

**European Community Directive
on the Conservation of Natural Habitats
and of Wild Fauna and Flora
(92/43/EEC)**

**Second Report by the United Kingdom under
Article 17
on the implementation of the Directive
from January 2001 to December 2006**

**Conservation status assessment for :
S1261: *Lacerta agilis* - Sand lizard**

Please note that this is a section of the report. For the complete report visit <http://www.jncc.gov.uk/article17>

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S1261 *Lacerta agilis* Sand lizard

Audit trail compiled and edited by Joint Nature Conservation Committee, the Inter-Agency Herpetofauna Working Group and the Herpetological Conservation Trust

This document is an audit of the data and judgements on conservation status in the UK's report on the implementation of the Habitats Directive (January 2001 to December 2006) for this species. Superscript numbers accompanying the headings below, cross-reference to headings in the corresponding Annex B reporting form. This supporting information should be read in conjunction with the UK approach for species (see 'Assessing Conservation Status: UK Approach').

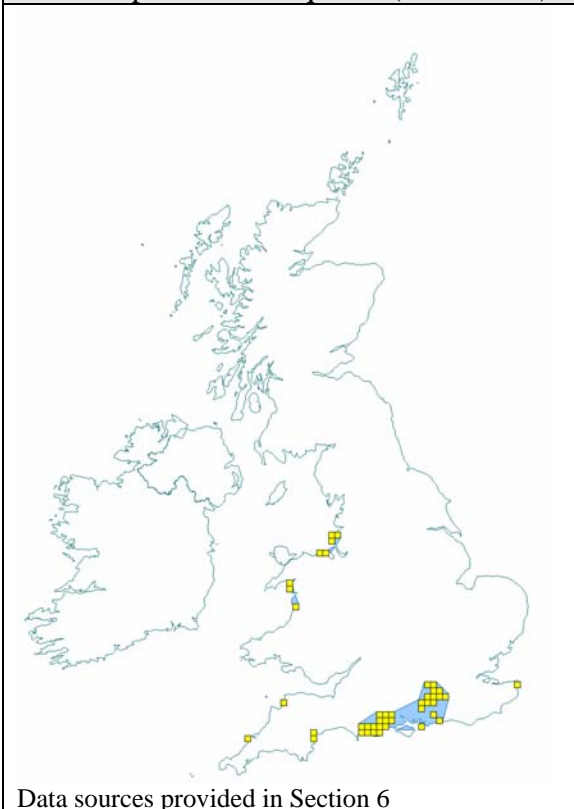
1. Range Information^{2.3}

In the UK, this species is restricted to the south of England, north Wales and Merseyside. It is absent from Northern Ireland. Sand lizards have recently been re-introduced to sites in the New Forest, Derbyshire, the Weald, Merionethshire, Denbighshire and Flintshire.

1.1 Surface area of range^{2.3.1} 8,850km²

The above estimate was calculated within Alpha Hull software, using extent of occurrence as a proxy measure for range (as shown in Map 1.1), at a resolution of 10 km. The value of alpha was set at 25 km to reflect the mobility of this species. The alpha hull (range area) was clipped to include terrestrial habitat only.

Map 1.1. Current extent of occurrence and occupied 10 km-squares (2000-2006)



1.2 Date of range determination^{2.3.2}

2000 – 2006

Sand lizard data is sufficiently comprehensive to calculate range using records from 2000 onwards.

1.3 Quality of range data^{2.3.3}

Good

Due to its nature conservation status and restricted distribution, this species has been subject to intensive survey effort. Hence the quality of available data is good.

1.4 Range trend^{2.3.4} & Range trend magnitude^{2.3.5}

Stable

Since the Habitats Directive came into force in 1994, range (at a 10 km scale) has remained relatively stable, with a possible increase since 2001 (J. Foster, *pers. comm.*).

1.5 Range trend period^{2.3.6}

1994 – 2006

The reported trend reflects the period after the Habitat Directive came into force.

1.6 Reasons for reported trend in range^{2.3.7}

Not applicable

Historic negative trends observed since the 1800s are thought to have resulted from habitat loss and fragmentation through agricultural intensification and development; a reduction in suitable of habitat caused by successional changes following lack of management; a reduction of suitable habitat following unsympathetic management (notably burning); encroachment of habitat by invasive plant species; arson.

