



FROGS, TOADS AND NEWTS IN GARDEN PONDS

Answers to questions about amphibians in gardens

Amphibians in gardens

Frogs, toads and newts can enhance the environmental, educational and aesthetic value of your garden. A great many households derive immense pleasure from watching 'their' frogs returning to breed year after year. As wild habitats become increasingly scarce, now, more than ever, gardens are providing a vital refuge for frogs, toads and newts.

This advice sheet answers some of the more frequently asked questions about amphibians in gardens.

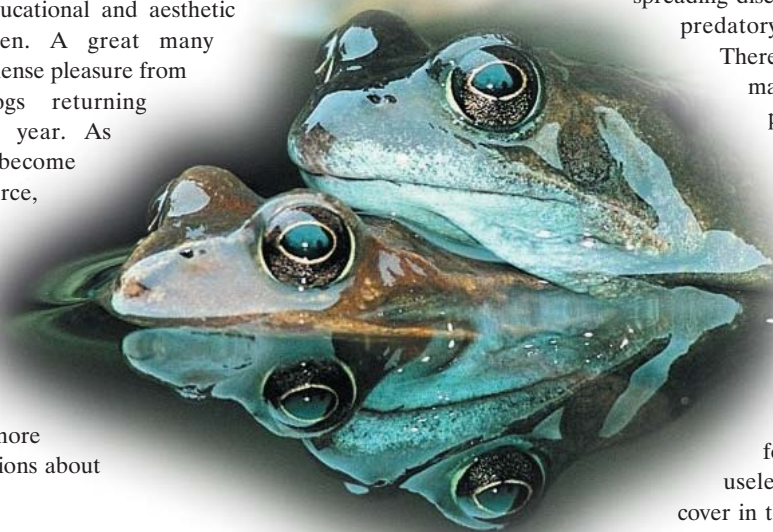


Photo Graeme Skinner

year is unlikely to reduce the number of frogs significantly, as numbers will build up in subsequent seasons to replace those removed. There may also be a risk of spreading diseases and parasites, unwanted predatory fish or invasive plants.

There is also the danger that you may be artificially inflating frog populations elsewhere or introducing the animals to an unsuitable area. The latter may be illegal under the Abandonment of Animals Act 1960. Amphibians have certain requirements of both their aquatic and land habitats. So, even if a pond looks ideal for frogs to breed in, it may be useless unless there is suitable cover in the vicinity to permit foraging and safe overwintering.

Too many/too few frogs?

Do I have too many frogs or too much frogspawn?

Sometimes garden ponds seem to be crowded with spawn, tadpoles or adult frogs. However, as long as you have not introduced animals from elsewhere, this is a normal situation.

Frogs and their tadpoles are important natural prey of mammals, birds, reptiles, fish and aquatic invertebrates. By laying large numbers of eggs they can ensure that some of their offspring will survive the many perils they face, especially in the first weeks of life. Their numbers can also be limited by disease and extremes of water temperature. High natural mortality ensures that only a fraction of those potential frogs originally deposited as spawn will hop out as froglets. Competition between tadpoles ensures that only those best suited to the rigours of pond life will survive. Also, amphibians can experience huge fluctuations in numbers, so large numbers of frogs or masses of spawn can simply be short-lived population peaks.

- Amphibians are naturally abundant in many garden ponds. Do not worry about apparent over-crowding.
- There is no such thing as too much spawn.

What shall I do with 'unwanted' frogs or frogspawn?

Generally, there is very little point in moving amphibians and their spawn from a well populated pond (unless it is due to be destroyed). Removing adults and spawn from a pond in one

- Avoid the unnecessary moving of frogs, toads, newts or spawn to another pond. They are best left to their own devices in your garden where natural processes will regulate their numbers.
- Moving spawn to other ponds is not the best way to help frog populations. The main reason that frogs are scarce in some areas is the lack of suitable habitat. Importing frogspawn does not address this problem.

Where can I get frogs for my pond?

Surprisingly, moving frogs, toads or newts into a newly built pond is generally unnecessary. By transferring animals from another pond you run the risks outlined above. The best way to 'get' frogs for your pond is to attract them by creating suitable habitat (see *Managing your pond and garden* overleaf). Given the right sort of habitat, amphibians – in particular frogs and smooth newts – rapidly colonise new garden ponds.

