

**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:

S1355 - Otter (*Lutra lutra*)

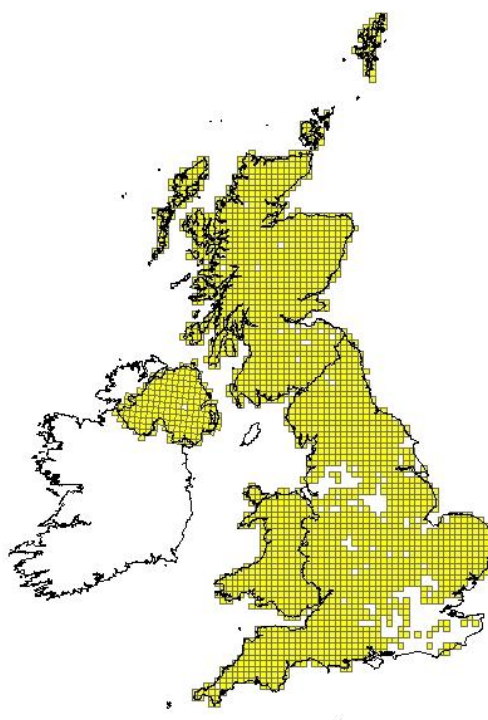
IMPORTANT NOTE – PLEASE READ

- 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 **Scottish Natural Heritage** and refers only to the state of the habitat/species in **Scotland** - 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

<i>Field name</i>	<i>Brief explanations</i>	
0.2 Species	0.2.1 Species code	S1355
	0.2.2 Species scientific name	<i>Lutra lutra</i>
	0.2.3 Alternative species scientific name Optional	
	0.2.4 Common name Optional	Otter

1.1 Maps		
1.1.1 Distribution map		Sensitive False
	<p>The otter is currently recovering from a severe population crash in the 1960s-1970s, which extirpated populations from much of England and, to a lesser extent Wales. A series of standardised national surveys have documented the recovery of the species from surviving populations. Recovery is not yet complete.</p> <p>In Scotland, the population was less severely affected by the causes of the crash in other parts of the UK, with the most discernible losses being confined to the central lowlands and south-east. These areas have now been repopulated and there are very few 10km squares in Scotland that do not have otters recorded.</p> <p>In England, the otter population was very severely affected, with surviving populations confined to the south-west and north. Since the last report in 2007, surveys have documented the return of the otter to most of the country, with only the south-east and small parts on the north-west Midlands remaining to be recolonised.</p> <p>Populations in Wales suffered much less than in England and so recovered much more quickly. The otter has now been recorded as present in every 10 km square.</p>	



1.1.2 Method used - map	<p>Estimate based on partial data with some extrapolation and/or modelling</p> <p>Scotland Otter Survey Database; England Otter Survey Database; Northern Ireland Otter Survey Database; Wales Otter Survey Database (via the National Biodiversity Network (NBN) Gateway). distribution map based entirely on verified records, with no extrapolation or modelling</p>
1.1.3 Year or period	2001-2012
1.1.4 Additional distribution map	False
1.1.5 Range map	

2.1 Biogeographical region & marine regions	ATL
2.2 Published sources	<p>"UK & Scotland</p> <p>BATTERSBY, J (Ed.). 2005. UK Mammals: Species Status and Population Trends. JNCC/Tracking Mammals Partnership http://jncc.defra.gov.uk/page-3311.</p> <p>CAREY, P.D., WALLIS, S.M., EMMETT, B.E., MASKELL, L.C., MURPHY, J., NORTON, L.R., SIMPSON, I.C. & SMART, S.S. 2008. Countryside Survey: UK headline messages from 2007. Centre for Ecology & Hydrology, Wallingford www.ceh.ac.uk/products/publications/CS2007headlinereport.</p>

