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:

S1095 - Sea lamprey (*Petromyzon marinus*)

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	**1095**
1.3 Species scientific name	**Petromyzon marinus**
1.4 Alternative species scientific name	
1.5 Common name (in national language)	Sea lamprey

2. Maps

2.1 Sensitive species	No
2.2 Year or period	1990-2018
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

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

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

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

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5. Range

5.1 Surface area (km²)	38217.03
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
5.9 Long-term trend Method used	
5.10 Favourable reference range	a) Area (km²) b) Operator Approximately equal to (≈) c) Unknown d) Method The FRR is approximately equal to the current range. An FRR operator has been used because it has not been possible to calculate the exact FRR. For further details see the 2019 Article 17 UK Approach document.
5.11 Change and reason for change in surface area of range	Improved knowledge/more accurate data Use of different method The change is mainly due to: Use of different method
5.12 Additional information	The current Range surface area calculation does not represent the real range

surface area, which is considered to be the range in 2013 - 63046.95km2. Change in availability of underpinning mapping data compared to 2013 has resulted in an apparent decrease in range area, but this is not genuine change. Expert opinion considers the trend to be stable. For further information see the 2019 Article 17 UK Approach document.

6. Population

6.1 Year or period	1990-2018	
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	174
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	2006-2018	
6.8 Short-term trend Direction	Unknown (x)	
6.9 Short-term trend Magnitude	a) Minimum	
	b) Maximum	
	c) Confidence interval	
6.10 Short-term trend Method used	Insufficient or no data available	
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	x
	d) Method	The FRP for this species is Unknown. There is insufficient information to set an FRP value. For further information see the 2019 Article 17 UK Approach document.
6.16 Change and reason for change in population size	Improved knowledge/more accurate data	
	The change is mainly due to:	Improved knowledge/more accurate data

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

6.17 Additional information	The species is very widespread and spatial distribution and annual variability of populations are not fully understood. Therefore it is not been possible to set an short term trend or FRP. Surveyor error may also be an issue. Petromyzon ammocoetes are relatively difficult to detect using standard techniques, partly because they are much less abundant than Lampetra ammocoetes, which occupy similar habitat. The current population calculation does not represent the real population. Change in availability of distribution data has resulted in an apparent decrease in the population compared to 2013, but this is not due to genuine change. Expert opinion considers the trend in population to be stable. The population in 2013 was 305km2. For further information see the 2019 Article 17 UK Approach document.

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)?	Unknown
	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	2001-2018	
7.4 Short-term trend Direction	Unknown (x)	
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 sufficiency is unknown for this species. Evidence suggests that the historical introduction of physical barriers have precluded sea lamprey reaching their spawning grounds. Poor water quality is also a factor in some parts of the species range.	

8. Main pressures and threats

8.1 Characterisation of pressures/threats

Pressure	Ranking
Agricultural activities generating point source pollution to surface or ground waters (A25)	M
Agricultural activities generating diffuse pollution to surface or ground waters (A26)	M
Forestry activities generating pollution to surface or ground waters (B23)	M
Hydropower (dams, weirs, run-off-the-river), including infrastructure (D02)	M
Discharge of urban waste water (excluding storm overflows and/or urban run-offs) generating pollution to surface or ground water (F12)	M

Modification of hydrological flow (K04)	M
Physical alteration of water bodies (K05)	H
Droughts and decreases in precipitation due to climate change (N02)	M
Change of habitat location, size, and / or quality due to climate change (N05)	H

Threat	Ranking
Agricultural activities generating point source pollution to surface or ground waters (A25)	M
Agricultural activities generating diffuse pollution to surface or ground waters (A26)	M
Forestry activities generating pollution to surface or ground waters (B23)	M
Hydropower (dams, weirs, run-off-the-river), including infrastructure (D02)	M
Discharge of urban waste water (excluding storm overflows and/or urban run-offs) generating pollution to surface or ground water (F12)	M
Modification of hydrological flow (K04)	M
Physical alteration of water bodies (K05)	H
Droughts and decreases in precipitation due to climate change (N02)	M
Change of habitat location, size, and / or quality due to climate change (N05)	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: Expand the current range of the species (related to ‘Range’)

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

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 diffuse pollution to surface or ground waters from forestry activities (CB10)
Reduce impact of hydropower operation and infrastructure (CC04)

Reduce/eliminate point source pollution to surface or ground waters from industrial, commercial, residential and recreational areas and activities (CF04)
Reduce/eliminate diffuse pollution to surface or ground waters from industrial, commercial, residential and recreational areas and activities (CF05)
Reduce impact of mixed source pollution (CJ01)
Reduce impact of multi-purpose hydrological changes (CJ02)
Adopt climate change mitigation measures (CN01)
Implement climate change adaptation measures (CN02)

