



Pooling Our Ponds Welcome Pack

A Guide to Tayside Pond Surveying

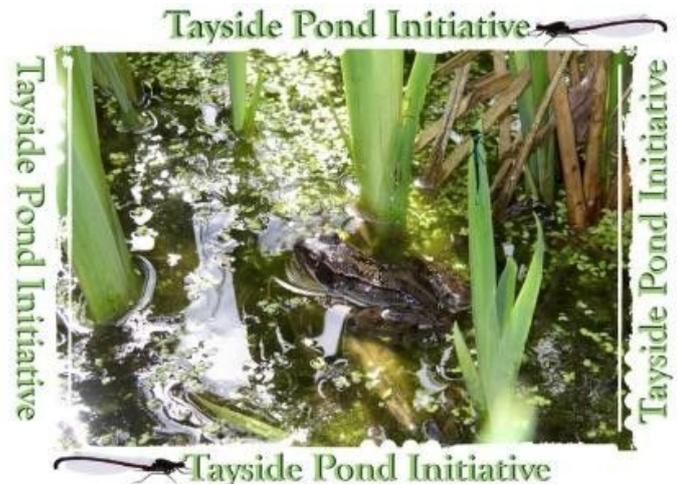
An Introduction to the Project

Ponds are home to a huge array of organisms, and even small garden ponds can provide an important refuge for wildlife. Sadly, owing to urbanisation, habitat fragmentation and land use intensification there are fewer ponds left in the countryside, and many are polluted or poorly managed.

We know little about the quality of ponds across much of Scotland and the "Pooling our Ponds" survey initiative is designed to gather more information about ponds in our region.

With your help, we will be able to gather useful information to assist with future habitat management recommendations and will also help to provide data on under-recorded species in the area.

This pack is designed to help you identify and record some of the species you may find in your local pond.



Lower photo © Lucy Briscoe

All that is needed is for a pond to be surveyed 4x times a year for c30 minutes each time - and the information recorded on the form we provide.

Pooling our Ponds Survey (Tayside)

Animals and plants living in the pond, particularly invertebrates, are great indicators for the health status of a pond. We have chosen a selection of key invertebrate species for you to search for which can give an indication of the pond's condition.

We have also chosen some easily identified species for which we have few records and would like to find out if they occur more widely in the area.

- Amphibians are under-recorded in Tayside, and we would like you to record any frogs, toads or newts you discover during your survey. This will also help us in our other projects, including the Amphibians in Drains Survey and the Toads on Roads Project. Check the home page of www.taysidebiodiversity.co.uk, [Tayside Amphibian and Reptile Group \(arguk.org\)](#) or the [TayARG Facebook page](#) for the latest information.
- Non-native species are becoming more of a problem in the environment and ponds, particularly, can be badly damaged by the introduction of invasive non-native plants. These often get out of hand because there are no natural herbivores to keep the growth in check. To obtain more information on non-natives in the area, we are asking you to record *four key non-native plant species* that you may encounter in local ponds.

Thanks for taking part in Pooling our Ponds - we really appreciate your help and hope it's going to be fun!

This Welcome Pack is split into different sections to help you on your way:

- Equipment
- Safety around ponds
- How to go about pond dipping
- How to use this guide
- How to submit those all-important records
- Photographs – a useful extra tool
- Brief Summary
- What your findings mean – *please read this before you start your pond dipping!*
- An Example to inspire you
- What else can I do?
- Thanks and Acknowledgements
- Useful Links – where to find out more, where to buy equipment

Don't forget - you can't be a citizen scientist unless you share your records but we show you how (and it's not remotely as daunting as you might think!).

