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:

S6284 - Natterjack toad (*Epidalea calamita*)

ENGLAND

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 (England information only)**
1.2 Species code	**6284**
1.3 Species scientific name	**Epidalea calamita**
1.4 Alternative species scientific name	
1.5 Common name (in national language)	Natterjack toad

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

ARNOLD, H.R. 1995. Atlas of amphibians and reptiles in Britain. ITE Research Publication No.10. HMSO, London.
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BEEBEE, T.J.C. 1976. The natterjack toad (Bufo calamita) in the British Isles: a study of past and present status. British Journal of Herpetology 5: 515-521.
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BUCKLEY, J. & BEEBEE, T.J.C. 2004. Monitoring the conservation status of an endangered amphibian: the natterjack toad Bufo calamita in Britain. Animal Conservation 7: 221-228.
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GLEED-OWEN, C.P. 2004. Initial surveillance baseline datasets for the sand lizard Lacerta agilis, natterjack toad Bufo calamita and smooth snake Coronella austriaca in England. Report for English Nature, Peterborough.
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. English Nature Research Report No. 663, English Nature, Peterborough.
HITCHINGS, S.P. & BEEBEE, T.J.C. 1996. Persistence of British natterjack toad Bufo calamita Laurenti (Anura: Bufonidae) populations despite low genetic diversity. Biological Journal of the Linnean Society 57: 69-80.
LANGTON, T.E.S., BECKETT, C.L. & DUNSMORE, I. 1993. UK herpetofauna: a review of British herpetofauna populations in a wider context. Report 99F2AO69 to Joint Nature Conservation Committee. Joint Nature Conservation Committee, Peterborough.
ROWE, G., BEEBEE, T.J.C. & BURKE, T. 1998. Phylogeography of the natterjack toad Bufo calamita in Britain: genetic differentiation of native and translocated populations. Molecular Ecology 7: 751-760.
The Amphibian & Reptile Conservation Trust: Rare Species Database and Reptile and Amphibian Dataset. 2018.
Amphibian and Reptile Conservation Trust: Species Action Plan United Kingdom (unpublished). 2016.

5. Range

5.1 Surface area (km²)		
5.2 Short-term trend Period		
5.3 Short-term trend Direction	Stable (0)	
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	No change The change is mainly due to:	
5.12 Additional information		

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6. Population

6.1 Year or period	2013-2018	
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	108
6.3 Type of estimate	Minimum	
6.4 Additional population size (using population unit other than reporting unit)	a) Unit	
	b) Minimum	
	c) Maximum	
	d) Best single value	
6.5 Type of 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	Stable (0)	
6.9 Short-term trend Magnitude	a) Minimum	
	b) Maximum	
	c) Confidence interval	
6.10 Short-term trend Method used	Complete survey or a statistically robust estimate	
6.11 Long-term trend Period		
6.12 Long-term trend Direction		
6.13 Long-term trend Magnitude	a) Minimum	
	b) Maximum	
	c) Confidence interval	
6.14 Long-term trend Method used		
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	No change	
	The change is mainly due to:	
6.17 Additional information		

7. Habitat for the species

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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)?	No
	b) Is there a sufficiently large area of occupied AND unoccupied habitat of suitable quality (to maintain the species at FCS)?	Unknown
7.2 Sufficiency of area and quality of occupied habitat Method used	Based mainly on expert opinion with very limited data	
7.3 Short-term trend Period	2007-2018	
7.4 Short-term trend Direction	Uncertain (u)	
7.5 Short-term trend Method used	Insufficient or no data available	
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 pollution to surface and ground waters (limnic and terrestrial) (J01)	H
Interspecific relations (competition, predation, parasitism, pathogens) (L06)	H
Natural succession resulting in species composition change (other than by direct changes of agricultural or forestry practices) (L02)	H
Reduced fecundity / genetic depression (e.g. inbreeding or endogamy) (L05)	M
Abiotic natural processes (e.g. erosion, silting up, drying out, submersion, salinization) (L01)	M
Modification of hydrological flow (K04)	H
Extensive grazing or undergrazing by livestock (A10)	H
Removal of small landscape features for agricultural land parcel consolidation (hedges, stone walls, rushes, open ditches, springs, solitary trees, etc.) (A05)	M

