

WHAT IS A POND?



'A pond can be defined as a body of water (normally fresh water, but occasionally brackish), which can vary in size between 1m² and 2 hectares (about 2.5 football pitches), and which holds water for four months of the year or more.'

Pond Conservation

But more than a simple definition, ponds are part of our landscape and have been for hundreds of thousands of years. Ponds are entire ecosystems; hotspots for biodiversity and vital habitat for 1000's of species of wildlife. Think of the excitement of seeing frogspawn floating in the reeds or catching a glimpse of the first tadpole wriggling free. The magic of that iridescent dragonfly flying over our heads never leaves us. Nor does the summer sight of swallows skimming the water. There are curious long legged stick critters that balance on the surface and the mysterious murky depths harbour minibeasts and dragons and microscopic marvels.

Ponds can be natural or manmade and are important in countryside, town or city.

Seasonal ponds may contain water only for short periods filling in the winter months and drying over the summer months.

Many ponds were dug to provide drinking water for cattle and sheep within a field or on a specific road to the livestock market, known as drovers' ponds. Many were built as ornamental features in the grounds of manor houses, maybe a moat, or as an elaborate decorative feature. Ponds can also appear after quarrying a site for stone, clay or minerals.

Historically fish or stew ponds were important in the community, during the medieval period freshwater fish such as carp, pike and bream were reared for eating. Large manor houses may have had duck decoy ponds to attract in waterfowl to capture for eating.

Many ponds have disappeared or declined either being filled in or neglected. Major losses have resulted in wildlife declines particularly with amphibians and invertebrates.

We can help out by building more ponds which increases the wetland network and linkage of water habitats in our landscape.

PONDS AS HABITATS

Ponds are whole worlds to explore!



Not just a pool of murky water!

Ponds are complex habitats in which many animals depend on each other.

Habitat =
place where a
living thing
lives for some
for all or part
of its life.

Frogs and newts may spend winter on land but need the pond to mate and lay eggs in the spring.

Plants provide places for breeding, hunting, protection, egg laying, somewhere for nymphs to climb out to shed skin.

Look up!
Watch the air above the pond for dragonflies & damselflies.

Some plants put vital oxygen into the water.

Bats fly over a pond at dusk to feed on insects.

SKY HIGH

Herons stop by for a feed and summer swallows swoop over for a tasty bug, skimming the surface for a drink.

The whirligig beetle whirrs on the surface of the water. Half of each eye can see above the water, and half below. Literally 'keeping an eye on predators' and its prey.

Pond skaters have hairs on their feet, which trap air and allow them to stand and move on the water's surface. They are so light the surface tension of the water holds them up.

SURFACE LEVEL

Water flea/daphnia move in jerks through open water like a flea hopping!

The great diving beetle is a voracious predator often found in weedy ponds.

Ramshorn snails have a simple lung and float to the surface to fill this with air. But they eat algae and rotting stuff from the bottom of the pond!

SWIMMING FREE

There are more species of water beetle living in British ponds than there are bird species living in the countryside!

Caddisfly larvae **camouflage** cases from what is in the pond; stones, sticks, leaves.

Mayfly nymph are **adapted** for water. They have gills on the side of their bodies. Water flows over the gills and the oxygen from the water goes into their blood.

Adaptation

Creatures have different features and feeding habits depending on where they spend most of their time in the pond.

Water hoglouse feeds on rotting matter at bottom of the pond. It is adapted to survive on low oxygen levels so can live in partly **polluted water**.

Dragonfly nymphs indicate a clean pond.

MURKY DEPTHS

Camouflage

Some creatures disguise themselves so they are less likely to be seen and eaten by their 'predators' (Caddisfly).
Some animal's skin colour or texture blends in with their surrounding. (Frog)

The number and type of different species in a pond can be dependent on **water quality**. Often the more polluted the pond is the fewer the number of species.

PONDLIFE SUPERHEROS!



The makers of many films have got their ideas from weird and wonderful pondlife: Dr Who, Monsters vs. Aliens, Batman. Re-think these mini-beasts and roaming reptiles into superheroes.

Water spiders

We spend our whole life in a diving bell, an underwater web filled with air.

Water spiders

I look like a scorpion but have no sting in my tail.

Dragonflies

My jaws shoot out like an alien to catch my prey.

Dragonflies

Our huge 'compound' eyes can see all the way around us and detect movement very far away.

Rat-tailed maggots

Yucky name but cool animals. Our telescopic snorkel tail gets up above for oxygen

Lesser Waterboatmen

We eat through our legs! We sieve the water through the hairs and suck up the tiny algae that get caught. Yum.

Dragonflies

We are one of the fastest insects in the world, flying up to 40 miles per hour.

Prehistoric dragonflies

the size of seagulls flew the earth 300million years ago.

