METHOD


© Paul Baker

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 Pond:** This pond we have selected for survey will have previous records for Pond Mud Snail, although they may not have been recorded since the 1980s. Estimate the number (if present) and fill out the pond habitat survey form (page 3-4).
- **Check other ponds and pools in the surrounds:** We are keen to find new ponds for Pond Mud Snail and would like you to look in other ponds to see if they can be discovered. Visit as many nearby ponds or pools as possible to see whether Pond Mud Snail are present. **Complete a new survey form for each pond you visit.**
- **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 post your survey forms to Freshwater Habitats Trust.
- **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, 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 habitat types you see in the pond (e.g. grassy pond margins, rushes, shaded areas). Thus for 3 habitats you'd sample each for 20 seconds. It's best to further divide the time up into approximately 5 second bursts of netting collected in different places within each habitat.

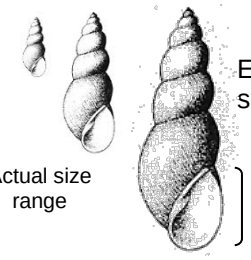
Sampling method:

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 not into the sediment which will make the sample muddy.
3. Empty the contents of your net into the tray/bucket of water. Swill 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, swill 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.

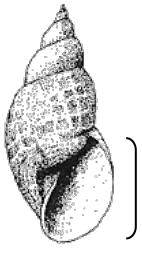
Once completed, enter your results online: www.freshwaterhabitats.org.uk/projects/waternet, or email your recording forms and maps to Freshwater Habitats Trust and we can enter the data for you: info@freshwaterhabitats.org.uk.

Mud Snail
Omphiscola glabra
14-25mm

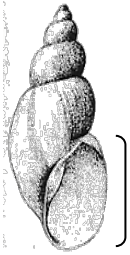


Small aperture - one third the height of the shell

Marsh Snail
Lymnaea palustris
19-24mm



Dwarf Pond Snail
Galba truncatula
8-12mm



Aperture close to half the height of the shell

Moss Bladder Snail
Aplexa hypnorum
9-15mm

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

heritage lottery fund
LOTTERY FUNDED

PondNet

Pond Mud Snail (*Omphiscola glabra*)
RARE SPECIES RECORDING FORM (PAGE 2 of 4)

Your name		**Date**	
Square: 4 figure grid ref e.g. *SP1243* (see your map)		**Pond: 8 figure grid ref** e.g. *SP 1235 4325 (see your map)*	
Pond name (if known)			
Determiner name (*optional* - if someone confirms the identity of the species you've recorded)		**Voucher material** (*optional* - comment if you've taken a photo to confirm identification)	

If you find Pond Mud Snail please take a confirmatory photo. You can also take a photo of your pond or your maps (or scan them if you have a scanner) and upload them with the record www.freshwaterhabitats.org.uk/projects/waternet.

Number of Pond Mud Snail in your pond

Areas where Pond Mud Snail were found (list): use this table to help with your number calculations, and so you/others can re-find the snails on future visits.	**Number of individuals**
1.	
2.	
3.	
4.	
5.	
6.	
7.	

Total number of Pond Mud Snail (total count)
Provide a single total for the whole pond based on an actual or estimated number of individuals recorded

Total number of Pond Mud Snail (abundance category)
Then record the number of Pond Mud Snail found in the pond using the following abundance categories:
1, 2-5, 6-10, 11-20, 21-50, 51-100, 101-200, 201-500, 501-1000, 1001-5000, 5001-10000, 10001-20000, 20001+

Pond Mud Snail looked for, but not found
Note: if you *don't* find evidence of Pond Mud Snail at the pond, this is an important result so please still enter these findings online (tick box if none found)

Pond sketch map: Make a sketch map of your ponds and draw on the locations where Pond Mud Snail were recorded.

Location map: Use this box to show the location of the pond and surrounding ponds you searched (or mark the information on the base map included in your site information pack).

heritage lottery fund
LOTTERY FUNDED

Please complete a POND HABITAT SURVEY sheet at each pond surveyed.

This is a really important part of the survey at your pond. Please complete this form whether Pond Mud Snail is present or absent. Each variable provides information known to be linked to pond quality and community type, and can be used to investigate reasons for change in Pond Mud Snail occurrence. If you are surveying non-pond habitat – complete all variables that apply.
Go to: **www.freshwaterhabitats.org.uk/projects/pondnet/survey-options/habitats** for survey guides and more information.