Threat	Ranking
Mixed source pollution to surface and ground waters (limnic and terrestrial) (J01)	H
Interspecific relations (competition, predation, parasitism, pathogens) (L06)	H
Natural succession resulting in species composition change (other than by direct changes of agricultural or forestry practices) (L02)	M
Reduced fecundity / genetic depression (e.g. inbreeding or endogamy) (L05)	M

Abiotic natural processes (e.g. erosion, silting up, drying out, submersion, salinization) (L01)	H
Modification of hydrological flow (K04)	H
Extensive grazing or undergrazing by livestock (A10)	H
Sea-level and wave exposure changes due to climate change (N04)	M
Temperature changes (e.g. rise of temperature & extremes) due to climate change (N01)	M
Removal of small landscape features for agricultural land parcel consolidation (hedges, stone walls, rushes, open ditches, springs, solitary trees, etc.) (A05)	M

8.2 Sources of information

8.3 Additional information

9. Conservation measures

9.1 Status of measures

a) Are measures needed? Yes

b) Indicate the status of measures Measures identified and taken

9.2 Main purpose of the measures taken

Increase the population size and/or improve population dynamics (improve reproduction success, reduce mortality, improve age/sex structure) (related to 'Population')

9.3 Location of the measures taken

Both inside and outside Natura 2000

9.4 Response to the measures

Medium-term results (within the next two reporting periods, 2019-2030)

9.5 List of main conservation measures

Reduce impact of mixed source pollution (CJ01)
Other measures related to natural processes (CL04)
Management of habitats (others than agriculture and forest) to slow, stop or reverse natural processes (CL01)
Reduce/eliminate point pollution to surface or ground waters from agricultural activities (CA10)
Restore habitats impacted by multi-purpose hydrological changes (CJ03)
Improvement of habitat of species from the directives (CS03)
Adapt mowing, grazing and other equivalent agricultural activities (CA05)
Restore small landscape features on agricultural land (CA02)
Management of problematic native species (CI05)
Implement climate change adaptation measures (CN02)

9.6 Additional information

10. Future prospects

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

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	

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13.2 Trans-boundary assessment