Equipment List

- see the “Useful Links” page for further details and sources

- *Appropriate clothing:* pond dipping can be messy, so it is important to make sure everyone is dressed appropriately. Wellies and waterproofs are advisable for children and remember sun hats and sun cream in hot sunny weather.
- *Pond nets:* for collecting your samples. There is a wide variety available online.
- *Containers:* large white trays can be purchased, or you can use Tupperware or plastic pots. White, or pale colours, are best for spotting your specimens.
- *Specimen pots:* can be purchased online or you can use clean jars, Tupperware or food containers. Carefully transfer specimens into these pots for closer examination.
- *Spoons:* to carefully transfer specimens between containers.
- *Magnifying glasses/magnifying pots:* Very useful for looking at your specimens in more detail. Many pond creatures are very small and can only be truly appreciated when seen close up.
- *ID guide.*
- *Camera/phone* for taking photographs.

Safety Around Ponds

- see the “Useful Links” page for further details and sources

Details from ROSPA about pond pooling can be found at the back of the pack, with all relevant links.

1. Undertake a Site Risk Assessment for the site you plan to survey, even if you are only going to be surveying a pond with a friend or family member. Make sure you include any specific hazards associated with the site, for instance tripping hazards or slippery banks.
2. Make sure you have permission to be on the land where the pond is situated – check with the landowner (show them this Welcome Pack!).
3. Never survey alone, even if you are familiar with the site. Always let others know where you are when you set off to do the survey. When planning an autumn or winter survey, plan as early a survey time to complete the survey and get home whilst it is still light. Never undertake surveys at night.
4. When working with children, check there is adequate supervision available before setting off to the site: the adult to child ration should be such that each adult can easily supervise those they are responsible for (as per Royal Society for the Prevention of Accidents guidelines – see website link at the end of this Welcome Pack). This will vary with each situation (and age of children) and should form part of any Risk Assessment.
5. Be aware at the water’s edge: ideally, a pond dipping platform should be used if your pond has one. Older children can kneel, but younger children should lie on their front.
6. Checking the catch: move your catch away from the pond edge (5m should be enough) to inspect it. Handle it very carefully and make sure you return everything to the pond as quickly as possible.
7. Hygiene: pond water can carry diseases such as Weil’s disease. Always avoid hand to mouth contact and always wash hands thoroughly afterwards. On site make sure you have hand gel to use in the meantime and if possible, provide gloves to all those taking part. Any cuts and grazes should, if appropriate, be covered with waterproof plasters.

How to Go About Pond Dipping

1. Take your containers and fill them with water from the pond and then set them away from the water's edge. Never use tap water or bottled water.
2. Use your net to make slow, figure of 8 patterns in the water for up to 10 seconds. Sheltered places at the edge of the pond amongst emerging vegetation are usually the most productive. Aim to sample the middle layer of water; avoid sweeping too deep and collecting sediment or dipping on the surface and collecting lots of floating pond weed.
3. Turn the net inside out to gently pour the contents into your container. Swish the net under the water to remove any stubborn bits of vegetation and debris.
4. Use spoons to carefully move creatures of interest into smaller, separate containers for closer inspection.
5. Be aware that if you leave predatory animals in the containers for too long (great diving beetles and their larvae, dragonfly and damselfly nymphs), they may eat the rest of your catch! It's often helpful to separate carnivores first from the rest of your catch, before looking at them more closely, to avoid things being eaten.
6. Remember to return your catch (plants and debris included) very carefully back to the pond you took them from when you've finished identifying them.
7. Thoroughly rinse your dipping kit after each pond-dipping session, particularly if you are moving to another pond for dipping.

How to Use This Guide

We have chosen a few key species and groups to record at your pond and have produced an ID card for each one. Use the ID card guides to help you identify your catch and also keep an eye open for the four non-native plant species. You will likely find animals and plants that don't match those in this guide; whilst this recording pack covers the main species that we would like you to record, other records of additional species are always welcome. There are some links to useful guides listed at the end of this pack to help you identify them.

Ideally, we hope you will record what you find in your pond four times over the period of a year (once each season) to get as full a picture as possible of the wildlife that inhabits the pond.

