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:

S6965 - Bullhead (*Cottus gobio*)

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	**6965**
1.3 Species scientific name	**Cottus gobio**
1.4 Alternative species scientific name	
1.5 Common name (in national language)	Bullhead

2. Maps

2.1 Sensitive species	No
2.2 Year or period	1998-2018
2.3 Distribution map	Yes
2.4 Distribution map Method used	Based mainly on extrapolation from a limited amount of 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

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5. Range

5.1 Surface area (km²)	138680.9	
5.2 Short-term trend Period	2007-2018	
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	Based mainly on extrapolation from a limited amount of data	
5.6 Long-term trend Period		
5.7 Long-term trend Direction		
5.8 Long-term trend Magnitude	a) Minimum	b) Maximum

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5.9 Long-term trend Method used		
5.10 Favourable reference range	a) Area (km²)	138155
	b) Operator	
	c) Unknown	
	d) Method	The FRR is the same as in 2013. The value is considered to be large enough to support a viable population and no lower than the range estimate when the Habitats Directive came into force in the UK. For further information see the 2019 Article 17 UK Approach document.
5.11 Change and reason for change in surface area of range	No change	
	The change is mainly due to:	
5.12 Additional information	Bullhead are a common and widespread species across England and Wales. Recording effort for the species is relatively high, although they may be under-recorded in some habitats due to their cryptic nature, habitat preferences, crepuscular behaviour and difficulties in surveying some habitats.	

6. Population

6.1 Year or period	2007-2018	
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	4273
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	Based mainly on extrapolation from a limited amount of data	
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	Based mainly on expert opinion with very limited 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	

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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	 Approximately equal to (≈) The FRP has changed since 2013. An FRP operator has been used because it has not been possible to calculate the exact FRP. The FRP is considered to be large enough to maintain a viable population and is no less that when the Habitats Directive came into force in the UK. For further details see the 2019 Article 17 UK Approach document.
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

7.1 Sufficiency of area and quality of occupied habitat	a) Are area and quality of occupied habitat sufficient (for long-term survival)?	No
	b) Is there a sufficiently large area of unoccupied habitat of suitable quality (for long-term survival)?	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	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	Evidence suggests that partial and permanent artificial barriers, as well as poor water quality, still preclude the bullhead returning to parts of its historic range.	

8. Main pressures and threats

8.1 Characterisation of pressures/threats

Pressure	Ranking
Freshwater fish and shellfish harvesting (recreational) (G06)	M
Invasive alien species of Union concern (I01)	M
Problematic native species (I04)	M
Mixed source pollution to surface and ground waters (limnic and terrestrial) (J01)	H
Modification of hydrological flow (K04)	H

Physical alteration of water bodies (K05)	H

Threat	Ranking
Physical alteration of water bodies (K05)	H
Other climate related changes in abiotic conditions (N09)	M
Hydropower (dams, weirs, run-off-the-river), including infrastructure (D02)	H
Freshwater fish and shellfish harvesting (recreational) (G06)	M
Invasive alien species of Union concern (I01)	M
Problematic native species (I04)	M
Mixed source pollution to surface and ground waters (limnic and terrestrial) (J01)	H
Modification of hydrological flow (K04)	H

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		Restore the habitat of the species (related to 'Habitat for the species')
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/eliminate point pollution to surface or ground waters from agricultural activities (CA10)
Reduce diffuse pollution to surface or ground waters from agricultural activities (CA11)
Reduce impact of hydropower operation and infrastructure (CC04)
Management of hunting, recreational fishing and recreational or commercial harvesting or collection of plants (CG02)
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)
Restore habitats impacted by multi-purpose hydrological changes (CJ03)
Other measures related to mixed source pollution and multi-purpose human-induced changes in hydraulic conditions (CJ04)
Adopt climate change mitigation measures (CN01)

9.6 Additional information

10. Future prospects

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10.1 Future prospects of parameters	a) Range	Good
	b) Population	Good
	c) Habitat of the species	Unknown
10.2 Additional information	Future trend of Range is overall stable; Future trend of Population is overall stable; 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	Favourable (FV)
11.2. Population	Favourable (FV)
11.3. Habitat for the species	Unknown (XX)
11.4. Future prospects	Favourable (FV)
11.5 Overall assessment of Conservation Status	Favourable (FV)
11.6 Overall trend in Conservation Status	Stable (=)
11.7 Change and reasons for change in conservation status and conservation status trend	a) Overall assessment of conservation status Improved knowledge/more accurate data The change is mainly due to: Improved knowledge/more accurate data b) Overall trend in conservation status Genuine change The change is mainly due to: Genuine change
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 not less than the Favourable Reference Range. Conclusion on Population reached because: (i) the short-term trend direction in Population size is stable; and (ii) the current Population size is approximately equal to the Favourable Reference Population. Conclusion on Habitat for the species reached because: (i) the area of occupied and unoccupied habitat is unknown and (ii) the habitat quality is unknown 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 good; (ii) the Future prospects for Population are good; and (iii) the Future prospects for Habitat for the species are unknown. Overall assessment of Conservation Status is Favourable because three of the conclusions are Favourable and one is Unknown. Overall trend in Conservation Status is based on the combination of the short-term trends for Range – stable, Population – stable, and Habitat for the species – stable.

