

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

**Fourth Report by the United Kingdom
under Article 17**

on the implementation of the Directive
from January 2013 to December 2018

Supporting documentation for the
conservation status assessment for the species:

S1261 - Sand lizard (*Lacerta agilis*)

WALES

IMPORTANT NOTE - PLEASE READ

- The information in this document is a country-level contribution to the UK Report on the conservation status of this species, submitted to the European Commission as part of the 2019 UK Reporting under Article 17 of the EU Habitats Directive.
- The 2019 Article 17 UK Approach document provides details on how this supporting information was used to produce the UK Report.
- The UK Report on the conservation status of this species is provided in a separate document.
- The reporting fields and options used are aligned to those set out in the European Commission guidance.
- Explanatory notes (where provided) by the country are included at the end. These provide an audit trail of relevant supporting information.
- Some of the reporting fields have been left blank because either: (i) there was insufficient information to complete the field; (ii) completion of the field was not obligatory; (iii) the field was not relevant to this species (section 12 Natura 2000 coverage for Annex II species) and/or (iv) the field was only relevant at UK-level (sections 9 Future prospects and 10 Conclusions).
- For technical reasons, the country-level future trends for Range, Population and Habitat for the species are only available in a separate spreadsheet that contains all the country-level supporting information.
- The country-level reporting information for all habitats and species is also available in spreadsheet format.

Visit the JNCC website, <https://jncc.gov.uk/article17>, for further information on UK Article 17 reporting.

Report on the main results of the surveillance under Article 11 for Annex II, IV and V species (Annex B)

NATIONAL LEVEL

1. General information

1.1 Member State	UK (Wales information only)
1.2 Species code	1261
1.3 Species scientific name	Lacerta agilis
1.4 Alternative species scientific name	
1.5 Common name (in national language)	Sand lizard

2. Maps

2.1 Sensitive species	No
2.2 Year or period	2013-2018
2.3 Distribution map	Yes
2.4 Distribution map Method used	Complete survey or a statistically robust estimate
2.5 Additional maps	No

3. Information related to Annex V Species (Art. 14)

3.1 Is the species taken in the wild/exploited?	No	
3.2 Which of the measures in Art. 14 have been taken?	a) regulations regarding access to property	No
	b) temporary or local prohibition of the taking of specimens in the wild and exploitation	No
	c) regulation of the periods and/or methods of taking specimens	No
	d) application of hunting and fishing rules which take account of the conservation of such populations	No
	e) establishment of a system of licences for taking specimens or of quotas	No
	f) regulation of the purchase, sale, offering for sale, keeping for sale or transport for sale of specimens	No
	g) breeding in captivity of animal species as well as artificial propagation of plant species	No
	h) other measures	No

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3.3 Hunting bag or quantity taken in the wild for Mammals and Acipenseridae (Fish)

a) Unit

b) Statistics/ quantity taken	Provide statistics/quantity per hunting season or per year (where season is not used) over the reporting period					
	Season/ year 1	Season/ year 2	Season/ year 3	Season/ year 4	Season/ year 5	Season/ year 6
Min. (raw, ie. not rounded)						
Max. (raw, ie. not rounded)						
Unknown	No	No	No	No	No	No

3.4. Hunting bag or quantity taken in the wild Method used

3.5. Additional information

BIOGEOGRAPHICAL LEVEL

4. Biogeographical and marine regions

4.1 Biogeographical or marine region where the species occurs

Atlantic (ATL)

4.2 Sources of information

AMPHIBIAN AND REPTILE CONSERVATION TRUST 2011. Sand lizard and natterjack toad recovery project 2009-2011. CCW Contract Science Report 963. Countryside Council for Wales, Bangor.

BRIG 2007. A preliminary assessment of the implications of climate change for the implementation of UK BAP targets. Report to UK Biodiversity Partnership Standing Committee. (Draft).

EDGAR, P 2007. The conservation status of the natterjack toad *Bufo calamita* and sand lizard *Lacerta agilis* in Wales. CCW Contract Science Report 788. Countryside Council for Wales, Bangor.

