



## What is an amphibian?

Amphibians are vertebrates (animals with backbones) which are able, when adult, to live both in water and on land. Unlike fish, they can breathe atmospheric oxygen through lungs, and they differ from reptiles in that they have soft, moist, usually scale-less skin, and have to breed in water. Reptiles, such as lizards and turtles, always lay their eggs on land. Amphibians lay jelly-covered eggs, called spawn, usually in still, fresh water, often among water plants. The resulting young, known as **tadpoles** - which at first look like legless blobs with tails - are aquatic and have feathery, external gills, but soon develop lungs and legs and leave the water. Adult amphibians spend most of their life on land, usually in damp habitats, only returning to the water to breed in the spring. A few species may be found in water at almost any time of year. There are three groups of amphibians in the world today - the frogs and toads, the newts and salamanders, and the caecilians (legless burrowing types). However, the only amphibians native to Britain are **frogs**, **toads** and **newts** - two species of frog (there are another two species but these have been introduced from the Continent), two species of toad and three species of newt.

## Frogs

The frog you are most likely to see in Britain is the **Common Frog** (*Rana temporaria*), which lives on land in damp habitats for most of the year. It may be found in open woods, hedgerows, fields and gardens, not too far from water. The body colour varies widely, with upper parts usually brown or olive, but sometimes yellowish- orange or grey. The underside is normally paler, and the whole body is blotched or spotted with a darker colour, which helps to camouflage it against its background. This frog has a distinctive dark patch behind its eye. A male common frog is slightly smaller than the female, which measures about 7.5cm (3in.). Frogs move by hopping or leaping, using their long, muscular back legs; they do not crawl. They have very smooth, damp skins. The fully-webbed hind feet help them to swim.

**Diet:** Frogs eat insects and other invertebrates, such as slugs, snails and worms. On summer days, they like to hide amongst tall plants and come out on warm, damp evenings to hunt. Like all amphibians, it is hard for them to find food during the winter, and they cannot function in cold temperatures, so from about mid-October they hibernate in a sheltered place on land e.g. under a log, or in the muddy bottoms of ponds. Males often hibernate in the bottom of ponds, so that they are already at the breeding site when the females arrive in the early spring. They can take in sufficient oxygen through their skin during hibernation under the water.

**Breeding:** A frog is ready to breed at about two years old. After their winter hibernation, frogs emerge to migrate to breeding ponds, returning, if possible, to the places where they themselves were hatched. The males usually arrive first, usually in February or March, but often January in the south-west of England and begin croaking loudly to attract the females. The male frog develops thick pads of rough skin on his thumbs, which enable him to grip the slippery female firmly whilst mating. The female releases about 2,000 eggs into the shallow parts of the pond, and, as they leave her body, the male releases his sperm over them. The jelly around each egg swells up, so protecting the egg and helping to keep it warm. The spawn sinks to begin with, but soon swells and rises to the surface. After spawning, the adults usually stay in the water until April, when the weather is warmer, and then live on the land. Tadpoles hatch from the eggs after about two weeks. It will be three months before they will have developed into tiny miniature frogs, ready to leave the pond. As they leave the water, they are very vulnerable to predators such as blackbirds. At any age they may be eaten by grass snakes, cats, crows, herons, ducks, hedgehogs, rats and foxes.

## Toads

There are two species of toad found in Britain, and both these are native. By far the most numerous is the **Common Toad** (*Bufo bufo*). It has a rough, warty skin, generally brown in colour with darker spots. A toad's movements are much slower than a frog's, and it crawls along, sometimes jumping a little, but does not leap as a frog does. A toad is bigger than a frog, growing up to 10cm (4in).

**Diet:** During the spring and summer, the toad feeds on worms, slugs, snails, other invertebrates, and even young frogs, newts and mice! Like the frog, it catches most of its prey with its long, sticky tongue. In winter, the toad hibernates in a dry place, under logs or stones. Predators, such as cats, weasels and foxes, usually leave toads alone because they have special poison glands on their back. These glands secrete a nasty-tasting, smelly poison. Some grass snakes will eat toads.

**Breeding:** After waking up from their winter hibernation, about a month later than frogs, toads set out on a long, often dangerous migration to their breeding ponds. They climb walls and other obstacles, and hundreds are killed by cars as they cross roads. On traditional migration routes, warning signs are sometimes placed on busy roads. Toads like to spawn in fairly deep water. The female lays about 5,000 eggs, not in a large mass as the female frog does, but in a very long double string, entwined among water plants. The tadpoles are much darker in colour than frog tadpoles, but they develop in a similar way. They are poisonous to some predators, but even so, only 1 in 20 survives to become adult. It will be three years before the males are ready to breed, and the females are ready a year later. In the summer when spawning is over, adult common toads live on the land, hiding under logs or stones during the day, but venturing out at night to go hunting. On warmer summer evenings, they may head for a nearby pond for a cooling dip.

**Natterjack Toad** (*Bufo calamita*) is only found in sandy habitats and was once common in many areas, including the southern heathlands. It is now mainly found in coastal sand dunes in East Anglia and north-west England. Habitat destruction has been the main reason for its decline in numbers and it is protected by law. The natterjack toad is smaller than its more common cousin and it has a distinctive yellow line down the middle of its back. It also has a smoother, shinier skin, and shorter back legs, which enable it to crawl faster. The toads dig burrows in the sand and use these to shelter in during the day. Although they may come out during the daytime, most of their hunting is done during the night. They feed on insects and other invertebrates.

