

**European Community Directive  
on the Conservation of Natural Habitats  
and of Wild Fauna and Flora  
(92/43/EEC)**

**Second Report by the United Kingdom under  
Article 17  
on the implementation of the Directive  
from January 2001 to December 2006**

**Conservation status assessment for**

**Species:**

**S1029 - *Margaritifera margaritifera* - Freshwater  
pearl mussel.**

The information in this assessment corresponds to the "species fact sheet" submitted by the UK to the European Union in February 2008 (second and final submission). Please note that this is a section of the UK's report. For the complete report visit <http://www.jncc.gov.uk/article17>

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**Species Name: *Margaritifera margaritifera***

<b>1. National level</b>	
Species Code	S1029
Member State	United Kingdom
Biogeographic regions concerned within the Member state	ATL
1.1 Range map	No map available for this feature
1.2 Distribution map	No map available for this feature
<b>2. Biogeographic level</b>	
2.1 Biogeographic region	ATL
2.2 Published sources and/or websites	<p>ATKINS (2005) Hands off flows for cSAC Rivers Study, Chapter 4 River Ehen. Report for the Environment Agency.</p> <p>BAUER, G .1992. Variation in the life span and size of the freshwater pearl mussel. Journal of Animal Ecology, 61, 425-436</p> <p>BEASLEY, C.R. &amp; ROBERTS, D.1999. Assessing the conservation status of the freshwater pearl mussel in the north of Ireland - relevance of growth and age characteristics. Journal of Conchology, 36, 53-61.</p> <p>COSGROVE, P.J. &amp; HASTIE, L.C. 2000. National survey of the freshwater pearl mussel <i>M. margaritifera</i> – Phase II. Confidential report to Scottish Natural Heritage, Edinburgh.</p> <p>COSGROVE, P.J &amp; YOUNG, M.R. 1998. The status of the freshwater pearl mussel <i>M. margaritifera</i> (L.) in Scotland. Confidential report to Scottish Natural Heritage, Edinburgh.</p> <p>COSGROVE, P.J., YOUNG, M.R., HASTIE, L.C., GAYWOOD, M. AND BOON P.J. 2000. The status of the freshwater pearl mussel <i>Margaritifera margaritifera</i> Linn. In Scotland. Aquatic Conservation: Marine and Freshwater Ecosystems, 10(3), 197-208.</p> <p>GIBBONS, C., YOUNG, M., HASTIE, L., SOULSBY, C., POKRAJAC, D. &amp; CAMBELL, L. (2004). River Ehen Freshwater Pearl Mussel Project, Aberdeen University, Contract No JB128, Unpublished report to English Nature and the Environment Agency.</p> <p>HASTIE, L., (2003) Setting a compensation flow for Dubbs Beck. Report to</p>

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HASTIE, L.C. & COSGROVE, P.J. 2002. Intensive searching for mussels in a fast-flowing river: an estimation of sampling bias. *Journal of Conchology*, 37, 309-316

JACKSON, D.L. & MCLEOD, C.R. (eds.). 2000. Report 312 - Handbook on the UK status of EC Habitats Directive interest features: provisional data on the UK distribution and extent of Annex I habitats and the UK distribution and population size of Annex II species. Revised 2002. Peterborough: Joint Nature Conservation Committee. Available online at: [www.jncc.gov.uk/page-2447](http://www.jncc.gov.uk/page-2447)

KILLEEN, I. (2006) Freshwater pearl mussel *Margaritifera margaritifera* (L.,1758) In the Dubbs Beck, Cumbria: Report on the 2006 survey. Report to English Nature.

KILLEEN, I. (2006) The Freshwater pearl mussel *Margaritifera margaritifera* (L.,1758) In the River Irt, Cumbria: Report on the 2005 survey and desktop study on prospects for recovery of the mussel population. Report to the Environment Agency.

KILLEEN, I. (2006) Freshwater pearl mussel *Margaritifera margaritifera* (L.,1758) In the River Ehen, Cumbria: Report on the 2006 survey. Report to the Environment Agency.

KILLEEN, I.J. & OLIVER, P.G., 2000. A survey of rivers in Cumbria and North Lancashire for the freshwater pearl mussel *Margaritifera margaritifera*. Report to the Environment Agency & English Nature.

KILLEEN, I.J. & OLIVER, P.G., 1998. A comparison of the populations of the freshwater pearl mussel [*Margaritifera margaritifera* (L., 1758)] in the Rivers Ehen and Irt. *English Nature Research Reports Series No. 272*.

KILLEEN, I.J. & OLIVER, P.G., 1997b. The freshwater pearl mussel [*Margaritifera margaritifera* (L., 1758)] in the River Ehen. Part 2. Distribution maps. *English Nature Research Reports Series No. 226*.

