



# Marvellous Mud Snails - Surveying for Pond mud snails (*Omphiscola glabra*) at Treveal, near Zennor

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Laura Larkin



*Saving the small things that run the planet*

## **Contents**

Marvellous Mud Snails Project	2
The Pond mud snail	2
Species Description	3
Habitat	3
Threats	3
Pond mud snails at Treveal	4
Survey	4
Recommendations	5
Appendix	7

## **Surveying for Pond mud snails (*Omphiscola glabra*) at Treveal, near Zennor**

### **Marvellous Mud Snails Project**

Marvellous Mud Snails is seeking to gather up to date data on, and improve the plight of the Pond mud snail (*Omphiscola glabra*) in Cornwall. The project is running from April 2019 until March 2020 and is funded by the People's Postcode Lottery and the Ernest Cook Trust.

Marvellous Mud Snails will update our knowledge on the status of the Pond mud snail in Cornwall by undertaking surveys of sites with historic records of the snail across the county. It will also run a captive breeding programme with local schools and colleges, and will create new habitats in the form of ponds or scrapes to house these newly created snail populations and safeguard them for the future.

### **The Pond mud snail**

The Pond mud snail is a S41 Priority Species for conservation action in England that lives in temporary water bodies with low nutrients such as ponds, ditches and marshes. Pond mud snails are adapted to survive periodic drought by burying themselves into the mud, becoming inactive until their habitat becomes wet again.

The species was formerly fairly widespread in Cornwall, but the few recent records have been largely confined to the mid-Cornwall Moors and West Penwith. For much of its former range the status of the species is largely unknown. At an international level, the Pond mud snail is listed as Near Threatened by the IUCN.

The small, temporary ponds and other freshwater habitats that Pond mud snails rely upon are rarely protected and are often not recognised for their biodiversity value. Through habitat loss, damage and neglect, the Pond mud snail has disappeared from many of its former known locations across Britain. Previous surveys for the snail in Cornwall show a decline in the county – it has only recently been recorded from four sites, a further eleven sites do not have any post-2000 records.



Pond mud snails (*Omphiscola glabra*) © Martin Coard

## Species Description

The Pond mud snail is a small freshwater snail with a shell height between 1mm and 25mm. Its shell is usually dark brown and is conical and elongate, coming to a blunt tip. The shell has a small aperture which is no more than one third of its total height; this is the easiest way to distinguish it from other, similar snails. The species can be confused with other freshwater snails such as the Dwarf pond snail (*Galba truncatula*) and the Marsh snail (*Lymnaea palustris*) (Figure 1). The Moss bladder snail (*Aplexa hypnorum*) is also similar but can be easily distinguished by the aperture opening on the opposite side (Figure 1).

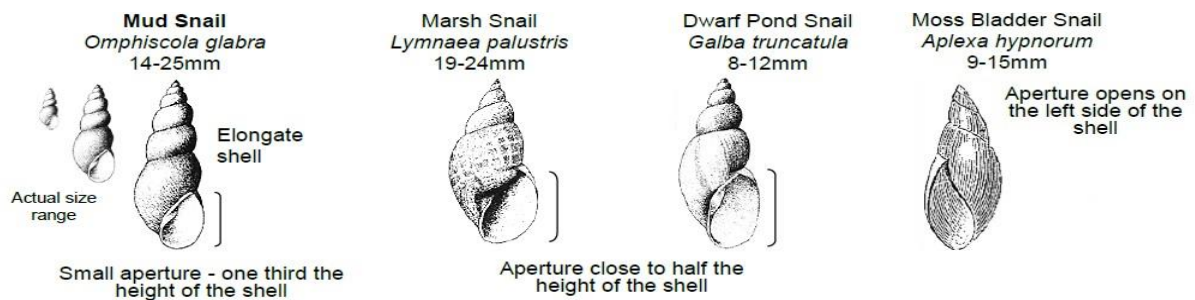


Figure 1 - Comparative diagram of *O. glabra* and similar species © Freshwater Habitats Trust

## Habitat

The Pond mud snail is typically associated with inconspicuous freshwater habitats that dry out or diminish during the peak of summer. During periods of drought, the snails will burrow as deep as 6cm into the mud and aestivate until sufficient water levels return; giving the snail its common name. The habitats in which it is found include anything from temporary ponds, seepages and ditches to freshwater marshes. Sites associated with the Pond mud snail usually have low species diversity and in most cases *O. glabra* will be the only species of snail in the water body. The species is tolerant of acidic waters (as low as pH 5) so is likely to be found on uncultivated land with acidic, sandy or gravelly soils, such as heaths and commons, or other unimproved grasslands. In Cornwall, all of the sites we have found the snails at have contained a high proportion of grasses which the snails appear to feed on.

