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:

S1096 - Brook lamprey (*Lampetra planeri*)

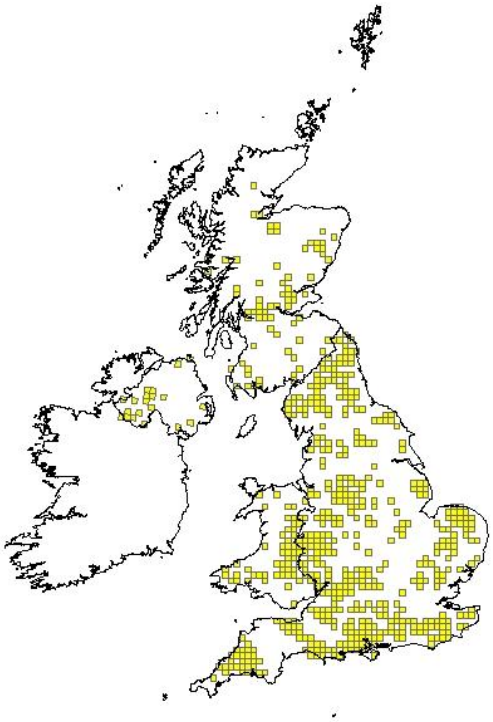
IMPORTANT NOTE – PLEASE READ

- The country-level reporting information contained in this document is a contribution to the Article 17 UK report for the habitat/species concerned.
- It has been provided by **Northern Ireland Environment Agency** and refers only to the state of the habitat/species in **Northern Ireland** - it does not constitute an assessment for the whole of the UK.
- The Article 17 UK Approach document provides details on how this information has been used and, combined with information supplied by other Statutory Nature Conservation Bodies
- The format of the document is closely aligned to that set out by the European Commission for Member State reporting – as a result, some of the fields are not applicable at a country-level and have deliberately been left blank – in addition, the content of most fields is constrained by the EC reporting categories.

Reporting format on the 'main results of the surveillance under Article 11' for Annex II, IV & V species

Field name	*Brief explanations*	
0.2 Species	**0.2.1 Species code**	**S1096**
	0.2.2 Species scientific name	***Lampetra planeri***
	0.2.3 Alternative species scientific name Optional	
	0.2.4 Common name Optional	**Brook Lamprey**

1.1 Maps			
1.1.1 Distribution map		**Sensitive**	**False**
	At a 10-km square resolution, the current Database for the Atlas of Freshwater Fishes, does not provide an updated data source for brook lamprey in NI. Records have been used from CEDaR, the Loughs Agency, NIEA and Goodwin et al (2009) to inform the current assessment. For the assessment, records from date range (2007-2012) have been used to map current extent of occurrence. Records are compounded by the problems in distinguishing betwee fluviatilis (river lamprey) and L. Planeri (brook lamprey) during their juvenile stage. To improve th quality of the range data for L. fluviatilis there would need to be further surveys specifally targeted at this species, or that take account of some of their particular habitat requirements.		



1.1.2 Method used - map	**Estimate based on partial data with some extrapolation and/or modelling**
1.1.3 Year or period	**2007-2012**
	2007-2012
1.1.4 Additional distribution map	**False**
1.1.5 Range map	

2.1 Biogeographical region & marine regions	**ATL**
2.2 Published sources	**"Goodwin CE, Dick JTA, Rogowski DL, Elwood RW. Lamprey (Lampetra fluviatilis and Lampetra planeri) ammocoete habitat associations at regional, catchment and microhabitat scales in Northern Ireland. Ecology of Freshwater Fish 2008: 17: 542–553. 2008.** **Goodwin, C.E., Dick, J.T.A., Elwood, R.W. 2009. A preliminary assessment of the distribution of the sea lamprey (Petromyzon marinus L.), river lamprey (Lampetra fluviatilis (L.)) and brook lamprey (Lampetra planeri (Bloch)) in Northern Ireland. Biology and Environment: Proceedings of the Royal Irish Academy 109B, 47□52; DOI: 10.3318/BIOE.2009. 109.1.47.** **Loughs Agency (2010). Lamprey Baseline Surveys: River Finn and River Deele Co Donegal. Loughs Agency of the Foyle**

