ENGLISH NATURE

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Front cover photographs:
Top left: A good range of aquatic and marginal plants creates ideal conditions for garden pond wildlife.
Jim Foster/English Nature
Bottom left: Head of male great crested newt showing the start of his crest.
Derek Middleton/FLPA 20635-00039-231
Main: Common frog hiding amongst pond plants.
Laurie Campbell/NHPA AM/LCA04805A

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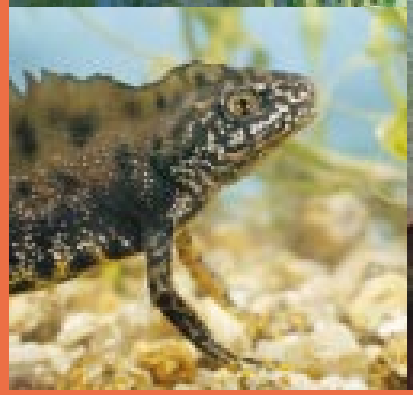
ENGLISH NATURE

Amphibians in your garden

Your questions answered



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Amphibians in your garden

Your questions answered

Why are garden ponds important for amphibians?

More and more people are thinking of digging a pond as an extra feature for their garden. As well as being a great way to aesthetically enhance your garden, a pond can also play a helpful role in conservation. Wetlands have been under immense pressure due to the intensive land use changes that we have imposed on the countryside, meaning that around three-quarters of British ponds present at the start of the last century have been lost. Although conservation efforts have yet to fully address this issue, garden ponds can help by creating additional habitats for plants and animals which depend on water. Garden ponds cannot make up for the loss of our countryside ponds, but they do give a helping hand to some wetland wildlife - frogs, in particular - and they can be a wonderful educational resource. Given their handy location, just outside the back door, garden ponds are an ideal introduction to wildlife for children. More good news is that, once constructed, garden wildlife ponds require little maintenance.

Male common frog - note the bluish-white throat. Jim Foster/English Nature

Common toads often choose damp hiding places in gardens. Laurie Campbell/NHPA AM/LCA05166A

Some amphibians, like this North American bullfrog, have been introduced from abroad and may pose threats to native wildlife. Jim Foster/English Nature

This leaflet should help you to maximize the value of your pond for amphibians (frogs, toads and newts) and this in turn will help other wildlife that lives in or visits garden ponds. Even people who have lived near a pond for years still have queries about what they see in these remarkably complex aquatic habitats. This leaflet has been compiled to answer the most frequently asked amphibian questions. It cannot answer every last one, however, so a range of further reading and contacts is given at the end to help you with additional detective work.

Which amphibians live in my pond?

Have I got frogs or toads?
Common frogs have smoother skins than common toads, the latter having a granular or warty appearance. Frogs have longer legs than toads, and leap rather than hop (which toads tend to do). Toads are usually a mottled mid-brown, while frogs are much more variable in their colour and markings. Whilst male frogs make a quiet, low-pitched call during the breeding season, toads make a louder, higher croak. Frogspawn is laid in familiar clumps, while toads lay long, gelatinous ‘strings’. After a few weeks, it is easy to tell frog and toad tadpoles apart too; frog tadpoles are mottled brownish-grey to olive with gold speckles, while toad tadpoles remain jet black. In Britain we also have a few other amphibian species, including some introduced from Europe, but these rarely turn up in gardens. Check in a guidebook or leaflet if you are unsure (see Further reading).

This male albino frog has paired with a typically-coloured female. Jim Foster/English Nature

Reddish common frogs, like this female, are not unusual. Jim Foster/English Nature

Albino frogs arise when a genetic mutation means they cannot produce dark pigments. Jim Foster/English Nature

I've seen an orange frog - is this a different species?

Probably not. Reddish, orange and yellow common frogs do occur. However, common frogs with pigment abnormalities are more unusual. They can be white, yellow, pink or orange, with pink or sometimes black eyes. These albino, partial albino or leucistic frogs lack dark markings due to a genetic mutation, which arises naturally by chance (the same happens with many animal species, including humans). There is no need to be worried if you find one.

Frogs often lay their spawn close together in the shallows. Here, a single clump of albino spawn is obvious. Jim Foster /English Nature

Which type of newts do I have in my pond?