The more positive trend noted in recent years is attributed to re-introduction programs, positive habitat management and restoration.

1.7 Favourable reference range^{2.7.1}

9,833 km²

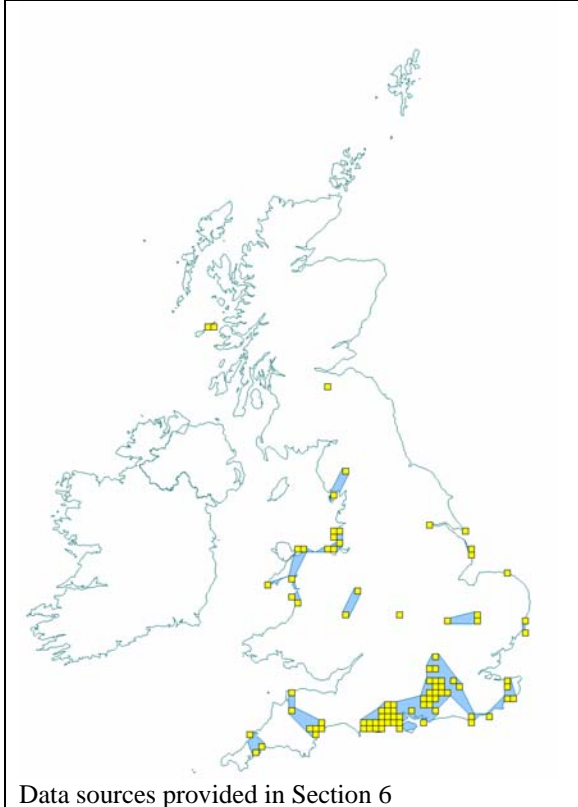
The decision tree in Note 1 has been used as a guide in determining the favourable reference range estimate (see 'Assessing Conservation Status: UK Approach').

Map 1.2 shows the historical (1800-1999) extent of occurrence, which has been calculated as 22,300 km² using Alpha Hull and an alpha value of 25 km. A comparison of this, and the current extent of occurrence (8,850 km²), suggests a 60% decline in range over this period. As a direct result of conservation action, this negative trend has been curbed in more recent years, and current trend is considered stable.

If intensive conservation were to be withdrawn, species specialists are not confident that the range would be sufficiently comprehensive to support viable populations in the long-term. However, any decline would be unlikely to exceed 1% per annum. (This judgement is based on knowledge of the species' ecology, its previous distribution and the potential to re-establish the species.)

For these reasons, the current (and hence 1994 range) are not considered a sufficient baseline for the favourable reference range. Rather, in accordance with the UK approach, it has been set at 10% greater than the current estimate, i.e. 9,833 km².

Map 1.2. Historic extent of occurrence and occupied 10 km-squares (1800-1999)



1.8 Range conclusion^{2.8}

Unfavourable – Inadequate but improving

The favourable reference range is more than the current estimate, but not by a factor more than 10%. The range conclusion is therefore Unfavourable – Inadequate, but improving to reflect post-2001 trends (attributed to conservation action).

2. Population of the species^{2.4}

2.1 Population estimate^{2.4.1}

580 subpopulations

The current UK estimate stands at ~300 metapopulations, comprising ~580 populations (or subpopulations) (Herpetological Conservation Trust (HCT) in European Habitats Forum 2006).

2.2 Date of population estimate^{2.4.2}

2006

2.3 Method of population estimate^{2.4.3}

3 = from comprehensive inventory

Geographical Information System (GIS) mapping (incorporating clusters of sightings and habitat assessment data) was used to estimate the number of sub-populations.

2.4 Quality of population data^{2.4.4}

Good

All data is from the HCT Rare Species Database. This offers a comprehensive source of data for sand lizard. It is thought probable that ~95% of sand lizard populations are known and monitored.

2.5 Population trend^{2.4.5} & Population trend magnitude^{2.4.6}

Stable

Since the beginning of the 19th Century, sand lizard populations have declined due to extensive losses of suitable heathland and dune habitat. Although probably now stable or slightly increasing in some localities, sand lizard remains conservation dependant due to its fragmented habitat and continuing problems with suitable management of sites.

