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

Conservation status assessment for the species:

S1092 - White-clawed crayfish (*Austropotamobius pallipes*)

UNITED KINGDOM

IMPORTANT NOTE - PLEASE READ

- The information in this document represents 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.
- It is based on supporting information provided by the geographically-relevant Statutory Nature Conservation Bodies, which is documented separately.
- The 2019 Article 17 UK Approach document provides details on how this supporting information contributed to the UK Report and the fields that were completed for each parameter.
- The reporting fields and options used are aligned to those set out in the European Commission guidance.
- Maps showing the distribution and range of the species are included (where available).
- Explanatory notes (where provided) are included at the end. These provide additional audit trail information to that included within the UK assessments. Further underpinning explanatory notes are available in the related country-level reports.
- 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; and/or (iii) the field was not relevant to this species (section 12 Natura 2000 coverage for Annex II species).
- The UK-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**
1.2 Species code	**1092**
1.3 Species scientific name	**Austropotamobius pallipes**
1.4 Alternative species scientific name	
1.5 Common name (in national language)	White-clawed crayfish

2. Maps

2.1 Sensitive species	No
2.2 Year or period	1994-2018
2.3 Distribution map	Yes
2.4 Distribution map Method used	Based mainly on expert opinion with very limited data
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

England
Environment agency crayfish records, 2013-2017
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http://www.gazetteandherald.co.uk/news/14937862.Deadly_plague_killing_hundreds_of_crayfish/
https://www.staffs-wildlife.org.uk/news/2013/10/01/call-public-help-stop-spread-deadly-crayfish-disease
Eden Crayfish Project Funded by the Catchment Restoration Fund Project reference no: CRF0039 (ST002)
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Holdich, D. 2003. Ecology of the white-clawed crayfish. Conserving Natura 2000 Rivers Ecology Series. No. 1. English Nature.
Howe, M.A. 2013. European Community Directive on the Conservation of Natural Habitats and of Wild Fauna and Flora
(92/43/EEC) Supporting documentation for the Third Report by the United Kingdom under Article 17 on the implementation of the Directive from January 2007 to December 2012 Conservation status assessment for Species: S1092 - White-clawed Crayfish (Austropotamobius pallipes).
Howells, M. 2003. Conservation of the native white-clawed crayfish, Austropotamobius pallipes in the uplands of mid-Wales. Unpublished 2nd year report for PhD thesis. Cardiff University.
Howells, M., Slater, F.M., Gaweda, A., Lee, R., Jenkins, R. & Smith, J. 2004. Measurement of siltation levels in the Afon Edw. CCW Contract Science Report No. 622. Countryside Council for Wales & Cardiff University.
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5. Range

5.1 Surface area (km²)	74459.23	
5.2 Short-term trend Period	2007-2018	
5.3 Short-term trend Direction	Decreasing (-)	
5.4 Short-term trend Magnitude	a) Minimum	b) Maximum
5.5 Short-term trend Method used	Based mainly on expert opinion with very limited data	
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 is the same as in 2013 and is more than 10% above the current range. An FRR operator has been used because it had not been possible to calculate the exact FRR value. See the 2019 Article 17 UK Approach document for further information.
5.11 Change and reason for change in surface area of range	Genuine change	
	The change is mainly due to:	Genuine change
5.12 Additional information	The short term trend direction is considered to be 'decreasing >1% (more than one percent) per year based on the reported declines in England and Wales. Competition by the invasive signal crayfish, and occurences of crayfish plague disease continue to suppress UK populations.	

