Amphibian Habitat Management Handbook

John Baker, Trevor Beebee, John Buckley, Tony Gent and David Orchard

amphibian and reptile conservation

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Cover images:
An amphibian pond (a pingo) in Norfolk (Amphibian and Reptile Conservation)
Smooth newt and natterjack toad (Fred Holmes)

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Summary

The *Amphibian Habitat Management Handbook* is a resource for a range of users including conservation professionals and interested volunteers.

There are seven amphibians native to Great Britain. Five of these are widespread; great crested newt, smooth newt, palmate newt, common toad and common frog. Of these, the great crested newt and common toad are also Biodiversity Action Plan priorities. The great crested newt has breeding site requirements that are also suitable for the other widespread amphibian species. On the other hand the common toad can breed in relatively large water bodies with fish, which tend to be less suitable for the other species. Hence, in many areas the great crested newt is a useful target species for conservation management as an umbrella for the others.

There are two rare amphibians; the natterjack toad and the northern pool frog.

The natterjack is a conservation priority and a habitat specialist with very different ecological requirements to the other native amphibians. Hence a section of the handbook is dedicated to this species.

The pool frog is currently subject to a reintroduction project and is not covered by the current handbook.

Ponds are not only amphibian breeding sites but are also important habitat for many other species. A section of the handbook describes planning and creating new ponds. Pond restoration can greatly improve ponds in poor condition, yet the methods involved also have the potential to cause harm. Hence a section of the handbook includes a risk assessment approach developed by Pond Conservation.

The relationships between amphibians and other species is considered. Amphibians vary in their ability to withstand predation by fish. On the one hand common toads successfully co-exist with fish. At the other extreme, fish can eradicate great crested newts. Given that toads can also survive without fish, the general principle is that fish should not be introduced to amphibian ponds. Waterfowl also have negative impacts on ponds and hence should not be encouraged.

Disease is a significant issue in global declines of amphibians. *Ranavirus* and chytrid fungus are both present in Great Britain but the impacts of these pathogens are not yet understood. A precautionary approach is recommended, avoiding the transfer of organisms and materials between ponds. There are no practical cures for amphibian diseases in the wild. Disease symptoms and other causes of amphibian mortality are described to assist field workers in determining the likely causes of amphibian mortality.

Amphibians spend a great deal of their time on land. They inhabit a range of terrestrial habitat types, requiring cover to retain moisture and provide habitat for their invertebrate prey. Management of terrestrial habitat is usually required, especially to prevent the shading of ponds by scrub and trees. Hibernation sites can be constructed, although amphibians should be able to find their own such sites within favourably managed habitat.

Movement of individuals between neighbouring breeding sites is important for long-term health of amphibian populations. Hence, landscape issues should be considered, especially the distance between breeding ponds and the nature of intervening habitat.

Opportunities for amphibians are also considered within specific habitats; gardens, Sustainable Urban Drainage Systems and drainage ditches. Measures to reduce the impacts of roads are also reviewed.

The natterjack toad breeds in shallow, usually temporary ponds and requires sparsely vegetated terrestrial habitat. The natterjack can survive in habitat that is too arid for other amphibians. In fact, if conditions change so that sites become colonised by other amphibians, the invading species become significant predators or competitors of natterjacks.

The dispersed but limited range of the natterjack toad has meant that reintroduction is a significant element of the conservation work for this species. A section examines translocations for conservation purposes, focusing on the natterjack in particular.