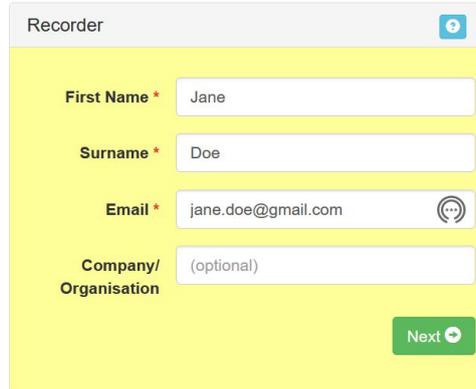
Download the Pooling our Ponds Identification Cards here: [Pond ID Card](#)

Download the Recording Sheet here: [CLICK](#)

How to Submit Your Records

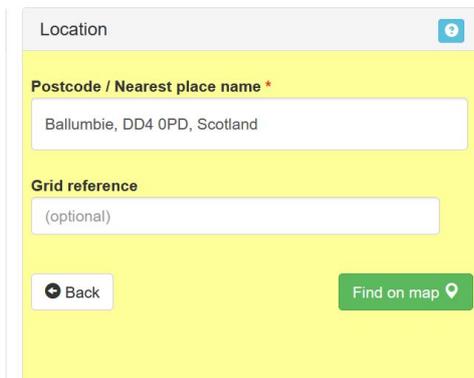
Using [Record Pool](#), you can upload the data you have collected on the amphibians. Below there is a visual tutorial on how to submit the data on the amphibians you find. If you find invasive species, you should report it to [Scotland's Environment](#) web via this link: [Reporting a non-native species | Scottish Invasive Species Initiative](#)

Step 1 – Enter in your name and email



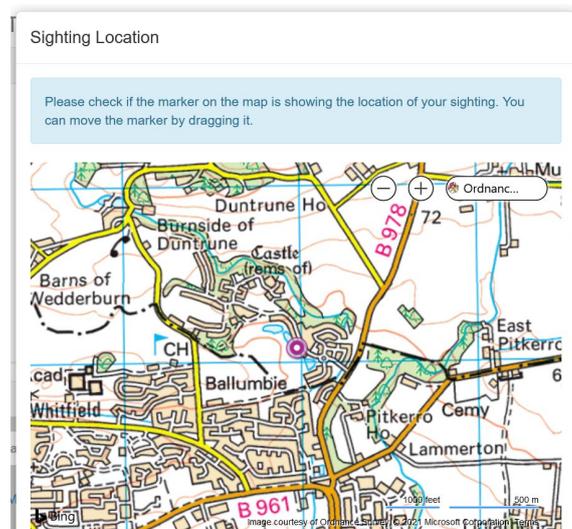
The 'Recorder' form is a yellow box with a grey header containing the title 'Recorder' and a help icon. It contains four input fields: 'First Name *' with 'Jane', 'Surname *' with 'Doe', 'Email *' with 'jane.doe@gmail.com' and a contact icon, and 'Company/ Organisation' with '(optional)'. A green 'Next' button with a right arrow is at the bottom right.

Step 2 – Enter the postcode where the pond is located, or if you know it, the OS grid reference.

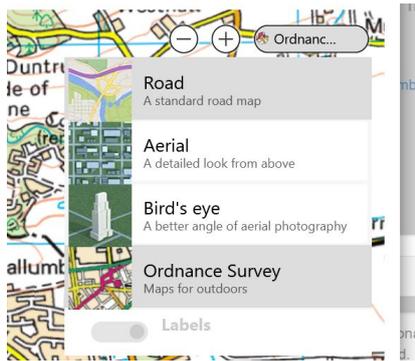


The 'Location' form is a yellow box with a grey header containing the title 'Location' and a help icon. It contains two input fields: 'Postcode / Nearest place name *' with 'Ballumbie, DD4 0PD, Scotland' and 'Grid reference' with '(optional)'. At the bottom are a 'Back' button with a left arrow and a 'Find on map' button with a location pin icon.

