

3. Conservation of British Reptiles

3.1. Threats

The box below lists the key threats to reptiles. Currently, the greatest threats are habitat degradation through over-shading due to lack of management, loss of habitat and loss of habitat structure. The six species are affected in different ways; for example, viviparous lizards decline rapidly through 'tidying up' of urban green space; development is no longer a significant threat for the two rarest species.

Threats to reptiles

- Successional changes caused by a lack of habitat management, resulting in increased shading and degradation of key microhabitat features.
- Changes in land use (especially the intensification of agriculture) leading to habitat degradation.
- Habitat loss to building development, roads, farming, afforestation, and mineral extraction.
- Habitat fragmentation leading to population isolation.
- Fire. Burning as a management method or through accidents and arson is probably the most significant threat to heathland sites supporting rare reptiles.
- Loss of habitat structure due to unsympathetic management (especially inappropriate grazing, scrub clearance and burning).
- Non-native, invasive plant species.
- Predation by domestic cats and pheasants.
- Damage to habitats due to public access (especially off-road vehicle usage).
- Disturbance of animals due to public access
- Deliberate killing by people.

3.2. Legal protection

All native reptiles receive some legal protection in Great Britain, arising from the following main items of legislation:

- Wildlife and Countryside Act 1981 (as amended) and the Nature Conservation (Scotland) Act 2004.
- Conservation of Habitats and Species Regulations 2010.

In England and Wales all reptile species are listed on schedule 5 of the 1981 Act. The more threatened species are also listed on schedule 2 of the 2010 Regulations, which designate them 'European protected species'.

The legislation effectively creates two levels of protection. The European protected species, the sand lizard and smooth snake, receive strict protection. It is an offence to capture, possess, disturb, kill, injure, or trade in individuals of these species. In addition, it is an offence to damage or destroy the places they use for breeding or resting. The remaining species (viviparous lizard, slow-worm, grass snake and adder) are protected against killing, injuring and unlicensed trade only. The legislation applies to all life stages of wild animals only.

Legislation also provides protection for sites of particular value to nature conservation, including some occupied by reptiles. Sites of Special Scientific Interest (SSSIs) may be selected on the basis of important reptile populations, and indeed currently there are approximately 50 such sites in Great Britain. The majority are designated on the basis of their sand lizard or smooth snake interest, the rest because of important assemblages of the widespread species. In addition, many SSSIs designated primarily for other species, habitat or geological interests also support important reptile populations. SSSIs receive legal protection meaning that damaging activities are strictly controlled or prevented. Management is agreed with landowners to ensure that sites are maintained at, or restored to, a favourable condition. There are also special considerations in planning for development activities that might affect SSSIs. Reptiles may receive additional protection through by-laws where they occur on specific types of land, for example on some forestry land.

3.3. Biodiversity Action Plan and Section 41 listing

All six reptiles are now listed as priority species in the UK Biodiversity Action Plan (BAP). Action plans have been produced for all of them (see Amphibian and Reptile Conservation's website www.arc-trust.org). Further information on the BAP is available at www.ukbap.org.uk. All BAP species have been included in Section 41 and 42 lists produced by the Secretary of State of England and the Welsh Assembly. These are lists of species that, as specified under the Natural Environment and Rural Communities Act 2006, are of *principal importance for the purpose of conserving biodiversity*.

Further, the government introduced the 'Biodiversity Duty' under Section 40 of the same act, which gives responsibility to all public bodies *to have regard...to the purpose of conserving biodiversity*. Accompanying guidance produced by Defra and the Welsh Assembly also notes that biodiversity conservation extends to restoring and enhancing species' populations and habitats, as well as protecting them.

3.4. Implications for site managers

Compliance with legislative constraints An irony of habitat management is that activities that are often essential to maintain habitat in a condition favourable to reptiles, may have the potential to inadvertently kill, injure or disturb individual animals, and thus potentially result in an offence. However, site managers should not be deterred from undertaking management because of this, and guidance here should help achieve positive outcomes.

The legal situation regarding the widespread species is straightforward. These are protected under the Wildlife and Countryside Act 1981, only. Harming these animals is not an offence if it is the result of an otherwise lawful operation, and could not reasonably have been avoided. As a matter of course, site managers should make reasonable effort to avoid inadvertent harm to species or habitats within sites under their care. In practice this means, for example, careful timing of management and targeting away from sensitive areas. No licence is required for management works affecting these species.

Legal implications of habitat management for the sand lizard and smooth snake are more complicated. Otherwise unlawful activities (such as disturbance for conservation purposes) can be made

lawful by a licence from the relevant government agency. Amendments to the legislation have removed the defence for incidental and unavoidable acts.

In practice, most typical habitat management for the sand lizard and smooth snake should not require a licence. Government agency advice is to plan works so that they will avoid committing an offence (such as killing smooth snakes through controlled burning). This may be done by careful timing, choice of methods and targeting operations away from sensitive areas. Actions that have a higher risk of committing an offence, and therefore being licensable, include large-scale habitat restoration projects. Here, there is often more potential for harm to protected species, but with careful planning this risk can often be minimised and the need for a licence avoided. If in doubt over a particular project, contact the licensing section of the relevant national agency (Natural England, Countryside Council for Wales, or Scottish Natural Heritage).

