



ERCCIS



Cornwall

## Amphibians in Your Garden

Amphibians – frogs, toads and newts – are remarkable animals, spending part of their lives under water and the remainder on land. Many species have suffered huge population declines due to the loss of suitable habitats such as wetland areas and natural pools and ponds. Wildlife gardens, in particular those with ponds, can provide a vital sanctuary for these vulnerable creatures. In Cornwall, where there is thought to be a lower density of ponds than other parts of the country, they may play an even more important role in helping to conserve the breeding populations.

### Amphibians in Cornwall

Cornwall is home to three (or possibly four) of the seven amphibian species native to the UK: common frog, common toad and palmate newt. Smooth newt is the most common newt in Britain as a whole but its natural range has only ever extended into the far east of the county and its continued presence is not certain. The rare species, natterjack toad and great crested newt, are not found here, nor is the pool frog which has only recently been confirmed as native to south east England and reintroduced there. Several non-native species are also occasionally found in the wild after having escaped or been released. Frogs, toads and newts can be found in almost any damp habitat with plenty of cover and suitable breeding ponds nearby e.g. meadows, marshes, heathland, hedgerows, open woodland and gardens.

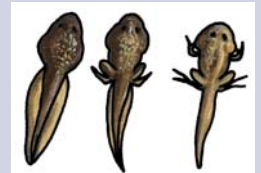


Photo: Adrian Davey

### The amphibian life cycle

Amphibians have to breed in water but spend most of their lives on land in damp habitats. Hibernating throughout winter, they emerge and return to their breeding ponds in early spring. This is generally around February to March but in the west of Cornwall breeding in January or December is common, while on The Lizard some frogs breed as early as October.

Spawn (jelly-covered eggs) is laid in still or slow-moving fresh water, often among plants. These grow into aquatic tadpoles with external gills but soon develop lungs and legs, metamorphosing into froglets, toadlets or efts (juvenile newts) which leave the water by the end of summer and mature on land. They become sexually mature after two to three years and then return to the pond to breed.



Tadpole development

ponds with: a varied depth profile; a range of native marginal and aquatic plants (but also enough open water to allow feeding and courtship); long grass around the edge; and a sunny, sheltered location away from overhanging trees.

Here are some other key points to remember:

- The centre of your pond need only be around 30cm deep. Include a number of shallower areas and have at least one side sloping gradually to dry land to help amphibians get in and out, particularly emerging young.
- Even small container ponds (for example using an old sink, bucket or stone trough) can be beneficial as a place for amphibians to cool down as long as you ensure they are able to get in and out.
- Allow your new pond to become colonised naturally by amphibians that are likely to be already present in the area. **Do not transfer spawn or tadpoles between ponds** as you risk spreading diseases and parasites or introducing non-native invasive plants. If the conditions are right in the pond then the wildlife will find you!

### Creating an amphibian-friendly garden

The best way to help frogs, toads and newts is to build a garden pond. Once constructed, wildlife ponds require little maintenance, will benefit a wide variety of plants and animals and are an ideal way to introduce children to wildlife. More detailed information on creating and maintaining wildlife ponds can be found in the separate information sheet, but in general amphibians prefer

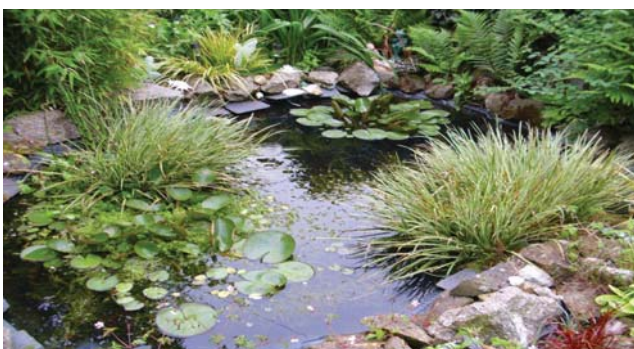


Photo: Frankie Cowling

## Identification guide:

### Common frog (*Rana temporaria*)

**Description:** Adults 6-9 cm (male usually smaller than female). Smooth, moist skin. Typically brown or olive green but sometimes yellowish-orange, red or grey. Body variably spotted or striped with dark bars on legs. Distinctive dark patch behind the eyes. Tends to jump not crawl.



Photo: Terry Dunstan



Frogspawn

Spawn is laid in clumps in shallow water. Black tadpoles become mottled with gold/brown as they develop and do not shoal. Grow back legs first.