GLEED-OWEN, C, BUCKLEY, J, CONEYBEER, J, GENT, T, MCCracken, M, MOULTON, N, & WRIGHT, D 2005. Costed plans and options for herpetofauna surveillance and monitoring. CCW Contract Science Report 666. Countryside Council for Wales, Bangor.

GREEN, K & MOULTON, N 2015. Sand lizard rapid site assessment 2014: Assessment of the status of sand lizards *Lacerta agilis* in Great Britain through a Rapid Site Assessment approach. Amphibian & Reptile Conservation Research Report 15/02.

HERPETOLOGICAL CONSERVATION TRUST 2001. Sand lizard and natterjack toad recovery project 2000. CCW Contract Science Report 467. Countryside Council for Wales, Bangor.

HERPETOLOGICAL CONSERVATION TRUST 2003a. Sand lizard and natterjack toad recovery project 2002. CCW Contract Science Report 573. Countryside Council for Wales, Bangor.

HERPETOLOGICAL CONSERVATION TRUST 2003b. Database and geographical information system. CCW Contract Science Report 574. Countryside Council for

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Wales, Bangor.

HERPETOLOGICAL CONSERVATION TRUST 2005. Sand lizard and natterjack toad recovery project 2004. CCW Contract Science Report 665. Countryside Council for Wales, Bangor.

HERPETOLOGICAL CONSERVATION TRUST 2006. Sand lizard and natterjack toad recovery project 2005. CCW Contract Science Report 727. Countryside Council for Wales, Bangor.

HERPETOLOGICAL CONSERVATION TRUST 2007. Sand lizard and natterjack toad recovery project 2005-2006. CCW Contract Science Report 774. Countryside Council for Wales, Bangor.

HERPETOLOGICAL CONSERVATION TRUST 2009. Sand lizard and natterjack toad recovery project 2007-2009. CCW Contract Science Report 872. Countryside Council for Wales, Bangor.

HILL, P, MOULTON, N & FOSTER, J 2016. Sand lizard surveys at Newborough Warren NNR and sand dune habitat management guidance. Amphibian and Reptile Conservation Trust, Bournemouth.

MOULTON, N & BUCKLEY, J 2015. Sand lizard and natterjack toad recovery project 2011-2014. NRW Evidence Report. Report No.32. 23pp. Bangor.

MOULTON, N & CORBETT, K 1999. The sand lizard conservation handbook. English Nature, Peterborough.

ARC Data. Occupancy data for herpetofauna is based on data held internally by Amphibian and Reptile Conservation, combining a variety of data sources.

5. Range

5.1 Surface area (km²)

5.2 Short-term trend Period

5.3 Short-term trend Direction

Increasing (+)

5.4 Short-term trend Magnitude

a) Minimum

b) Maximum

5.5 Short-term trend Method used

5.6 Long-term trend Period

5.7 Long-term trend Direction

5.8 Long-term trend Magnitude

a) Minimum

b) Maximum

5.9 Long-term trend Method used

5.10 Favourable reference range

a) Area (km²)

b) Operator

c) Unknown

d) Method

5.11 Change and reason for change in surface area of range

Genuine change

The change is mainly due to:

5.12 Additional information

6. Population

6.1 Year or period

1995-2018

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6.2 Population size (in reporting unit)	a) Unit	number of map 1x1 km grid cells (grids1x1)
	b) Minimum	
	c) Maximum	
	d) Best single value	15
6.3 Type of estimate	Best estimate	
6.4 Additional population size (using population unit other than reporting unit)	a) Unit	number of localities (localities)
	b) Minimum	15
	c) Maximum	15
	d) Best single value	15
6.5 Type of estimate	Best estimate	
6.6 Population size Method used	Complete survey or a statistically robust estimate	
6.7 Short-term trend Period	2007-2018	
6.8 Short-term trend Direction	Increasing (+)	
6.9 Short-term trend Magnitude	a) Minimum	275
	b) Maximum	275
	c) Confidence interval	
6.10 Short-term trend Method used	Complete survey or a statistically robust estimate	
6.11 Long-term trend Period	1989-2018	
6.12 Long-term trend Direction	Increasing (+)	
6.13 Long-term trend Magnitude	a) Minimum	
	b) Maximum	
	c) Confidence interval	
6.14 Long-term trend Method used	Complete survey or a statistically robust estimate	
6.15 Favourable reference population (using the unit in 6.2 or 6.4)	a) Population size	
	b) Operator	
	c) Unknown	
	d) Method	
6.16 Change and reason for change in population size	Genuine change	
	The change is mainly due to:	Genuine change
6.17 Additional information		