Skullhead (male)

If you try to swallow me you'll get a nasty surprise from my spines. I change colour to attract a female fish. I teach my young self defence!

Dragonflies

We inject our prey with poison then suck it back!

Great Crested Newts

I am the dragon of the pond with my spiky crest.

Great Crested Newts

Our orange tummies have individual patterns of black blotches as unique as your fingerprint.

Great Diving Beetle

We are one of the UK's largest beetles. One of the pond's fiercest predators, we often hunt things much bigger than us. Many creatures in the pond fear us and our larvae. As an adult we can produce a poison capable of killing a frog! We spend most of our lives underwater but we can also fly to find new habitats.

Green Hydra

I move in loops and somersaults along water lily leaves. Sounds pretty? Watch out my tentacles sting and paralyse prey.

Watermites

We may only be tiny but we are powerful blood suckers.

Great Pond snail

I can leap 5 times my height to catch my tea.

Great Pond snail

I may lay up to 4500 eggs in a spring!

Watermites

I am called Cyclops after a one-eyed monster of Greek legend.

Watermites

We fix ourselves to water plants. Whirling threads draw food to our mouths. Size 2mm

Great Pond snail

You might be scared of my bloodsucking ability but I help with modern medicine.

Dragonflies

Jet Power! We squirt water from our bottoms to move faster.

Dragonflies

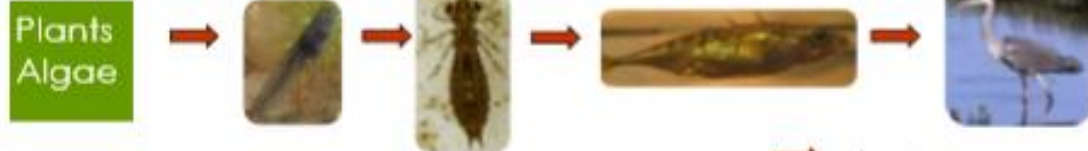
I roam the pond on one large foot.

ACTIVITY Can you invent your own larger than life live-wire pond superhero? Or a teeny tiny pond bugster based on these **PONDLIFE CREATURE FEATURES**? Give it a name based on its super powers. Make it out of junk.....draw it really big.....make a mask and costume to transform into your pond superhero yourself.....

FOOD WEBS



Food chain



All animals and plants need food to grow and move.

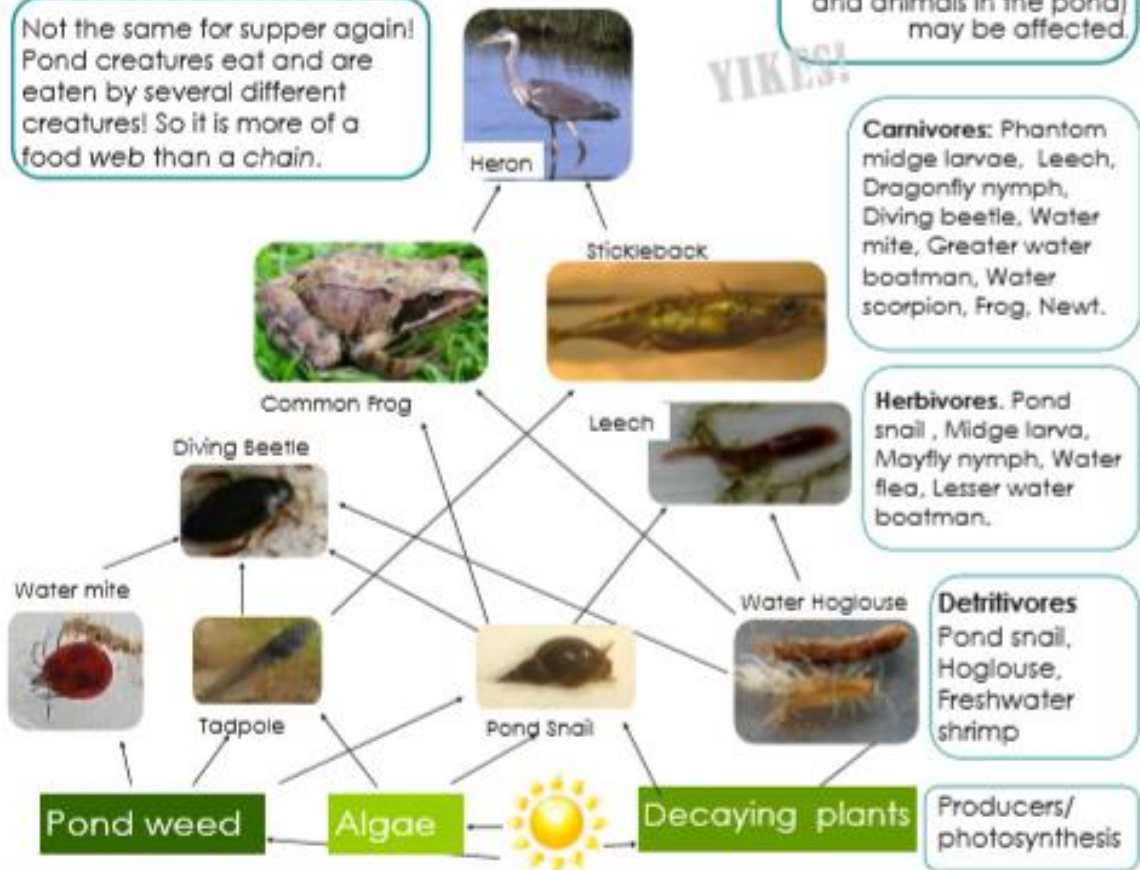
Nearly all food chains start with green plants, even in ponds.