Frog tadpole

**Habits:** Prefers shallow water for breeding. Hibernates in a sheltered place on land or at the bottom of the pond. Feeds on a variety of insects and other invertebrates such as slugs, snails and worms which they catch using their long, sticky tongues. Usually seen February to October but emerge from hibernation earlier in Cornwall.

### Palmate newt (*Lissotriton helveticus*) (formerly *Triturus helveticus*)

**Description:** Adults 6-9 cm. Smooth velvety skin. Brown/olive with a yellow/orange underside. Throat is pale or pinkish and lacks spots (often distinguishing from smooth newt which usually has throat spots). During the breeding season males develop a low, straight-edged crest on the back, a more developed crest on the tail, a 'thread' at the end of the tail and black webbing on the back feet.

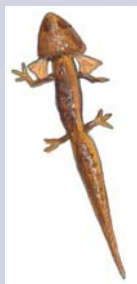


Photo: Terry Dunstan



Newt egg

Spawn is laid as individual eggs (grey or beige) wrapped in submerged plant leaves. Larvae have a frill of gills behind the head and develop front legs first.



Newt larvae

**Habits:** Prefers still, shallow ponds on acid soils. Widespread in Cornwall and garden ponds often used for breeding. Outside of the breeding season found in damp areas of the garden hiding in leaf litter, long grass and under stones. Hibernates under stones, in compost heaps or in mud at the bottom of pools. Feeds mostly on small invertebrates, either aquatic or terrestrial, and also preys on tadpoles.

### Common toad (*Bufo bufo*)

**Description:** Adults 8-13 cm (male smaller than female). Broad, squat bodies. Rough 'warty' skin, often appears dry. Usually brown or olive-brown with some darker markings but occasionally almost black or brick red. Distinct bulges on back of head, the parotoid glands, which



Photo: Terry Dunstan



Toadspawn

produce toxins to deter predators. Tends to crawl not jump.

Spawn is laid in long double string of eggs in fairly deep water.

Tadpoles remain jet black and often form shoals. Grow back legs first. Toadlets are often very dark in colour.



Toad tadpole

**Habits:** Follows traditional migration route to ancestral breeding pond, preferring large, deep water bodies. May remain in gardens for long periods in summer, hiding in damp hollows, compost heaps, leaf piles etc. which may also be used for hibernation. Most active at night, feeding on invertebrates including worms, slugs, ants, spiders, insect larvae and even young frogs, newts and mice! Usually seen April to October but emerge from hibernation earlier in Cornwall.

### Smooth (or Common) newt (*Lissotriton vulgaris*) (formerly *Triturus vulgaris*)

**Description:** Adults around 10-11 cm. Very similar to palmate newt but throat is creamy white and usually spotted or speckled. During the breeding season males develop a more prominent wavy crest from head to tail, fringing on the hind toes and bright orange undersides. Eggs and larvae are indistinguishable from palmate.

**Habits:** Prefers still water with reedbeds and weeds such as lake margins, ditches and ponds. Natural range restricted to the far east of Cornwall but it is not clear whether the species still exists there. Outside of the breeding season found in damp areas of the garden hiding in leaf litter, long grass and under stones. Feeds mostly on small invertebrates, either aquatic or terrestrial, and also preys on tadpoles.

### Amphibians and the Law:

All of Cornwall's native amphibians are protected against sale under the Wildlife and Countryside Act 1981. It is also illegal to introduce any non-native species into the wild.

Illustrations by Sarah McCartney

## More ways to help amphibians.....

- Features such as piles of logs and leaves, rockeries, compost heaps, hedge bases and flower beds help attract invertebrate prey and provide shelter and hibernation sites. A frog/toad home can provide an additional refuge in the garden.
- Keep areas of vegetation in your garden rough and long, especially around your pond to provide shelter and hunting grounds for amphibians. An associated marsh area is particularly beneficial.
- Mown areas near the pond should be kept permanently short so that you will be able to see and avoid any amphibians when cutting the grass.
- Avoid features like slabs or cobbles around your pond so that young don't have to cross large areas of hot, dry stone.