If your pond has not been colonised after one or two years, it may be because the pond itself is not attractive to amphibians. Perhaps:

- It contains fish, which often make a meal of spawn and tadpoles (although toads can happily coexist due to their distasteful skin).
- The profile of the pond (the slope of its sides) is unsuitable (see *Managing your pond and garden*).

- There is no submerged vegetation. Newts lay their eggs on the leaves of pond weed, and vegetation provides shelter from predators (see *Managing your pond and garden*).
- Your pond is isolated from other amphibian populations.

If the latter is the case, then it may be acceptable to introduce animals from another garden pond. The best source is a nearby pond, not more than 1000 m or so away. Frogs and toads are best introduced as small amounts of spawn: one or two clumps/strings, perhaps repeated over two years, is usually sufficient. Newts can be transferred by collecting plants with eggs attached (in April/May) or by collecting small numbers of adults of both sexes. Take care not to introduce animals from ponds where amphibians may have died from disease. "Wild" ponds should not be interfered with. Before transferring animals, always make sure that your pond and garden are amphibian-friendly (see *Managing your pond and garden*).

Great crested newts and natterjack toads should not be introduced to garden ponds. They are strictly protected and licences are required to handle them. Moreover, their specific ecological requirements mean that garden ponds are unsuitable for natterjack toads and often are not used by great crested newts. The latter prefer larger ponds and their tadpoles can be decimated by fish, a common occupant of garden ponds. If you are lucky enough to have great crested newts in your pond, contact Froglife for information on how you can optimise their habitat.

- **Frogs, toads and newts are wild animals – not pets. They should not be interfered with unnecessarily.**
- **The best way to stock your pond with amphibians is to leave them to do it for you.**
- **Transferring amphibians (from a nearby pond) should be considered only as a last resort.**

Managing your pond and garden

What is the best pond design for amphibians?

You do not need to go to any great lengths to attract amphibians to your pond. By following a few simple guidelines you can easily create a breeding pond for frogs, toads and newts. The pond should be as large as you can make it (although even a bath-tub sized pond can attract a surprising number of frogs) and be situated in a sunny part of the garden. The profile of the pond is quite important; there should be a gently sloping edge to provide an area of shallow water (around 15-30 cm) for frogs to spawn in. A deeper section (around 1 m) allows frogs and other wildlife that may spend the winter in the pond to be better protected from the effects of freezing. The best way to line the pond is with a butyl or polyethylene liner which should be placed on top of a layer of material such as bidum, sand or old carpet to protect it from sharp objects in the soil.

What pond plants do amphibians need?

Establishing a good mix of, ideally, native vegetation will attract wildlife to your pond. Areas of the pond's edge should be planted with marginals such as spearwort and water mint to provide cover for the animals. Emergent and submerged plants such as water forget-me-not and starwort will provide egg-laying sites for newts.

When should I clean out my pond?

A well-managed wildlife pond should need little maintenance. However, ponds can become choked with silt, water plants and fallen leaves, which may need clearing from time to time. Early autumn, before the harsh frosts begin, and late winter, when the weather is brightening up, are the best times to do this. Leaving some material at the bottom of the pond is a good idea because hibernating frogs and various invertebrates may use it for shelter.



John Robinson

Smooth newts are often found in garden ponds

What about the rest of my garden?

Amphibians spend most of their lives on land, so the rest of your garden should be amphibian-friendly, too. The surroundings of your pond will influence colonisation by amphibians and their breeding success. Fairly dense vegetation along part of the pond border will provide damp cover. Leave some of the surrounding grass uncut and, if you have to mow the lawn nearby, do it before May, prior to the young animals leaving the pond. Mown areas should be kept very short to discourage young froglets and toadlets from hiding there. Other parts of your garden should be left to "go wild". Planting with native species and creating a wood pile or compost heap will provide amphibians with places to find food and shelter. Frogs, toads and newts feed on slugs and other flower/vegetable munchers: by encouraging amphibians you will develop a natural pest control force, avoiding the need to resort to chemicals.

Another option is to dig an additional pond, perhaps with a slightly different profile to your existing one. Amphibian populations benefit from a variety of pond types.