Is the pond new? (less than 10 yrs old) *yes, no, unknown* [ ]

Year of creation? *date, decade, unknown* [ ]

Pond Altitude (m) [ ]

Area

[ ] m²

Note: This is the *surface area of the pond when the water is at its highest level (usually in early spring)*. It will probably *not* be the current water level of the pond. The high water level line should be evident from wetland vegetation like rushes at the pond's outer edge. Measure by pacing (single pace = 0.8-1m) or use online maps.

Pond dries?

[ ]
1 = never dries
2 = rarely dries
3 = sometimes
4 = annually

1 = Never dries, **2 = Rarely dries**: no more than two years in any ten year period, or only in drought, **3 = Sometimes dries:** dries between three years in ten to most years, **4 = Dries annually.** Deduce pond permanence from local knowledge (e.g. landowner) and personal judgement e.g. water level at the time of the survey. Ponds that dry out annually usually have a hard base.

Overhanging trees & shrubs

[ ] % of pond overhung by trees and shrubs

[ ] % pond margin overhung to at least 1m from the pond margin

This is an estimate of how much of the pond is *directly* overhung by trees and shrubs, i.e. that would be shaded if the sun was overhead (use the diagram (below) as a guide).

Waterfowl impact

[ ]
1 = major
2 = minor
3 = none

Major = severe impact of waterfowl e.g. few or no submerged plants, water turbid, pond banks have patches where vegetation removed, feed put down; **Minor** = waterfowl present, but little impact on pond vegetation, pond still supports submerged plants and banks are not denuded of vegetation; **None** = no evidence of waterfowl impact (moorhens may be present).

Fish presence

[ ]
1 = major
2 = minor
3 = possible
4 = absent

Major = dense populations of fish known to be present; **Minor** = small numbers of Crucian Carp, goldfish or stickleback known to be present; **Possible** = no evidence of fish, but local conditions suggest that they may be present; **Absent** = no records of fish stocking and no fish revealed during survey.

Disturbance by dogs

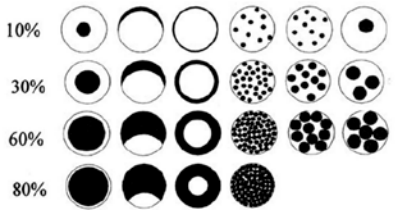
[ ]
1 = major
2 = minor
3 = none

Major = dogs repeatedly use the pond, compacted edges with little vegetation, water very turbid; **Minor** = dogs use the pond, but little impact on pond vegetation, pond still supports submerged plants and banks are not denuded of vegetation; **None** = no evidence that dogs are using the pond.

Aquatic vegetation: includes emergent, floating and submerged plants

[ ] % of the whole pond (wet and dry) occupied by emergent vegetation – incl. plants like grasses, water mint and rushes, but not floating (e.g. pondweed) or submerged (e.g. water-crowfoot) species.

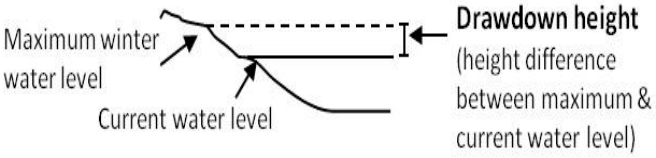
[ ] % of pond water surface area covered by all vegetation (emergent, floating (excl. duckweed) and submerged).



Water left in the pond

[ ] % of water area in pond relative to maximum water level. This can be 0% if the pond has dried out.

[ ] cm Drawdown. The height drop from the maximum winter water level to current level (see diagram).



Grazing

[ ] Tick if there is evidence the pond is grazed by livestock. If **yes**, complete the following boxes:

[ ] % % of whole pond grazed (note: stock can wade into shallow ponds to graze).

[ ] % % of pond perimeter grazed (note: stock can wade into shallow ponds to graze otherwise inaccessible edges).

[ ] Grazing intensity: rank 1-5 (1=infrequent or low intensity to 5 = margins heavily poached and almost bare).

Pond management (tick): use tick boxes to list management within the last 12 months. Use 'other' box for any extra info.

[ ] Fully dredged	[ ] Partly dredged	[ ] >5% vegetation removed	[ ] <5% vegetation removed
[ ] Trees planted	[ ] Trees clear-felled	[ ] Trees cut back / coppiced	[ ] Pond changed shape / size
[ ] Plants introduced	[ ] Bank plants mown	[ ] Structural work e.g. to dam	[ ] Straw added

Add other or more detail [ ]

Water quality:

Turbidity / water clarity: Estimate turbidity looking down into c.20cm depth of water in the pond.