- Avoid using garden netting close to the ground as frogs and toads can get caught up.
- For a real wildlife-friendly pond, do not introduce fish; they will quickly devour spawn and tadpoles.
- Try to avoid using any chemicals or poisons in your garden that could leak into your pond or kill invertebrate prey. Remember that amphibians prey heavily on slugs, snails and insects, acting as a natural pest control.
- Early autumn is the best time to carry out any necessary pond management as you're least likely to disturb amphibian breeding or hibernation (and other wildlife).



Photo: Ian French

## Some frequently asked questions:

### I've found an amphibian....what shall I do with it?

Amphibians spend the majority of their life on land and are often found in gardens, sometimes hundreds of metres from water. Unless the animal is in immediate danger you do not need to move it or do anything for it. If you've found it near a road or in a part of the garden you're working on, release it into nearby suitable habitat or another part of the garden that provides cover from predators and extreme weather such as a compost heap, underneath a garden shed or near/underneath dense foliage; it does not need to be in a pond.

### My pond is overcrowded with spawn....what shall I do?

Amphibians need to produce many times more eggs than will actually survive to adulthood, allowing for losses expected during the first few weeks of life. Spawn, tadpoles and young frogs are all vulnerable to disease, starvation, extremes of temperature and predators, being important prey for fish, newts, reptiles, birds, mammals and aquatic invertebrates. Tadpoles are also cannibals and will eat each other! It's estimated that for a typical clump of frogspawn comprising 2,000 eggs, about 95% might make it to hatching stage but only 20 to 100 will have survived by the time the tadpoles are developing into froglets, after which time their survival improves. There is no need to intervene, just allow nature to take its course. Remember, you should not try to reduce apparent overcrowding by moving adults or young to another pond as you risk spreading disease, parasites or invasive plants, and you may introduce the animals to an area that is unsuitable for them. This is also unlikely to be effective; if a pond provides a good habitat for amphibians, numbers will quickly increase again to replace the animals that have been removed. However, if a large amount of spawn has jelly around the embryos that appears cloudy, a sign that the clump has died or was unfertilised, you may feel it necessary to move the dead spawn onto the top of a

compost heap away from the pond to allow mammals and birds to eat it there and prevent contamination of the water.

### How can I help amphibians during freezing or hot weather?

Some frogs spend winter hibernating at the bottom of ponds. If the surface freezes over for more than a few days, oxygen levels fall and harmful gases may build up in the pond and kill the frogs. When the pond thaws, their bloated bodies float to the surface. Many more frogs will safely overwinter on land but if you are particularly concerned you can maintain a hole in the ice by sinking buckets of hot water or floating a football on the surface.

During the summer, young amphibians must be able to leave the pond to continue life on land. Ensure they can emerge safely by providing sloping sides and marginal vegetation, and avoid stone or concrete around the pond as young can die on the hot, dry surfaces.

### What should I do if I find ill or dead frogs/toads?

Amphibians suffer from a wide variety of diseases but in recent years there has been an increase in the number of unusual deaths of frogs and toads. Dozens may be affected, often without obvious external symptoms, but can appear lethargic, disorientated and thin with bleeding or ulcerated skin. The disease is now known to be caused by a ranavirus and is sometimes referred to as 'red leg'. There is no known cure but some may recover naturally from the infection, and it is best to just leave affected animals alone. Burying or burning any dead frogs may reduce the risk of spreading the infection but avoid directly handling the bodies and follow normal health precautions. Any unusual frog or toad deaths in and around your pond should be reported to Froglife (see below) who are carrying out research and can provide further information about amphibian mortality including spawn failure and tadpole loss.

### For further information and advice:

Wildlife Information Service  
Environmental Records Centre for Cornwall  
and the Isles of Scilly (ERCCIS)  
Five Acres, Allet, Truro, Cornwall TR4 9DJ

Tel: (01872) 240777 ext 250  
Email: wis@cornwallwildlifetrust.org.uk  
Web: www.ercis.co.uk

### Other useful contacts:

- Amphibian and Reptile Conservation:  
www.arc-trust.org, tel: (01202) 391319
- Cornwall Reptile & Amphibian Group,  
contact via ERCCIS
- Amphibian and Reptile Groups of the UK  
(ARG UK): www.arguk.org
- Froglife:  
www.froglife.org, tel: (01733) 558960

- Pond Conservation:  
www.pondstrust.org.uk, tel: (01865) 483249

### Get involved:

Submit your amphibian and other wildlife records at  
www.ercis.co.uk/wildlife\_recording

Become a member of Cornwall Wildlife Trust at www.cornwallwildlifetrust.org.uk