	Carlingford and Irish Lights Commission. Report Ref: LA/Lamprey/04&09/11. **Loughs Agency (2011). Water Framework Directive Fish in Rivers Classification Report. Loughs Agency of the Foyle Carlingford and Irish Lights Commission. Report Ref: LA/WFDFIRNI/11.** **Maitland, PS. (2003). Ecology of the River, Brook and Sea Lamprey. Conserving Natura 2000 Rivers, Ecology Series No. 5. Peterborough: English Nature. http://www.english-nature.org.uk/LIFEinUKRivers/publications/lamprey.pdf** **Maitland, PS. (2004). Keys to the Freshwater Fish of Britain and Ireland, with notes on their distribution and ecology. FBA Scientific Publication No.62.** **Map Data Sources** **GB records:** **Biological Records Centre - Database for the Atlas of Freshwater Fishes (2004) (via NBN Gateway)"**

2.3 Range	
2.3.1 Surface area Range	**9320**
	Lamprey spp. are wide spread throughout the river catchments of NI. In the current assessment they were present in all river catchments apart from Melvin and the Skeogh Rivers (Goodwin et al 2009). Using existing/available data and comparing it to the UK range maps for river and brook lamprey (where range of brook lamprey has been assumed to be 30% larger), calculations for distribution have been made. From 140 entries for river/brook lamprey and 6 entries for river lamprey and relating this to individual 10k squares only the range has been determined to be 9320km2.
2.3.2 Method used Surface area of Range	**Estimate based on partial data with some extrapolation and/or modelling**
	At a 10-km square resolution, the current Database for the Atlas of Freshwater Fishes, does not provide an updated data source for brook lamprey in NI. Records have been used from CEDaR, the Loughs Agency, NIEA and Goodwin et al (2009) to inform the current assessment. For the assessment, records from date range (2007-2012) have been used to map current extent of occurrence. Records are compounded by the problems in distinguishing betwee fluviatilis (river lamprey) and L. Planeri (brook lamprey) during their juvenile stage. To improve th quality of the range data for L. Fluviatilis there would need to be further surveys specifally targeted at this species, or that take account of some of their particular habitat requirements.
2.3.3 Short-term trend	**2001-2012**

Period	2001-2012	
2.3.4 Short term trend Trend direction	**stable**	
	Stable - records from the NBN Gateway (including the Database and Atlas of Freshwater Fishwere examined and compared to current distribution of lamprey spp. in NI (Godwin et al 2009). However, the data was found to be insufficient for determining trends due to the relative lack of historic lamprey surveys (until recently, very few surveywere aimed at lampreys). Maitland (2004) suggested that whilst the species has been lost from a number of former catchments in the UK (due to pollution and barriers to migration) the current extent of the species' range appears to have increased from its current historical rang. Unfortunately the definition of 'historical' range in this context is unknown. However, it can be assumed from this, that the range has been relatively stable since the Habitats Directive came into force in 1994 an Water Framework Directive in 2000.	
2.3.5 Short-term trend Magnitude	**a) Minimum**	
	b) Maximum	
2.3.6 Long-term trend Period	**1988-2012**	
	1988-2012	
2.3.7 Long-term trend Trend direction	**unknown**	
	Unknown	
2.3.8 Long-term trend Magnitude Optional	**a) Minimum**	
	b) Maximum	
2.3.9 Favourable reference range	**a) Value in km²**	
	b) Operator for FRR	**approximately equal to**
	FRR = CV (current value). Lack of survey and historical data for lamprey in NI for comparison	
	c) FRR is unknown (indicated by "true")	**False**

	d) Method used to set FRR	**FRR = CV (current value). Lack of survey and historical data for lamprey in NI (for comparision).**
2.3.10 Reason for change Is the difference between the reported value in 2.3.1 and the previous reporting round mainly due to…	**a) Genuine change?**	**False**
	b) Improved knowledge/more accurate data?	**True**
	c) Use of different method (e.g. "Range tool")?	**False**

2.4 Population		
2.4.1 Population size estimation (using individuals or agreed exceptions where possible)	**a) Unit**	
	b) Minimum	
	c) Maximum	
2.4.2 Population size estimation (using population unit other than individuals) Optional *(if 2.4.1 filled in)*	**a) Unit**	**number of map 1x1 km grid cells**
	The 2007 to 2012 grids1x1 locations was compiled using the results of surveys undertaken by the NI Loughs Agency with in the Foyle and Carlingford catchments and by Water Management Unit during their provence wide WFD monitoring. As stressed due to the profound difficulty of distinguishing between Brook and River ammocoetes they have only being identified down to family Lampetra sp level. As stated above the grid1x1 only cover a limited area of NI, however post 2007 records indicate that both species, particularly Brook are widespread in NI	
	b) Minimum	**12**
	Min values is derived from records of where the lamprey has being identified to species level.	
	c) Maximum	**62**
	Max value is derived from records where the lamprey has being identified both at species and family level.	
2.4.3 Additional	**a) Definition of**	**Presence of juvenile Brook/River lamprey**