## Threats

The biggest threat that most populations of Pond mud snail face is habitat loss. Temporary freshwater habitats are generally seen as hard to manage, insignificant for wildlife and in some cases unsightly. A combination of these factors has led to such habitats being filled or drained in to create productive agricultural land or turned into permanent, more aesthetically pleasing ponds.

The species can also suffer due to chemical run off from agriculture or roads polluting the water body, causing it to become unsuitable habitat for Pond mud snails. Due to the nature of the habitat, the ponds that this species of snail relies upon are susceptible to vegetation succession if left unmanaged completely.



### **Pond mud snails at Treveal, near Zennor**

Pond mud snails have previously been recorded in 1975 near Treveal in the ground of Trendrine Farm at SW479396. Buglife were unable to contact the landowner at Trendrine Farm and so approached Shaun Boyns at The National Trust to see whether they had any suitable wet habitat on their land, adjacent to Trendrine Farm.

### **Survey**

Buglife staff Laura Larkin, volunteer Kevin Thomas visited Treveal with Shaun Boyns from the National Trust on Thursday 6<sup>th</sup> February 2020. Areas close to the existing record containing suitable habitat that were easily and safely accessible on foot were searched. Hand nets were used to search through submerged vegetation, and any individuals that were found were identified, counted, and replaced back in their original locations. We followed the Pond mud snail survey methodology as laid out by the Freshwater Habitats Trust. A copy of this can be found in the Appendix.

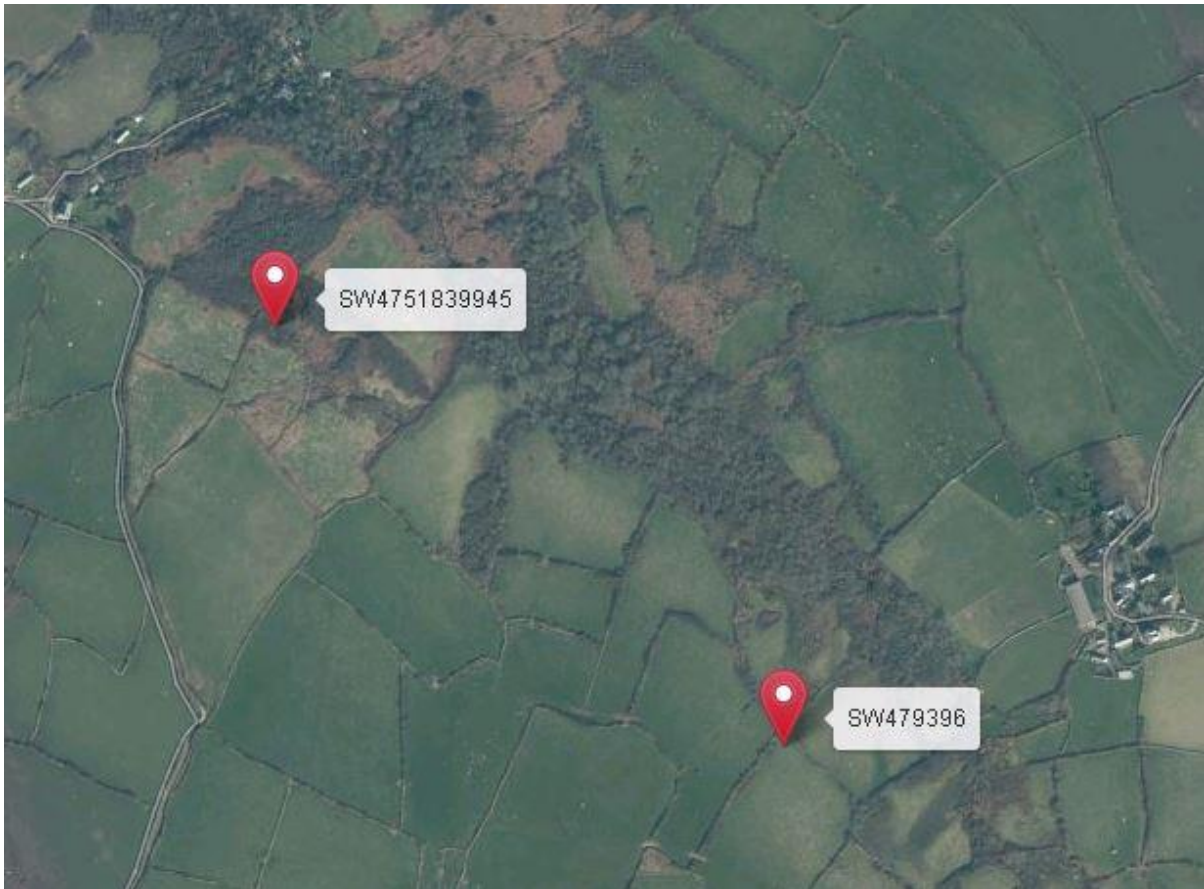
In total we found 34 snails in the wet wooded area near the Courtyard House at Treveal at SW 47518 39945.



