

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

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

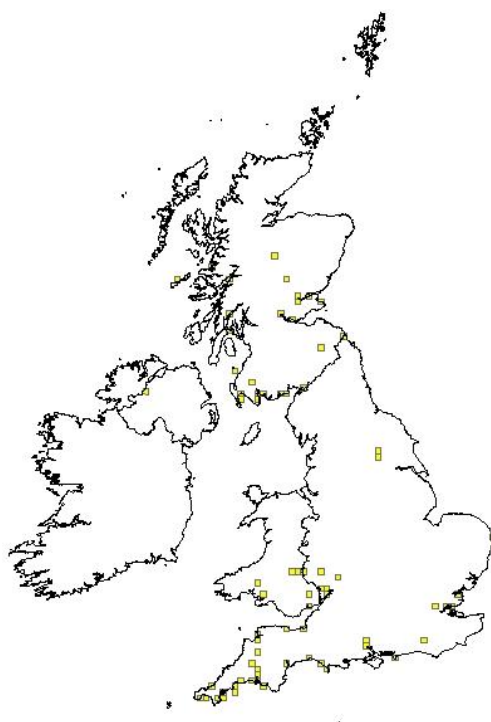
Species:

S1102 - Allis shad (*Alosa alosa*)

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

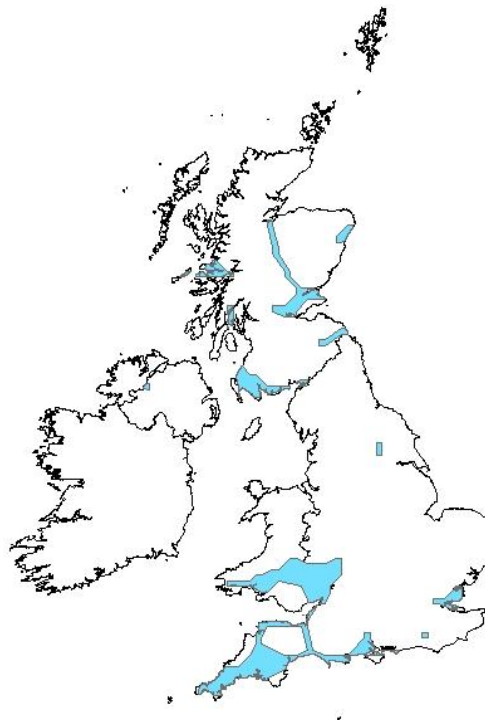
| <i>Field name</i> | <i>Brief explanations</i> | |
|--------------------|--|---------------------------|
| 0.2 Species | 0.2.1 Species code | S1102 |
| | 0.2.2 Species scientific name | <i>Alosa alosa</i> |
| | 0.2.3 Alternative species scientific name Optional | |
| | 0.2.4 Common name Optional | |

| 1.1 Maps | | | |
|-------------------------------|--|------------------|--------------|
| 1.1.1 Distribution map | True | Sensitive | False |
| | The distribution map is based on species records which are considered to be representative of the range within the current reporting period. For further details see the 2013 Article 17 UK Approach document. | | |



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| 1.1.2 Method used - map | Estimate based on partial data with some extrapolation and/or modelling |
| | For further details see the 2013 Article 17 UK Approach document and relevant country-level reporting information. |
| 1.1.3 Year or period | 1990-2012 |
| | The distribution map is based on species records which are considered to be representative of the range within the current reporting period. For further details see the 2013 Article 17 UK Approach document. |

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| 1.1.4 Additional distribution map Optional | False |
| 1.1.5 Range map | True The range map was produced by applying the UK range mapping tool to the distribution map presented in 1.1.4, but with additional genus level records (which could not be distinguished to species level) added in. This is because the Allis shad is very hard to distinguish from the Twaite shad, and this approach is thought to result in a better representation of the range of the Allis shad. The alpha value for this species was 25km. For further details see the 2013 Article 17 UK Approach document. |



