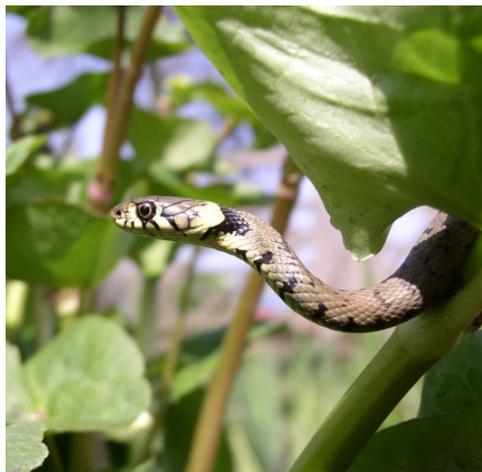


Amphibian and Reptile Reintroductions Guidelines for Amphibian and Reptile Groups

Updated November 2024

1. Background

In the face of ongoing wildlife declines, releasing animals back into the wild has become an increasingly popular proposition. For species with limited dispersal abilities, such as amphibians and reptiles, actively moving animals may be the only way of restoring them to some sites. Nevertheless, reintroductions are not without risk. They require careful assessment, planning and delivery – all of which can be costly. **The risks and costs mean that in practice reintroduction is often not the best conservation intervention.** A related issue of ‘genetic rescue’ of declining populations has also attracted interest recently. Similarly to reintroduction, such action can be very appealing but requires careful consideration.



Grass snake (*Natrix helvetica*) copyright Jon Cranfield

A number of Amphibian and Reptile Groups have been approached regarding reintroduction or genetic rescue proposals. We hope that this guidance will support volunteer groups to evaluate the proposals, and determine whether the actions suggested are appropriate. We also recommend consultation with other national NGOs and statutory agencies.

2. Key considerations

The IUCN/SSC (2013) *Guidelines for Reintroductions and Other Conservation Translocations* is the ‘textbook’ on the subject and there is further guidance specific to amphibians (Linhoff et al., 2021). There is also guidance for Scotland (National Species Reintroduction Forum, 2014) and England (Defra, 2021). For amphibians and reptiles there are a few key principles to consider:

- Natural re-colonisation is always preferable to reintroduction.
- Reintroduction should only take place to restore species within their former range.
- Reintroduction should proceed only when the original causes of disappearance have been determined and redressed.

2.1. Natural recolonisation

Moving animals from one location to another entails costs and risks to the animals themselves, and to the ecosystem they are brought into; natural recolonisation minimises these. For most of the widespread species¹, if habitat management of the site in question can be adjusted to favour the species, then in many cases recolonisation from neighbouring populations will occur and reintroduction may be unnecessary. Reintroduction is more appropriate for species with a restricted range (e.g. rare species² and adder) and

¹ Great crested, palmate and smooth newts, common frog, common toad, viviparous lizard, slow-worm, grass snake.

² Natterjack toad, northern pool frog, sand lizard and smooth snake (translocation of these species requires licensing).

when natural recolonisation may no longer be possible due to limited dispersal abilities and isolation of the site.

When evaluating a potential reintroduction site, surveys should be carried out to confirm that the target species really is absent, rather than present in low numbers, and to determine whether it is present on adjacent sites. In either case reintroduction may be unnecessary.

2.2. Former range

Natural ranges are largely determined by the environmental conditions the species has evolved to inhabit. For example, grass snakes require relatively warm temperatures for successful egg incubation, and there would be little point in introducing this species to a more northerly, cooler climate where it would almost certainly fail to thrive. At a local level, range is less likely to be affected by climate, but other factors may be at work, determining where a species may or may not thrive. Hence, reintroductions (by definition) should be confined to former range.

2.3. Causes of local extinction

When considering a reintroduction the cause(s) of local population extinction must be identified and remedied – there is no point releasing animals into the same situation that caused the demise of the original population in the first place.