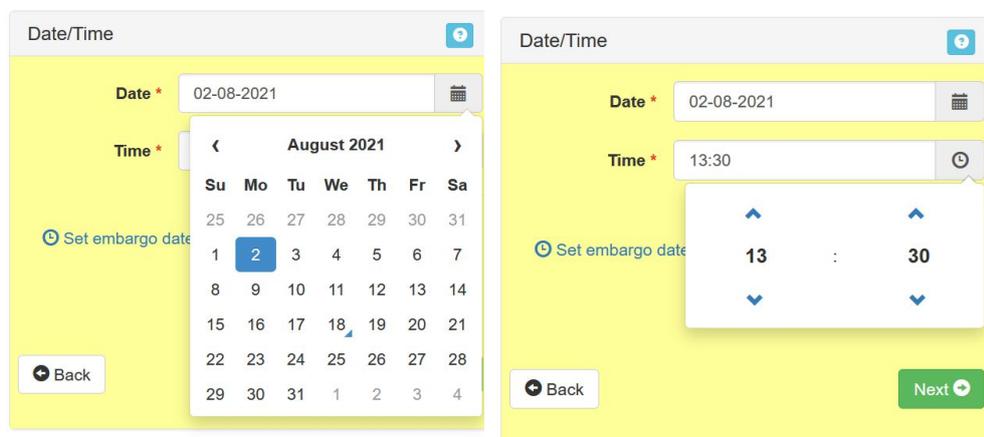
Click find on map, and then drag the purple dot to the pond you surveyed. Water on the map is a light blue line (separate from the grid lines) and bodies of water are shaded. Click Confirm at the end (you may need to scroll for this.)



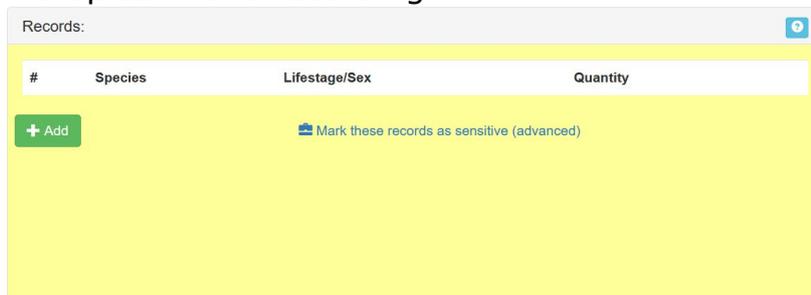
You can also change the map to satellite or road maps



Step 3 – Add the date and time you saw the amphibian(s)



Step 4 – Record your data – click add and a pop up will appear, you can do multiples in one recording



The pop up then asks you to identify the animal, how many you have seen, and details of the animal; there are options for “unknown” if you do not know some of these.

Add a record

Species *

Details *

Don't know how many.

You can upload photos of these animals by either dragging the files into the pop up or clicking the link at the bottom of the pop up.

Step 5 – If you feel you have any other information that is relevant, please tell us in this text box.

Notes:

Any additional information which might help us to verify your record.

(optional)

I agree to the Record Pool User agreement & privacy policy

[Next](#)

You will then be asked to check your records, where you edit before saving the records to the database. You can then print off the recording or enter more records at another time.

**If this project has captured your imagination,
how about contributing to the following too?**

PondNet Spawn Survey –

<https://freshwaterhabitats.org.uk/?s=Pond+net+survey>

Dragon Finder App - <https://www.froglife.org/dragon-finder-app/>

Dragonfly Watch –

<https://british-dragonflies.org.uk/recording/bds-recording-scheme/>

Amphibian and Reptile Survey –

<https://www.arc-trust.org/survey-protocols>

Photographs - a Useful Extra Tool

Taking photographs can be a very helpful way of recording wildlife at a particular place and time. If you can, please take photographs of the things you see with a note of the name of the pond. Taking photographs of pond plants and animals can allow experts to identify them at a later date and provide more information to the pond project.

If possible, please submit photos of adult and immature dragonflies, damselflies, stoneflies, mayflies and caddis flies, if you see them, and also photographs of pond plants and amphibians if you are unsure of the species. Sending a photo if you are unsure of something is better than recording it incorrectly.

