



Sand lizards in the UK

The European sand lizard *Lacerta agilis* is a small lizard species found across much of Europe. Predation and high human disturbance leads to a high egg and juvenile mortality, and means that only around 5% of eggs laid will survive to become adults. Furthermore, sand lizards favour declining habitats, such as heathlands and sand dunes. Despite a wide geographical range, it is regarded as threatened. In the United Kingdom, sand lizards are listed on schedule 5 of the Wildlife and Countryside Act (1981) and on schedule 2 of the Conservation of Habitats and Species Regulations (2010), designating them 'European Protected Species' protected by law throughout the European Union. They are also listed as priority species in the UK Biodiversity Action Plan (BAP) (Section 10.3) (Moulton et al., 2011).

Sand lizards do not disperse long distances within favourable habitats and do not appear to disperse at all through unfavourable habitats. This means that they are unlikely to colonize newly suitable areas, especially if habitat connectivity is low (Section 7.6.2). Overall, sand lizards are unlikely to recover their lost range or to increase in numbers substantially within their existing range without conservation intervention.

The decision was taken to establish an *ex situ* captive breeding programme in the UK followed by a series of reintroductions in the UK and elsewhere. The *ex situ* programme brings together organizations that include Amphibian and Reptile Conservation, government agencies, Marwell Wildlife, and Chester Zoo (Moulton et al., 2011). Collectively, these stakeholders developed best practice for husbandry and for reintroduction.

Lizards captured from wild populations are kept in specially designed enclosures at ten facilities, in semi-natural conditions. To ensure a high hatching rate and high survival

of lizards, controlled egg incubation and supplementary feeding are employed. Lizards hatch in late summer and are typically released a month later (Figure A). The young lizards hatch earlier than wild-bred individuals and so are larger at the point of release than their wild-bred counterparts. This gives the captive-bred individuals a higher chance of survival over winter (25–30% survive compared with only 5% of wild-bred lizards) (Davies, 2013).

Reintroduction has been very successful. As of 2012, the reintroduction programme had undertaken 76 reintroductions to various sites in England and Wales where sand lizards used to be present, and numerous reintroductions in 11 further counties. The programme includes reintroductions in seven counties where sand lizards had been extirpated. Overall, this represents a 65% success rate (where a population has been reliably established), 12% initial success (further monitoring needed), 15% currently ongoing, 4% failed (largely due to inadequate habitat management), and 4% unknown (due to difficulties over access at sensitive sites). To 2012, around 9000 animals have been released (Moulton et al., 2011).

REFERENCES

- Davies, E. (2013) UK's rarest lizards return to sand dunes. *BBC Nature News*. Available at: <http://www.bbc.co.uk/nature/24022952>
- Moulton, N., Wilkinson, J., Davis, C., Foster, J., & Howe, L. (2011) Sand lizard translocation in the UK. In: P. S. Soorae (Ed.) (2011). *Global Re-introduction Perspectives: 2011. More case studies from around the globe*, pp. 116–119. Gland: IUCN/SSC Re-introduction Specialist Group and Abu Dhabi, UAE: Environment Agency-Abu Dhabi.



Online Case Study 12 Figure A A juvenile captive-bred sand lizard *Lacerta agilis* is released at a sand dune site in the UK.

Source: Photograph by Chester Zoo, used with kind permission.