9.6 Additional information

10. Future prospects

10.1 Future prospects of parameters	a) Range	Good
	b) Population	Unknown
	c) Habitat of the species	Unknown
10.2 Additional information	Future trend of Range is Unknown; Future trend of Population is Unknown; and Future trend of Habitat for the species is Unknown. 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	Unknown (XX)
11.3. Habitat for the species	Unknown (XX)
11.4. Future prospects	Unknown (XX)
11.5 Overall assessment of Conservation Status	Unknown (XX)
11.6 Overall trend in Conservation Status	Unknown (x)
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 approximately equal to the Favourable Reference Range. Conclusion on Population reached because: (i) the short-term trend direction in Population size is unknown; and (ii) the Favourable Reference Population is unknown. 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 unknown.
Conclusion on Future prospects reached because: (i) the Future prospects for Range are unknown; (ii) the Future prospects for Population are unknown; and (iii) the Future prospects for Habitat for the species are unknown.
Overall assessment of Conservation Status is Unknown because two or more of the conclusions are Unknown and none are Unfavourable.
Overall trend in Conservation Status is based on the combination of the short-term trends for Range - unknown, Population - unknown, and Habitat for the species - unknown.
The overall assessment of Conservation Status is the same as in 2013, 'unknown'.
The overall trend in Conservation is the same as in 2013, 'unknown'.

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	116
12.2 Type of estimate		Minimum
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		Unknown (x)
12.5 Short-term trend of population size within the network Method used		Insufficient or no data available
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