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| 2.1 Biogeographical region & marine regions | ATL |
| 2.2 Published sources | <p>Alexandrino P, Faria R (2004) Population Genetic Structure of Shad in the UK. Report to the Environment Agency.</p> <p>Alexandrino, P., R. Faria, D. Linhares, F. Castro, M. Le Corre, R. Sabatie, J.-L. Bagliniere, and S. Weiss. 2007. Interspecific differentiation and intraspecific substructure in two closely related clupeids with extensive hybridisation, <i>Alosa alosa</i> and <i>Alosa fallax</i>. <i>Journal of Fish Biology</i> 69 (Supplement B):242-259.</p> <p>Aprahamian MW, Aprahamian CD, Bagliniere JL, Sabatie R & Alexandrino P 2003. <i>Alosa alosa</i> and <i>Alosa fallax</i> spp. Literature Review and Bibliography. Bristol, Environment Agency R&D Technical Report W1-014/TR, xxiii + 349pp.</p> <p>Aprahamian, M. W. (1989). The diet of juvenile and adult twaite shad <i>Alosa fallax fallax</i> (Lacépède) from the rivers Severn and Wye (Britain). <i>Hydrobiologia</i>, 179: 173 182.</p> <p>Aprahamian, M. W., Aprahamian, C. D. and Knights, A.M. (2010). Climate change and the green energy paradox: the</p> |