information on population estimates / conversion Optional	**"locality"**	**in grids10x10**
	b) Method to convert data	
	c) Problems encountered to provide population size estimation	**Lack of survey and historical data for lamprey in NI (for comparision). Also current juvenile survey data does not differentiate between river and brook lamprey.**
2.4.4 Year or period	**2007-2012**	
2.4.5 Method used Population size	**Estimate based on partial data with some extrapolation and/or modelling**	
2.4.6 Short-term trend Period	**2001-2012**	
2.4.7 Short-term trend Trend direction	**unknown**	
2.4.8 Short-term trend Magnitude	**a) Minimum**	
	b) Maximum	
	c) Confidence interval	
2.4.9 Short-term trend Method used	**Absent data**	
2.4.10 Long-term trend – Period	**1988-2012**	
	1988-2012	
2.4.11 Long-term trend Trend direction	**unknown**	
	Unknown	
2.4.12 Long-term trend Magnitude Optional	**a) Minimum**	

	b) Maximum	
	c) Confidence interval	
2.4.13 Long term trend Method used	**0**	
	Absent data	
2.4.14 Favourable reference population	**a) Number of individuals/agreed exceptions/other units**	
	b) Operator	**approximately equal to**
	FRP = CV (current value). Lack of survey and historical data for lamprey in NI for comparison	
	c) FRP is unknown indicated by "true"	**False**
	d) Method used to set FRP	**FRP = CV (current value). Lack of survey and historical data for lamprey in NI (for comparision).**
2.4.15 Reason for change Is the difference between the value reported at 2.4.1 or 2.4.2 and the previous reporting round mainly due to:	**a) Genuine change?**	**False**
	b) Improved knowledge/more accurate data?	**True**
	Improved knowledge and more accurate data (Loughs Agency and Goodwin et al (2009))	
	c) Use of different method (e.g. "Range tool")?	**False**

2.5 Habitat for the species	
2.5.1 Area estimation	

	Unknown - insufficient information to make assessment It is unknown whether the amount of habitat in the UK is sufficient to support a viable population of the species.	
2.5.2 Year or period	**2007-2012**	
2.5.3 Method used Habitat for the species	**Absent data**	
	Absent data	
2.5.4 Quality of the habitat	**a) Habitat quality**	**Moderate**
	Moderate	
	b) Assessment method	**Lack of information on habitat quality for NI, however based on the densities of lamprey spp. that Goodwin et al (2009) reported (mean 2.16 per m2), habitat is generally considered to be of moderate quality for lamprey spp..**
	Lack of information on habitat quality for NI, however based on the densities of lamprey spp. that Goodwin et al (2009) reported (mean 2.16 per m2), habitat is generally considered to be of moderate quality for lamprey spp..	
2.5.5 Short-term trend Period	**2001-2012**	
	2001-2012	
2.5.6 Short-term trend Trend direction	**unknown**	
	Unknown - insufficient information to make assessment	
2.5.7 Long-term trend Period	**1988-2012**	
2.5.8 Long-term trend Trend direction	**unknown**	
2.5.9 Area of suitable habitat for the species	**a) Value in km²**	
	b) Absence of data indicated as '0'	
2.5.10 Reason for change Is the difference between the value reported at 2.5.1 and the previous reporting round mainly due to	**a) Genuine change?**	**False**
	b) Improved knowledge/more accurate data?	**True**
	Improved knowledge/more accurate data - Goodwin et al (2009) and the Loughs Agency	
	c) Use of different method (e.g. "Range tool")?	**False**

2.6 Main pressures		
a) Pressure	**b) Ranking**	**c) Pollution qualifier**
	H = high importance M = medium importance L = low importance	
A01: Cultivation	H	N
A08: Fertilisation	H	N
D01: Roads, paths and railroads	H	X
H01: Pollution to surface waters (limnic & terrestrial, marine & brackish)	H	X
E01: Urbanised areas, human habitation	M	X
J02: human induced changes in hydraulic conditions	M	X

A01 - Cultivation A08 - Fertilisation D01 - Roads, paths and railroads E01 - Urbanised areas, human habitation H01 - Pollution to surface waters (limnic&terrestrial, marine & brackish) J02 - Human induced changes in hydraulic conditions	
2.6.1 Method used – Pressures	**mainly based on expert judgement and other data**
	Estimate based on partial data with some extrapolation and/or modelling

2.7 Threats		
a) Threat	**b) Ranking**	**c) Pollution qualifier**
	H = high importance M = medium importance L = low importance	
A01: Cultivation	H	N
A08: Fertilisation	H	N
E01: Urbanised areas, human habitation	H	X
J02: human induced changes in hydraulic conditions	H	X
D01: Roads, paths and railroads	M	X
H01: Pollution to surface waters (limnic & terrestrial, marine & brackish)	M	X