7. Habitat for the species

7.1 Sufficiency of area and quality of occupied habitat	a) Are area and quality of occupied habitat sufficient (to maintain the species at FCS)?	Yes
	b) Is there a sufficiently large area of occupied AND unoccupied habitat of suitable quality (to maintain the species at FCS)?	
7.2 Sufficiency of area and quality of occupied habitat Method used	Based mainly on extrapolation from a limited amount of data	

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7.3 Short-term trend Period	2007-2018
7.4 Short-term trend Direction	Stable (0)
7.5 Short-term trend Method used	Based mainly on extrapolation from a limited amount of data
7.6 Long-term trend Period	
7.7 Long-term trend Direction	
7.8 Long-term trend Method used	
7.9 Additional information	

8. Main pressures and threats

8.1 Characterisation of pressures/threats

Pressure	Ranking
Mixed source air pollution, air-borne pollutants (J03)	M
Natural succession resulting in species composition change (other than by direct changes of agricultural or forestry practices) (L02)	M
Threat	Ranking
Mixed source air pollution, air-borne pollutants (J03)	M
Natural succession resulting in species composition change (other than by direct changes of agricultural or forestry practices) (L02)	M

8.2 Sources of information

8.3 Additional information

9. Conservation measures

9.1 Status of measures	a) Are measures needed?	No
	b) Indicate the status of measures	

9.2 Main purpose of the measures taken

9.3 Location of the measures taken

9.4 Response to the measures

9.5 List of main conservation measures

9.6 Additional information

10. Future prospects

10.1 Future prospects of parameters	a) Range b) Population c) Habitat of the species
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10.2 Additional information

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11. Conclusions

11.1. Range

11.2. Population

11.3. Habitat for the species

11.4. Future prospects

11.5 Overall assessment of Conservation Status

11.6 Overall trend in Conservation Status

11.7 Change and reasons for change in conservation status and conservation status trend

a) Overall assessment of conservation status

No change

The change is mainly due to:

b) Overall trend in conservation status

No change

The change is mainly due to:

11.8 Additional information

12. Natura 2000 (pSCIs, SCIs and SACs) coverage for Annex II species

12.1 Population size inside the pSCIs, SCIs and SACs network (on the biogeographical/marine level including all sites where the species is present)