They are most likely to be smooth newts but, depending on where you live and what type of pond you have, you could also see palmate or great crested newts. Palmate newts are more common in the west and north of Britain, particularly on poor, acid soils. Great crested newts prefer larger ponds than the other species and tend to be found infrequently in garden ponds. **Note:** on land, newts' colours become duller and their crests shrink.

Male smooth newts can reach around 10 cm, and have a distinctive wavy crest and fringed hind feet. Jim Foster/English Nature

Female smooth newts (shown here) and palmate newts both have sandy brown colouration and are hard to tell apart. Jim Foster/English Nature

Male palmate newts have a thin 'thread' at the tail tip, a tiny crest, webbed hind feet and intricate colouration. Jim Foster/English Nature

Great crested newts live in my pond, but I have heard that they are protected. What does this mean?

Great crested newt populations have decreased severely and, therefore, they are strictly protected by law. In practice, however, this should not be a problem as normal garden management will present no major dangers for the newts. It would be an offence to fill in the pond, or to damage the places the newts use for shelter. Fish should not be stocked. English Nature can provide further advice, and there are more detailed guides available to help you enhance your garden for this declining species (see Further reading).

Male great crested newt - note the spiky crest, white tail stripe and large size. Derek Middleton/FLPA 20635-00044-231

Female great crested newts grow to 16 cm and are usually dark brown, with an orange stripe on the bottom of the tail. Jim Foster/English Nature

All photographs on page 5 approximately two-thirds life size.

Two 'strings' of toad spawn lay on top of a clump of frogspawn. Jim Foster/English Nature

Too many or too few?

What should I do with 'excess' spawn or frogs?
During spring, a lot of people become concerned when they see their pond filling up with frogspawn, thinking that it is too much for the pond to cope with, or that they will be 'overrun' with frogs. In fact, there is no such thing as 'excess' spawn. Females lay their eggs (up to 2000 each year) in a special jelly which gradually swells up on contact with water. Also, in a given pond, several frogs will often lay their spawn together in one place and it might appear, to our eyes, that too much has been laid. However, each female lays a single clump of spawn, and each pond (plus surrounding land areas) can support a certain number of frogs, largely depending on the quality of the habitat. In any case, most spawn and tadpoles perish, so only a tiny fraction of the eggs you see in spring will naturally survive to become adult frogs. Taking spawn away will not have any significant effect on overall frog numbers. Rather than fruitlessly removing spawn and frogs, it is better to accept that if you provide good habitat you are effectively inviting lots of frogs.

I don't have a pond and yet there are lots of frogs in my garden. Can I get rid of them?
Amphibians range several hundred metres from ponds and it is not unusual to find them in gardens that lack a pond, especially in summer. There is not much you can do about this, though you could try reducing the amount of cover (long grass, debris, rockeries, shrubs, etc) or erecting a fence that is dug into the ground to prevent them getting in. In the end it is often better to learn to live with the frogs rather than to try to find ways of keeping them out.

How do I attract amphibians to my garden?
If you don't have a pond, why not build one? In addition, keeping parts of your garden rough and unkempt is a good ploy. Frogs, toads and newts all like to take shelter underneath piles of rocks and logs, so installing these features can help. Other familiar garden features can also harbour amphibians - rockeries, compost heaps, loose patio slabs, gaps under sheds and in footings, wood stacks, open tree roots, hedge bases and flower beds. You do not need to leave food out for them, but anything that encourages insects and other minibeasts will help. Avoid using pea netting close to the ground, as frogs and grass snakes get caught up in it.

Should I introduce amphibians?
Normally you won't need to, as they are very good at colonising naturally. Try to provide the best garden pond and surrounding habitat that you can, and then sit back and wait for the amphibians to turn up. In this way you can be sure that the conditions you have created are suitable. However, sometimes they will not colonise, and this may be for a number of reasons. The habitats you have provided may not be quite right. There may be some barriers (very busy roads, buildings, rivers, etc) that make it difficult for them to reach your pond. Alternatively, there may not be any amphibians in your area, perhaps because the surrounding land use is hostile to them. However, if you are sure that you have

A female frog is grasped by two males. Such frenzied mating activity sometimes leaves females dead. Jim Foster/English Nature

Creating a pond will attract all sorts of colourful wildlife like this emperor dragonfly. Martin Garwood/NHPA/IN/MIG01632A

provided a good set of conditions, then introducing some amphibians can be a good idea. This is best done by bringing in a few clumps or strings of spawn (for frogs or toads), or vegetation that is supporting eggs (for smooth and palmate newts). This should be done for two or three seasons. You should take spawn or eggs only from a nearby garden pond, with the owner's permission, and where there is no evidence of amphibian or fish disease. Also be very careful not to transport any unwanted exotic plants.