→ = is eaten by

If any level of the food chain is disturbed, for example by disease or too many predators, the whole ecosystem (all the plants and animals in the pond) may be affected.

Food web

Not the same for supper again! Pond creatures eat and are eaten by several different creatures! So it is more of a food web than a chain.



Animals that eat plants are called herbivores.
 Animals that eat plants and animals are omnivores.
 Animals that eat other animals are called carnivores.
 Animals that eat dead plants and animals are detritivores.

POND IDENTIFICATION: MEET AND GREET!

facts

Use these pictures to spot what is in your pond
 Identification of pond creatures can seem confusing.
 Don't worry too much about knowing names.
 Look at the creature features; size, number of legs, body parts.
 Watch how and where the animal moves.



Azure damselfly



Common frog



Dragonfly



Pond skater



Great crested newt

Photos: P. King
 Drawings: N. Hand

Pictures not to scale!



Three spined stickleback

Whirligig beetle



Damselfly & exuvia



Pond snail



Great diving beetle

Water boatman



Frog tadpole



Water flea



Water scorpion



Dragonfly nymph



Ramshorn snail

Watermite



Mayfly nymph



Water hoglouse



Caddis fly larva in its case



There are lots more Identification charts to help (see resources)

THE ART OF PONDS!

CRAFTY CLASSROOM CREATURE CREATIONS



Pond TV Pond Theatre

Cut the front from a cereal box. Paint the inside as the colours of a pond. Add grasses at the top and mud colour or real stones at the bottom. Cut and colour pond creatures from card and hang them from strings along the top of the box. Either so you can move them like puppets or just in place as a still pond life!

Pipe cleaner dragonfly.

Wind coloured pipecleaners round a stick. Twist 3 across to make 6 legs. Thread 2 bright plastic beads onto another pipecleaner leaving a little space in between to twist the pipecleaner into a bump. Attach to front of stick with ends of pipecleaner. Add light material (organza or tulle) for wings which you secure with pipecleaner round middle.



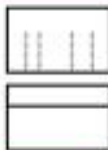
Catch your 'leaf' Pond scene.

Open up the top of box not side. Instead of fixing the creatures on strings attach metal paper clips to them. Lay them at the 'bottom of the pond'. Make rods (sticks) and lines (string) with little magnets tied or stuck on the end. Dangle line into pond and see who can be the first to catch the most prey! You could cut out pictures of the fierce predators and stick them on your rods. Heron, Diving beetle, Dragonfly Nymph, etc.

Explore **different colour dragon & damselflies** with different colour pipecleaners. Add layers of pipecleaners or thicker stick for broader 'Hawkers'. Less for delicate damselflies. Make **caddisfly larva**. Just don't add wings but insert larvae into a tube of rolled card covered in sticks, sand or gravel or leaves.

Shadow Puppets

Cut creature silhouettes (the basic outline shapes) from black card. Tape a stick to hold onto. Tie up a white sheet in a darkish area. Kneel down behind the sheet and hold up your creatures with a torch or lamplight coming from behind you and your audience in front of the sheet.



To get the **big pond picture** create your own class pond on big paper on the floor with paint & collage. For the key features refer to habitat, 'project pond', 'why preserve', 'pond types' and 'food web' pages of this pack

Have a giant pond parade!

Make oversized pond creatures from cardboard, collage & recycled bits. Attach them to tall sticks for kids to hold creating a creature carnival! Make masks and willow dragonflies (next page) for the procession too.

Pond explorers kit

Cut 2 rectangles of cloth: One A4 size, one smaller in height. Paste glue in thin vertical lines on bigger cloth - see dotted lines. (This will make compartments). Lay smaller piece on top. When glue has dried. Add items like Magnifying glass, plastic teaspoon, pencil and paper for notes. Roll up the cloth bundle. Tie round with string ready for any pond dip or nature exploration.