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| | <p>consequences for twaite shad <i>Alosa fallax</i> from the River Severn, U.K. <i>Journal of Fish Biology</i> 77:1912-1930.</p> <p>Aprahamian, M. W., J.-L. Bagliniere, R. Sabatie, P. Alexandrino, and C. D. Aprahamian. 2002. <i>Alosa alosa</i> and <i>Alosa fallax</i> spp.: Literature Review and Bibliography. R&D Technical Report W1-014/TR. Environment Agency, Swindon.</p> <p>Aprahamian, M. W., S. M. Lester, and C. D. Aprahamian. 1999. Shad Conservation in England and Wales. Environment Agency R & D Technical Report W110. Environment Agency, Bristol.</p> <p>Aprahamian, M.W. and Aprahamian, C. D. (2001). The influence of water temperature and flow on year class strength of twaite shad (<i>Alosa fallax fallax</i>) from the River Severn, England. <i>Bulletin Francais de la Pêche et de la Pisciculture</i>. 362/363: 953-972</p> <p>Aprahamian, M.W. and Aprahamian, C.D. (1990). Status of the genus <i>Alosa</i> in the British Isles; past and present. <i>Journal of Fish Biology</i> 37 (Supplement A): 257-258.</p> <p>Aprahamian, M.W. and Lester, S.M. (2001). Variation in the age at first spawning of female twaite shad (<i>Alosa fallax fallax</i>) from the River Severn, England. <i>Bulletin Francais de la Pêche et de la Pisciculture</i>. 362/363: 941-951</p> <p>Aprahamian, M.W., Bagliniere, J. L., Sabatié, M. R., Alexandrino, P., Thiel, R. And Aprahamian, C. (2003). Biology, status and conservation of the anadromous twaite shad, <i>Alosa fallax fallax</i>. In: K. E. Limburg and J. R. Waldman (eds.) <i>Biodiversity, status, and conservation of the world's shads</i>. American Fisheries Society, Symposium 35, Bethesda, Maryland. Pp. 103-124.</p> <p>Atkins Ltd. 2004. Assessment of Obstructions to Shad Migration on the River Usk. CCW RoC Report No. 16.</p> <p>Biological Records Centre - Database for the Atlas of Freshwater Fishes (2004) (via NBN Gateway/CEDaR)</p> <p>Caswell, P. A., and M. W. Aprahamian. 2001. Use of River Habitat Survey to determine the spawning habitat characteristics of Twaite Shad (<i>Alosa fallax fallax</i>). <i>Bulletin Francais de la Pêche et de la Pisciculture</i> 362/363:919-929.</p> <p>Confirmed Anglers Records: Angler (Mourne River - 2010) - Samples sent to CFB and Irish Specimen Fish Committee; and Angler (Mourne River - 2010) - Samples sent to CFB C/O Dr Jimmy King.</p> <p>DAVIES, CE, SHELLEY, J, HARDING, PT, MCLEAN, IFG, GARDINER, R & PEIRSON, G (eds.) 2004. <i>Freshwater fishes in Britain. The species and their distribution</i>. Colchester: Harley Books</p> <p>Davies, R. N., J. Davies, J. Griffiths, and P. Clabburn. 2011. Appraisal of the use of a DIDSON imaging sonar to quantify shad migration on the River Tywi. FAT/REP/11/FINAL DRAFT. Environment Agency (2009) River Basin Management Plan: Severn River Basin District. Annex C: Actions to deliver objectives. Available online at www.environment-agency.gov.uk/research/planning/124941.aspx</p> <p>Faria, R., A. N. Pinheiro, T. Gabaldon, S. Weiss, and P. Alexandrino. 2011. Molecular tools for species discrimination and detection of hybridization between two closely related Clupeid fishes <i>Alosa alosa</i> and <i>A. fallax</i>. <i>Journal of Applied Ichthyology</i> 27:16-20.</p> |
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| | <p>Garrett H (2012) Afon Tywi SAC shad egg survey 2012. CCW Staff Science Report No. 12/8/4. CCW, Bangor.</p> <p>Hatton-Ellis, T., Aprahamian, M and Mainstone, C.P. (2012) Accessibility of shad spawning rivers in Wales and England, 1998-2012. Supplementary information for Article 17 reporting.</p> <p>Henderson PA 2003. Background information on species of shad and lamprey. Bangor, CCW Marine Monitoring Report No:7; 30pp.</p> <p>Hillman RJ, Cowx IG & Harvey JP 2003. Monitoring Allis and Twaite Shad. Conserving Natura 2000 Rivers Monitoring Series No.3. English Nature, Peterborough, 24pp http://publications.naturalengland.org.uk/publication/68031</p> <p>Hillman, R. 2002. The distribution, biology, ecology and conservation of allis and twaite shad (<i>Alosa alosa</i> and <i>Alosa fallax</i> Lacépède) in Southwest England. R&D Technical Report W1-047/TR. Environment Agency, Bristol.</p> <p>Historical records from CEDaR: Art Niven / Loughs Agency (Mourne River - 2003); and Coastal Fishery (Donaghadee - Unlocalised 1896).</p> <p>Joint Nature Conservation Committee. 2007. Second Report by the UK under Article 17 on the implementation of the Habitats Directive from January 2001 to December 2006. Peterborough: JNCC. Available from: www.jncc.gov.uk/article17</p> <p>Jolly MT, Aprahamian MW, Hawkins SJ, Henderson PA, Hillman R, O'Maoileidigh N, Maitland PS, Piper R & Genner MJ 2012. Population genetic structure of protected allis shad (<i>Alosa alosa</i>) and twaite shad (<i>Alosa fallax</i>). <i>Marine Biology</i> 159, 675-687.</p> <p>Jolly MT, Maitland PS & Genner MJ 2011. Genetic monitoring of two decades of hybridization between allis shad (<i>Alosa alosa</i>) and twaite shad (<i>Alosa fallax</i>). <i>Conservation Genetics</i> 12, 1087-1100.</p> <p>Lyle A & Maitland PS 1995. A Questionnaire Survey of Inshore Catches of Shad, Smelt and Sturgeon in Scotland. Scottish Natural Heritage Contract Report SNH/011D/93/AEB, 10pp.</p> <p>MAITLAND P.S. & LYLE, A.A. 1990. Practical conservation of British fishes: current action on six declining species. <i>Journal of Fish Biology (Suppl. A)</i> 1, 25-54.</p> <p>Maitland PS & Hatton-Ellis TW 2003. The Ecology of the Allis and Twaite Shad. Conserving Natura 2000 Rivers Ecology Series No.3. English Nature, Peterborough, 28pp http://publications.naturalengland.org.uk/publication/75039</p> <p>Maitland PS & Lyle AA 1995. Shad and Smelt in the Cree Estuary, S.W. Scotland. Scottish Natural Heritage Contract Report SNH/11A93AEB1 and SNH/11A93AEB2, 137pp</p> <p>Maitland PS & Lyle AA 2001. Shad and Smelt in the Cree Estuary, South West Scotland. Scottish Natural Heritage Research, Survey and Monitoring Report No. 6, 139pp www.snh.gov.uk/publications-data-and-research/publications/search-the-catalogue/publication-detail/?id=1174.</p> <p>Maitland PS 1979. The freshwater fish fauna of the Forth area. <i>The Forth Naturalist & Historian</i> 4, 33-47.</p> <p>Maitland PS 2007. Scotland's Freshwater Fish - Ecology, Conservation and Folklore, Oxford Trafford Publishing, 287-291</p> |
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MAITLAND, P.S. 1994. Fish. In: The Fresh Waters of Scotland: A National resource of International Significance. (eds. P.S. Maitland, P.J. Boon & D.S. McLusky), pp.191-208. Wiley & Sons Publ. Ltd. 639pp.