Note: great crested newts are protected by law and should not be moved.

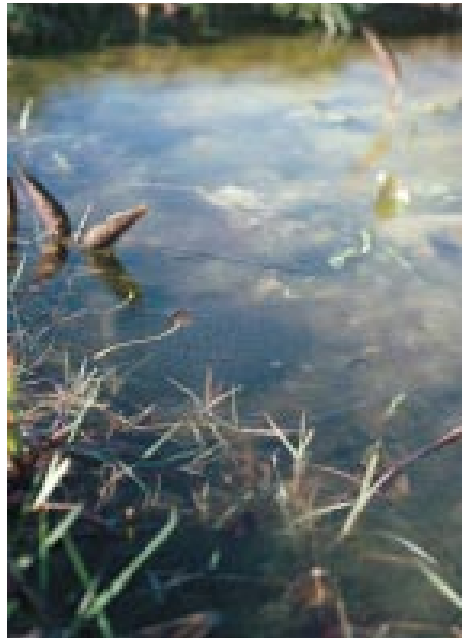
I want to distribute my frogs, toads or newts for conservation purposes. Where shall I take them?

Although it can seem appealing to share out your amphibians, in practice this rarely helps with their conservation. It is best to leave them alone, and to enhance their environment; you could also encourage others to follow your example. The main reason amphibians have declined is because of damage to habitats, so moving animals around does not really help. One exception would be to introduce fresh animals to a small population that is becoming inbred due to isolation.

Predators, diseases, disappearances and related concerns

Why does my frogspawn die, sink or change colour?

Frogs' eggs can be killed by frost (though often this will just harm the top few layers of eggs), fungus, or predators. Newts will feed on the eggs, as will some invertebrates such as flatworms. Spawn sometimes sinks to the bottom of the pond but this is nothing to worry about. Some eggs may not have been fertilised and these will die shortly after laying. The outer jelly of frogspawn sometimes takes on a green or grey tinge due to algal growth or sediments in the pond. All of these events are fairly normal in garden ponds and, so long as some tadpoles survive, there's normally nothing to worry about. Even if all the spawn in a given year dies, frog populations will hold up.



Frozen ponds are one of nature's hazards for frogs. Jim Foster/English Nature

Frog tadpoles are important prey for a range of predators, including newts, birds and many invertebrates.
R Krekels/Foto Natura Stock/FLPA 20125-00167-240

Of more concern is when there is consistent, total failure of spawn with no tadpoles being produced over several years, eventually leading to a major decline in adult numbers. Occasionally this happens and there is no obvious explanation, though chemicals, disease, and intense predation are possibilities.

Why don't my tadpoles develop?

It is quite common for some tadpoles to develop much more slowly than others in the same pond. This may occur in small ponds with lots of tadpoles (due to competition) or it can happen when the water is cool (because of shading, for instance) or contains little food (eg in new ponds with little algae). Sometimes the tadpoles will continue to grow over winter, then emerge the following year. It is also usual for some tadpoles to develop normally and leave the pond without you noticing, leaving behind the slow developers.

Where do all my frogs disappear to after spawning?
Spring is the time when frogs and toads are most obvious, and afterwards they do a disappearing act which often takes people by surprise. They tend to leave the pond and seek out damp, sheltered areas in gardens or further afield - sometimes travelling a few hundred metres. You may see frogs in smaller numbers in and around the pond in summer, especially when it rains heavily or when you turn on the hose.

I've heard that there is a disease affecting frogs. How can I tell?
Over the last decade or so there have been reports of unusual mass mortalities of frogs, mainly in south east England and this has now been attributed to a virus. It seems likely that the virus has been introduced recently from overseas.

