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*)

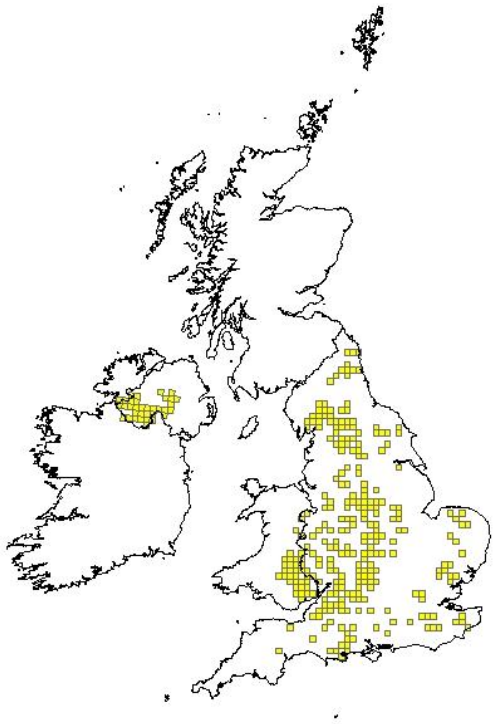
IMPORTANT NOTE – PLEASE READ

- 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**	**S1092**
	0.2.2 Species scientific name	***Austropotamobius pallipes***
	0.2.3 Alternative species scientific name Optional	
	0.2.4 Common name Optional	**White-clawed crayfish**

1.1 Maps			
1.1.1 Distribution map		**Sensitive**	**False**



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**
1.1.4 Additional distribution map	**False**
1.1.5 Range map	

2.1 Biogeographical region & marine regions	**ATL**
2.2 Published sources	**"AERC (1998). Surveys of the distribution of freshwater crayfish (Austropotamobius pallipes) in Northern Ireland. Unpublished report to Environment and Heritage Service (DoE Northern Ireland) (now NIEA), May 1998. AERC ref. B8202.** **Bradley, P. (2008) Population status of white-clawed crayfish (Austropotamobius pallipes Lereboullet) at Magheraveely Marl Loughs SAC. Unpublished report for Bioscape Ltd. To ENSIS Ltd. And the Northern Ireland Environment Agency (NI).** **Gallagher, M.B., Dick, J.T.A., Elwood, R.W. (2006) Riverine habitat requirements of the white-clawed crayfish, Austropotamobius pallipes. Biology and Environment: Proceedings of the Royal Irish Academy 106(1):1 – 8.** **Preston, S. J. and Stone, R. (1998) Survey Assessment and Site Boundary Delineation of the Fury River in Co. Tyrone. Unpublished report to Environment and Heritage Service (DoE Northern Ireland) (now NIEA), December 1998.** **McShane, P. (2012) Survey of the Distribution and Abundance of White-clawed crayfish (Austropotamobius pallipes) on the Blackwater River and Tributaries (Round 1). Unpublished report for NIEA (DoE, Northern Ireland).** **(Also Round 2 of this report currently being carried out including Fury River and other rivers within the Blackwater catchment.)** **McShane, P. (2009) Baseline Survey of White-clawed Crayfish, Austropotamobius pallipes, in the River Tempo. Unpublished report for NIEA (DoE, Northern Ireland).** **Unpublished Data (1990-2011) Surrogate information gathered during Invertebrate Sampling for the Water Framework Directive and surveys pre-dating this legislation. Supplied by Water Management Unit, Environmental Protection, NIEA. (DoE, NI).** **National Biodiversity Network Gateway Website (http://searchnbn.net/)** **Wilson, N. (2008) Assessing the Riparian Habitat Requirements of the White-clawed Crayfish, Austropotamobius pallipes (Lereboullet, 1858) in Northern Ireland. Crayfish News Vol 30 Issue 4 Pg. 1. Part of PhD Thesis for QUB.**

FÜreder, L., Gherardi, F., Holdich, D., Reynolds, J., Sibley, P. & Souty-Grosset, C. (2010). Austropotamobius pallipes. In: IUCN (2011) 2011 IUCN Red Lists of Threatened Species. Version 2011.2

Gouin, N.F., Grandjean F., Pain S., Souty-Grosset J. and Reynolds J., (2003). Origin and Colonisation history of the White-clawed crayfish, Austropotamobius pallipes, in Ireland. Heredity, 91, 70-77.