- **Allow vegetation to grow around the edge of the pond.**
- **Organise your garden into wild and neat areas and manage them carefully.**
- **Consider constructing more ponds.**

I need to fill in my pond. What should I do with my frogs?

If your pond has to be dismantled, you should make sure that the needs of any resident amphibians are addressed. The best time to fill in ponds is early autumn. Ponds should not be dismantled between February and September to avoid disturbing the animals. Additionally, during the winter frogs may hibernate at the bottom of some ponds and underneath

pond liners, so disturbance whilst the weather is very harsh should also be avoided. Any animals discovered during the process should be relocated to the nearest garden pond or to a well-vegetated corner of the garden. Avoid releasing amphibians into "wild" sites such as marshes, woodlands or farm ponds. If a pond has to be filled in during the active season, animals should be removed as above.

- **If a garden pond has to be dismantled, do so in the autumn to cause the least disturbance to the animals.**
- **Destroying a pond means the loss of a breeding site for local amphibians. Wherever possible, try to ensure that a new pond is created nearby to compensate for the one that has been lost.**

Amphibian deaths in garden ponds

I have found dead frogs in my pond in January and February. What is wrong?

If your pond freezes over in the winter, oxygen levels in the water can plummet as dead plant and animal matter decays. Fresh oxygen is prevented from entering the pond by the icy barrier, and decomposing material releases noxious gases. Sometimes, adult frogs hibernate at the bottom of ponds, and can die if the pond is frozen over long enough for these conditions to reach a critical state.

The best solution is to maintain holes in the ice. This can be done by: floating a plastic football, or similar, on the pond and removing it to leave an open area in the ice; sinking buckets of hot water into the ice; or by purchasing a commercially available product to maintain an ice-free area. Frogs that have died under an icy layer may not appear at the surface for several weeks after the ice has melted and are often bloated and pallid in coloration.

Frogs or toads that are found dead in the pond during the breeding season may well have died from exhaustion or from drowning during mating. Although these deaths can be distressing, they are natural events.

I have found adult frogs dying in and around the pond in the summer. What can I do?

Recently frogs have been contracting a disease with various unpleasant symptoms such as haemorrhaging, ulceration, emaciation and lethargy. This disease is probably caused by a virus that may have originated abroad. We know little about how it spreads and there is no known cure. If you discover that your frogs are sick or dying, you can help by reporting the incident to Froglife, which is investigating these unusual deaths. There is no known danger to humans or pets from the diseased frogs. The best advice is to leave the frogs alone. Do not move them or their spawn to other ponds. For further information on frog disease see *Froglife Advice Sheet 7: Unusual Frog Mortality*.

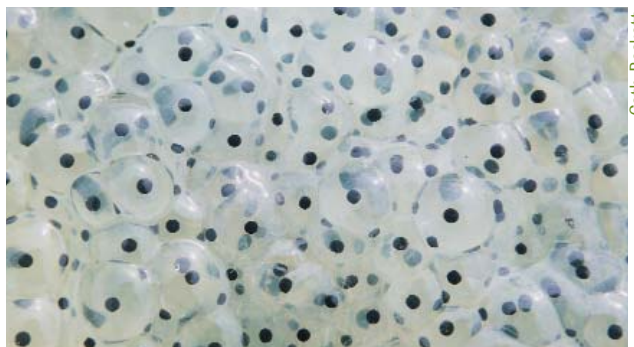
There are dead froglets/toadlets floating on the surface of my pond in summer. What is happening?

As tadpoles metamorphose into froglets (or toadlets), usually in June or July, they need to leave the water to begin their life on land. It is crucial that the emerging young can exit the pond easily and have access to cool, moist areas. Steep sided

concrete, or pre-formed plastic, ponds can make this difficult. Froglets benefit from a gently sloping, well vegetated pond margin, leading into an area of long grass or other plants. Laying out logs or rocks at the edge of the pond can also help. Flagstones or bare concrete should be avoided as emerging froglets may die on their hot, dry surfaces.

The frogspawn in my pond never seems to develop properly. What is wrong?