a) Unit

b) Minimum

c) Maximum

d) Best single value

12.2 Type of estimate

12.3 Population size inside the network Method used

12.4 Short-term trend of population size within the network Direction

12.5 Short-term trend of population size within the network Method used

12.6 Additional information

13. Complementary information

13.1 Justification of % thresholds for trends

13.2 Trans-boundary assessment

13.3 Other relevant Information

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Distribution Map

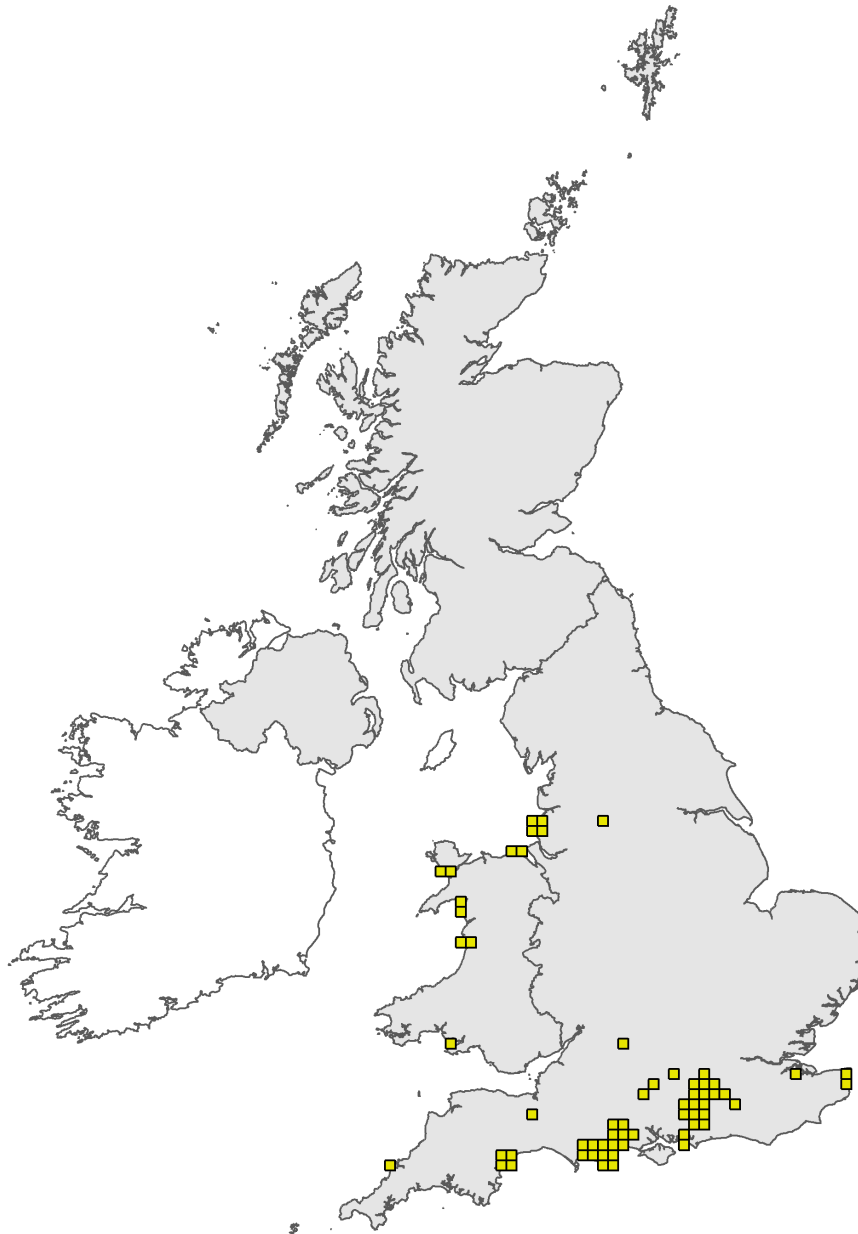


Figure 1: UK distribution map for S1261 - Sand lizard (*Lacerta agilis*). Coastline boundary derived from the Oil and Gas Authority's OGA and Lloyd's Register SNS Regional Geological Maps (Open Source). Open Government Licence v3 (OGL). Contains data © 2017 Oil and Gas Authority.

The 10km grid square distribution map is based on available species records within the current reporting period. For further details see the 2019 Article 17 UK Approach document.

Range Map



Figure 2: UK range map for S1261 - Sand lizard (*Lacerta agilis*). Coastline boundary derived from the Oil and Gas Authority's OGA and Lloyd's Register SNS Regional Geological Maps (Open Source). Open Government Licence v3 (OGL). Contains data © 2017 Oil and Gas Authority.

The range map has been produced by applying a bespoke range mapping tool for Article 17 reporting (produced by JNCC) to the 10km grid square distribution map presented in Figure 1. The alpha value for this species was 25km. For further details see the 2019 Article 17 UK Approach document.