MAITLAND, P.S. 2004 Keys to the Freshwater Fish of Britain and Ireland with notes on their distribution and ecology . Freshwater Biological Association , Scientific Publication No. 62, 245pp.

McColl D, Gregg L, Yeomans WE & McGillivray C 2012. Bullhead and shad in Scotland. Report to Scottish Natural Heritage

Noble, R. A. A., A. D. Nunn, J. P. Harvey, and I. G. Cowx. 2007. Shad monitoring and assessment of conservation condition in the Wye, Usk and Tywi. CCW Environmental Monitoring Report No. 40. CCW, Bangor.

Smith, V. (2005a). River Tywi cSAC: Potential Impacts of Abstraction and River Regulation on Shad, *Alosa* spp. Llandarcy: Environment Agency in Wales. EATW/05/01.1, 40pp.

Smith, V. (2005b). Llyn Brianne Reservoir: Temperature Effects in the River Tywi and their Effects on Shad, *Alosa* spp. Llandarcy: Environment Agency in Wales. EATW/05/01.3, 40pp.

Thomas Rh, Hatton-Ellis TW, Garrett H (in prep) Water Quality Assessments for River Special Areas of Conservation: Third Habitats Directive Reporting Round (2007-2012). CCW Staff Science Report No. 12/8/2. CCW, Bangor.

Thomas, Rh., and C. Dyson. 2011. River Usk shad egg survey 2010. CCW staff Science Report no. 10/8/1. Countryside Council for Wales, Bangor.

Thomas, Rh., and C. Dyson. 2012a. River Wye Shad Egg Survey 2011. CCW Staff Science Report No. 11/8/4. Countryside Council for Wales, Bangor.

Thomas, Rh., and C. Dyson. 2012b. River Usk Shad Egg Survey 2011. CCW Staff Science Report 11/8/3. Countryside Council for Wales, Bangor.

West, R. (2006). Temperature issues, Llyn Brianne and Afon Tywi SAC features. EA Tech Memo No: TMW06_14.

Worcestershire Biodiversity Partnership (2008) Twaite and Allis Shad *Alosa fallax* and *Alosa alosa*. Species Action Plan. Available online at <http://www.worcestershire.gov.uk/cms/pdf/S7%20Shad%20Action%20Plan.pdf>

UK distribution map data sources

Aprahamian et al. 1999 - sent to JNCC (LH) within final spreadsheet from CCW (TH-E) 02/10/2012

BIS sent directly to JNCC (no details) SurveyName

Miscellaneous records in BIS area

CCW sent to JNCC (LH) within final spreadsheet from TH-E 02/10/2012

CCW, unpublished data - sent to JNCC (LH) within final spreadsheet from CCW (TH-E) 02/10/2012

CCW, unpublished data- sent to JNCC (LH) within final spreadsheet from CCW (TH-E) 02/10/2012

Database for the Atlas of Freshwater Fishes (1637-2003)