Here are some examples from a summer intern with common frogs and common toads



All 4 photos on this page © Lucy Briscoe

Summary

1. Visit your local pond and take the ID cards and recording sheet from this pack with you.
2. Use the methods described above to pond dip and try to “match-up” any creatures you catch, or see at the pond, with those on the ID cards.
3. Take photographs, if you can, of your catch, particularly adult dragonflies, damselflies, stoneflies, mayflies, caddis flies, plants and amphibians, making a note of the name of pond.
4. Make a note of what you have found on your recording sheet.
5. If necessary, tidy up your records at home/ back at the classroom ready to submit. Don't forget to send your photos too!

**Download the Pooling our Ponds Identification
Cards here: [Pond ID Card](#)**

Download the recording sheet here: [CLICK](#)

What Your Findings Mean

The ID cards for the invertebrates are colour-coded depending on what they indicate in terms of the pond's health status. This is only a simplified guide, but it could give you clues as to how much water pollution there may be and how beneficial your pond is for wildlife.

- **Green species – lots of green species are a good indicator that the pond water is clean.**
- **Orange species – these species can tolerate some pollution. Lots of these and few/no greens could suggest that the water quality could be improved.**
- **Red species – these can indicate that there is some pollution in the pond. The presence of red species and few or none of the orange or green species suggests the pond needs improvement.**

Phantom midge larvae may not look very exciting, but they are a valuable food source for other creatures in the pond. If you find a lot of them in your catch this suggests that there may not be any fish in your pond, as fish are the main predator of midge larvae. Not having fish in a pond is actually good for wildlife. It means that the pond is more likely to attract amphibians, which are often predated by fish.

Dragonflies and damselflies are an indicator that the pond water is relatively clean as their nymphs cannot survive in polluted water. Dragonfly and damselfly nymphs are voracious predators so their presence also indicates that there are plenty of smaller invertebrates in the pond which they can feed on. Finding adult damselflies and dragonflies by the pond suggests that they are either feeding at the pond or breeding there, which is a good sign.

Stonefly and mayfly nymphs are dependent on clean water and are a good indicator that there is little pollution (though some species are more tolerant of pollution than others). Stoneflies like running water and are found in rivers and streams as well as ponds.

Caddisfly nymphs are also considered good indicators of a healthy aquatic environment, as many species of caddisfly are particularly sensitive to environmental changes such as pollution.

Diving beetles are predatory and can feed on amphibian tadpoles and small fish like sticklebacks, as adults and larvae. Like dragonfly and damselfly nymphs, their presence means there is a lot of prey available in the pond which would suggest a healthy food chain.

Water boatmen, backswimmers, pond skaters and water scorpions can tolerate some water pollution as they all breathe fresh air. If you see these but none or few of the "green" species then water quality could be improved. Water boatmen are often one of the first creatures to inhabit a new pond as they are good fliers, so if you see these and little else living in the pond, more time may be needed to allow other creatures to colonise the pond.

Water hoglouse are adapted to live among debris and decaying matter at the bottom of the pond and so they are able to survive with little oxygen in the water. This means they can tolerate moderately polluted ponds or water that is stagnant. If you find these in your pond but few or none of the orange or green species then your pond may need some enhancement.

Rat-tailed maggots generally mean poor water quality as they thrive in polluted and stagnant water. If you find these in your pond but few or none of the orange or green species then your pond may need some management to improve it for wildlife.

No wildlife in the pond is not good news; your pond may be polluted and could need some management in order to attract wildlife. Newly-created ponds take some time to establish, so if your pond is new then wildlife may not have discovered it yet. In time wildlife will find your pond if there are other ponds nearby.

An Example to Inspire You!

Crombie Pond Dipping and the Community

For several years, two ponds in Crombie Country Park, Angus, have been surveyed by a keen group of adults with a learning disability from the NHS Craigmill Centre. They have become brilliant ambassadors for the *Pooling Our Ponds* project. Regardless of the weather these dedicated citizen scientists enjoy collecting the pond life, identifying it through a magnifying glass and noting the animal's name using the ID flash cards provided with the project; sometimes there is a spot of internet research too.