A01 - Cultivation A08 - Fertilisation D01 - Roads, paths and railroads E01 - Urbanised areas, human habitation H01 - Pollution to surface waters (limnic&terrestrial, marine & brackish) J02 - Human induced changes in hydraulic conditions	
2.7.1 Method used – Threats	**expert opinion**
	Estimate based on expert opinion

2.8 Complementary information	
2.8.1 Justification of % thresholds for trends	
2.8.2 Other relevant information	**Good future prospects (next 12 years and in 2025). Trends have not been determined, as there is nothing for analysis, and there is a lack of survey/historical data for NI.** **Species less likely to struggle because the L. planeri is an entirely freshwater species it can remain in catchments, or parts of catchments, where the other anadromous species have become excluded by being unable to ascend a physical obstacle or area of poor water quality. However impoundments can still isolate populations within certain river systems, and restoring L. planeri populations is hampered by a poor understanding of their water quantity and water quality requirements (Maitland, 2003).** **An additional threat to brook lamprey is the risk associated with water intakes, and particularly those associated with powerstations and other industrial processes. Current records are available from relevant powerstation impingement studies (Ballylumford and Coolkeeragh).** **The extent to which the species' habitat is restored outside the designated site network through the implementation of the Water Framework Directive is unclear at present. This is because the objectives are unclear if the habitat has been degraded by physical intervention (e.g. will many such waterbodies be considered to be Heavily Modified Waterbodies?) and** **the process for addressing diffuse pollution is in its early stages. However, it is likely that L. planeri's prospects are good in the long term.** **At present there are no designated sites for L. Planeri in NI.**

	Poor future prospects (next 12 years and in 2025). Trends have not been determined, as there is nothing for analysis, and there is a lack of survey/historical data for NI. Species likely to struggle unless conditions change (notably pressures and threats that are related to the water environment). For NI this has been related to extensive agriculture, road surface water runoff, urbanisation, pollution of surface waters, and ease of migration over man-made structures - even those that are considered suitable for migration of salmonids). An additional threat to brook lamprey is the risk associated with water intakes, and particularly those associated with powerstations and other industrial processes. Current records are available from relevant powerstation impingement studies (Ballylumford and Coolkeeragh).
2.8.3 Trans-boundary assessment	

2.9 Conclusions *(assessment of conservation status at end of reporting period)*
Please refer to the United Kingdom assessment for this species.

3 Natura 2000 coverage & conservation measures - Annex II species ***(only applies to species listed under Annex II of the Directive)***

3.1 Population		
3.1.1 Population size Estimation of population size included <u>in the SAC network</u>	**a) Unit**	**number of map 1x1 km grid cells**
	Refer to 2.4.2a	
	b) Minimum	**0**
	Refer to 2.4.2b	
	c) Maximum	**15**
	Refer to 2.4.2c	
3.1.2 Method used	**Estimate based on partial data with some extrapolation and/or modelling**	
3.1.3 Trend of population size within the network (short-term trend)	**unknown**	

3.2 Conservation measures

Conservation measures taken (i.e. already being implemented) within the reporting period and provided information about their importance, location and evaluation.

3.2.1 Measure	3.2.2 Type					3.2.3 Ranking H = high importance M = medium importance L = low importance	3.2.4 Location where the measure is PRIMARILY applied			3.2.5 Broad evaluation of the measure					
	a) Legal/statutory	b) Administrative	c) Contractual	d) Recurrent	e) One-off		a) Inside	b) Outside	c) Both inside & outside	a) Maintain	b) Enhance	c) Long term	d) No effect	e) Unknown	f) Not evaluated
2.0: Other agriculture-related measures	Y					H			Y			Y			
4.1: Restoring/improving water quality	Y					H			Y			Y			
4.2: Restoring/improving the hydrological regime	Y					M			Y			Y			
4.3: Managing water abstraction	Y					H			Y			Y			
6.3: Legal protection of habitats and species	Y					H			Y			Y			
7.4: Specific single species or species group management measures	Y					H			Y			Y			

8.1: Urban and industrial waste management	Y					H			Y			Y			
8.2: Specific management of traffic and energy transport systems	Y					M			Y			Y			

2.0 - Other agriculture-related measures
4.1 - Restoring/improving water quality
4.2 restoring/improving the hydrological regime
4.3 - managing water abstraction
8.1 - urban and industrial waste management
8.2 specific management of traffic and energy transport systems