6. Population

6.1 Year or period	1994-2018	
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	933
6.3 Type of estimate	Best estimate	
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		

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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	Decreasing (-)	
6.9 Short-term trend Magnitude	a) Minimum b) Maximum c) Confidence interval	
6.10 Short-term trend Method used	Based mainly on extrapolation from a limited amount of data	
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	 Much more than (>>) The FRP is the same as in 2013 and is more than 25% above the current population. An FRP operator has been used because it has not been possible to calculate the exact FRP value. For further information see the 2019 Article 17 UK Approach document.
6.16 Change and reason for change in population size	Genuine change Improved knowledge/more accurate data 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 (for long-term survival)? b) Is there a sufficiently large area of unoccupied habitat of suitable quality (for long-term survival)?	Yes
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	Stable (0)	
7.5 Short-term trend Method used	Based mainly on expert opinion with very limited data	
7.6 Long-term trend Period		
7.7 Long-term trend Direction		
7.8 Long-term trend Method used		
7.9 Additional information	Habitat is considered overall to be sufficient for the species due to continued	

improvements in water quality and the control of invasive species (i.e. signal crayfish) in the core populations of England and Northern Ireland. In Wales, whilst habitat sufficiency has improved, pollution and invasive species continue to compromise habitat sufficiency.

8. Main pressures and threats

8.1 Characterisation of pressures/threats

Pressure	Ranking
Freshwater fish and shellfish harvesting (recreational) (G06)	M
Introduction and spread of species (including alien species and GMOs) in freshwater aquaculture (G24)	M
Invasive alien species of Union concern (I01)	H
Drainage (K02)	M
Modification of hydrological flow (K04)	M
Physical alteration of water bodies (K05)	M
Interspecific relations (competition, predation, parasitism, pathogens) (L06)	H

Threat	Ranking
Freshwater fish and shellfish harvesting (recreational) (G06)	M
Introduction and spread of species (including alien species and GMOs) in freshwater aquaculture (G24)	M
Invasive alien species of Union concern (I01)	H
Mixed source pollution to surface and ground waters (limnic and terrestrial) (J01)	M
Interspecific relations (competition, predation, parasitism, pathogens) (L06)	H
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

Maintain the current range, population and/or habitat for the species

9.3 Location of the measures taken

Both inside and outside Natura 2000

9.4 Response to the measures

Long-term results (after 2030)

9.5 List of main conservation measures

Prevent conversion of natural and semi-natural habitats, and habitats of species into agricultural land (CA01)

Manage the use of natural fertilisers and chemicals in agricultural (plant and animal) production (CA09)
Reduce impact of hydropower operation and infrastructure (CC04)
Management of hunting, recreational fishing and recreational or commercial harvesting or collection of plants (CG02)
Early detection and rapid eradication of invasive alien species of Union concern (CI01)
Management, control or eradication of established invasive alien species of Union concern (CI02)
Reduce impact of mixed source pollution (CJ01)
Reduce impact of multi-purpose hydrological changes (CJ02)
Reinforce populations of species from the directives (CS01)
Improvement of habitat of species from the directives (CS03)

9.6 Additional information

10. Future prospects

10.1 Future prospects of parameters

a) Range	Bad
b) Population	Bad
c) Habitat of the species	Good

10.2 Additional information

Future trend of Range is Very Negative - decreasing >1% (more than one percent) per year on average; Future trend of Population is Very Negative - decreasing >1% (more than one percent) per year on average; and Future trend of Habitat for the species is Overall stable. 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 - Bad (U2)
11.5 Overall assessment of Conservation Status	Unfavourable - Bad (U2)
11.6 Overall trend in Conservation Status	Deteriorating (-)

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 decreasing by more than 1% per year; 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

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Population size is decreasing by more than 1% per year; and (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 habitat is sufficiently large and (ii) the habitat quality is suitable for the long-term survival of the species; and (iii) the short-term trend in area of habitat is stable.

Conclusion on Future prospects reached because: (i) the Future prospects for Range are bad; (ii) the Future prospects for Population are bad; and (iii) the Future prospects for Habitat for the species are good.

Overall assessment of Conservation Status is Unfavourable-bad because three of the conclusions are Unfavourable-bad.

Overall trend in Conservation Status is based on the combination of the short-term trends for Range – decreasing, Population – decreasing, and Habitat for the species – stable.

Overall assessment of Conservation Status has not changed since 2013.

Overall trend in Conservation Status has not changed since 2013.