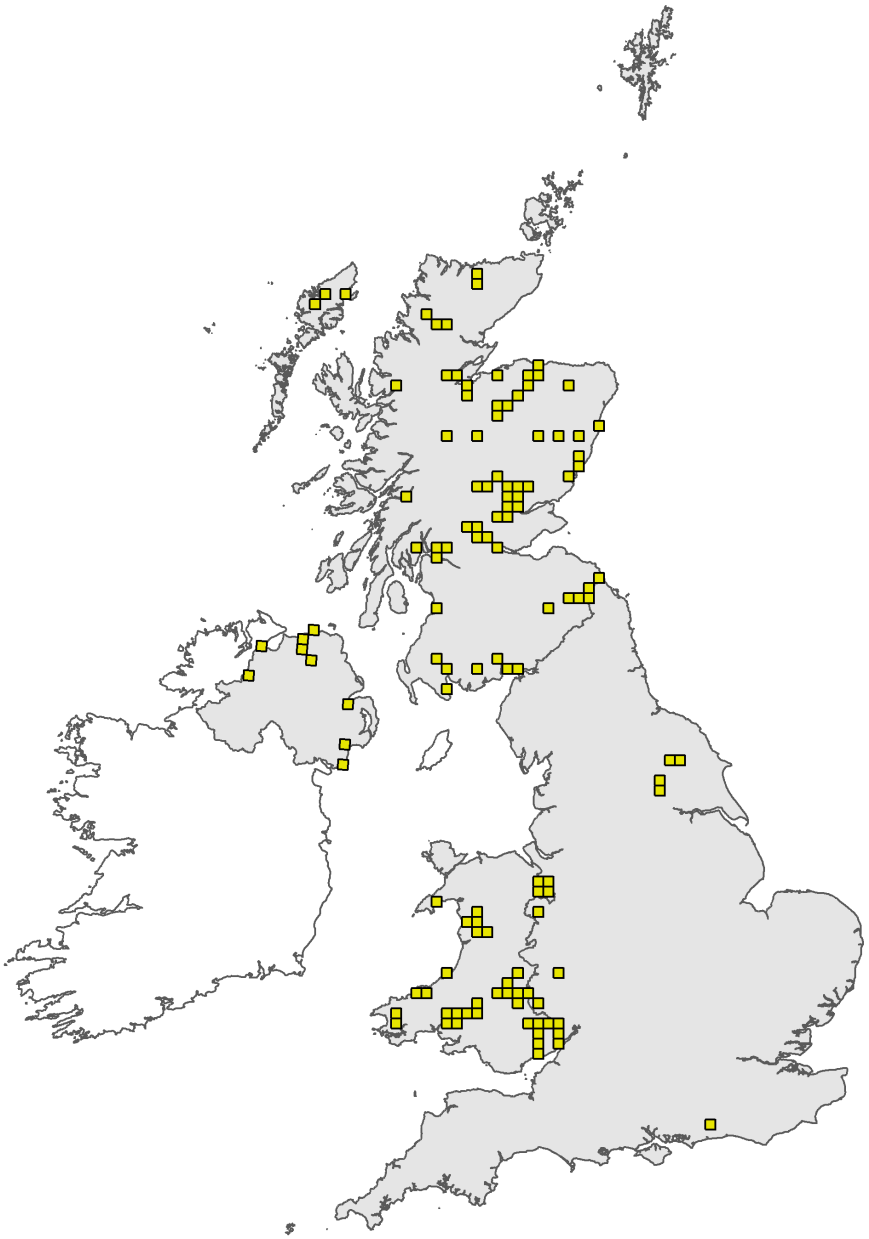

Figure 1: UK distribution map for S1095 - Sea lamprey (*Petromyzon marinus*). Coastline boundary derived from the Oil and Gas Authority's OGA and Lloyd's Register SNS Regional Geological Maps (Open Source). Open Government Licence v3 (OGL). Contains data © 2017 Oil and Gas Authority.

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

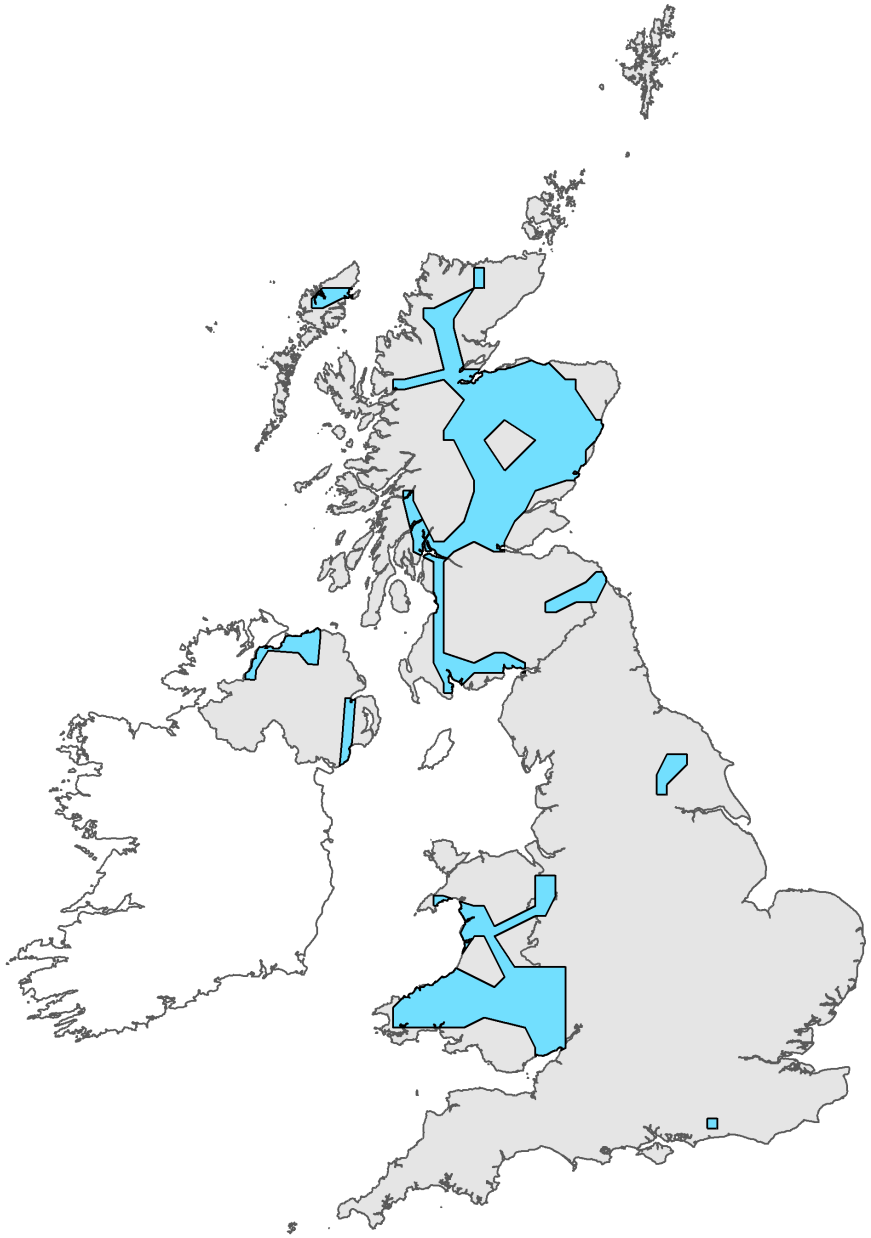

Figure 2: UK range map for S1095 - Sea lamprey (*Petromyzon marinus*). Coastline boundary derived from the Oil and Gas Authority's OGA and Lloyd's Register SNS Regional Geological Maps (Open Source). Open Government Licence v3 (OGL). Contains data © 2017 Oil and Gas Authority.

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.