3. Disease risks

Diseases occur naturally in wild animals. But moving pathogens around, exposing naïve wildlife populations to diseases they would not otherwise encounter can be disastrous. Chytrid fungi are a significant cause of amphibian declines, globally, and they have been spread by human movement of amphibians. Guidelines to reduce the risk of spreading amphibian disease have been produced for field workers (ARG UK, 2017). Reintroductions of amphibians and reptiles require thorough disease screening of both donor stock and other amphibian/reptile species that may be present at the reintroduction site.

4. Captive breeding

Although the idea of rearing animals in captivity to boost dwindling wild populations is appealing, the potential for disease transmission means that in some cases the institutions or private individuals with the necessary facilities and experienced personnel to successfully breed the animals, can pose the highest risk. Captive facilities holding a variety of species from different sources, referred to as ‘cosmopolitan collections’, are a particular concern. Ideally, captive facilities for reintroductions should be dedicated solely to the target species, which may add considerable costs to a reintroduction project.

5. Wild-to-wild translocation

In practice wild-to-wild translocation is more straightforward and less costly, and greatly reduces disease risks. The donor population should be geographically close to the reintroduction site and of sufficient size to sustain the loss of the animals that are to be removed for translocation.

Mitigation of building development sometimes means that amphibians and reptiles have to be translocated for welfare purposes, and this may be a potential source of both reintroduction stock and funding that could be explored. For some location, suitable receptor sites can be difficult to find, hence, there may be mutual benefits in developing links with this sector.

6. Genetic rescue

Small, isolated populations face risks from natural fluctuations in their numbers as well as environmental factors. In the longer term they may also face the threat of genetic impoverishment. Genetic rescue has been demonstrated in a population of adders in Sweden but the applicability of this approach for this species in Britain is questionable. Amphibian and Reptile Conservation has produced a technical note (ARC, 2021) summarising genetic considerations for the natterjack, illustrating the complexity of this issue. In practice, habitat management may still be the most effective intervention and field indications should be used to determine whether inbreeding depression is significant for any particular population.

7. Legislation and non-native releases



European tree frog (*Hyla arborea*) from The Netherlands, copyright Tariq Stark

The Wildlife and Countryside Act 1981 (section 14) makes it an offence to release into the wild an animal 'of a kind which is not ordinarily resident in and is not a regular visitor to Great Britain in a wild state'. This is intended to avoid potential harm, ecological, environmental or socio-ecological, that can be caused by the release of non-native species. The species covered by this guidance note (see footnotes on page 1) are native species, ordinarily resident, and hence reintroduction is legal (although for the rare species this would still require a licence). The unlicensed 'reintroduction' of other amphibian and reptile species, such as common tree frog or European pond terrapin, would be illegal. Both of these are explicitly listed on schedule 9 of the Act.

8. Acknowledgements and citation

This advice note was first published in March 2020 with input from ARG volunteers. It was revised in November 2024 and can be downloaded from the ARG UK website www.arguk.org and cited as: ARG UK (2024). Advice Note 12: Amphibian and Reptile Reintroductions - Guidelines for Amphibian and Reptile Groups. Amphibian and Reptile Groups of the United Kingdom.

9. Literature

- ARC (2021). Genetic considerations in natterjack toad conservation. ARC Technical Briefing Note 21/01. Amphibian and Reptile Conservation Trust, Bournemouth.
- ARG UK (2017). ARG UK Advice Note 4: Amphibian Disease Precautions: A Guide for UK Fieldworkers. Amphibian and Reptile Groups of the United Kingdom.
- Ball, S. et al. (2020). Genetic and demographic vulnerability of adder populations: Results of a genetic study in mainland Britain. PLoS ONE 15(4): e0231809. <https://doi.org/10.1371/journal.pone.0231809>
- Defra (2021). Reintroductions and Other Conservation Translocations: Code and Guidance for England. Version: 1.2 (updated July 2024).
- IUCN/SSC (2013). Guidelines for Reintroductions and Other Conservation Translocations. Version 1.0. Gland, Switzerland: IUCN Species Survival Commission.
- Linhoff, L.J. et al. (2021). IUCN Guidelines for amphibian reintroductions and other conservation translocations, First edition. IUCN, Gland, Switzerland.
- National Species Reintroduction Forum (2014). Best Practice Guidelines for Conservation Translocations in Scotland Version 1.1. Scottish Natural Heritage.