13.3 Other relevant Information

Distribution Map

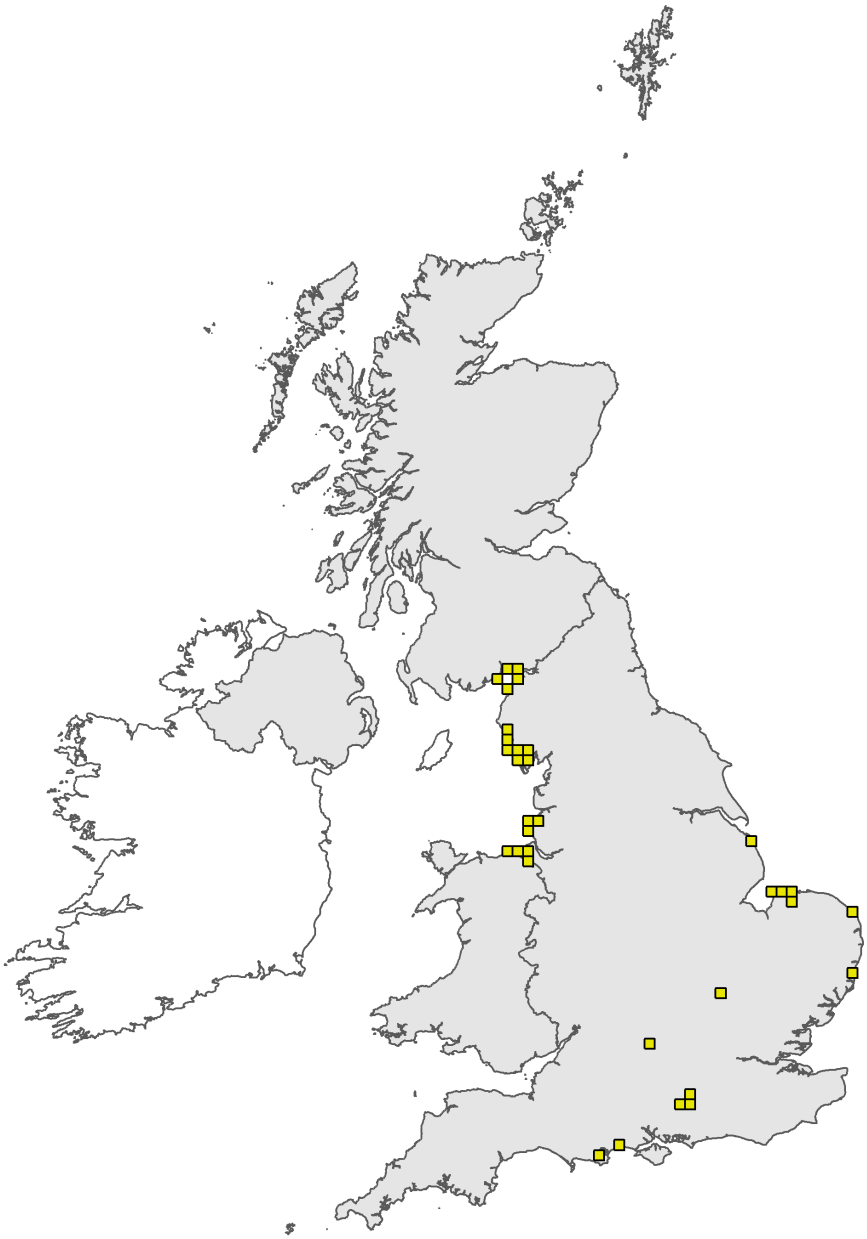

Figure 1: UK distribution map for S6284 - Natterjack toad (*Epidalea calamita*). Coastline boundary derived from the Oil and Gas Authority's OGA and Lloyd's Register SNS Regional Geological Maps (Open Source). Open Government Licence v3 (OGL). Contains data © 2017 Oil and Gas Authority.