Interpretation of legislation is complicated by a number of factors, for example: the differing types of liability for offences (strict liability, intentional, reckless or deliberate); definition of terms such as 'resting place'; and recent changes to the European protected species offences. Given the aims of this handbook, we set out here pragmatic guidance that should allow site managers to plan their works for the benefit of reptiles. This involves striking a balance between ensuring activities potentially affecting individual reptiles are adequately controlled and considering the wider needs of the reptile population and other site interest features.

Site managers taking reasonable measures to avoid harm to reptiles during management that would be beneficial to them should not be penalised for inadvertent breaches, as this is contrary to the purpose of the legislation. A prosecution on this basis would be highly unlikely as it would not be in the public interest. Indeed a prosecution for harm during habitat management is only likely to occur if there were evidence of serious negligence or malicious intent.

Note that the above is a summary of the legislative constraints relevant to habitat management. It is intended for general guidance only, and should be used solely in the context of habitat management. It is neither authoritative nor comprehensive; the original legislation should be referred to for specific enquiries. Only a court can decide whether an offence has been committed.

Integration of reptile habitat management into local authority sites The 'biodiversity duty', places a responsibility on all public bodies to integrate biodiversity conservation into their activities. With regard to sites managed by local authorities effort should be made to determine which sites support reptiles. These sites should be managed sympathetically for reptiles, in balance with other conservation objectives. Sites managed by local authorities with the potential to support reptiles include local nature reserves, cemeteries, parks and public open spaces, allotments, tenanted farms, road verges and linear corridors along walking and cycling routes.

3.5. Accommodating reptiles within broader conservation approaches

Species live within habitats, so in theory managing a habitat should take care of a suite of resident species. However, in practice, without a species focus, general habitat management can produce undesirable results. Reptile habitats can even be managed in such a way that populations are harmed or eradicated. On the other hand, a focus on species conservation is sometimes criticised because it is difficult to decide how to meet the potentially conflicting demands of all species within a single site.

Reptiles are among a range of species that are sometimes poorly catered for in broad habitat management regimes. This issue has been explored in recent research (Webb, Drewitt and Measures, 2010). It appears that some widespread species, including reptiles, are declining because generalised, prescriptive management does not always provide the particular habitat resources they need.

Hence, a more desirable approach is to treat species and habitat management as complementary, rather than alternative guiding principles. As relatively sedentary predators, the presence of reptile populations is indicative of favourable management for a range of other species. If reptiles can thrive on a site, then so too will many other species requiring warm microhabitats or living within the diverse vegetation structures needed by reptiles. Incorporating a reptile focus within habitat management plans should not only enhance the reptile status on sites and avoid breaching legislation, but also increase overall biodiversity.

Landscape-scale and ecosystem approaches consider wildlife conservation from a broader

perspective. Managing for reptiles can fit within these approaches. Reptiles have limited dispersal abilities; hence managing habitat for them requires attention to the maintenance of continuous, linked, or at least spatially close patches of habitat (see 4. *Habitat Requirements*). The long-term survival of reptile populations is dependent on large areas of either continuous or connected habitat. To meet the needs of reptiles, a site manager should consider connectivity of habitat both within a site and beyond.

The ecosystem approach integrates management of land, water and living resources in a way that promotes conservation and sustainable use. It should also be consistent with the objectives of the Convention on Biological Diversity, which include conservation of biological diversity. Managing habitat for reptiles may seem to be operating at a different scale to the ecosystem, but, of course, not only are reptiles an element of biodiversity, but their habitats support a wider range of species and their presence is an indicator that habitat is hospitable to these as well.

The newer field of ecosystem services is yet to be applied broadly in the UK. Though reptiles have few utilitarian benefits (e.g. adder venom in medical research), this approach should consider their educational value and the enjoyment they bring to many naturalists. Of course, the intrinsic value of reptiles and their habitats must be considered in any application of ecosystem services.

The critical point in all these wider approaches is to ensure that the particular habitat requirements of reptiles are met in some way, such that populations are in favourable status. Management methods to deliver these will differ according to the scale and type of project.

3.6. Climate change

Reliance on external temperatures may make reptiles particularly sensitive to climate change. Although it is fairly straightforward to envisage how specific elements of their lives might be altered by climate change, the overall impact on species status is not as readily apparent. For example, sand lizards and smooth snakes, at the edge of their ranges in the UK and confined to very specific habitat, in future may be able to survive in a much broader range of habitats in an altered climate, as they do further south in Europe. However, in practice the fragmented nature of the natural landscape in the UK may prevent migration to alternative habitats. Conversely, the increase in hot weather and

droughts may result in an increased impact of arson attacks on the sites to which they are confined. Similarly, milder winters might negatively affect body condition and survival.

Strategies have been recommended to cushion wildlife from the impacts of climate change and maximise its potential to adapt to it in general (Hopkins *et al.*, 2007), and specifically for heathlands (Alonso, 2009). At the site level maximising microhabitat diversity may allow species to move between microclimate patches in response to climate change. At the landscape level, it will be important to establish ecological networks to facilitate migration between habitat patches and colonisation of new areas according to climatic suitability. Both maximising microhabitat diversity and establishing links between habitat patches are consistent with the principles of sound reptile habitat management, irrespective of climate change.