

Your name	Date
Square: 4 figure grid reference e.g. SP1243 (see your map)	Pond: 8 figure grid ref e.g. SP 1235 4325 (see your map)
Pond name	

Please complete a POND HABITAT SURVEY sheet for each pond surveyed in your 1 km grid square.

The aim is to collect environmental data from each survey pond between May and September. You can learn all the skills needed from our pond habitat survey guide and online video.

Before you begin, it's also worth checking to see if environmental data has previously been collected from the pond. This can save you time, since some factors rarely change, and you can download (and later upload) a sheet with these factors auto-filled.

Go to: www.freshwaterhabitats.org.uk/projects/pondnet/survey-options/habitats for survey guides and more information.

Once completed, please don't forget to enter the results online: www.freshwaterhabitats.org.uk/projects/waternet/

Note that you can also **upload photos** or a **sketch map** of the pond, to provide a useful visual record of the site.

Is the pond new? (less than 10 yrs old) <i>yes, no, unknown</i>	Year of creation? <i>date, decade, unknown</i>	Pond Altitude (m)
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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:** no more than 2 years in any 10 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.

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

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 **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).

1 = major
2 = minor
3 = none

Fish presence **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.

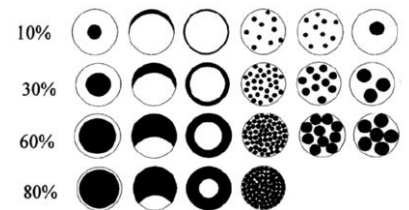
1 = major
2 = minor
3 = possible
4 = absent

Disturbance by dogs **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.

1 = major
2 = minor
3 = none

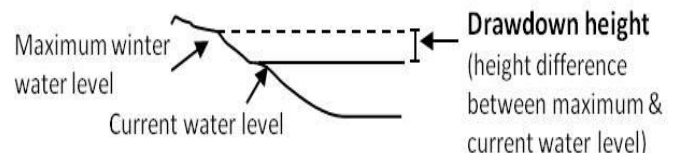
Aquatic vegetation: includes emergent, floating and submerged plants
 % of the whole pond (wet and dry) occupied by emergent vegetation – incl. plants like grasses, water mint and rushes, but not floating (e.g. pondweed) or submerged (e.g. water-crowfoot) species.

% 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.

- | | | | |
|--|---|--|--|
| <input type="checkbox"/> Fully dredged | <input type="checkbox"/> Partly dredged | <input type="checkbox"/> >5% vegetation removed | <input type="checkbox"/> <5% vegetation removed |
| <input type="checkbox"/> Trees planted | <input type="checkbox"/> Trees clear-felled | <input type="checkbox"/> Trees cut back / coppiced | <input type="checkbox"/> Pond changed shape / size |
| <input type="checkbox"/> Plants introduced | <input type="checkbox"/> Bank plants mown | <input type="checkbox"/> Structural work e.g. to dam | <input type="checkbox"/> 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 ($\mu\text{S cm}^{-1}$)

Nitrate (NO_3^- -N ppm): PPW kits provided by FHT
(tick one from the following range categories)

Phosphate (PO_4^{3-} -P 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 +

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

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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? (yes, no, unknown) Give details

Invasive non-native species: Record any non-native invasive species you know to be present in the pond, or leave blank if you are unsure. Visit <https://freshwaterhabitats.org.uk/projects/pondnet/survey-options> for tips on identification (please tick all that apply).

- | | | |
|--|---|---|
| <input type="checkbox"/> New Zealand Pigmyweed
<i>Crassula helmsii</i> | <input type="checkbox"/> Floating Pennywort
<i>Hydrocotyle ranunculoides</i> | <input type="checkbox"/> Non-native Pondweed, e.g.:
Canadian Pondweed <i>Elodea canadensis</i> ,
Nuttall's Pondweed <i>Elodea nutallii</i> ,
Curly Waterweed <i>Lagarosiphon major</i> |
| <input type="checkbox"/> Parrot's Feather
<i>Myriophyllum aquaticum</i> | <input type="checkbox"/> Water Fern
<i>Azolla filiculoides</i> | |

Location score for Great Crested Newts (select pond location based on map to right)

- A (optimal), B (marginal) or C (unsuitable)



Number of ponds: Note: ponds are <2ha in size - to help you calculate the total use the PondNet map, an OS map, Google maps, or other mapping tool):

- Number of *other* ponds (exclude the survey pond) in a *1km radius circle* centred on the pond centre. Omit ponds separated by amphibian barriers e.g. large rivers or roads.

- If there are more than 12 ponds present in the 1km radius, you can just tick this box.

Habitat quality for amphibians: (choose one option - **1 = none**, **2 = poor**, **3 = moderate**, **4 = good**)

- None** = clearly no suitable habitat within immediate pond locale; **Poor** = habitat with poor structure that offers limited opportunities for foraging and shelter (e.g. amenity grassland); **Moderate** = offers opportunities for foraging and shelter, but may not be extensive; **Good** = extensive habitat that offers good opportunities for foraging and shelter completely surrounds pond e.g. rough grassland, scrub or woodland.

Water quality for amphibians: (choose one option - **1 = bad**, **2 = poor**, **3 = moderate**, **4 = good**)

- Bad** = clearly polluted, only pollution-tolerant invertebrates, no submerged plants; **Poor** = low invertebrate diversity, few submerged plants; **Moderate** = moderate invertebrate diversity; **Good** = abundant and diverse invertebrate community, often surrounded by semi-natural land e.g. grassland, heath, woodland.

Pond modification:

Extent of modified bank

- | | |
|--------------------------------------|--|
| <input type="checkbox"/> 1 = 0 | Many ponds are of artificial or unknown origin and consequently naturalness of the shoreline is difficult to assess. What is important is that there are no artificial barriers to the formation of a natural vegetation structure. Artificial/reinforced banks include, for example, concrete, metal or wooden pilings, brick or laid stone, and fabric or other lining. It is suggested that the presence of artificial/reinforced banks is recorded using a 5 class scale of 0, 1-25%, 26-50%, 51-75% and 76-100% of the margin modified. |
| <input type="checkbox"/> 2 = 1-25% | |
| <input type="checkbox"/> 3 = 26-50% | |
| <input type="checkbox"/> 4 = 51-75% | |
| <input type="checkbox"/> 5 = 75-100% | |

Modified hydrology (tick all that apply)

- Natural hydrology (no obvious sign of modification)
- Ditches drain in or out of the pond
- Structure on the outflow and evidence of abstraction and surveyors can tick any that apply
- Evidence of abstraction

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

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

Pond sketch map: Make a sketch map of your pond, marking on variables such as amount of shade and patches of emergent vegetation. These will help you to calculate percentage cover and provide a record of the pond which you or others can use on future visits.

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.