Create a pond play using your puppets

POND POETRY

Use these poems as inspiration
Create more from the suggestion boxes

ACTIVITY



Mayfly

By M. Polack

A day in the life of a Mayfly

May fly rather fast

It must live the moment and seize the day

And forget about future and past!

Give starting lines. See what emerges:
'I walked to the pond today and I saw...'
'Down amongst the murky reeds...'

My Pond

*There are many
creatures round my pond
And all of which I'm very fond*

*I love to observe the watching frog
Who sits as still as any log.
Its eyes above the water stare
And it waits for flies to pass just there.*

*Pond skaters on the water float
And swimmers paddle just like a boat*

*And if on summer days I stay awake
I might just see a grass-green snake
A flash of yellow as its sleek head dips
And from the water gently sips.*

*A winged thing is a butterfly
I love to see it flutter by.
But the most stunning thing is a dragonfly
It couldn't drink a flagon dry
But a flash of colour to the pond it brings
With bead like eyes and translucent wings.*



Haiku are perfect pond poetry. Something small to capture the magic of the minibeast world.



Write the name of a pond creature down the left hand side of the page. Write a line for each letter about the creature. It's a poem!

The Dragon-fly

By Alfred Lord Tennyson

*Today I saw the dragonfly
Come from the wells where he did lie,
An inner impulse rent the veil
Of his old husk: from head to tail
Came out clear plates of sapphire mail.
He dried his wings: like gauze they grew;
Thro' crofts and pastures wet with dew
A living flash of light he flew.*



The Frog

*What a wonderful bird the frog are.
When he sit, he stand almost.*

When he hop, he fly almost.

He ain't got no sense hardly,

He ain't got no tail hardly.

*When he sit, he sit on what he ain't
got—almost.*

Anon



The dragonfly

By Louise Bogan

You are made of almost nothing

But of enough

To be great eyes

And diaphanous double vans;

To be ceaseless movement,

Unending hunger

Crappling love.

*Link between water and air
Earth repels you.*

*Light touches you only to shift into
iridescence*

Upon your body and wings

Twice born, predator,

You split into the heat.

Swift beyond calculation or capture

You dart into the shadow

Which consumes you

You rocket into the day

*But at last, when the wind flattens the
grasses,*

For you, the design and purpose stop.

And you fall

With the other husks of summer.

*I'm a beetle that
Goes round and round
One eye on the upward
One eye on the down*

What am I?

Riddles are guessing game poems.

*Here I go
Rather slow
Eating algae and dead foe
But my house is curly
And a little whirly
And I'm pretty important don't you know.*

What am I?

PONDS: PLACES OF MYTH & LEGEND

Standing water is important to humans and animals all over the world. It may be where life first began. Different cultures, countries and religions create their own stories about these special places and the creatures that dwell there.



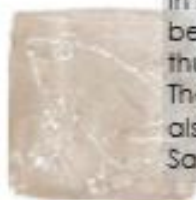
A Zuni (North American) myth tells of two children who were left behind by the villagers when the corn crop failed. The little boy constructed a toy **dragonfly** from corn husks to cheer up his sister. The dragonfly eventually came to life and appeased the corn maidens who created a bountiful harvest of corn to welcome the villagers back.

In China, they see the **toad**, not the man in the moon. They say that eclipses happen when the "toad" tries to swallow the moon.



SOME LEGENDS ARE STORIES OF REAL POND CREATURES.

In India, frogs were believed to personify thunder in the sky. The word for frog also meant cloud in Sanskrit!



Taniwha is a **water spirit** of Maori (Aotearoa/New Zealand) myth. Both a helpful spirit that warned curious children away from danger and a hidden monster of huge proportions lurking in the depths.

SOME ARE A DREAMWORLD. BEASTS THAT BLUR LINES OF FACT AND FICTION, HUMAN AND ANIMAL.

Loch Ness monster? A myth of a huge beast in a big pond!

Tiddalik the Frog from Australia wakes with an unquenchable thirst. He drinks until all the fresh water in the ponds, lakes, rivers and seas are gone. Creatures and plant life everywhere begin to die because they have no water to live in or drink. Many creatures try to persuade Tiddalik to give the water back but nothing works. Eventually a wise old Wombat suggests the eel ties himself in comical shapes to make Tiddalik laugh. As Tiddalik laughs the water rushes out of him to fill the dry land. 😊

An old name for **damselflies** was 'Devil's Darning Needles'. This stems from an old myth that if you went to sleep by a stream on a summer's day, damselflies would use their long, thin bodies to sew your eyelids shut!



In Japan the **dragonfly** is symbolic of success, victory, happiness, strength and courage. During the 11th century noble Japanese families used the dragonfly as ornamentation on everything from furnishings to textiles. The dragonfly was chosen as a part of the Samurai family crest.



What pond creatures would make our Frogs laugh?