Disease sometimes causes discolouration of the frog's body due to haemorrhaging and ulceration.
Jim Foster/English Nature

Some invertebrate predators can tackle surprisingly large prey. Here, a water beetle larva overcomes a smooth newt.
J. Whitehurst/Cheshire Ecological Services Ltd.

It causes frogs to die in numbers, typically during June to September, in and around the breeding pond. Symptoms include emaciation, ulceration and haemorrhaging, though the disease is complex and sometimes no external signs are apparent. There is no cure for the disease, but Froglife can advise further (see Contacts). Bear in mind that dead frogs may have perished for reasons other than disease (see below).

How else do frogs die?
Adult frogs are eaten by predators such as grass snakes, herons, owls, crows, foxes, hedgehogs and cats. As tadpoles, they will be eaten by newts, fish, beetles and dragonfly nymphs. The eggs will also be eaten by some predators. Some frogs die during hibernation on land or in water (see below) and, during the breeding season, some females will perish in the frenzy of mating after being clasped by males for long periods. All of these things are natural causes of death and although they can appear distressing, it is best to let nature take its course.

I am sure the grass snakes are a menace to my frogs. How do I get rid of them?
It is best not to. Although it can be a gruesome sight to witness a grass snake devouring a frog, it is actually a perfectly natural occurrence. Though some people are understandably concerned that this will wipe out their frogs, grass snakes actually take very small numbers and do not endanger their populations. In fact, grass snakes are more threatened than frogs (and are protected by law) so seeing one in your garden is great news.

I sometimes find dead frogs in the pond in winter. What can I do?
At some ponds, a proportion of the frogs spend winter underwater. If the water freezes over for more than a few days the falling oxygen levels and trapped noxious gases can prove fatal. Often, people find the bloated frogs floating on the surface after a thaw, and this can look particularly gruesome. However, these few deaths will not affect the health of the total population, as many more frogs will overwinter on land, where it may be safer. Normally it is just a few males that stay in the pond in winter in order to be first on the scene for the females, come spring. If you are particularly concerned then you can maintain a hole in the ice by sinking buckets of hot water or floating a football on the surface.

The distinctive yellow 'collar' identifies this as a grass snake, a reptile with a taste for amphibians. Jim Foster/English Nature

After around 10 weeks, this tadpole is almost ready to leave the water, but some take much longer.
R Krekels/Foto Natura/FLPA 20125-00192-240

How can I stop baby frogs dying in the pond in summer?
Froglets drown in some ponds because they cannot easily get out of the water - typically when there are steep sides or overhanging slabs. It is best to provide easy exit points by creating vegetated ramps in the short term and, in the longer term, by ensuring that the sides of the pond slope gently, with plenty of marginal plants for cover. Also make sure they do not have to cross large areas of hot, dry stone.

Are cats a problem for amphibians?
Cats don't often kill frogs, but they do 'play' with them and, rather unhelpfully, bring them indoors. Cats are more of a concern for other animals (they will kill slow-worms, grass snakes, birds and small mammals), and they are best avoided in a true wildlife garden.

Are newts a problem for frogs?
No, although newts thrive particularly well in some ponds and can reach a level at which predation on frogspawn and tadpoles reduces frog numbers. In these cases, frogs will typically prosper in other nearby ponds, while the newts do better in yours. No one is quite sure exactly what makes some ponds more suitable for newts than for frogs but, as long as there is a range of pond types in the area, both species should do well. Removing newts to try to redress the balance is not recommended and, in any case, this sort of engineering normally fails. If you are keen to have frogs too, one solution might be to create another pond with a different profile.

How can I stop frogs attacking my goldfish?
Male frogs or toads sometimes attach themselves to fish in the spring, mistaking them for females. This rarely harms the fish, and the frog usually notices its mistake and soon hops off. You can carefully prise the frog off if you are especially concerned. Bear in mind that this is only ever going to happen for a few days in early spring.

Toads, like other garden amphibians, spend most of their lives on land, so it is important to provide good cover around your pond. M B Withers/FLPA 21087-00005-171

How can I stop tadpoles eating my goldfish?
They are feeding only on the mucus or on the dead flesh of a fish affected by ulcers or fungus. No harm is done to the fish and, in fact, goldfish benefit at the expense of frogs because they feed on frogspawn and tadpoles.