KILLEEN, I.J. & OLIVER, P.G., 1997a. The freshwater pearl mussel [*Margaritifera margaritifera* (L., 1758)] in the River Ehen. Part 1. Report on the 1996 survey. *English Nature Research Reports Series No. 226*.

SKINNER, A., YOUNG, M. & HASTIE, L. 2003. Ecology of the Freshwater Pearl Mussel. *Conserving Natura 2000 Rivers Ecology Series No. 2* English Nature, Peterborough.  
[www.english-nature.org.uk/LIFEinUKRivers/publications/mussel.pdf](http://www.english-nature.org.uk/LIFEinUKRivers/publications/mussel.pdf)

YOUNG, M.R., COSGROVE, P.J. & HASTIE, L.C. 2001. The extent of, and causes for, the decline of a highly threatened naiad: *Margaritifera margaritifera*. In: *Ecology and evolutionary biology of the freshwater mussels Unionoida* (eds. G. Bauer & K. Wächtler), pp 337-357. Springer-Verlag, Berlin (*Ecological studies*, Vol. 145).

	<p>ZAHNER-MEIKE, E. &amp; HANSON, J.M. 2001. Effect of muskrat predation on naiads. In: Ecology and evolutionary biology of the freshwater mussels Unionoida (eds. G. Bauer &amp; K. Wächtler), pp 163-184. Springer-Verlag, Berlin (Ecological studies, Vol. 145).</p> <p>Map Data Source</p> <p>Jackson &amp; McLeod. 2000.</p>			
<b>2.3 Range of species in the biogeographic region or marine region</b>				
2.3.1 Surface range of the species (sq km)	Unknown			
2.3.2 Date of range determination	05/2007			
2.3.3 Quality of data concerning range	Poor			
2.3.4 Range trend	Decreasing (-)			
2.3.5 Range trend magnitude (%)	Unknown			
2.3.6 Range trend period	1994-2006			
2.3.7 Reasons for reported trend	3 - Direct human influence; 4 - Indirect anthropo or zoogenic influence;			
<b>2.4 Population</b>				
2.4.1 Population size estimation	Minimum	66	Maximum	66
	Units	Other Viable populations		
2.4.2 Date of population estimation	2006			
2.4.3 Method used for population estimation	2 - Extrapolation from surveys of part of the population			
2.4.4 Quality of population data	Moderate			
2.4.5 Population trend	Decreasing (-)			
2.4.6 Population trend magnitude (%)	Unknown			
2.4.7 Population trend period	2002-2006			
2.4.8 Reasons for reported trend	3 - Direct human influence; 4 - Indirect anthropo or zoogenic influence; Not applicable			
2.4.9 Justification of % thresholds for trends (optional)				
2.4.10 Main pressures	161 - Planting; 240 - Taking / Removal of fauna, general; 530 - Improved access to site; 701 - water pollution; 830 - Canalisation; 850 - Modification of hydrographic functioning, general; 852 - modifying structures of inland water courses; 910 - Silting up; 952 - eutrophication; 953 - acidification;			
2.4.11 Threats	161 - Planting; 240 - Taking / Removal of fauna, general; 530 - Improved access to site; 701 - water pollution; 830 - Canalisation; 850 - Modification of hydrographic functioning, general; 852 - modifying structures of inland water courses; 910 - Silting up; 952 - eutrophication; 953 - acidification;			
<b>2.5 Habitat for the species in the biogeographic region or marine region</b>				
2.5 Habitats for the species	The freshwater pearl mussel burrows into sandy substrates, often between boulders and pebbles, in fast-flowing rivers and streams. It requires cool, well-oxygenated soft water free of pollution or turbidity. The mussel spends			

	its larval, or glochidial, stage attached to the gills of salmonid fish.
2.5.2 Area estimation (sq km)	Unknown
2.5.3 Date of estimation	05/2007
2.5.4 Quality of data	Poor
2.5.5 Trend of the habitat	Stable (=)
2.5.6 Trend period	2002-2006
2.5.7 Reasons for reported trend	3 - Direct human influence; 4 - Indirect anthropo or zoogenic influence;
<b>2.6 Future prospects</b>	
2.6 Future prospects for the species	Bad prospects_Species likely to become extinct in the biogeographical region
<b>2.7 Complementary information</b>	
2.7.1 Favourable reference range (sq km)	56389
2.7.2 Favourable reference population	80
2.7.3 Suitable Habitat for the species	Unknown
2.7.4 Other relevant information	
<b>2.8 Conclusions</b> <i>(assessment of conservation status at end of reporting period)</i>	
(2.3) Range	(U1-) - Inadequate and deteriorating
(2.4) Population	(U2-) - Bad and deteriorating
(2.5) Habitat for the species	(U2) - Bad
(2.6) Future prospects	(U2) - Bad
Overall assessment	(U2-) - Bad and deteriorating