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	number of map 1x1 km grid cells (grids1x1)
	b) Minimum	
	c) Maximum	
	d) Best single value	131
12.2 Type of estimate		Best estimate
12.3 Population size inside the network Method used		Based mainly on extrapolation from a limited amount of data
12.4 Short-term trend of population size within the network Direction		Decreasing (-)
12.5 Short-term trend of population size within the network Method used		Based mainly on extrapolation from a limited amount of data
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

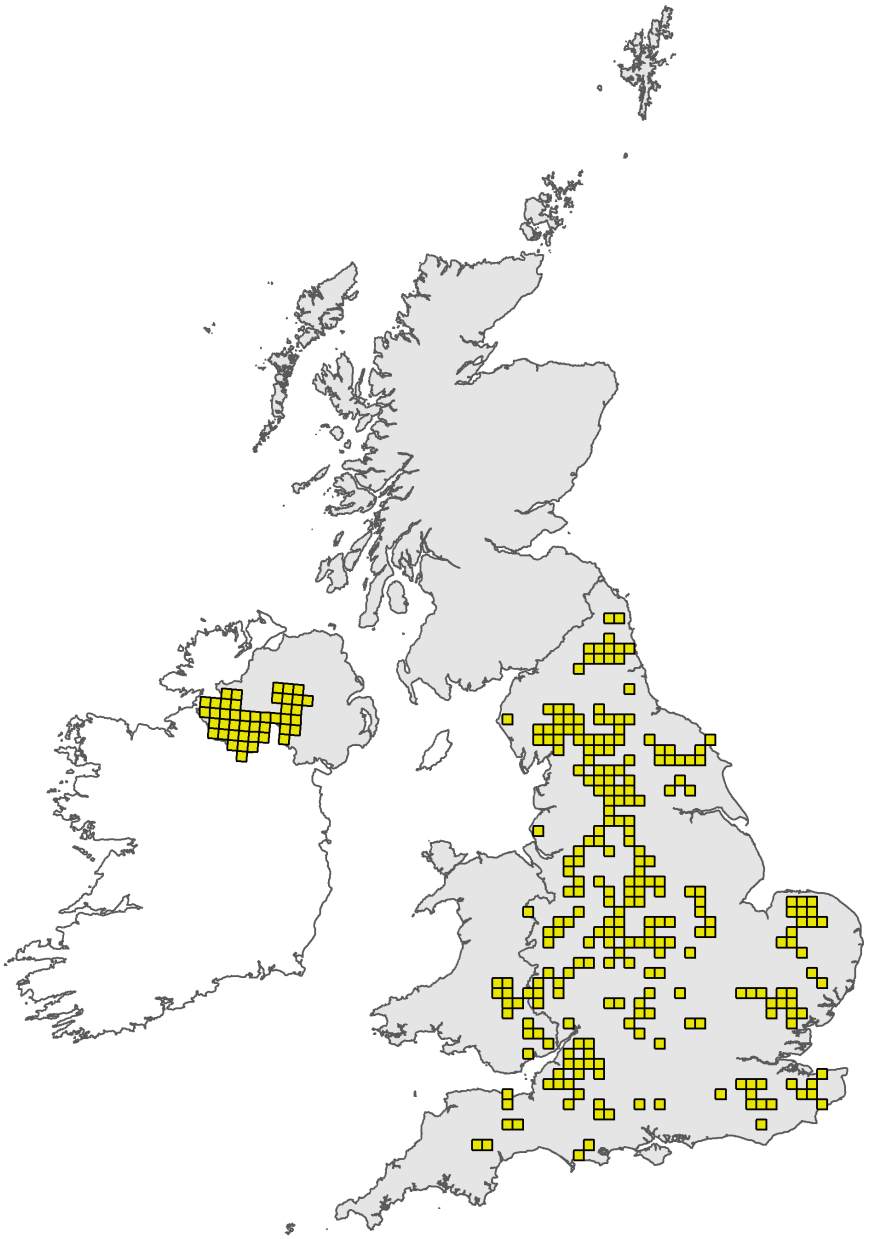

Figure 1: UK distribution map for S1092 - White-clawed crayfish (*Austropotamobius pallipes*). Coastline boundary derived from the Oil and Gas Authority's OGA and Lloyd's Register SNS Regional Geological Maps (Open Source). Open Government Licence v3 (OGL). Contains data © 2017 Oil and Gas Authority.