I've heard that toads are poisonous. Should I be concerned about children or pets?
Common toads and great crested newts both have special chemicals in their skins to dissuade potential predators. Dogs will normally react quickly by spitting out the toad or newt; and no serious consequences have been reported. In the course of normal handling by people it is extremely unlikely that any ill-effects would result.

Male frogs develop rough-skinned nuptial pads on their 'thumbs' to help them grasp the slippery females during mating.
Jim Foster/English Nature

Creating ponds and managing your garden

What makes a good amphibian pond?

Frogs are the least choosy of our amphibians, and will breed in almost any type and size of garden pond. With a bit of care, however, you can create a pond that will support decent populations of at least two species, and maybe more, depending on where you live. Ponds should be sited in a sunny location, away from overhanging trees. If you have the space, dig a pond that is at least 2 x 3 m in surface area; the larger it is, the more scope you will have to create diverse conditions. Make sure there are some shallow (up to 20cm) margins, with a deeper (at least 60cm) section too. The shallow areas are particularly important for frog spawning. For toads, you may need to build a much bigger and deeper pond. The Further reading section gives more detailed references on how to construct ponds.

Ornamental ponds with steep sides and no surrounding vegetation present limited opportunities for amphibians.
Joan Hutchings/FLPA 90465-00352-080

Amphibians prefer ponds with a varied depth profile, a good mix of aquatic plants, long grass around the edge, and a sunny location.
Chris Mattison/FLPA 80095-00028-207

Like other invasive exotic plants, Australian swamp stonecrop *Crassula helmsii* can smother pond wildlife.
Roger Wilmhurst/FLPA 59615-00003-169

Does it matter if the pond is artificially lined?

No. Amphibians do very well in lined ponds. Flexible liners (such as butyl) are ideal for wildlife ponds. They vary in price, with the more expensive types generally being more flexible and having greater resistance to sunlight and to root and animal damage. You will also need an underlay to protect the liner.

What about pond plants?

Having a good mix of aquatic vegetation helps to create a rounded pond ecosystem, into which amphibians will fit more happily. Though frogs and toads do not have a specific need for certain plant species, they will take cover in plant stands and their tadpoles will feed on decomposing plant matter. Newts have a more direct need in that they require flexible leaves for egg laying. For detailed help on pond plants refer to publications listed in the Further reading section. In general, you should aim for an assortment of marginals, floating leaved plants and submerged species. Only use native species that are suited to your area.

Tadpoles rasp algae from the pond edge or from plant leaves using special mouthparts.
Jim Foster/English Nature

What management work will my pond need?
It is a good idea to remove up to a third of the water plants plus accumulated leaves and silt every few years, but the frequency will depend on the exact conditions in your pond and your personal preference. Try to keep some of the water column open to allow sunlight to penetrate; this warms the water to help spawn and tadpoles develop. Annual thinning may be desirable for some vigorous plants. It is best to do all this in late autumn. Small top-ups in hot summers can be done from a hose with no ill-effects, but it is better still to feed water in from roof run-off. Occasional reduction in shading scrub or trees may be needed.

Do I need to feed tadpoles?
No. They will find enough food from the algae and decomposing material in your pond. If it is a very new pond you may wish to add some rabbit food pellets for them to feed on (it can be interesting to watch) but it is not absolutely necessary.

Should I introduce fish?
Toads do not seem to be directly affected by fish. If your pond is aimed at amphibians in general, however, it is best not to stock fish, given the problems with predation and the increased nutrient load that may result. Garden ponds are normally too small to replicate

You may find the shed skin of a frog if you inspect your pond closely. Jim Foster/English Nature

natural fish habitats and therefore adding fish can upset the balance created by the other plants and animals. Although fish are unlikely to remove entire amphibian populations (with the exception of the great crested newt, which seems especially vulnerable), garden pond wildlife often copes better in their absence. For fish lovers, one option is to build a separate pond specifically for fish.

I'm worried about mowing my lawn because of the frogs. What should I do?
This may be a particular issue in early summer when the young emerge from the pond in huge numbers. The best plan is to allocate certain areas of your garden as wild, and mow only when the frogs are in hibernation. Regularly mow any areas you want to keep as lawn, to prevent longer grass developing where frogs may hide. Mowing in hot, dry weather will also minimise the chances of finding amphibians, and making some disturbance before mowing may encourage frogs to hop out of the way.