**Images of the wet woodland pond at Courtyard House, Treveal**

Several different sections of the pond were surveyed for a total of 60 seconds. The snails were all found attached to floating vegetation, some grass and some broad leaved.

The map below shows the new record in relation to the 1975 record. The distance between the two is approximately 500m.



Map showing the 2019 record at Trevail (top) relative to the 1975 record at Trendrine Farm (bottom).

Image taken from [www.gridreferencefinder.co.uk](http://www.gridreferencefinder.co.uk)

### Recommendations

In order to ensure that this population of snails continues to thrive we would recommend that the wooded pond area be maintained to encourage growth of more grasses and broad leaved vegetation within the pond. If possible, the area would probably benefit from some canopy thinning to allow this to happen.

It would be very interesting to carry out further surveys in the future of any other still or very slow moving waterbodies in the vicinity of both this and the previous record, to see whether any other populations of snails persist in the surrounding area.

Some other potential management considerations are below:

Action: Avoid drainage, infilling and deepening of the ditch.

Reason: Due to its precise habitat requirements, the Pond mud snail is extremely susceptible to small environmental changes and could suffer dramatically if any of the above management

practices are carried out. Drainage and deepening could alter the seasonal cycles of the temporary pool, making it an unsuitable habitat for the pond mud snail.

Action: Any grazing by livestock needs to be carefully balanced. Cattle stocking densities should be low enough to prevent water bodies becoming overgrown whilst avoiding excessive poaching and eutrophication from overstocking. In some cases, the exclusion of livestock or the use of water troughs can help protect this vulnerable habitat.

Reason: High levels of livestock grazing at this site could damage the areas of grassland surrounding the ditch through excessive poaching, potentially destroying the Pond mud snail habitat at this site and posing a high risk to the Pond mud snail population.

Action: Prevent pollution and eutrophication by avoiding fertiliser and pesticide use near ditch, or in areas that might drain into a ditch.

Reason: The Pond mud snail prefers nutrient-poor waters and will not survive in habitats which are enriched with chemicals from fertilisers or contaminated with pesticides.

Action: If the opportunity ever arises, expand the current habitat further by creating new ponds and scrapes for the Pond mud snail at the site.

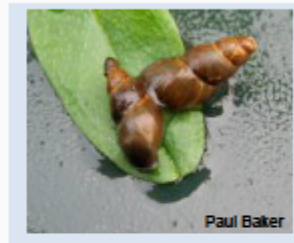
Reason: Increasing the number of suitable habitats in close proximity to each other will give the Pond mud snail population the best chance of expanding and stabilising.



**METHOD**

**Aims:** To find out if Pond Mud Snails are i) present in the focal pond, ii) get an approximate idea of numbers in the focal pond, iii) collect physical data about the focal pond that can be used to assess the reasons for any change recorded on future visits, and iv) look in any adjacent ponds to see if Pond Mud Snails are present or absent.

- **Survey the Focal Pond.** This pond will have previous Pond Mud Snail records, although they may not have been recorded since the 1980s. Estimate the number (if present) and fill out the pond habitat survey sheet.
- **Check other ponds and pools in the surrounds.** Visit as many nearby ponds or pools as you can within your time availability to see if Pond Mud Snails are present or absent. You don't need to record numbers, or environmental data at these ponds.