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

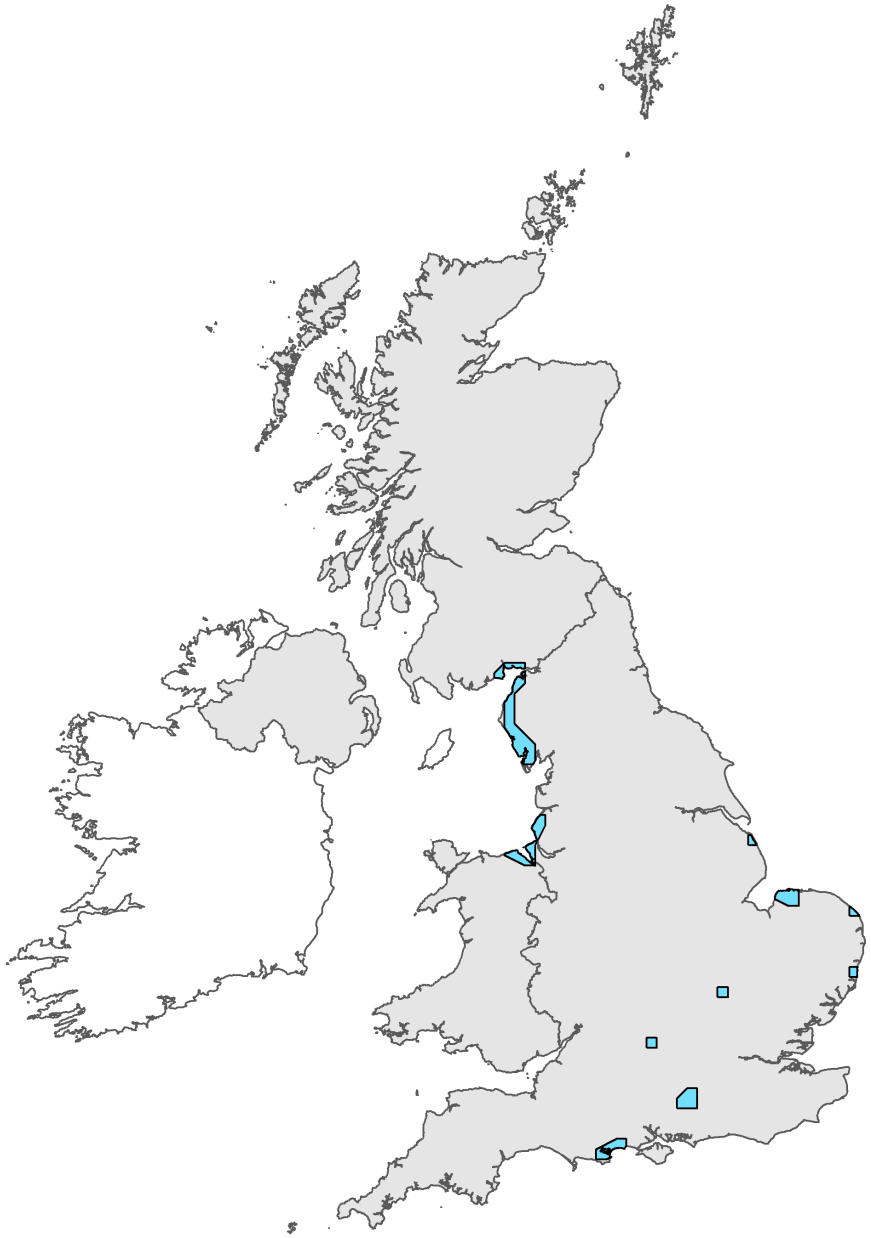

Figure 2: UK range map for S6284 - Natterjack toad (*Epidalea calamita*). Coastline boundary derived from the Oil and Gas Authority's OGA and Lloyd's Register SNS Regional Geological Maps (Open Source). Open Government Licence v3 (OGL). Contains data © 2017 Oil and Gas Authority.

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 20km. For further details see the 2019 Article 17 UK Approach document.

Explanatory Notes

Species name: Epidalea calamita (6284)

Field label	Note
2.4 Distribution map; Method used	Natterjack toad distribution in England is generally well understood as most sites are monitored every year (all are surveyed over any three year period), mostly by volunteers but not all data is digitised so this distribution is a minimum for the species.

Species name: Epidalea calamita (6284) Region code: ATL

Field label	Note
6.3 Type of estimate	This is thought to be the minimum number of occupied 1km squares, with known populations monitored on a regular basis but not all data is digitised.
6.8 Short term trend; Direction	It is thought that populations will have fluctuated during this period with overall numbers remaining relatively stable.
7.1 Sufficiency of area and quality of occupied habitat	There is enough suitable habitat to maintain a viable population however, it does not meet favourable conservation status for the species. Estimate of current area of occupied habitat is not available, but there is no evidence that the four times increase in population required to meet favourable has been acheived (refer to 3rd Article 17 UK report for the natterjack toad).
7.4 Short term trend; Direction	There is inadequate data to comment on trends in the current period so this is 'uncertain'. Agri-environment schemes targetting natterjack toads are ongoing so it is possible this habitat is stable or increasing (as reported previously).
10.1 Future prospects of parameters	There is uncertainty around the degree or direction of change. However, many natterjack sites are subject to conservation interventions, particularly management funded by agri-environment schemes, in place now and continuing so it is thought that habitat in the longer term will at least be stable.