[ ] 1 = clear; 2 = moderately clear; 3 = moderately turbid; 4 = turbid

Inflows and outflows: (tick if inflow or outflow present or leave blank)

[ ] **Inflow present** [ ] **Outflow present**

Water chemistry: If suitable kits and meters are available (or leave blank)

[ ] **pH** [ ] **Conductivity (µS cm-1)**

Nitrate (NO^{3-}-N ppm): PPW kits provided by FHT
(tick one from the following range categories)

<0.2	0.2-0.5	0.5-1	1-2	2-5	5-10	10 +

Phosphate (PO_4^{3-}-P ppm): PPW kits provided by FHT
(tick one from the following range categories)

<0.02	0.02-0.05	0.05-0.1	0.1-0.2	0.2-0.5	0.5-1	1 +

Pond base: This refers to the *geology* (i.e. rock-type) that immediately underlies the pond. You may know, or be able to see the underlying geology in the base or banks of the pond, especially in new ponds. If not, check a geology map or leave this section blank.
Choose one of the following to categorise the % composition of **each** of pond base: 1= 0-32%, 2= 33-66%, 3= 67-100%

[ ] Silt/ clay [ ] Sand, gravel, cobbles [ ] Hard rock [ ] Peat [ ] Other (please specify)

Surrounding land use: Estimate the *percentage* of surrounding land-use in distance zones from the pond perimeter (i.e. the maximum winter water level) used to assess pond area. In many ponds the 0-5m zone will include surrounding trees/scrub.

Habitat	0-5m	0-100m	Examples
Trees, woodland & scrub	%	%	Deciduous and coniferous woodland, individual trees, scrub and hedgerows.
Heath & moorland			Lowland and upland heathland, moorland and mountain; includes bracken.
Rank vegetation			Unmanaged grass, neglected and abandoned land, set-aside, verges and buffer strips.
Unimproved grassland			Herb-rich, calcareous and acid grassland (good quality plant indicators usually present). Low percentage of agricultural grasses. Not fertilised, little or no drainage.
Semi-improved grassland			A transition category. Grasslands modified by fertilisers, drainage, herbicides or intensive grazing, but retaining elements of natural grassland types in the area.
Improved grassland			Fertile agricultural grass, often bright green and lush; including parks and golf greens.
Arable			All crops. Includes flower and fruit crops (e.g. strawberries) and ploughed land.
Urban buildings & gardens			Areas in curtilage (associated with buildings); including glass-houses and farm yards.
Roads, tracks & paths			Including car-parks and footpaths.
Rock, stone & gravel			Cliffs, rock-outcrops, gravel-pits, quarries, areas of sand and gravel or stone.
Bog, fen, marsh & flush			Wetland vegetation and blanket bog.
Ponds & lakes			Permanent and seasonal waterbodies; including trackway pools.
Streams & ditches			Rivers, streams, ditches, springs and canals.
Other (state)			E.g. maritime vegetation, saltmarsh, sand-dune, orchards and railways.

[ ] **Is the pond in a protected area?** (e.g. nature reserve, SSSI, etc.) (choose one option - *yes, no, unknown*)

New Zealand Pigmyweed *Crassula helmsii*: This non-native weed may have an impact on this species.

[ ] % of drawdown zone occupied by New Zealand Pigmyweed

Identification of New Zealand Pigmyweed:

- Can be submerged, emergent and terrestrial.
- Forms dense mats below and above the water surface.
- The flowers it has, if any at all, are very small (less than 1cm) whitish-green to slightly pink with 4 petals.
- Leaves are up to 2cm long in opposite pairs - fleshy for emergent plants, but flatter for submerged parts of the plant.
- Similar species (such as the Water-starworts) do not have fleshy leaves. Water-starworts also have a notch at the leaf tip which is absent in New Zealand Pigmyweed.

Other invasive non-native species: (tick all that apply)

[ ] Floating Pennywort *Hydrocotyle ranunculoides*

[ ] Non-native Pondweed, e.g.: Canadian Pondweed *Ellodea canadensis*, Nuttall's Pondweed *Elodea nutallii*, Curly Waterweed *Lagarosiphon major*

[ ] Parrot's Feather *Myriophyllum aquaticum*

[ ] Water Fern *Azolla filiculoides*

How much of pond perimeter could be surveyed? Note areas of pond not accessible.

Comments box: e.g. new ownership, changes since previous visit, any other information about the pond or survey species.