2.6 Population trend period^{2.4.7}

1994 – 2006

The reported trend reflects the period after the Habitat Directive came into force.

2.7 Reasons for reported trend in population^{2.4.8}

Not applicable

Historic declines have been attributed to habitat loss and fragmentation through agricultural intensification and development; a reduction in habitat suitability caused by successional change (resulting from a lack of management). More recent declines have been caused by a reduction in habitat suitability following unsympathetic management (notably burning, grazing); encroachment of habitat by invasive plant species; arson; and degradation of habitat by increased public access. As a result of such factors, suitable habitat is often badly fragmented.

Re-introduction schemes, positive habitat management and restoration are thought to have ameliorated these impacts in recent years.

2.8 Justification of % thresholds for trends^{2.4.9}

Not applicable

2.9 Main pressures^{2.4.10}

100 cultivation

160 general forestry management

161 afforestation

300 sand and gravel extraction

400 urbanised areas, human habitation

410 industrial or commercial areas

500 communication networks

601 golf course

608 camping and caravans

800 landfill etc.

976 damage by pheasant

2.10 Threats^{2.4.11}

101 modification of cultivation practices

390 mineral extraction activities not referred to above – specifically chalk and clay extraction

400 urbanised areas, human habitation

410 industrial or commercial areas

500 communication networks

800 landfill etc.

853 management of water levels

910 silting up

920 drying out

950 Biocenotic evolution

965 predation

976 damage by pheasant

2.11 Favourable reference population^{2.7.2}

645 sub-populations

The decision tree in Note 1 has been used as a guide in determining the favourable reference population estimate (see ‘Assessing Conservation Status: UK Approach’).

Based on this, and a professional understanding of the species, the current estimate (and hence the 1994 estimate) is not considered sufficiently large to ensure the long-term viability of the species.

In deriving a value for favourable reference population an estimate has been made based on what the population level should be 12-15 years hence. Favourable reference population is thus given as within 10% of current estimates.

2.12 Population conclusion^{2.8}

Unfavourable - Inadequate but improving

Although sand lizard populations have stabilised and possibly increased since the Habitat’s Directive came into force, expert opinion is that is not yet within 10% of the favourable reference population.

In accordance with Annex C, a judgment of Unfavourable-Inadequate is therefore given. However, as a result of re-introduction schemes and positive habitat management, the situation can now be reported as improving.

3. Habitat for the species in the Biogeographic region or sea^{2.5}

In the UK the sand lizard is only found on southern, dry heathland and its recent derivatives, and coastal sand dunes. Sand lizard is constrained to drier and sandier soils for breeding and hibernation though it will occupy adjacent habitats, e.g. for dispersal and feeding.

3.1 Surface area of habitat^{2.5.2}

35km²

A report by the HCT in 2005 suggests that sand lizards utilise 34.75 km² of sand dune and heathland habitat; of which 10.20 km² supports key sub-populations (HCT in European Habitats Forum 2006).

3.2 Date of estimation^{2.5.3}

2005

3.3 Quality of data on habitat area^{2.5.4}

Good

Much is known about this species' habitat requirements, and furthermore, lowland dry heaths and coastal dunes have been subject to fairly extensive survey. Quality of data is therefore taken to be good.

3.4 Habitat trend^{2.5.5}

Stable

The two broad habitats most commonly associated with this species are the southern lowland heaths and coastal dunes of the north-west.

Only about 70,000 ha of lowland heathland remain in the UK, which represents approximately 16% of its extent in the 19th century. Many heaths have been lost due to afforestation, development and agricultural practices (source: www.jncc.gov.uk/page-1432).

Coastal dune systems are naturally dynamic structures, however their general locations have remained more or less stable over the long term.

Set in this overall context, sand lizard habitat is known to be fragmented and faces continuing problems with suitable management of sites including both over and under management and fires. It is important to emphasise that the management of small habitat features on sites is as important as management of the whole habitat.

Attempting to relate these broad habitat trends specifically to sand lizard habitat is problematic. However, overall, expert opinion is that habitat has most likely remained stable since 1994.

3.5 Habitat trend period^{2.5.6}

1994 – 2006

The reported trend reflects the period after the Habitat's Directive came into force.