Explanatory Notes

Species name: *Lacerta agilis* (1261) Region code: ATL

Field label	Note
5.3 Short term trend; Direction	In Wales, the range has increased, as lizards have been reintroduced to more locations and spread within those localities.
5.11 Change and reason for change in surface area of range	This species was extinct in Wales until 1995 when it was first reintroduced as part of the Species Recovery Project and the UKBAP action plan. In Wales, the range has increased, as lizards have been reintroduced to more locations and spread within those localities. They were present at 1 locality and 1x 10km square (Morfa Harlech I, SH52) from 1995 to 2000 when a release further north at Morfa Harlech took place (Morfa Harlech II, SH53). In 2003 releases began at Gronant (SJ08), followed by Presthaven/Talacre in 2004 (SJ18). In 2006, animals were released at Towyn, Aberdovey (SN69) at a third Morfa Harlech locality in 2008 (Morfa Harlech III, SH53) and at Ynys Las (SN59) in 2009. Surveillance has shown that animals have spread out on each site from the original release foci (For data see reports cited in 4.2). Populations were found at Aberffraw on Anglesey (SH36) in 2010, at Newborough Warren (SH46) in 2012 and on Gower (SS49) in 2018. It is thought likely that these were all unauthorised releases and are not part of the planned UKBAP project (Hill et al, 2016). The map is based on the datasets held by Amphibian and Reptile Conservation Trust who were UKBAP lead partner for this species and who implement the re-introduction programme in Wales. All Welsh re-introduced sites are included in this 2018 report. Relevant data for all the report fields can be found in the following references listed at 4.2: Herpetological Conservation Trust 2003a, 2005, 2006, 2007 and 2009, Amphibian and Reptile Conservation 2011, Moulton and Buckley 2015, Hill et al 2016.
6.2 Population size	Note that there are a further, 6 1 km square records which are the result of non-authorised releases (3 on Anglesey and 3 on Gower)
6.6 Population size; Method used	Mapped records at 1km square resolution are available for all of the re-introduction sites in Wales (See HCT, 2003b and all HCT refs cited in 4.2 and ARC data) enabling them to be related to sub population distributions.
6.8 Short term trend; Direction	The number of 1 km squares in Wales has increased during this time period. All are derived from re-introductions and natural spread at those sites. More sites have been added since 2007 so it is considered that the population in Wales is increasing.(See HCT reports cited in 2.2)
6.9 Short term trend; Magnitude	The number of 1 km squares in Wales has increased from 4 to 15 1km squares , all derived from re-introductions to suitable dune habitat (There are an additional 6 1 km squares resulting from unauthorised releases which are not included in this report). This is a 275% increase over the time period of 2007-2018. Data on re-introductions and spread within localities is available in the HCT refs cited in 4.2 and HCT 2003b and in the ARC data.
6.11 Long term trend; Period	1989-2018 has been used as recommended. Sand lizards were extinct in Wales in 1989. They were first re-introduced in 1995. The population has increased from 0 to 15 1km squares during the time period
6.12 Long term trend; Direction	This species was extinct in Wales until 1995 when it was first reintroduced to Wales as part of the Species Recovery Project and the UKBAP action plan. The population count is based on the NBN datasets provided by Amphibian and Reptile Conservation Trust who are UKBAP lead partner for this species and who implement the reintroduction programme in Wales. Relevant data for all of the report fields can be found in the references listed at 4.2. All sand lizards in Wales are located solely in sand dune habitat. Unofficial release sites on Anglesey and Gower have not been included in the data presented, but have been noted here for completeness.