**Equipment:** You need (a) a deep tray or a bucket, and (b) a net - a robust plastic kitchen sieve is OK (clip off the bowl supports), or a standard biologist's long-handled net with a 0.5mm mesh (hardier and useful for slightly deeper areas). It's also helpful to take a camera (e.g. mobile phone camera) for confirmatory photos of Pond Mud Snail or your survey ponds and to take a photograph of your sketch maps if you don't have access to a scanner - alternatively you can give your survey forms to your regional officer.

**When and where to look:** You can search for Pond Mud Snail at almost any time of year. Early autumn can be particularly productive, when temporary ponds refill with water. Pond Mud Snails are typically found in shallow water near to the pond edge. They usually live amongst submerged plants close to the pond bottom, but also amongst submerged fallen tree leaves under shaded margins.

**Sampling approach:** Spend **1 minute** (net-in-the-water time) sampling the pond. Divide the one minute equally between the different edge and shallow water habitats in the pond (e.g. grassy pond margins, rushes, shaded areas). Thus for 3 habitats you would sample each for 20 seconds. It's best to further divide the time up into approximately 5 second bursts of netting in different places within each habitat and to sort through each of these collections, recording the results as you go.

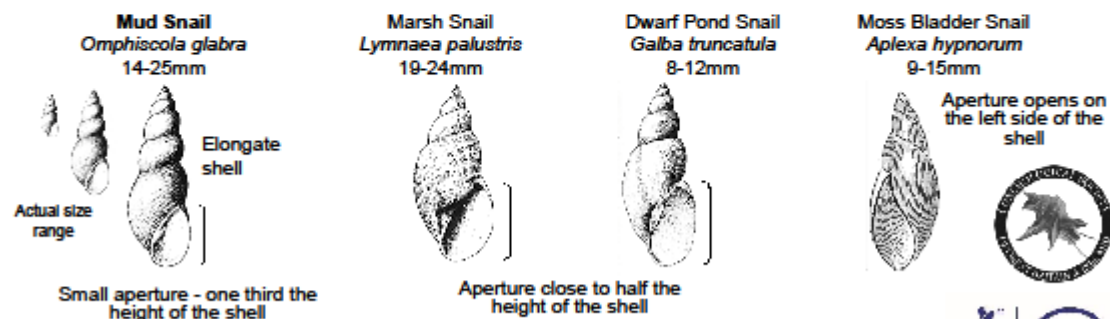
**Sampling method:**

1. Fill your tray or bucket with water and place at the pond edge. Do this before you disturb the water and make it muddy.
2. Collect a c.5 second net sample. Ensure that you sweep down to the pond bottom where the snails often sit, but do not push down into the sediment, as this will make the sample muddy.
3. Empty the contents of your net into the tray/bucket of water. Swirl it around a little to help any snails (which are heavy) settle to the bottom. Agitate any vegetation using your hand, to loosen any snails clinging there.
4. Gradually pour the water back into the pond, also removing vegetation as needed. Take care near to the bottom of the tray not to pour out the snails too! If the bottom is muddy, swirl out carefully with a little more water.
5. Estimate the number of Pond Mud Snails present, and place in abundance categories (overleaf).
6. Return the snails to where they were found. Repeat from other sampling areas until the 1 minute sample is complete.

**Dry ponds:** When ponds dry-up, Pond Mud Snails bury down into the sediment. However, you can sometimes find them by looking under logs that were formerly submerged. Estimate the abundance and record overleaf.

**Checking other ponds:** It will be helpful to revisit these ponds in future years. So, to ensure they can be found again by yourself or others, please (a) provide an accurate grid reference and/or mark the locations on your PondNet base map, or (b) make a sketch of the location of ponds around the focal pond and (c) take photos.

Once completed, enter your results online: [www.freshwaterhabitats.org.uk/projects/watemet](http://www.freshwaterhabitats.org.uk/projects/watemet), or give your recording forms and maps to your regional project officer and we can enter data for you.



For further information about Mud Snail, and how to identify this species, please see the Pond Mud Snail survey presentation online at [www.freshwaterhabitats.org.uk/projects/pondnet](http://www.freshwaterhabitats.org.uk/projects/pondnet)