Holdich, D.M. (2003) Ecology of the White-clawed Crayfish. Conserving Natura 2000 Rivers Ecology Series No.1 English Nature, Peterborough.

Holdich D.M., Palmer M. and Sibley P.J., (2009). The indigenous status of Austropotamobius pallipes (Lereboullet) in Britain. In: Brickland, J., Holdich D.M. and Imhoff E.M., (EDS), Crayfish Conservation in the British Isles, Proceedings of Conference held in Leeds, 1-11.

Holdich, D.M., Reynolds, J.D., Souty-Grosset, C., and Sibley, P.J. (2009). A review of the ever increasing threat to European crayfish species. Knowledge and Management of Aquatic Ecosystems, Issue 394-395, 11.

IUCN (2003). Guidelines for Application of IUCN Red List Criteria at Regional Levels, Version, 3.0, IUCN Species Survival Commission, IUCN, Gland, Cambridge.

IUCN (2011). IUCN Red List of Threatened Species. Version 2011.2. <www.iucnredlist.org>. Downloaded on 12 November 2011.

JNCC (2005). Common Standards Monitoring Guidance for Freshwater Fauna. Joint Nature Conservation Committee, Peterborough.

Matthews, M. & Reynolds, J.D. (1992) Ecological impact of crayfish plague in Ireland. Hydrobiologia, 234, 1-6.

Peay, S. (2002) Monitoring the White-clawed Crayfish. Field-testing in River Eden Tributaries, Summer 2002. Conserving Natura 2000 Rivers Monitoring Series. English Nature, Peterborough.

Peay, S. (2003) Monitoring the White-clawed Crayfish Austropotamobius pallipes. Conserving Natura 2000 Rivers Monitoring Series No.1. English Nature, Peterborough.

Reynolds, J.D. (2002) Growth and Reproduction. In Biology of Freshwater Crayfish. (ed D.M. Holdich), pp152-191. Blackwell Science Ltd., Oxford.

Sibley, P.J. (2003). The distribution of crayfish in Britain. In Management and Conservation of Crayfish. Proceedings of a

	conference held on 7th November 2002, Nottingham, UK (eds D.M. Holdich & P.J. Sibley), pp. 64-72. Environment Agency, Bristol. **Smith, G.R.T., Learner, M.A., Slater, F.M. and Foster, J. (1996). Habitat features important for the conservation of the native crayfish Austropotamobius pallipes in Britain. Biological Conservation 75, 239-46."**

2.3 Range		
2.3.1 Surface area Range	**2991**	
	The Range was calculated by drawing an external envelop around the species distribution for the period 2007-2012 (eliminating any uncorroborated occasional records and outliers). It is also noted data from Water Management Unit for 2012 and part of 2011 is not available at the time of compilation of this report therefore it is believed that this is an underestimation of the actual range. (See 2.2 and 2.9.3.d also) I have it as 8.5%. What FRR did you use? (The figures in Notes 2.3.4. and 2.3.7. refer to overall range). As filled in 2.3.9.a did not think had to fill in 2.3.9.b or c! The range may have decreased but the occupied 10km2 is the same i.e. 28.	
2.3.2 Method used Surface area of Range	**Estimate based on partial data with some extrapolation and/or modelling**	
2.3.3 Short-term trend Period	**2001-2012**	
2.3.4 Short term trend Trend direction	**unknown**	
	2.3.4. The overall drop in range from 2001 to 2012 was calculated to be 11.74% i.e. 0.98% per year. This reflects a drop in survey effort over this time and that data from Water Management Unit for 2012 and part of 2011 is not available at the time of compilation of this report. For this reason the range trend direction is unknown at this time.	
2.3.5 Short-term trend Magnitude	**a) Minimum**	
	b) Maximum	
2.3.6 Long-term trend Period	**1990-2012**	
2.3.7 Long-term trend Trend direction	**unknown**	
	2.3.7. The overall drop in range from 1990-2012 was calculated to be 8.5% i.e. 0.37% per year. This reflects an decrease in survey effort over that time and that data from Water Management Unit for 2012	

