#### Entry Level Scheme

These options need to be combined with specific management needs

- **EB6** Ditch management
- **EB7** Half ditch management

- **EB8-9** Combined hedge and ditch management (incorporating **EB1-2**)
- **EB10** Combined hedge and ditch management (incorporating **EB3**)

### What about liver fluke control on grazing marshes?

The liver fluke *Fasciola hepatica* is a trematode “worm” which infects the liver of a range of mammals and causes a condition called fascioliasis in sheep or cows. The fluke’s life cycle involves an intermediate stage within a water snail host.

Little whirlpool ramshorn snail is **not** one of the target host species for the liver fluke and there is some evidence to suggest that the snail species that are hosts to the liver fluke tend not to be present in ditches with the ramshorn snail.

Flukicidal treatment strategies are available and a September treatment schedule may be beneficial in high risk areas after wet summers, when the risk of infection is greatest.

It is important to avoid any snail – targeted treatments (ie any chemicals with molluscicidal properties such as slug pellets) at little whirlpool ramshorn snail sites.

### Further information and advice

- Snail identification. Conchological Society of Great Britain & Ireland key to UK *Anisus* species [www.conchsoc.org/aids\\_to\\_id/Anisus.php](http://www.conchsoc.org/aids_to_id/Anisus.php)
- Research information from Cardiff University on *Anisus vorticulus*: [www.malacsoc.org.uk/The\\_Malacologist/BULL50/terrier.htm](http://www.malacsoc.org.uk/The_Malacologist/BULL50/terrier.htm)
- Defra Biodiversity Action Plan report on Little Whirlpool ramshorn snail: [http://ukbars.defra.gov.uk/plans/national\\_2005.asp?HAP=&SAP=%7BFBE000CE-27B7-4A09-AFD3-44E5E1912C4B%7D](http://ukbars.defra.gov.uk/plans/national_2005.asp?HAP=&SAP=%7BFBE000CE-27B7-4A09-AFD3-44E5E1912C4B%7D)
- Treatment advice for liver fluke in sheep: [www.nadis.org.uk/EBLEX%20Bulletins/07-10Fluke%20in%20sheep.pdf](http://www.nadis.org.uk/EBLEX%20Bulletins/07-10Fluke%20in%20sheep.pdf)

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