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| | <p>Environment Agency, unpublished data- sent to JNCC (LH) within final spreadsheet from CCW (TH-E) 02/10/2012 NBN Gateway data: Biological Records Centre GA000174 Database for the Atlas of Freshwater Fishes NBN Gateway data: Clyde River Foundation GA001152 Allis Shad (<i>Alosa alosa</i>) distribution for Scotland, historical to present NBN Gateway data: Countryside Council for Wales GA000412 Freshwater Site Visits and Ad-hoc Sightings NBN Gateway data: Countryside Council for Wales GA000814 Freshwater Shad Monitoring data NBN Gateway data: Environment Agency GA001129 Environment Agency Rare and Protected Species records v1 NBN Gateway data: extracted by LH 11/09/2012 Centre for Environmental Data and Recording GA000926 Northern Ireland Priority Species Data Set NBN Gateway data: Kent & Medway Biological Records Centre GA001015 Fish: Records for Kent. NBN Gateway data: Marine Biological Association GA000526 DASSH Data Archive Centre volunteer sightings records NBN Gateway data: South East Wales Biodiversity Records Centre GA000823 CCW Regional Data : South East Wales Non-sensitive Species Records NBN Gateway data: Sussex Biodiversity Record Centre GA001076 SxBRC Full dataset for Environment Agency and Natural England use only.</p> <p>UK Distribution Map data sources</p> <p>Aprahamian et al. 1999 - sent to JNCC (LH) within final spreadsheet from CCW (TH-E) 02/10/2012 BIS sent directly to JNCC (no details) SurveyName Miscellaneous records in BIS area CCW sent to JNCC (LH) within final spreadsheet from TH-E 02/10/2012 CCW, unpublished data - sent to JNCC (LH) within final spreadsheet from CCW (TH-E) 02/10/2012 CCW, unpublished data- sent to JNCC (LH) within final spreadsheet from CCW (TH-E) 02/10/2012 Database for the Atlas of Freshwater Fishes (1637-2003) Environment Agency, unpublished data- sent to JNCC (LH) within final spreadsheet from CCW (TH-E) 02/10/2012 NBN Gateway data: Biological Records Centre GA000174 Database for the Atlas of Freshwater Fishes NBN Gateway data: Clyde River Foundation GA001152 Allis Shad (<i>Alosa alosa</i>) distribution for Scotland, historical to present NBN Gateway data: Countryside Council for Wales GA000412 Freshwater Site Visits and Ad-hoc Sightings NBN Gateway data: Countryside Council for Wales GA000814 Freshwater Shad Monitoring data NBN Gateway data: Environment Agency GA001129 Environment Agency Rare and Protected Species records v1 NBN Gateway data: extracted by LH 11/09/2012 Centre for Environmental Data and Recording GA000926 Northern Ireland Priority Species Data Set</p> |
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| | <p>NBN Gateway data: Kent & Medway Biological Records Centre GA001015 Fish: Records for Kent.</p> <p>NBN Gateway data: Marine Biological Association GA000526 DASSH Data Archive Centre volunteer sightings records</p> <p>NBN Gateway data: South East Wales Biodiversity Records Centre GA000823 CCW Regional Data : South East Wales Non-sensitive Species Records</p> <p>NBN Gateway data: Sussex Biodiversity Record Centre GA001076 SxBRC Full dataset for Environment Agency and Natural England use only.</p> |
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| 2.3 Range | | | | | |
|--|--|-------------------|--|-------------------|--|
| 2.3.1 Surface area Range | <p>24378</p> <p>The surface area of the range was calculated from the map presented in 1.1.5. For further details see the 2013 Article 17 UK Approach document.</p> | | | | |
| 2.3.2 Method used Surface area of Range | <p>Estimate based on partial data with some extrapolation and/or modelling</p> <p>For further details see the 2013 Article 17 UK Approach document and relevant country-level reporting information.</p> | | | | |
| 2.3.3 Short-term trend Period | <p>2001-2012</p> <p>For further details see the 2013 Article 17 UK Approach document and relevant country-level reporting information.</p> | | | | |
| 2.3.4 Short term trend Trend direction | <p>unknown</p> <p>The short term trend direction was derived by comparing the map in 1.1.1 with the map produced in the 2007 report, by considering the range trend in the 2007 report, and by considering any further information provided by the UK country conservation agencies. For further details see the 2013 Article 17 UK Approach document and relevant country-level reporting information.</p> | | | | |
| 2.3.5 Short-term trend Magnitude | <table border="1"> <tr> <td>a) Minimum</td> <td></td> </tr> <tr> <td>b) Maximum</td> <td></td> </tr> </table> | a) Minimum | | b) Maximum | |
| a) Minimum | | | | | |
| b) Maximum | | | | | |
| 2.3.6 Long-term trend Period | <p>1989-2012</p> <p>For further details see the 2013 Article 17 UK Approach document and relevant country-level reporting information.</p> | | | | |
| 2.3.7 Long-term trend Trend direction | <p>unknown</p> <p>The long term trend direction was derived by comparing the map in 1.1.1 with the map produced in the 2007 report, by considering the range trend in the 2007 report, and by considering any further information provided by the UK country conservation agencies. For further details see the 2013 Article 17 UK Approach document and</p> | | | | |

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| | relevant country-level reporting information. | |
| 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 | more than |
| | | |
| | c) FRR is unknown (indicated by "true") | False |
| | | |
| 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 |
| | The apparent increase in the surface area of range is not thought to be genuine, but due to better data and the inclusion of genus level records which could not be distinguished to species level. | |
| | b) Improved knowledge/more accurate data? | True |
| | The apparent increase in the surface area of range is not thought to be genuine, but due to better data and the inclusion of genus level records which could not be distinguished to species level. | |
| | c) Use of different method (e.g. "Range tool")? | True |
| | The apparent increase in the surface area of range is not thought to be genuine, but due to better data and the inclusion of genus level records which could not be distinguished to species level. | |