	and part of 2011 is not available. It is noted that between the 1990-2006 the range increased by 3.67% i.e., 0.23% increase per year. It is therefore considered that the long range trend is also unknown at this time.	
2.3.8 Long-term trend Magnitude Optional	**a) Minimum**	
	b) Maximum	
2.3.9 Favourable reference range	**a) Value in km²**	**3269**
	b) Operator for FRR	
	c) FRR is unknown (indicated by "true")	**False**
	d) Method used to set FRR	**Range was estimated from historical data in the NBN Gateway, AERC Distribution Survey (1998), ATEC Rivers Survey, in house surveys, academic studies and from surrogate information provided by Water Management Unit (DOE NIEA) who carry out River Invertebrate surveys for Water Framework Directive monitoring (and also prior to this legislation i.e., from 1990,) which includes data on crayfish occurrence.**
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?	**False**
	c) Use of different method (e.g. "Range tool")?	**True**
	The short term range trend as calculated gives a reduction in range. This reduction reflects a decrease in survey effort over the time period	

	and that data for 2011/2012 is incomplete at the time of compilation of the report. Therefore the change in 2.3.1. is due to insufficient data at the time of reporting.

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 10x10 km grid cells**
	b) Minimum	**28**
	c) Maximum	**28**
2.4.3 Additional information on population estimates / conversion Optional	**a) Definition of "locality"**	
	b) Method to convert data	
	c) Problems encountered to provide population size estimation	**Data for the last reporting cycle is incomplete as most of 2011 and all of 2012 Water Management data is unavailable.**
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	**stable**	
	The short term population trend is an increase from 24 to 28 occupied 10x10km2. This is based on an incomplete data set therefore the population is judged as at least stable.	
2.4.8 Short-term trend Magnitude	**a) Minimum**	

	b) Maximum	
	c) Confidence interval	
2.4.9 Short-term trend Method used	**Estimate based on partial data with some extrapolation and/or modelling**	
2.4.10 Long-term trend – Period	**1990-2012**	
2.4.11 Long-term trend Trend direction	**stable**	
	The long term population trend is stable at 28 10x10km2. This is based on an incomplete data set therefore the population is judged as at least stable.	
2.4.12 Long-term trend Magnitude Optional	**a) Minimum**	
	b) Maximum	
	c) Confidence interval	
2.4.13 Long term trend Method used	**2**	
2.4.14 Favourable reference population	**a) Number of individuals/agreed exceptions/other units**	
	The number of 10km2 occupied from 1990-2000 was 28 and this would be the value I would use for FRV. This is the area I used to work out the FRR also. The number of occupied 10km2 in the last reporting cycle 2007-2012 (not all data in) is also 28 therefore I have it as the same as the FRV.	
	b) Operator	
	c) FRP is unknown	**False**

	indicated by "true"	
	d) Method used to set FRP	
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?	**False**
	c) Use of different method (e.g. "Range tool")?	**False**

2.5 Habitat for the species		
2.5.1 Area estimation		
	No available data. 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	**Estimate based on partial data with some extrapolation and/or modelling**	
2.5.4 Quality of the habitat	**a) Habitat quality**	**Unknown**
	b) Assessment method	**Unknown**
2.5.5 Short-term trend Period		
2.5.6 Short-term trend Trend direction	**unknown**	
2.5.7 Long-term trend Period		
2.5.8 Long-term trend	**unknown**	

Trend direction		
2.5.9 Area of suitable habitat for the species	**a) Value in km²**	
	No available data.	
	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?	**False**
	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	
A07: use of biocides, hormones and chemicals	H	O
F02: Fishing and harvesting aquatic resources	H	X
H01: Pollution to surface waters (limnic & terrestrial, marine & brackish)	H	X
K03: Interspecific faunal relations	H	
A02: modification of cultivation practices	M	X
A10: Restructuring agricultural land holding	M	X
A11: Agriculture activities not referred to above	M	
E03: Discharges	M	X
I01: invasive non-native species	M	
J02: human induced changes in hydraulic conditions	M	
K01: abiotic (slow) natural processes	L	

A02.01 Agricultural intensification.

