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:

S6981 - Pool frog (*Pelophylax lessonae*)

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.

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NATIONAL LEVEL

1. General information

1.1 Member State	**UK (England information only)**
1.2 Species code	**6981**
1.3 Species scientific name	**Pelophylax lessonae**
1.4 Alternative species scientific name	
1.5 Common name (in national language)	Pool frog

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

BAKER, J. 2018. A head-starting trial for the reintroduction of the pool frog Pelophylax lessonae to England. Herpetological Bulletin. 143, 7-11.
BAKER, J. 2017. Pool Frog Post-Release Monitoring. Unpublished.
BEEBEE, T.J.C. & GRIFFITHS, R.A. 2000. Amphibians and Reptiles: A Natural History of the British Herpetofauna. The New Naturalist series. HarperCollins, London.
BUCKLEY, J. & FOSTER, J. 2005. Re-introduction strategy for the pool frog Rana lessonae in England. English Nature Research Report No. 642. English Nature, Peterborough
EUROPEAN HABITATS FORUM. 2006. Towards European Biodiversity Monitoring. Assessment, monitoring and reporting of conservation status of European habitats and species. Wien, Cambridge, Bruxelles.
FOSTER, J. & BUCKLEY, J. 2006. Report on the second release in the reintroduction of the pool frog Rana lessonae to England, May-June 2006. Unpublished Report to Natural England Wildlife Licensing Unit. October 2006.
KUZMIN, S., BEEBEE, T., ANDREONE, F., NYSTROM, P., ANTHONY, B., SCHMIDT, B., OGRODOWCZYK, A., OGIELSKA, M., COGALNICEANU, D., KOVACS, T., KISS, I., PUKY, M. & VOROS, J. 2004. Rana lessonae. In: IUCN 2006. 2006 IUCN Red List of Threatened Species. Www.iucnredlist.org/search/details.php/58643/all
Sainsbury, A.W., Yu-Mei, R., Agren, E., Vaughan-Higgins, R.J., Mcgill, I.S., Molenaar, F., Peniche, G. & J. Foster. 2017. Disease Risk Analysis and Post-Release Health Surveillance for a Reintroduction Programme: the Pool Frog Pelophylax lessonae. Transboundary and Emerging Diseases. 64(5), 1530-1548.
WILLIAMS, C. & GRIFFITHS, R.A. 2004. A population viability analysis for the reintroduction of the pool frog (Rane lessonae) in Britain. English Nature

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Research Report No. 585, English Nature, Peterborough.
The Amphibian & Reptile Conservation Trust: Rare Species Database and Reptile and Amphibian Dataset (2018)

5. Range

5.1 Surface area (km²)	100	
5.2 Short-term trend Period	2013-2018	
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	Complete survey or a statistically robust estimate	
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	Much more than (>>)
	c) Unknown	
	d) Method	The FRR has changed since 2013. An FRR operator has been used because it had not been possible to calculate the exact FRR value. The FRR is considered to be more than 10% above the current range. See the 2019 Article 17 UK Approach document for further information.
5.11 Change and reason for change in surface area of range	No change	
	The change is mainly due to:	
5.12 Additional information	The species has been re-introduced to a second site in England and can also be found across much of the original re-introduction site. The current range surface area is stable but is not sufficient to support a viable population, and further introductions are planned in England. For further information see the 2019 Article 17 UK Approach document.	

6. Population

6.1 Year or period	2013-2017	
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	4
6.3 Type of estimate	Best estimate	
6.4 Additional population size (using population unit other than reporting unit)	a) Unit	number of individuals (i)
	b) Minimum	
	c) Maximum	

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	d) Best single value	60
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 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	10000 with unit number of individuals (i) The FRP is the same as in 2013. The value is considered to be large enough to support a viable population and no less than when the Habitats Directive came into force in the UK. For further information see the 2019 Article 17 UK Approach document and country level reporting information.
6.16 Change and reason for change in population size	Genuine change The change is mainly due to:	Genuine change
6.17 Additional information	The current population estimate is more than 25% below the FRP, although the short term trend is increasing. To achieve the FRP of 10,000 individuals, this will require more sites with established populations, consisting of suitable habitat which is managed for this species.	

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)?	No
	b) Is there a sufficiently large area of occupied AND unoccupied habitat of suitable quality (to maintain the species at FCS)?	Yes
7.2 Sufficiency of area and quality of occupied habitat Method used	Based mainly on extrapolation from a limited amount of data	
7.3 Short-term trend Period	2007-2018	
7.4 Short-term trend Direction	Increasing (+)	

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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	There is considered to be sufficient habitat to support a viable population. Habitat quality is moderate and the short term trend is stable. Current occupied habitat is subject to agri-environment schemes tailored to enhance and maintain habitat for the species.