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The Overall assessment of Conservation Status has changed between 2013 and 2019 because the conclusion for Population has changed from Unknown to Favourable, the conclusion for Habitat for the species has changed from Favourable to Unknown and
the conclusion for Future prospects has changed from Unknown to Favourable.

The Overall trend in Conservation Status has changed between 2013 and 2019 because the Habitat for the species trend has changed from increasing to stable.

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	744
12.2 Type of estimate		Minimum
12.3 Population size inside the network Method used		Based mainly on expert opinion with very limited data
12.4 Short-term trend of population size within the network Direction		Unknown (x)
12.5 Short-term trend of population size within the network Method used		Based mainly on expert opinion with very limited 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

Distribution Map

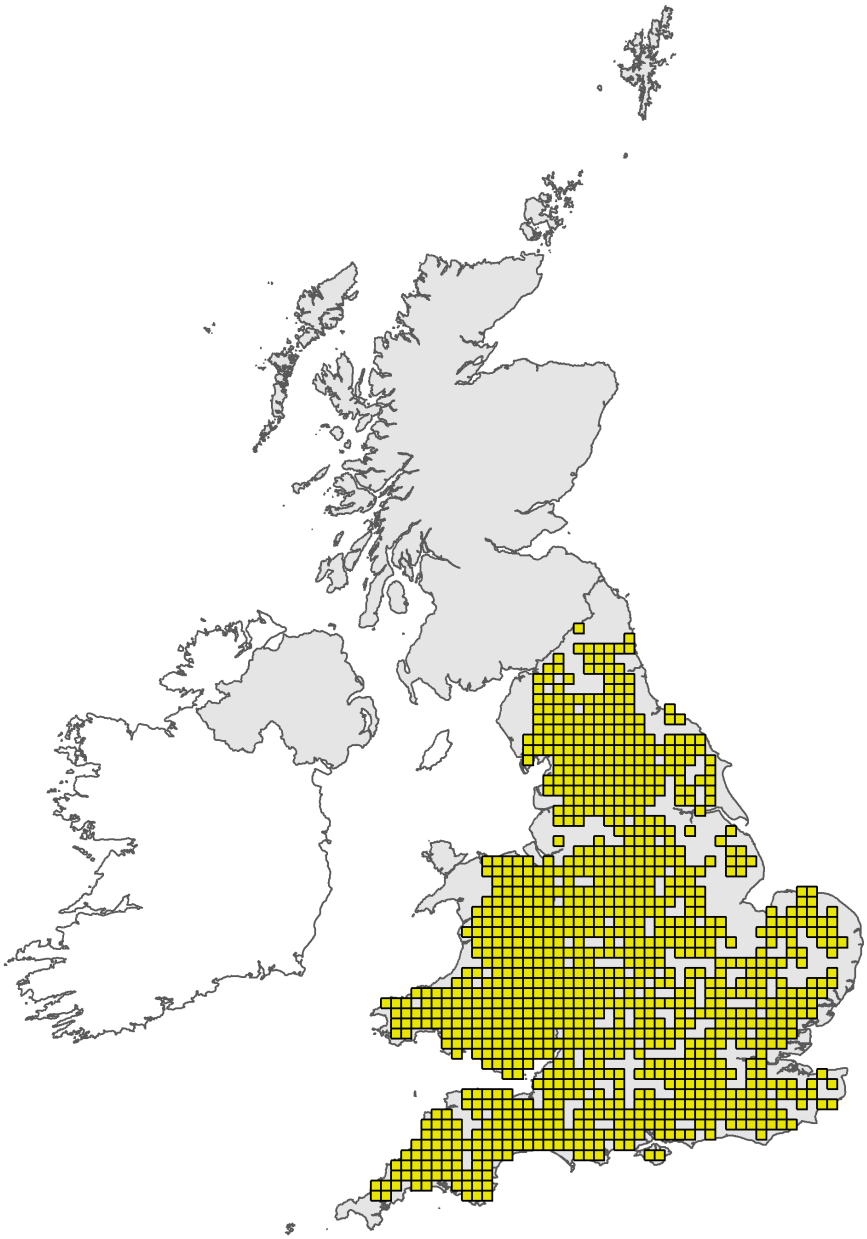

Figure 1: UK distribution map for S6965 - Bullhead (*Cottus gobio*). Coastline boundary derived from the Oil and Gas Authority's OGA and Lloyd's Register SNS Regional Geological Maps (Open Source). Open Government Licence v3 (OGL). Contains data © 2017 Oil and Gas Authority.

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 S6965 - Bullhead (*Cottus gobio*). 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.