They are a shining example of how citizen science can benefit both the scientific community and many local communities. It also shows that science can be open to everyone and that we can all play a part in caring for our environment.



All photos on this page © Daniele Muir

What Else Can I Do?

If pond dipping has whetted your appetite to find out more about pond life, and amphibians in particular, there are several websites recommended for you to explore:

- [Froglife](#) – full of advice on how to make a wildlife pond or garden, training webinars and education resources.
- [The Amphibian and Reptile Conservation Trust \(arc-trust.org\)](#) – this website has details about specific species, habitat management, disease and wildlife crime. You can also download its amphibian and reptile identification sheets.
- [Home - Amphibian and Reptile Groups of the UK \(arguk.org\)](#) – ARG UK promotes and supports the development of independent Amphibian and Reptile Groups (ARGs) – of which TayARG is one. Its website has a lot of resources, including Risk Assessment forms and advice notes.
- <https://british-dragonflies.org.uk> – The British Dragonfly Society runs an annual PondWatch in June – the website has identification pages, webinars and the Pond Ponderings blog.

Citizen science isn't just related to pond dipping - there are many other local and national projects, ranging from birds, bugs, plants and all kinds of wildlife that can be found in Scotland. Some of these projects don't even require you to leave your house! You can find out more about citizen science projects and how to get involved via the following links:

Bees, Butterflies, Moths and Bugs

- BeeWalk (March to October) - [Home | BeeWalk Survey Scheme](#)
- Moth Night (July) - [Themes - Moth Night](#)
- Big Butterfly Count (July/August) - [Big Butterfly Count \(butterfly-conservation.org\)](#)
- Bugs Matter (June to August) - [Bugs Matter | Buglife](#)
- Dragonfly Week (July) – www.British-dragonflies.org.uk
- PotWatch (New Zealand Flatworms) - [PotWatch | Buglife](#)

Bats

- UK BatFest - [BatFest - Conferences & Symposia - Bat Conservation Trust \(bats.org.uk\)](#)

Squirrels

- Red and Grey Squirrel sightings (year round) - [Squirrel Sightings – Saving Scotland’s Red Squirrels \(scottishsquirrels.org.uk\)](#)

Birds

- Big Garden Birdwatch (January) - [Big Garden Birdwatch | The RSPB](#)
- The Big Breakfast Birdwatch (March) - [RSPB’s Breakfast Birdwatch](#)
- Big School’s Birdwatch (March) - [Big Schools’ Birdwatch \(rspb.org.uk\)](#)
- Swift Awareness Week (July) - [Action for Swifts: August 2021](#)
- The BTO Garden BirdWatch (all year round) - [About Garden BirdWatch | BTO - British Trust for Ornithology](#)

Plants

- Cowslip Survey (spring) - [Cowslip Survey \(plantlife.org.uk\)](#)
- Every Flower Counts Survey (July) - [Every Flower Counts | Plantlife](#)
- The Great British Plant Hunt (year round) - [Great British Wildflower Hunt \(plantlife.org.uk\)](#)

Thanks and Acknowledgements

The original Pooling our Ponds Survey (2013) was a joint Tayside/Grampian citizen science initiative with the N.E. Scotland Biodiversity Partnership. We would like to thank all those who developed the pack, especially Rose Toney, Hayley Wiswell and the photographers who put a great deal of work into it all. In bringing the Survey up to date for use in Tayside from 2021, and helping to re-launch it, our thanks go especially to Lucy Briscoe from the University of Dundee.

We hope by reviving the Survey we can encourage as many people as possible to discover their local ponds again – not only is it fun for all ages and abilities, but it is hugely valuable to record what we see, where we see it and when we see it. Finding out about our local wildlife – and then recording it – not only helps safeguard it but helps us conserve it as best we can into the future. So, our thanks go to you, too - the citizen scientist: thanks for being part of Pooling our Ponds!