How do I make my pond safer if there are infants around?
It is fairly straightforward to erect a sturdy fence around your pond to prevent direct access. A post and rail fence backed with chicken wire is sometimes used. Garden centres also stock grates to go over ponds. Whatever you decide, there is no replacement for close supervision of children near water. Do consider such options rather than concluding straightaway to fill in your pond. Retaining it for the children's educational benefit later in life will be worthwhile.

I need to fill in my pond. Where shall I take the frogs/toads/newts?
The most practical course of action is to fill in the pond in autumn, when all or most animals will be on land. If you need to fill it in during the active season, then slowly drain the pond and catch any amphibians that do not make their own exit. They can be taken to another nearby garden pond (ideally a new one) with the owner's agreement, or adults can be left in nearby vegetated areas. Bear in mind, though, that you may well get animals returning to your garden the next spring, expecting to find a pond there. Sometimes frogs will even lay spawn on the lawn where the pond once was. Hopefully, after a few years this should reduce as the amphibians find new ponds.
Note: the destruction of great crested newt ponds is an offence without a licence.

What are the limitations of garden ponds?
Although it is true that garden ponds provide havens for frogs and some other wetland wildlife, there is a danger in overstating their importance in a conservation context. Garden ponds can never replace the number and variety of countryside ponds that have been lost. There are also a few potential problems with garden ponds, such as the associated urban fragmentation, high chemical inputs, lack of adjacent semi-natural habitats, short lifespan, and presence of exotic species and diseases. Some plant and animal species simply will not survive in garden ponds. However, these points should not in any way dissuade you from creating a pond because each new bit of well-planned habitat will help wildlife, as well as giving you years of enjoyment.

Paired frogs often wait a week or so before spawning, perhaps waiting for the right weather conditions. Jim Foster/English Nature

Amphibian behaviour

Do frogs, toads and newts return to the same pond?
The pond chosen for breeding will often be the one from which the adults originated as spawn. However, some individuals will wander from their original breeding area to find newly created ponds. Frogs seem to be the most adept at colonising new ponds.

How do amphibians find (new) ponds?
No one knows for sure, but there is some evidence that amphibians use smell, in addition to spatial memory, to locate ponds. They may also simply happen across new ponds whilst dispersing across land. Female frogs and toads are also attracted to the calls of males at ponds in spring.

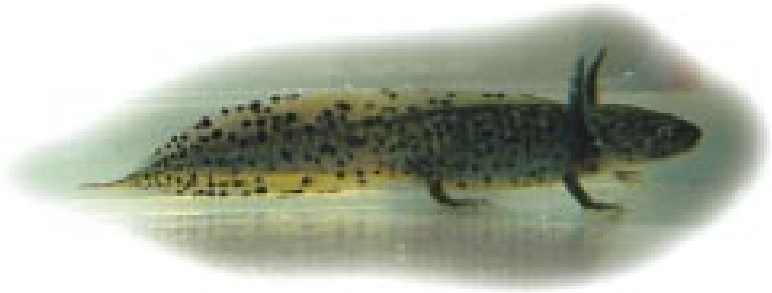
How do newts breed?
Newts have an interesting courtship 'dance' in which the male displays to the female and releases special chemicals to attract her. He then deposits a sperm packet on the bottom of the pond, and the female takes this in to fertilise the eggs. She will then lay the eggs individually, a few each day, for several months. Each egg is laid onto a plant leaf underwater. The leaf may be alive or dead and is sealed around the egg to protect it. You may notice the folded leaves if you look carefully at the pond edge in late spring.

This water mint has leaves folded over where newts have laid their eggs. Jim Foster/English Nature

Great crested newt eggs revealed by unfolding submerged grasses. Jim Foster/English Nature

What happens to spawn once it has hatched?
After the frog embryos hatch out into tiny tadpoles they remain very still and stay close to the spawn jelly for a while (the jelly gradually decomposes). Superficially, they appear to be dead at this stage but soon they will start to lose their external gills and become more active. The back legs emerge after a few weeks, followed by the front legs. The tail reduces in size, and the body and head shape changes (in particular, the mouth is now much wider). Frog tadpoles tend to become more secretive and bottom-dwelling in the later stages. Eventually - usually in June or July - they emerge from ponds onto land as froglets. Toads follow a very similar pattern, emerging a little later. Newts differ in that they retain external gills all through their aquatic larval stage (ie the period between egg and land-living juvenile). They also get their front legs first, and feed only on live prey, whereas frog and toad tadpoles feed mainly on algae and detritus. Young newts emerge later in the year, from July-October.

