Ponds factfile

This factfile intends to provide the background information necessary for teachers to use the lesson plans and worksheets confidently. A number of other websites that may be useful include Wikipedia, ARKive, BBC Nature, Naturenet, RSPB and The Wildlife Trust.

Leech

Leeches belong to the subclass Hirundea. Leeches are known as 'blood-suckers', and some have been used for medicinal purposes, however, not all leech species depend on blood for survival. Some eat small invertebrates such as tadpoles and worms, sometimes whole.

Haemophagic (blood-eating) leeches attach to their host by an oral sucker. Their saliva mixes with the blood of the host, preventing it from clotting. After they have finished feeding they will drop off to digest. Leeches can survive off a single blood meal for a very long time.

Some species of leech will nurture their young, while providing food, transport, and protection; which is unusual behavior in an invertebrate. Like earthworms, they are hermaphrodites. They reproduce by reciprocal fertilisation (two individuals pair up and fertilise each other).

Their movements may appear similar to that of a worm, although you may also see them swimming across open water, or creeping over submerged plants or logs. When found in shade, their true natural colour is a greyish green. But in bright sunlight they appear very yellow/brown.

A leech does not have gills or lungs for respiration. Many fine blood vessels near the surface of their body take in oxygen and give off carbon dioxide.

Grey Heron

Latin: *Ardea cinerea*

The Grey Heron is a wading bird of the heron family, which can be found throughout most of Europe, Asia and parts of Africa. It is a tall bird (usually 90-100cm) with a long neck and legs, and a heavy dagger-like bill.

Its plumage is mostly grey above, with a white head and a black band above the eye extending to a small crest. In flight, the outer half of the wings are black and the wing beat is very slow with the neck retracted into its shoulders and the legs are extended.

They often stand motionless, in or near water, waiting for prey. Grey Herons eat mainly fish, amphibians and small mammals, and occasionally birds. They will quickly empty a garden pond of fish. This species breeds in colonies in trees close to lakes, the seashore or other wetlands, although it will also sometimes nest in reedbeds. It builds a bulky stick nest. A colony of these nests is called a heronry.

Stickleback

The stickleback is a small fish, often caught by pond-dipping school children. The family, known as Gasterosteidae includes several species of stickleback. Sticklebacks are found in freshwater environments in Europe, Asia and North America. Their common name derives from the presence of two to four, but usually three sharp spines on the back of the fish. An unusual feature of sticklebacks is that they have no scales, although some species have bony armour plates.

It feeds on mainly small water invertebrates; also fish eggs and young fish. The stickleback itself may be preyed on by larger predators, such as larger fish, kingfishers, herons, water shrews and otters. The spines probably protect it from some of its enemies. When the spines are raised a larger fish may find the stickleback difficult to swallow.

The three-spined stickleback (*Gasterosteus aculeatus aculeatus*) is the most common species found in this country. It is colloquially known as the "tiddler" or "sprick". All species show a similar mating behaviour, which is also unusual among fishes. The males construct a nest from vegetation held together by secretions from their kidneys. The males then attract females to the nest who lay their eggs inside where the male can fertilise them. The male then guards the eggs until they hatch.

They are most commonly found in well-vegetated sites that typically have muddy or sandy bottoms.

Grass snake

Latin: *Natrix natrix*

Grass snakes are the largest land based reptiles in south Wales. The British record for a grass snake is 180cm in length, but 65 – 80cm is the average length. Typical grass snake colouration is varying shades of olive green/brown with vertical black stripes or rings, which vary greatly in size and thickness. Entirely black animals do occur on occasion. The eyes are a pale olive green with round black pupils. A distinguishing feature is the area of skin on the back of the neck of the animal, which is generally a varying shade of yellow often referred to as the "collar".

The grass snake is not venomous. Its only defence is to release a smelly liquid and/or playing dead. They are actually one of the few animals that play dead as a defence against predators. They rarely bite and will only do so as a very last resort.

Grass snakes feed chiefly on amphibians and small fish and are often found close to fresh water. They prefer damp habitats, including river banks, ponds and ditches, but they also inhabit hedgerows, woodland margins, farmland and meadows. Females lay eggs during June or July, seeking out heat generating spots such as heaps of wood chip, vegetation or manure to do so, and commonly make use of compost heaps. Baby grass snakes appear from mid August onwards. Providing much needed undisturbed egg laying and hibernation sites is one easy way to help grass snakes.

Common Toad

Latin: *Bufo bufo*

Common toads have drier, rougher skin than frogs. Behind the eyes on the side of the head are a pair of noticeable "bumps" which are in fact glands that can produce a distasteful secretion as a defence against predators. Toads tend to hop rather than jump and are almost as variable as frogs in colour, although most tend to be a shade of brown often with a tinge of olive green. The colour of the toad varies according to the colour of the soil in its habitat. If the soil is a greyish colour, the toads' skin tends to be greyish to blend in. If the soil is more brownish, the toad tends to be more brownish.

Although they are normally associated with water, toads and frogs spend most of their lives on dry land. Being creatures of habit, you can often find them in the same spot week after week, but because they are able to blend in with their background, and remain

motionless for hours at a time, they can be difficult to spot. Common toads are found throughout England, Scotland and Wales, but not in Ireland.

A toad stalks its prey until it's close enough to shoot its sticky tongue out and catch it. To help swallow its food, it blinks to push the food down. They eat worms, slugs and insects. Larger toads may also take slow worms, small grass snakes and harvest mice, which are swallowed alive. The skin of the Common Toad is cool and dry to the touch, but it contains a substance that burns the mouths of animals if they try to eat one. This is an effective predator-defence mechanism — you won't see a cat pick a toad up twice!

Common toads are also far less common these days than in the past. Toads travel to traditional breeding ponds in mid February to April to breed, producing long strings of spawn, which the females wind around the stems of aquatic plants. The breeding season is a dangerous time for a toad, and many are killed on roads when travelling to and from traditional breeding ponds. They often walk for long distances across land to return to their breeding ponds. This is usually the original pond where they developed. Although less likely to use garden ponds to breed in than frogs, toads can benefit from simple habitat piles being created.

Although the adults spend most of their time on land, the females enter ponds and other still waters to lay their eggs, toadspawn, which can be distinguished from the spawn of the common frog as it forms strings rather than a large mass of eggs. Eggs are laid in the spring, with the females attempting to return to the water in which they were born. The young tadpoles resemble other tadpoles in their appearance except that toadpoles have a larger, rounder blacker head and shorter tail.

Whirligig Beetle

Latin: *Gyrinus substriatus*

The common whirligig beetle is abundant in all types of still water without too much floating vegetation, throughout Britain. It has a smooth, black, oval body, and the hind two pairs of legs are highly modified into blunt paddles. It's a metallic colour with orange legs. The middle and hind legs are modified for swimming; they are broad, flattened and oar-like, with a fringe of hairs.

Whirligig beetles have unusual, compound eyes, which are divided into two – one pair is above the surface of the water, and one pair is below; allowing them to see above and below the waterline at the same time.

'Schools' of many whirligigs gyrate on the surface of open water in search of prey. If disturbed they swim beneath the water; they carry an air bubble around with them on the tip of the abdomen. This air bubble works like a scuba tank, allowing them to stay underwater for extended periods of time. This is a very common species and often colonises garden ponds as soon as they are created, even before suitable prey becomes available. They are predatory, feeding on mosquito larvae and other aquatic invertebrates. In the autumn, the adults fly in search of new ponds. Its larvae are also predatory under water.