You are very welcome to keep using this Pack and re-surveying the same or different pond in the future - it doesn't have to be a "one off" year of just four visits to one pond. If the recording bug has really got you and you would like to do even more, please continue your surveys into a second year or find a new pond and visit it four times. You can also search out information about NARRS - [NARRS - National Amphibian & Reptile Recording Scheme](#) and think about registering your interest online.

Please keep in touch and let us know how you are doing and what you find – join our TayARG Facebook page, perhaps, or drop us a line via taysidebiodiversity@pkc.gov.uk (Catherine) and/or TayARG taysideamphibians@yahoo.co.uk (Daniele).

Happy dipping!

Catherine Lloyd

Tayside Biodiversity Partnership

This revised Pooling our Ponds Welcome Pack was published 2021

Reviewed and researched by Lucy Briscoe
Edited by Catherine Lloyd and Lucy Briscoe

Tayside Biodiversity Partnership
Pullar House, 35 Kinnoull Street, Perth. PH1 5GD

E-mail taysidebiodiversity@pkc.gov.uk / www.taysidebiodiversity.co.uk
Find us on Facebook: Tayside Biodiversity / Tayside Amphibians & Reptiles

Useful Links

Organisations

- [Froglife](#)
- [Freshwater Habitats](#)
- [Amphibian and Reptile Conservation](#)
- [Amphibian & Reptile Groups UK](#)
- [British Dragonfly Society \(Scotland\)](#)
- [Buglife Scotland](#)

Equipment

- Nets: <https://www.wildcare.co.uk/ecology-for-schools/pond-dipping/dipping-nets.html>
- Nets and trays: [Pond Dipping Kits | Pond Dipping Equipment | Pond Dipping Nets \(bugzarre.co.uk\)](#) and [Search \(nhbs.com\)](#)
- Nets and magnifying pots: http://www.angleps.com/pond_nets_aquatic.php
- A range of magnifying glasses and pots:
<http://www.wildforms.co.uk/insects/bugcollecting/>

Species Guides

- The Field Studies Council offers a series of fold-out identification charts for purchase (including a fully waterproof version): to identify minibeasts in ponds, see the 'Freshwater name trail' <https://www.field-studies-council.org/shop/publications/freshwater-name-trail/>
- Identifying aquatic invertebrates:
<https://www.riverwatch.ca/invertebrates/> and
<https://www.riverwatch.ca/how-to-monitor/>

- British Dragonfly Society identification guide to dragonflies and damselflies: <https://british-dragonflies.org.uk/odonata/species-and-identification/>

Pond Safety

- Risk Assessment Information for Pond Dipping <https://www.rosipa.com/leisure-safety/water/advice/pond-dipping>

Pond Management

- Just Add Water booklet - [Just Add Water \(froglife.org\)](http://froglife.org)
- Freshwater Habitats: [Manage Your Pond - Freshwater Habitats Trust](http://freshwaterhabitats.org.uk)
- Lots of great information on pond creation and management - <https://freshwaterhabitats.org.uk/>
- RSPB guide to creating and managing ponds for wildlife <http://www.rspb.org.uk/advice/gardening/pondsforwildlife/index.aspx>
- The Pond Book, the most comprehensive guide available for creating and managing wildlife ponds: <https://freshwaterhabitats.org.uk/pond-clinic/pond-book/>
- Information on non-native plants in ponds <https://www.plantlife.org.uk/uk/our-work/publications/pond-alert-problem-pond-plants> and <https://www.nature.scot/sites/default/files/2018-01/Species%20Action%20Framework%20-%20Invasive%20non-native%20plants%20associated%20with%20fresh%20waters%20-%20A%20guide%20to%20their%20identification%20-%20training%20manual.pdf>
- Check, Clean Dry Campaign: www.nonnativespecies.org/checkcleandry/
- Non-native pond plant species - www.nonnativespecies.org//beplantwise

Tayside Biodiversity Partnership



UNITED NATIONS DECADE ON
**ECOSYSTEM
RESTORATION**
2021-2030

NOTES

You are invited to use this page to make your own notes