A11 Agricultural run-off e.g. slurry, dairy washings(non-natural eutrophication. F02. Leisure fishing (bait and tackle)can be a source of lethal crayfish plague. H01.03 Point source pollution of biocides such as sheep dip. I01. Invasive plant species such as Himalyan balsam which leads to bank erosion and prevents the development of bankside cover.	
2.6.1 Method used – Pressures	**based only on expert judgements**

2.7 Threats		
a) Threat	**b) Ranking**	**c) Pollution qualifier**
	H = high importance M = medium importance L = low importance	
A07: use of biocides, hormones and chemicals	H	X
H01: Pollution to surface waters (limnic & terrestrial, marine & brackish)	H	X
XO: Threats and pressures from outside the Member State	H	
A01: Cultivation	M	NPX
A10: Restructuring agricultural land holding	M	X
E03: Discharges	M	X
F02: Fishing and harvesting aquatic resources	M	X
I01: invasive non-native species	M	
J02: human induced changes in hydraulic conditions	M	X
K03: Interspecific faunal relations	M	

2.7.1 Method used – Threats	**expert opinion**

2.8 Complementary information	
2.8.1 Justification of % thresholds for trends	

2.8.2 Other relevant information	
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 in the SAC network	**a) Unit**	**number of map 10x10 km grid cells**
	b) Minimum	**2**
	The Min and Max are the same and is two occupied 10 X10km2.	
	c) Maximum	**2**
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)	**decrease**	
	There are 5-8 lakes within the Magheraveely Marl lake system. Between 1996 and 2006 there were 9 positive records. For this reporting period 2007-2012 there were only three positive records, however, occupied 10 km2 shows no change based on reported sightings (no survey took place during the most recent reporting period). Therefore this is judged as a decrease in population overall.	

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		Y	
3.2: Adapt forest management	Y	Y		Y		H			Y					Y	
4.1: Restoring/improving water quality	Y	Y		Y		H			Y			Y		Y	
4.3: Managing water abstraction	Y					H			Y			Y		Y	
6.1: Establish protected areas/sites	Y	Y			Y	H			Y	Y		Y		Y	
6.3: Legal protection of habitats and species	Y				Y	H	Y			Y		Y			
7.2: Regulation/ Management of fishery in limnic systems	Y	Y		Y		H			Y			Y		Y	
7.4: Specific single species or species group management measures			Y	Y	Y	H	Y					Y			Y

2.0. Control of fertiliser application either by inorganic form or manure or slurry
3.2 Adhering to the new UK Forestry Standards - foresty and water (FC 2011)

7.4 Proposed reintroduction into one of the lakes of the Magheraveely Marl lake SAC. Tender process underway.
6.3 The species is listed under the EU Habitats Directive Annex ll and V with a requirement to designate special areas of conservation (SACs) for its protection. (The Conservation (Natural Habitats, etc.) Regulations (Northern Ireland) 1995 and Amendments). Also the Wildlife (NI) Order 1985 as amended by the Wildlife (Amendment)(NI) Order 1995 and the Wildlife and Natural Environment (NI) Act 2011. In addition, it is a 'priority species' with it's own UK Biodiversity Action Plan.
7.4 To limit the dangers posed by introduction of such species The Wildlife and Natural Environment Act (NI) 2011 now prohibits the sale and transport of this and other invasives, while in addition amending Schedule 5 (Animals which are protected at all times) of the The Wildlife (Northern Ireland) Order 1985 to now include White-clawed crayfish.
7.2 Fisheries Act (NI) 1966 controls capture, possession and transfer of crayfish via permits under section 14. Sections 48 and 54, 58 and 59 control substrate removal and water abstraction respectively i.e. habitat.
7.4 Ballinderry Fish Hatchery Have carried out various pieces of work in recent times including setting up an Ark site see www.ballinderryfishhatchery.co.uk.