

<b>Your name</b> (and the name of anyone who helped you take the sample)		<b>Date</b>	
<b>Square: 4 figure grid ref</b> e.g. SP1243 (see your map)		<b>Pond: 8 figure grid ref</b> e.g. SP 1235 4325 (see your map)	
<b>eDNA sample kit number</b>		<b>Pond name</b> (if known)	

**Please complete this eDNA GREAT CRESTED NEWT SURVEY sheet and also a POND HABITAT SURVEY form for each pond in your 1km grid square. Look at your site information pack to find out which ponds you should survey.**

Environmental DNA (eDNA) is a non-invasive way to find out if Great Crested Newts are in a pond by collecting a water sample to see if their DNA is present. This is quite an easy survey to undertake, and you can learn the skills needed from our information sheet and the on-line video.

**METHOD:**

- Collect an eDNA kit from one of our local officers and **survey your pond in May**. Read the survey information and watch the online video. **Fill in the pond habitat survey form (page 2 to 4 of this form).**
- Collect a water sample from each pond in your 1km square (look at your site pack for details), and complete this form and a pond habitat survey form. Don't forget to record the number of the eDNA kit (written on the sample box) on this form.
- **IMPORTANT: Record your name, survey date, the pond grid reference and the pond's name on the kit box.** We won't know which pond you've sampled without this!
- **Give the kits back to your local officer, or drop them off at the agreed collection point.**
- Your eDNA samples will be couriered to France and analysed by SpyGen, who are international leaders in the field of eDNA testing, to see if Great Crested Newts were present in the pond. We'll email everyone's results back to them in September, and enter the findings on WaterNet for you.

**RECORDING YOUR RESULTS:**

- If you see other amphibians at the pond whilst taking the eDNA sample then you can record their presence on this form.
- Then, enter the kit number and the results of your pond habitat survey on to WaterNet – the data hub for the People, Ponds and Water project <http://freshwaterhabitats.org.uk/projects/waternet>. Alternatively, give this sheet and the pond habitat survey form to your local officer and we will enter the results for you.
- You can also take and **upload photos to WaterNet** (or email them to us) of your pond or the amphibians found there for reference and confirmation purposes, or just for fun!

### Amphibians seen at the pond whilst taking your eDNA sample:

If you happen to see amphibians whilst collecting your water sample, you can record them here:

	Tick, add numbers and a range*				Tick
	Adult	Immature	Tadpole/ larvae or efts	Eggs/ spawn	Identification uncertain
<b>Great Crested Newt</b>					
<b>Common Frog</b>					
<b>Common Toad</b>					
<b>Palmate Newt</b>					
<b>Smooth Newt</b>					
<b>Non-native amphibian</b> (list)					
<b>Notes (e.g. number of males and females):</b>					

\* For range values choose one of the following options: 1, 2-5, 6-10, 11-20, 21-50, 51-100, 101-200, 201-500, 501-1000, 1001-2000, 2001+

\* if you have experience (and a licence) you may want to record presence of Great Crested Newt or other newt eggs that you find. Unwrapping leaves to identify newt eggs can be damaging, so please minimise the number looked at - record presence (not abundance) of newt eggs.

<b>Determiner name</b> ( <i>optional</i> - if someone confirms the identity of the species you've recorded)	<b>Voucher material</b> ( <i>optional</i> - comment if you've taken a photo to confirm identification)

### Record any issues with the eDNA sample collection here:

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

This is a really important part of the survey at your pond. The variables will be used to calculate a Habitat Suitability Index for Great Crested Newts. Critical HSI metrics are indicated by a shaded box – we cannot calculate an HSI score for the pond unless these have been submitted. Other metrics will give us a full picture of pond quality.

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

<b>Is the pond new?</b> (less than 10 yrs old) yes, no, unknown	<b>Year of creation?</b> date, decade, unknown	<b>Pond Altitude</b> (m)
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**Area** m<sup>2</sup>  
**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 dries, 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).

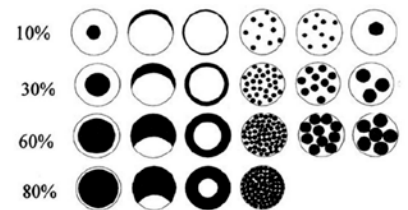
**Waterfowl impact** 1 = major, 2 = minor, 3 = none  
**Major** = severe impact of waterfowl e.g. few or no submerged plants, water turbid, pond banks have patches where vegetation removed, feed put down; **Minor** = waterfowl present, but little impact on pond vegetation, pond still supports submerged 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.

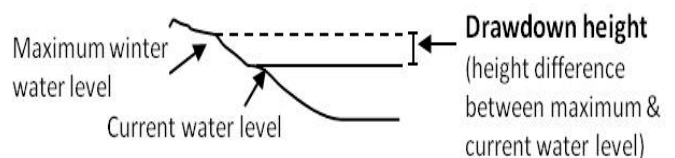
**Aquatic vegetation:** includes emergent, floating and submerged plants  
 % of the whole pond (wet and dry) occupied by emergent vegetation – incl. plants like grasses, water mint and rushes, but not floating (e.g. pondweed) or submerged (e.g. water-crowfoot) species.

% 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.

<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 ( $\text{NO}_3^-$ -N ppm):** PPW kits provided by FHT

(tick one from the following range categories)

&lt;0.2   0.2-0.5   0.5-1   1-2   2-5   5-10   10 +

<input style="width: 100%; height: 15px;" type="checkbox"/>	<input style="width: 100%; height: 15px;" type="checkbox"/>	<input style="width: 100%; height: 15px;" type="checkbox"/>	<input style="width: 100%; height: 15px;" type="checkbox"/>	<input style="width: 100%; height: 15px;" type="checkbox"/>	<input style="width: 100%; height: 15px;" type="checkbox"/>	<input style="width: 100%; height: 15px;" type="checkbox"/>
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**Phosphate ( $\text{PO}_4^{3-}$ -P ppm):** PPW kits provided by FHT

(tick one from the following range categories)

&lt;0.02   0.02-0.05   0.05-0.1   0.1-0.2   0.2-0.5   0.5-1   1 +

<input style="width: 100%; height: 15px;" type="checkbox"/>	<input style="width: 100%; height: 15px;" type="checkbox"/>	<input style="width: 100%; height: 15px;" type="checkbox"/>	<input style="width: 100%; height: 15px;" type="checkbox"/>	<input style="width: 100%; height: 15px;" type="checkbox"/>	<input style="width: 100%; height: 15px;" type="checkbox"/>	<input style="width: 100%; height: 15px;" type="checkbox"/>
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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?** (e.g. nature reserve, SSSI, etc.)

 (choose one option - *yes, no, unknown*)

**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).

 New Zealand Pigmyweed  
*Crassula helmsii*


 Floating Pennywort  
*Hydrocotyle ranunculoides*


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


 Parrot's Feather  
*Myriophyllum aquaticum*


 Water Fern  
*Azolla filiculoides*

**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.

**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](http://www.freshwaterhabitats.org.uk/projects/waternet).