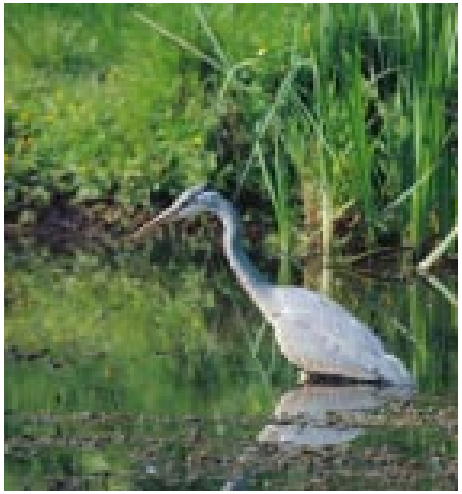
After being laid, frogspawn jelly swells up as it absorbs water. After a couple of days it has more than tripled in volume. W Meinderts/Foto Natura/FLPA 20125-00187-240



Newt larvae (here a great crested newt) have feathery gills just behind the head. Jim Foster/English Nature

Froglets and toadlets feed on tiny insects like aphids, and seek out moist refuges to escape predators. Stephen Dalton/NHPA AM/SDA03332A

I think I heard a frog scream. Can this be true?
Yes. When attacked by predators, frogs and toads can let out a surprisingly loud, high-pitched distress call. This happens most often in gardens when cats corner them.



Amphibians fall prey to herons, but such predation is natural. You can help the frogs by providing more cover around the garden. Melvin Grey/NHPA BI/MGR00322A

What do adult amphibians eat?
Frogs, toads and newts are not very fussy, eating most kinds of small invertebrate. Slugs, snails, flies, beetles, ants, woodlice, moths, worms and bugs are all eaten, though the proportions vary according to the habitat.

How long do frogs, toads and newts live?
There is no brief answer to this question. Most frogs will die very early in life, at the egg or tadpole stage, hence having a life expectancy of only a few weeks. But for the lucky ones that manage to avoid pond-based predation, early frosts and disease, survival is still risky because, as they leave the pond, they can be picked off by other predators (see page 10). Survival prospects are better when they reach maturity at two or three years, and some frogs may even live to seven years. Toads fare better, probably due to the chemicals in their skin meaning fewer predators, and a few toads will eventually reach the early teens. It is important to realise, however, that the number of animals reaching these grand old ages is tiny (perhaps less than one per cent of the eggs laid). Newts also have a risky larval period, with an increased survival rate once on land. Great crested newts seem to be more long-lived than the other two species, often reaching six and exceptionally up to 15 years. Smooth and palmate newts rarely live beyond around five years.

Adult toads, frogs and newts are strictly carnivorous. They use smell and movement detection to find prey. Daniel Heuclin/NHPA AM/DHE00355A

My child wants to study some frogspawn/tadpoles indoors. How should I go about this?
Often it is best to watch animals in their natural environment, but there are real educational benefits to be had from a close-up view of developing tadpoles. It is not possible to give a complete guide here, but some key points to be aware of are: only keep a small number of tadpoles (around 30 for a typical aquarium); rabbit food pellets make good rations; change the water frequently; provide bark or mossy rocks to allow froglets to emerge; always release them back at the edge of the pond they came from. More details are given in Further reading. Rearing newts is much more difficult and is not advised.

Foxes, badgers, hedgehogs and many birds will use garden ponds for drinking or bathing. Laurie Campbell/NHPA MA/LCA006260A

Further reading

Note: 'L' indicates a leaflet or similar that is normally available from the authoring organisation rather than from bookshops or libraries.

Amphibians and reptiles: A natural history of the British herpetofauna, by T Beebee and R Griffiths. HarperCollins (The New Naturalist series), 2000.

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