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

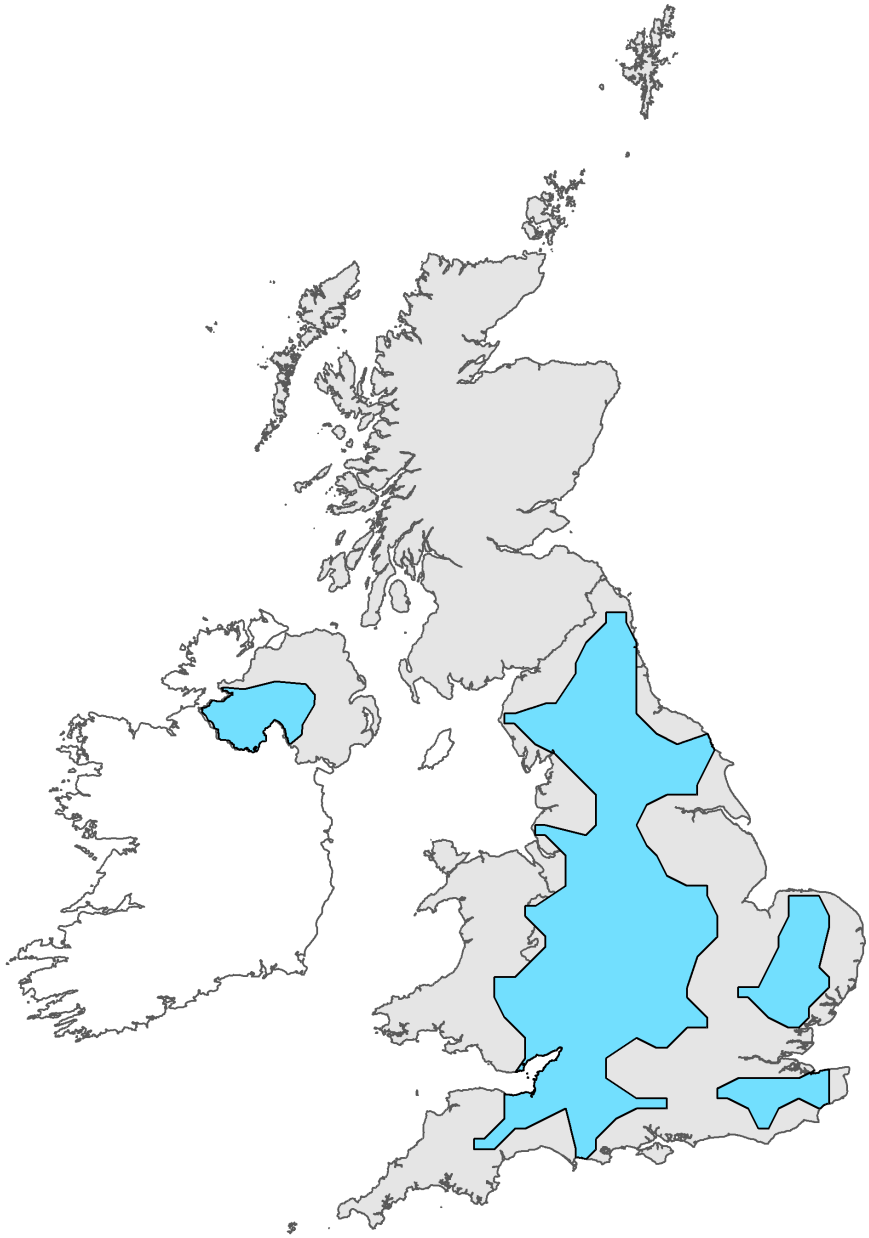

Figure 2: UK range map for S1092 - White-clawed crayfish (*Austropotamobius pallipes*). Coastline boundary derived from the Oil and Gas Authority's OGA and Lloyd's Register SNS Regional Geological Maps (Open Source). Open Government Licence v3 (OGL). Contains data © 2017 Oil and Gas Authority.

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.