**Breeding** : In April, the male natterjack toads begin sitting in the water round the edges of shallow sandy pools and they croak loudly to attract the females. Spawning continues until July and the female lays a long string of eggs - but with only a single row of eggs, not a double one, like the spawn of the common toad. Many tadpoles die before they have managed to develop into toadlets because their shallow pond dries up. Most surviving toadlets are ready to leave the water in June or July. It will be four or five years before they are fully grown. Most predators leave the natterjack toad alone because of its poisonous skin, but crows and seagulls somehow manage to remove the skin and then eat the rest of the toad.

## Newts

Newts are sometimes confused with lizards, but they are definitely not these reptiles because they have no scales, only thin, damp skin through which they can breathe, and they move much more slowly. Also lizards, like all reptiles, do not breed in water. There are three species of newts found in Britain - all native. These are the **Common** or **Smooth Newt**, the **Palmate Newt** and the **Great Crested Newt**.

**Common newt** (*Triturus vulgaris*): also known as the smooth newt, this newt is the most widespread of the three species, found mainly in lowland habitats. It is the only newt found in Ireland. It has a soft, smooth skin and a long tail, flattened at the sides. From head to the tip of the tail, the common newt measures about 10cm (4in.). Normally, it is a yellow- olive colour, but in the breeding season the male becomes much brighter, with an orange underside and spotted throat and belly. He also grows a crest down his back and tail. Common newts spend summer, autumn and winter on land in habitats such as open woodland, lush pasture and gardens, not far from their breeding ponds. During the day they hide under logs or stones or in thick grass. They come out on damp nights to hunt for their food. Like all newts, common newts eat a wide variety of prey, which they grab greedily and swallow whole. Their diet includes snails, slugs, worms, insects - and other newts! In winter, all newts hibernate, usually under logs, or stones, never far from water. In early spring, about March or April, common newts move to their breeding ponds - they prefer fairly deep ponds - to mate and lay their eggs. Unlike frogs and toads, they do not lay eggs in masses or strings, but the female wraps each egg separately in the folds of a water plant leaf. This helps to protect the egg from predators. A female newt lays about 300 eggs, so the egg-laying process takes her many hours. Newt tadpoles look like tiny dragons with feathery gills. They develop front legs about two weeks after hatching, and the hind legs grow soon after. They feed on tiny water creatures such as water fleas and worms, and even prey on smaller newt tadpoles. At the end of the summer the fully formed, tiny newts leave the water to live on the land. When they are two years old, they return to the water to breed. Only about six out of every 300 will manage to reach maturity - most of them fall prey to predators such as grass snakes, rats, blackbirds and hedgehogs.

**Palmate newt** (*Triturus helveticus*): this newt is the smallest British newt, about 7.5cm (3in.) in length, and is mainly found in heathland or upland habitats. The palmate newt is similar in colour to the common newt, but in the breeding season the male palmate develops black webs on his hind feet, a short filament at the end of the tail and his underside is plain rather than spotted. It is difficult to tell the females of the two species apart.

**Great crested newt** (*Triturus cristatus*): this is the largest British newt, about 16cm (6.5in.) and is also known as the **warty newt**. It is now rare, found only in a few areas of lowland England, mainly the south and east. It is even more rarely found in Scotland and Wales. The skin of the great crested newt is not as smooth as that of the other two species; it is warty (bumpy) and almost black in colour, with a black-spotted golden underside. In the breeding season the male grows a high, toothed crest along his back and tail and silver streaks on his tail. Like the other newts, the male waves his tail and crest during courtship to attract and impress the females.

## Protection of Amphibians

Over the past 40 years or so, hundreds of farm and village ponds have been filled in or become polluted; wild wetlands have been drained to make more land for crops, rivers have been dredged. All this activity has resulted in fewer and fewer suitable habitats for amphibians to live - and therefore the amphibians themselves have become increasingly rare. The pollution of water and the wide use of pesticides - which destroy the amphibian's food - has added to the problem. The common frog, common toad and common newt are no longer common - and populations of the natterjack toad and great crested newt have become so low that these two species have been officially declared endangered species and are protected by law. About 80% of all ponds in Britain are now found in gardens, and it is the garden pond which has been a life-saver for Britain's frogs, toads and newts. Garden ponds are normally in sheltered places, and there are fewer predators, so amphibians have a good chance of surviving. The more ponds we have in gardens and in school grounds, the better it will be for the future of our amphibians. In fact, a well-designed garden pond, even a small one, is an excellent nature reserve, attracting many other forms of pond-life, as well as providing water for birds, foxes, and hedgehogs.

The Friends are grateful to the Young People's Trust for most of the information on this page, visit their website [www.yptenc.org.uk](http://www.yptenc.org.uk)

For general advice and addresses of local amphibian groups:-

**FROGLIFE** :- Mansion House, 27-28, Market Place, Halesworth, Suffolk IP19 8AY. Tel:- 01986 873733

Or write to the, Young People's Trust for the Environment and Nature Conservation , for their fact sheet 'Making a Wildlife Pond'

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