8. Main pressures and threats

8.1 Characterisation of pressures/threats

Pressure	Ranking
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)	H
Mixed source pollution to surface and ground waters (limnic and terrestrial) (J01)	M
Harvesting or collecting of other wild plants and animals (excluding hunting and leisure fishing) (G09)	M
Abiotic natural processes (e.g. erosion, silting up, drying out, submersion, salinization) (L01)	M
Other forestry activities, excluding those relating to agro-forestry (B29)	M
Other human intrusions and disturbance not mentioned above (H08)	M

Threat	Ranking
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)	H
Modification of hydrological flow (K04)	H
Mixed source pollution to surface and ground waters (limnic and terrestrial) (J01)	H
Harvesting or collecting of other wild plants and animals (excluding hunting and leisure fishing) (G09)	M
Abiotic natural processes (e.g. erosion, silting up, drying out, submersion, salinization) (L01)	M

Other forestry activities, excluding those relating to agro-forestry (B29)	M
Other human intrusions and disturbance not mentioned above (H08)	M
Change of habitat location, size, and / or quality due to climate change (N05)	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

Short-term results (within the current reporting period, 2013-2018)

9.5 List of main conservation measures

Reinforce populations of species from the directives (CS01)
Other measures related to natural processes (CL04)
Reintroduce species from the directives (CS02)
Reduce impact of mixed source pollution (CJ01)
Improvement of habitat of species from the directives (CS03)
Management of habitats (others than agriculture and forest) to slow, stop or reverse natural processes (CL01)
Management of hunting, recreational fishing and recreational or commercial harvesting or collection of plants (CG02)
Reduce impact of multi-purpose hydrological changes (CJ02)

9.6 Additional information

Conservation measures are primarily targeted at improving population viability on existing sites, maintaining/improving habitat and re-introducing the species to additional sites.

10. Future prospects

10.1 Future prospects of parameters

a) Range Poor

b) Population Poor

c) Habitat of the species Good

10.2 Additional information

Future trend of Range is Positive - increasing <=1% (one percent or less) per year on average; Future trend of Population is Positive - increasing <=1% (one percent or less) per year on average; and Future trend of Habitat for the species is Overall stable.
Future trends are anticipated to move in a positive direction provided the re-

introduction programme maintains a similar trajectory and funding for improved head-starting facilities, monitoring and habitat management are realised.
There is successful breeding at two sites, but as small populations are still highly vulnerable to pressures and threats such as disease, future prospects are still considered to be overall poor.
For further information on how future trends inform the Future Prospects conclusion see the 2019 Article 17 UK Approach document.

11. Conclusions

11.1. Range	Unfavourable - Bad (U2)
11.2. Population	Unfavourable - Bad (U2)
11.3. Habitat for the species	Favourable (FV)
11.4. Future prospects	Unfavourable - Inadequate (U1)
11.5 Overall assessment of Conservation Status	Unfavourable - Bad (U2)
11.6 Overall trend in Conservation Status	Improving (+)
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	Conclusion on Range reached because: (i) the short-term trend direction in Range surface area is stable; and (ii) the current Range surface area is more than 10% below the Favourable Reference Range. Conclusion on Population reached because: (i) the short-term trend direction in Population size is increasing; but (ii) the current Population size is more than 25% below the Favourable Reference Population. Conclusion on Habitat for the species reached because: (i) the area of occupied and unoccupied habitat is sufficiently large for the long-term survival of the species; and (iii) the short-term trend in area of habitat is increasing. Conclusion on Future prospects reached because: (i) the Future prospects for Range are poor; (ii) the Future prospects for Population are poor; and (iii) the Future prospects for Habitat for the species are good. Overall assessment of Conservation Status is Unfavourable-bad because two or more of the conclusions are Unfavourable-bad. Overall trend in Conservation Status is based on the combination of the short-term trends for Range – stable, Population – improving, and Habitat for the species – improving. Overall assessment of Conservation Status has not changed since 2013.

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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

Distribution Map

Figure 1: UK distribution map for S6981 - Pool frog (*Pelophylax lessonae*). 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 S6981 - Pool frog (*Pelophylax lessonae*). 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 35km. For further details see the 2019 Article 17 UK Approach document.

Explanatory Notes

Species name: Pelophylax lessonae (6981)

Field label	Note
2.2 Year or Period	Sensitive species consistent with NBN approach for this species.

Species name: Pelophylax lessonae (6981) Region code: ATL

Field label	Note
5.3 Short term trend; Direction	This increase in range is due to the introduction of the species to a second site in Norfolk during this reporting period, the species has not naturally spread appreciably from their initial re-introduction site nor this second site.
6.4 Additional population size	This is the approximate number of adults in 2017.
7.1 Sufficiency of area and quality of occupied habitat	Although a full assessment of the amount of habitat needed to meet FCS for the species has not been calculated, a population FRV of 10,000 will require more sites with established populations consisting of habitat suitable and managed for pool frogs. Up to 20 further re-introductions are proposed.
8.1 Characterisation of pressures/ threats	Recent analysis of disease risk by Sainsbury et al (2017) and 2018 disease screening indicates there are no pathogens of significant concern on the re-introduction sites, but the spread of ranavirus and chytrid are likely.
10.1 Future prospects of parameters	Future prospects for population are good, with breeding recently confirmed at the second re-introduction site. Ongoing re-introductions and head-starting improvements are planned, but will require sufficient resources.
11.1 Range	Range has been assessed as Bad becase the FRV is much greater than the current surface area of range, although the short term trend is increasing.
11.2 Population	Population has been assessed as unfavourable-bad because the current population estimate is more than 25% below the favourable reference population, although the short term trend is increasing
11.3 Habitat for the species	Habitat for species has been assessed as Favourable because, there is thought to be sufficient habitat to support a viable population, the habitat quality is moderate and the short term trend is stable. It is thought that there is sufficicent habitat available for re-introductions, with appropriate habitat management to support a viable population. Current occupied habitat is subject to agri-environment schemes tailored to enhance and maintain habitat for the species.
11.4 Future prospects	Future prospects for the species has been assessed as unfavourable-inadequate. Although the habitat at both re-introduction sites is of high quality, the species are limited to only two sites with numbers of individuals at both sites remaining low, but increasing.