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| 2.4 Population | | |
| 2.4.1 Population size estimation (using individuals or agreed exceptions where possible) | a) Unit | |
| | | |
| | b) Minimum | |

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| | c) Maximum | |
| | | |
| 2.4.2 Population size estimation (using population unit other than individuals) Optional (<i>if 2.4.1 filled in</i>) | a) Unit | |
| | | |
| | b) Minimum | |
| | The population estimate for this species is unknown. For further details see the 2013 Article 17 UK Approach document and relevant country-level reporting information. | |
| | c) Maximum | |
| | | The population estimate for this species is unknown. For further details see the 2013 Article 17 UK Approach document and relevant country-level reporting information. |
| 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 | It is very hard to distinguish between the Twaite shad and the Allis shad. Survey for eggs is a standard monitoring technique, but other than using genetic analysis, it is not possible to distinguish between allis (S1102) and twaite (S1103) shad eggs. |
| | | For further details see the 2013 Article 17 UK Approach document and relevant country-level reporting information. |
| 2.4.4 Year or period | 1990-2012 | |
| | For further details see the 2013 Article 17 UK Approach document and relevant country-level reporting information. | |
| 2.4.5 Method used Population size | Absent data | |
| | For further details see the 2013 Article 17 UK Approach document and relevant country-level reporting information. | |
| 2.4.6 Short-term trend Period | 1999-2012 | |
| | For further details see the 2013 Article 17 UK Approach document and relevant country-level reporting information. | |
| 2.4.7 Short-term trend Trend direction | stable | |
| | For further details see the 2013 Article 17 UK Approach document and relevant country-level reporting information. | |
| 2.4.8 Short-term trend Magnitude Optional | a) Minimum | |
| | | |
| | b) Maximum | |

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| | | |
| | c) Confidence interval | |
| 2.4.9 Short-term trend Method used | Estimate based on expert opinion with no or minimal sampling For further details see the 2013 Article 17 UK Approach document and relevant country-level reporting information. | |
| 2.4.10 Long-term trend – Period | 1989-2012 | |
| Optional | For further details see the 2013 Article 17 UK Approach document and relevant country-level reporting information. | |
| 2.4.11 Long-term trend Trend direction | stable | |
| Optional | For further details see the 2013 Article 17 UK Approach document and relevant country-level reporting information. | |
| 2.4.12 Long-term trend Magnitude | a) Minimum | |
| Optional | | |
| | b) Maximum | |
| | | |
| | c) Confidence interval | |
| | | |
| 2.4.13 Long term trend Method used | Estimate based on expert opinion with no or minimal sampling For further details see the 2013 Article 17 UK Approach document and relevant country-level reporting information. | |
| Optional | | |
| 2.4.14 Favourable reference population | a) Number of individuals/agreed exceptions/other units | |
| | | |
| | b) Operator | much more than |
| | The FRV is thought to be greater than current. | |
| | c) FRP is unknown (indicated by "true") | False |
| | | |
| | d) Method used to set FRP | |
| | | |

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| 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 |
| | The population estimate now and in the 2007 report is unknown. | |
| | b) Improved knowledge/more accurate data? | False |
| | The population estimate now and in the 2007 report is unknown. | |
| | c) Use of different method (e.g. "Range tool")? | False |
| The population estimate now and in the 2007 report is unknown. | | |

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| 2.5 Habitat for the species | | |
| 2.5.1 Area estimation | The specific area of habitat occupied by this species in the UK is unknown. For further details see the 2013 Article 17 UK Approach document and relevant country-level reporting information. 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 For further details see the 2013 Article 17 UK Approach document and relevant country-level reporting information. | |
| 2.5.3 Method used Habitat for the species | Absent data For further details see the 2013 Article 17 UK Approach document and relevant country-level reporting information. | |
| 2.5.4 Quality of the habitat | a) Habitat quality | Moderate |
| | For further details see the 2013 Article 17 UK Approach document and relevant country-level reporting information. | |
| | b) Assessment method | Water quality monitoring and expert judgement of habitat condition. |
| For further details see the 2013 Article 17 UK Approach document and relevant country-level reporting information. | | |
| 2.5.5 Short-term trend Period | 2001-2012 For further details see the 2013 Article 17 UK Approach document and relevant country-level reporting information. | |
| 2.5.6 Short-term trend Trend direction | stable For further details see the 2013 Article 17 UK Approach document and relevant country-level reporting information. | |
| 2.5.7 Long-term trend Period | 1989-2012 For further details see the 2013 Article 17 UK Approach document and | |
| Optional | For further details see the 2013 Article 17 UK Approach document and | |