Sometimes, spawn is laid partly or completely unfertilised. It will then take on a cloudy appearance and die (the eggs in normal, healthy frogspawn are mainly black but light coloured underneath). Fungal infections can also kill spawn, especially in cold weather. Spawn laid early in the season is at risk from freezing conditions, which can kill the developing embryos, particularly in shallow ponds. In some ponds, there appears to be total spawn failure over several years for no obvious reason. If this happens in your pond, please contact Froglife, which is investigating the phenomenon.



Cath Beckett

Healthy frogspawn

Amphibians and other animals in your garden

Frogs are killing my fish. What can I do?

Occasionally, frogs or toads grasp hold of fish and may (rarely) end up damaging them. This tends to happen early in the breeding season, when there are large numbers of male frogs seeking to pair up with less abundant females. In their enthusiasm the males may grab onto almost anything they can. This is a rare occurrence, however, and is only likely to happen for a few days in the spring. In fact frogs are beneficial to fish in garden ponds since their spawn and tadpoles provide an ideal food source.

Sometimes, tadpoles will gather around a fish and appear to feed on it. In fact, they are not attacking the fish, but feeding on its mucus or areas affected by fungus. Tadpoles feed mainly on algae and dead animal matter.

- **Fish benefit from living with frogs.**

Should I separate the spawn and rear the tadpoles so that my fish don't eat them?

This is not usually advisable because you will not necessarily be helping the frog population. It may mean that in a few years the number of adult frogs will increase, producing more spawn to be rescued, and so on. This is an artificial situation to be avoided. It is much better to leave the environment of your

garden and its surroundings to influence the number of frogs that it can support (technically called the carrying capacity). You can increase your garden's carrying capacity by improving pond design and enhancing the land habitat. If your pond has fish in it, you may want to consider building another pond just for wildlife, without fish.

Grass snakes are eating my frogs. Is this acceptable?

Grass snakes sometimes visit gardens where they may feed on frogs, toads or newts. This is nothing to worry about: many animals prey on amphibians. Grass snakes are unlikely to decimate a pond's frog population as they eat surprisingly small numbers of frogs. It is natural for amphibians and grass snakes to live together. Grass snakes are becoming scarce across much of Britain, so providing them with a food source and appropriate habitat is to be encouraged (see *Froglife Advice Sheet 6: Conserving Grass Snakes*). If you see grass snakes in your garden, be assured that its wildlife value is increasing.

Other questions about amphibians

I don't have a pond, but I have found an amphibian in my garden, should I take it to water?

This is probably not necessary. Amphibians spend most of their lives on land. Once the tadpole stage is over they will generally not return to a pond until they are two to three years old and ready to breed. Once breeding is over, adults sooner or later move back onto land. During their time on land amphibians, especially toads, may move up to one kilometre from a breeding pond. It is always best to have your own pond, but even if you do not, your garden can still provide good land habitat (see *What about the rest of my garden?*) for amphibians from neighbouring ponds.

My local garden centre sells amphibians. Are these a suitable addition to my pond?

Definitely not! Various exotic (non-native) amphibian species are sold in garden centres and pet shops, but they should not be put into garden ponds (or any other ponds) unless they are totally escape-proof. Several risks are involved in releasing non-native amphibians, such as the fact that some, like the American bullfrog, are efficient predators of our native species. See *Froglife Advice Sheet 8: Exotic Reptiles and Amphibians in the Wild*.

More help for amphibians

How do I get more involved in the conservation of Britain's amphibians?

- **Join a local amphibian and reptile group, part of the Herpetofauna Groups of Britain and Ireland.**

- **Support the work of Froglife by becoming a Froglife Friend.**

Contact Froglife (address below) for details.

Other advice sheets in this series

2. **Snakes need friends**
3. **Amphibians and roads**
4. **Signing toad crossings**
5. **Reptile and amphibian recording**
6. **Conserving grass snakes**
7. **Unusual frog mortality**
8. **Exotic reptiles and amphibians in the wild**
9. **The planning system and site defence**
10. **Reptile survey**
11. **Surveying for (great crested) newt conservation**

Further reading

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Slater, F (1992) **The Common Toad**. Shire Publications, Princes Risborough.*

Wisniewski, P (1989) **Newts of the British Isles**. Shire Publications, Princes Risborough.*

* Available from Froglife (address below). Send an SAE for our *Froglife* catalogue of free and low-cost publications.

* Available free from English Nature (0870 1214177).

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