3.6 Reasons for reported trend in habitat^{2.5.7}

Not applicable

Historically, negative habitat trends have resulted from agricultural intensification and development; inappropriate management/unsympathetic management (notably burning); arson; and increased public access. Improved management and site protection has helped ameliorate these impacts in recent years.

3.7 Suitable habitat for the species (in km²)^{2.7.3}

Unknown

Area of 'suitable' habitat is unknown.

3.8 Habitat conclusion^{2.8}

Unfavourable – Inadequate

Although recent restoration programmes have (to some extent) stemmed the historic, negative habitat trends, coastal dunes and lowland dry heaths are still under threat. For this reason,

sand lizard habitat has been assessed as Unfavourable, but since there is no evidence to suggest that the habitat area “is clearly not sufficiently large to ensure the long term survival of the species”, or that “habitat quality is bad, clearly not allowing long term survival of the species”, in accordance with Annex C, the judgement is Inadequate, rather than Bad.

4. Future Prospects^{2.6}

Good prospects

This “species is expected to survive and prosper”.

Agri-environment schemes are now better targeted and with good incentives, and should encourage habitat retention, enhancement and creation. The planning system and associated mechanisms are now increasingly likely to recognise the presence of the species and avert adverse impacts, whilst ensuring compensation where there are some impacts. New emphasis on habitat creation in planning could, in theory, result in major gains. General habitat creation schemes are now more likely to take sand lizards into account. The Biodiversity Action Plan (BAP) process alerts many to the requirements of the species. New legal duty (Nature Conservation (Scotland) Act 2004, NERC Act 2006) should mean that public bodies take greater account of the species. Many of the foregoing positive comments rely on how well the mechanisms described are implemented and, even with many of these mechanisms working, in practice it will take many years to compensate for the substantial historical population losses. In addition, major losses still occur locally through arson.

4.1 Future prospects conclusion^{2.8}

Favourable

5. Overall Conclusion^{2.8}

Unfavourable – Inadequate but improving

Table 5.1. Summary of conclusions

Parameter	Judgement	Grounds for Judgement (in accordance with Annex C)	Reliability*
Range	Unfavourable – Inadequate but improving	Any other combination Current range is less than 10% below the favourable reference range, but stable and showing signs of recent improvement	2
Population	Unfavourable – Inadequate but improving	Any other combination Current population is less than 10% below favourable reference population, and showing signs of recent improvement	2
Habitat	Unfavourable – Inadequate	Any other combination Although restoration programmes have stemmed historic declines, it is not yet sufficiently large or of adequate quality, to support the species at favourable status	3
Future Prospects	Favourable	Main pressures and threats to the species not significant; species will remain viable on the long-term	2
Overall Assessment	Unfavourable – Inadequate but improving	One or more Unfavourable – Inadequate Future prospects are Favourable, and range and population are showing signs of improvement	1

*1=High, 2=Moderate, 3=Low

High – Expert opinion is that the concluding judgement accurately reflects the current situation based on a professional understanding of the species. For range, population, and habitat, quality of data used to establish the current estimate has been identified as “good”; data used to inform trends is comprehensive and up to date.

Moderate – A greater understanding of the feature, or the factors affecting it, is required before a confident concluding judgement can be made by experts. For range, population, and habitat, the current estimate and/or trend are based on recent, but incomplete or limited survey data; or alternately, a comprehensive, but outdated (pre-1994) review.

Low – Judgements, and comprising estimates, are based predominately on expert opinion.

N/A – Assessment conclusion is “unknown”, on the basis of insufficient reliable information

6. References

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COOKE, A.S. & SCORGIE, H.R.A.1983. *The status of the commoner amphibians and reptiles in Britain*. Huntingdon: Nature Conservancy Council.

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EUROPEAN HABITATS FORUM 2006. Towards European Biodiversity Monitoring. Assessment, monitoring and reporting of conservation status of European habitats and species. Wien, Cambridge, Bruxelles. 80 pp.

Map Data Sources

The Herpetological Conservation Trust Rare Species Database; Reptiles and Amphibians Dataset; SWT Scottish Borders Local Wildlife Site Survey; Reptile Records for Wiltshire 1900 – 2003 (via the National Biodiversity Network (NBN) Gateway).