| | | |
|---|--|--------------|
| | relevant country-level reporting information. | |
| 2.5.8 Long-term trend Trend direction Optional | stable | |
| | For further details see the 2013 Article 17 UK Approach document and relevant country-level reporting information. | |
| 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 |
| | Surface area of habitat is unknown at the UK level and was reported as unknown in 2007. | |
| | b) Improved knowledge/more accurate data? | False |
| | Surface area of habitat is unknown at the UK level and was reported as unknown in 2007. | |
| | c) Use of different method (e.g. "Range tool")? | False |
| Surface area of habitat is unknown at the UK level and was reported as unknown in 2007. | | |

| 2.6 Main pressures | | |
|--|---|-------------------------------|
| a) Pressure | b) Ranking | c) Pollution qualifier |
| | H = high importance (max 5 entries) M = medium importance L = low importance | |
| J02: human induced changes in hydraulic conditions | H | X |
| A01: Cultivation | M | NX |
| F02: Fishing and harvesting aquatic resources | M | |
| H01: Pollution to surface waters (limnic & terrestrial, marine & brackish) | M | X |
| J03: Other ecosystem modifications | M | |
| A08: Fertilisation | L | NX |
| C01: Mining and quarrying | L | |
| C03: Renewable abiotic energy use | L | |
| D01: Roads, paths and railroads | L | NX |
| E01: Urbanised areas, human | L | NX |

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| habitation | | |
| E06: Other urbanisation, industrial and similar activities | L | |
| H03: Marine water pollution | L | |
| K01: abiotic (slow) natural processes | L | |
| M01: Changes in abiotic conditions | L | |
| M02: Changes in biotic conditions | L | |
| | | |

For further details see the 2013 Article 17 UK Approach document and relevant country-level reporting information.

2.6.1 Method used – Pressures

mainly based on expert judgement and other data

For further details see the 2013 Article 17 UK Approach document and relevant country-level reporting information.

| 2.7 Threats | | |
|--|---|-------------------------------|
| a) Threat | b) Ranking | c) Pollution qualifier |
| | H = high importance (max 5 entries) M = medium importance L = low importance | |
| J02: human induced changes in hydraulic conditions | H | NX |
| A01: Cultivation | M | N |
| F02: Fishing and harvesting aquatic resources | M | |
| H01: Pollution to surface waters (limnic & terrestrial, marine & brackish) | M | X |
| J03: Other ecosystem modifications | M | |
| M01: Changes in abiotic conditions | M | |
| A08: Fertilisation | L | NX |
| C01: Mining and quarrying | L | |
| C03: Renewable abiotic energy use | L | |
| D01: Roads, paths and railroads | L | X |
| E01: Urbanised areas, human | L | X |

| | | |
|--|---|--|
| habitation | | |
| E06: Other urbanisation, industrial and similar activities | L | |
| H03: Marine water pollution | L | |
| I01: invasive non-native species | L | |
| K01: abiotic (slow) natural processes | L | |
| M02: Changes in biotic conditions | L | |
| | | |

For further details see the 2013 Article 17 UK Approach document and relevant country-level reporting information.

2.7.1 Method used – Threats

expert opinion

For further details see the 2013 Article 17 UK Approach document and relevant country-level reporting information.

2.8 Complementary information

2.8.1 Justification of % thresholds for trends

2.8.2 Other relevant information

This species is very hard to distinguish from the Twaite shad. The data for this species (and for shad in general) is not adequate to allow a reliable estimate of range, population size or habitat quality. The decision on whether/how to build the Severn Barrage will have significant consequences for this species.

For further details see the 2013 Article 17 UK Approach document and relevant country-level reporting information.