6.16 Change and reason for change in population size	Mainly due to genuine change because of re-introductions.
6.17 Additional information	The reintroduced populations are breeding (egg laying behaviour and juveniles have been recorded) and sightings are spreading out from release points. This suggests that the population structure is normal and no deviation is taking place.
7.1 Sufficiency of area and quality of occupied habitat	area Sand lizards in Wales occur only in sand dune habitat and there is thought to be a sufficient area of suitable habitat within the currently occupied range in Wales to support a viable population of the species. quality Moderate overall as several sites are in better condition than the others. The sand dune habitat at the re-introduction areas is under management regimes suitable for sand lizards. They mostly inhabit the frontal areas of dunes where there should be a mosaic of open bare sand (for egg laying) and denser marram for shelter. Continuous dense vegetation is not ideal as it is difficult for the lizards to bask and reproduce (Moulton & Corbett, 1999). However, as at all Welsh dune systems, there is an issue of dune stabilisation due to reduced sand availability and possible enrichment from aerial nitrogen. These sites are not generally grazed by stock and future management may include interventions to increase dune mobility for a range of dune taxa. The dune systems themselves are however restricted physically by landward infrastructure (roads/rail, golf course and caravan sites/houses). The overall conclusion is that the currently occupied area and quality of habitat is considered to be sufficient for the maintenance of the species at FCS
7.2 Sufficiency of area and quality of occupied habitat; Method used	Extrapolation is selected here because it is not empirically known exactly how much of the available suitable habitat the lizards on each re-introduced site are using. Whilst the HCT reports listed in 4.2 assessed the habitats prior to release of animals at each site, there is no quantitative record of habitat quality across the range of occupied sites.
7.4 Short term trend; Direction	Stable: Whilst the number of reintroductions and thus the area of habitat occupied has increased, the actual amount and quality of habitat available has not changed (Edgar, 2007 and see refs cited in 4.2). The sand dune habitat occupied by sand lizards does not require active management at this time and there is no need to provide extra habitat

8.1 Characterisation of pressures/ threats

Pressures: Pressures affecting sand lizards are summarised in Moulton & Corbett, 1999. J03: aerial pollution relates to the contribution of nitrogen/ammonia to dune stabilisation producing less mobile systems and open sand for egg laying. L02: succession on dune systems with scrub encroachment leads to shading out of basking and egg laying sites and also impacts on dune mobility. The following pressures are considered low and so not formally ranked in line with JNCC guidance. A10: undergrazing (often the product of extensive grazing regimes) leads to dominance of marram and lack of bare sand. Rabbits are important grazers on most sites, whilst farm stock may be present occasionally on 1 site. F05: several of the subpopulations at re-introduction sites have golf courses adjacent to and built upon dune habitat. Impacts from these are slight, but they do restrict the ability of dune managers to maintain the dynamics of the systems in a holistic manner. Threats: J03: aerial pollution relates to the contribution of nitrogen and other pollutants such as ammonia, to dune stabilisation producing less mobile systems and open sand for egg laying, this is considered likely to continue to be a threat on all dune systems. L02: the threat of succession on dune systems continues, with scrub encroachment leads to shading out of basking and egg laying sites and also impacts on dune mobility. The following pressures are considered low and so not formally ranked in line with JNCC guidance. A10: undergrazing (often the product of extensive grazing regimes) leads to dominance of marram and lack of bare sand. The trend for stabilisation continues to be a threat at all the sand lizard re-introduction sites. F05: several of the subpopulations at re-introduction sites have golf courses adjacent to and built upon dune habitat. Impacts from these are currently slight, but they do restrict the ability of dune managers to maintain the system in a holistic manner and there is the threat of further expansion of courses due to increased demand for leisure provision. L06: relates to the impact of disease on the rabbit grazers of most systems. Declines in their populations due to myxomatosis and rabbit haemorrhagic disease threaten the maintenance of open dune systems. N09: Climate change threats to coastal vertebrates include increased storminess leading to beach erosion and/or changes in sediment deposition. Effects of changes to climatic variables are especially likely to impact on the thermoregulation and reproductive patterns of lizards (eg sunshine hours, winter and summer temperatures). (See Brig, 2007 for discussion of risk to habitat of sand lizard- the species itself was not selected for this study).

10.1 Future prospects of parameters

The range of sand lizards in Wales is likely to remain stable over the next 12 years. Losses of established populations and significant natural expansion of the species range are considered unlikely over this timescale. slightly negative is a more accurate habitat trend because of the listed pressures and threats (section 8.1) relating to change in dune systems (decline in mobility, coastal erosion, climatic change, successional change etc) that will lead to a reduced quality in habitat. These pressures and threats may not be adequately addressed by the measures available to manage the habitat. The re-introduced populations are all producing offspring and expanding to other parts of sites. Although the amount of sand dune habitat cannot increase, there is still space for population expansion whilst dunes remain mobile.