2.8.3 Trans-boundary assessment

2.9 Conclusions (*assessment of conservation status at end of reporting period*)

2.9.1 Range

a) Conclusion

Inadequate

Range has been assessed as inadequate because the surface area of range is thought to be slightly lower than the FRV. The short term range trend is unknown, but there is no evidence for a decline in the short term.

b) Qualifier

unknown

The short term range trend is unknown.

2.9.2 Population

a) Conclusion

Bad

| | | |
|--|---|----------------|
| | Population has been assessed as Bad because the current population is thought to be more than 25% below the FRV, although the short term trend has been assessed as stable. | |
| | b) Qualifier | stable |
| | The population trend is stable. | |
| 2.9.3 Habitat for the species | a) Conclusion | Unknown |
| | Habitat for species has been assessed as unknown because it is not known whether there is sufficient habitat to support a viable population, although habitat quality is moderate and trend is stable. | |
| | b) Qualifier | |
| | | |
| 2.9.4 Future prospects | a) Conclusion | Unknown |
| | Future prospects is assessed as Unknown on the basis of assessments of the future prospects of the three parameters, range, population and habitat for species: Range future prospects: Unknown Population future prospects: Unknown Habitat future prospects: Unknown Overall future prospects: Unknown. | |
| | Prospects are currently improving for this species, although the possibility of the construction of the Severn Barrage increases the risk of substantial damage to this species and its habitat. It is unclear whether the quality of currently accessible habitat, and habitat that will become accessible once again through action on artificial barriers, is favourable to the species. | |
| | b) Qualifier | |
| | | |
| 2.9.5 Overall assessment of Conservation Status | Bad | |
| | The overall assessment is Bad because population has been assessed as Bad. | |
| 2.9.6 Overall trend in Conservation Status | stable | |
| | On balance, the overall trend is stable. | |

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 | |
| | b) Minimum | |
| | For further details see the 2013 Article 17 UK Approach document and relevant country-level reporting information. | |
| | c) Maximum | |
| | For further details see the 2013 Article 17 UK Approach document and relevant country-level reporting information. | |
| 3.1.2 Method used | Absent data For further details see the 2013 Article 17 UK Approach document and relevant country-level reporting information. | |
| 3.1.3 Trend of population size within the network (short-term trend) Optional | unknown | |
| | For further details see the 2013 Article 17 UK Approach document and relevant country-level reporting information. | |

| 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 |
| 1.2: Measures needed, but not implemented | | | | | Y | L | Y | | | | Y | Y | | |
| 2.0: Other agriculture-related measures | Y | | | | | L | | | Y | | Y | | | |

| | | | | | | | | | | | | | | | |
|--|---|---|---|---|---|---|--|---|---|--|---|---|--|---|---|
| 2.2: Adapting crop production | | Y | Y | Y | | M | | | Y | | Y | Y | | | |
| 4.0: Other wetland-related measures | | Y | Y | Y | Y | M | | | Y | | Y | Y | | | |
| 4.1: Restoring/improving water quality | Y | Y | Y | Y | | H | | | Y | | Y | Y | | | |
| 4.2: Restoring/improving the hydrological regime | Y | Y | | | Y | M | | | Y | | Y | Y | | | |
| 4.3: Managing water abstraction | Y | Y | | Y | | H | | | Y | | Y | Y | | | |
| 5.1: Restoring marine habitats | Y | | | | | L | | | Y | | | | | | Y |
| 6.1: Establish protected areas/sites | Y | | | | | L | | | Y | | | | | | Y |
| 6.3: Legal protection of habitats and species | Y | | | | | L | | | Y | | Y | | | | |
| 7.2: Regulation/Management of fishery in limnic systems | Y | | | | | M | | | Y | | Y | Y | | Y | Y |
| 7.3: Regulation/Management of fishery in marine and brackish systems | | Y | | | | L | | Y | | | Y | Y | | | Y |
| 7.4: Specific single species or species group management measures | Y | | | | | L | | | Y | | Y | | | | |

| | | | | | | | | | | | | | | | |
|--|---|--|--|--|--|---|--|--|---|--|---|--|--|--|--|
| 8.1: Urban and industrial waste management | Y | | | | | L | | | Y | | Y | | | | |
| 8.2: Specific management of traffic and energy transport systems | Y | | | | | L | | | Y | | Y | | | | |

For further details see the 2013 Article 17 UK Approach document and relevant country-level reporting information.