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	<p>2010. Environment Agency, Bristol. Available to download from the Environment Agency website www.environment-agency.gov.uk/static/documents/Leisure/otter_survey_oct10_full_report(1).pdf)</p> <p>LENTON, E.J, CHANIN, P.R.F. & JEFFERIES, D.J. 1980. Otter survey of England 1977-79. Nature Conservancy Council, London.</p> <p>STRACHAN, R. BIRKS, J.D.S., CHANIN, P.R.F. & JEFFERIES, D.J. 1990. Otter survey of England 1984-86. Nature Conservancy Council, Peterborough.</p> <p>STRACHAN, R. & JEFFERIES, D.J. 1996. Otter Survey of England 1991– 1994. A report on the decline and recovery of the otter in England and on its distribution, status and conservation in 1991–1994. Vincent Wildlife Trust, London</p> <p>Wales</p> <p>ANDREWS, E. & CRAWFORD, A.K. 1986. Otter Survey of Wales 1984–85. Vincent Wildlife Trust, London.</p> <p>ANDREWS, E., HOWELL, P. & JOHNSON, K. 1993. Otter Survey of Wales 1991. Vincent Wildlife Trust, London.</p> <p>CRAWFORD, A., EVANS, D., JONES, A. & McNULTY, J. 1979. Otter Survey of Wales 1977–78. Society for the Promotion of Nature Conservation, Lincoln.</p> <p>JONES, T. & JONES, D. 2004. Otter Survey of Wales 2002. Environment Agency, Bristol. Available to download from the Environment Agency website (www.environment-agency.gov.uk/subjects/conservation/483249/?version=1&lang=_e)"</p>
	<p>UK & Scotland</p> <p>BATTERSBY, J (Ed.). 2005. UK Mammals: Species Status and Population Trends. JNCC/Tracking Mammals Partnership http://jncc.defra.gov.uk/page-3311.</p> <p>CAREY, P.D., WALLIS, S.M., EMMETT, B.E., MASKELL, L.C., MURPHY, J., NORTON, L.R., SIMPSON, I.C. & SMART, S.S. 2008. Countryside Survey: UK headline messages from 2007. Centre for Ecology & Hydrology, Wallingford www.ceh.ac.uk/products/publications/CS2007headlinereport.html.</p> <p>CONROY, J.W.H. & KRUIK, H. 1995. Changes in otter numbers in Shetland. Unpublished report to Shetland Oil Terminal Advisory Group. ITE project 815, Institute of Terrestrial Ecology, Banchory.</p> <p>FINDLAY, M. 2012. Site condition monitoring for otters (<i>Lutra lutra</i>) in 2011-12. Unpublished interim report to Scottish Natural Heritage.</p> <p>GREEN, J. & GREEN, R. 1980. Otter Survey of Scotland 1977–79. Vincent Wildlife Trust, London.</p> <p>GREEN, J. & GREEN, R. 1987. Otter Survey of Scotland 1984–85. Vincent Wildlife Trust, London.</p> <p>GREEN, J. & GREEN, R. 1997. Otter survey of Scotland 1991–94. Vincent Wildlife Trust, London.</p> <p>HARRIS, S., MORRIS, P., WRAY, S. & YALDEN, D. 1995. A review of British Mammals: population estimates and conservation status of British mammals other than cetaceans. JNCC, Peterborough http://jncc.defra.gov.uk/page-2759.</p>

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2.3 Range	
2.3.1 Surface area Range	76432
	Scotland: Range data given a method of '2' to reflect the use of the Alpha software, although the 1991-94 survey covered the whole of Scotland.
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	stable
	Scotland: 0 England: + Wales: +
2.3.5 Short-term trend Magnitude	a) Minimum
	As for distribution The otter is found throughout Scotland, so there are no opportunities for range expansion. In England and, to some extent, Wales, the otter is recovering from a population crash in the 1960s and 1970s. In time it may be expected to occur throughout England. Recovery in Wales is more complete than in England, as the population crash was less severe.
	b) Maximum
2.3.6 Long-term trend Period	1988-2012
	Use GREEN, J. & GREEN, R. 1987 for Scotland (1984-85 range) Use STRACHAN, R. BIRKS, J.D.S., CHANIN, P.R.F. & JEFFERIES, D.J. 1990 for England (1985-86 range) Use ANDREWS, E. & CRAWFORD, A.K. 1986 for Wales (1984-85 range)
2.3.7 Long-term trend Trend direction	stable
	Scotland: 0 England: + Wales: +
2.3.8 Long-term trend Magnitude Optional	a) Minimum
	Scotland FINDLAY, M. 2012. Site condition monitoring for otters (<i>Lutra lutra</i>) in 2011-12. Unpublished interim report to Scottish Natural Heritage. GREEN, J. & GREEN, R. 1980. Otter Survey of Scotland 1977-79.

	<p>Vincent Wildlife Trust, London. GREEN, J. & GREEN, R. 1987. Otter Survey of Scotland 1984–85. Vincent Wildlife Trust, London. GREEN, J. & GREEN, R. 1997. Otter survey of Scotland 1991–94. Vincent Wildlife Trust, London. STRACHAN, R. 2007. National survey of otter <i>Lutra lutra</i> distribution in Scotland 2003-04. Scottish Natural Heritage Commissioned Report No. 211 www.snh.gov.uk/publications-data-and-research/publications/search-the-catalogue/publication-detail/?id=837.</p> <p>England LENTON, E.J, CHANIN, P.R.F. & JEFFERIES, D.J. 1980. Otter survey of England 1977-79. Nature Conservancy Council, London. STRACHAN, R. BIRKS, J.D.S., CHANIN, P.R.F. & JEFFERIES, D.J. 1990. Otter survey of England 1984-86. Nature Conservancy Council, Peterborough. STRACHAN, R. & JEFFERIES, D.J. 1996. Otter Survey of England 1991–1994. A report on the decline and recovery of the otter in England and on its distribution, status and conservation in 1991–1994. Vincent Wildlife Trust, London CRAWFORD, A. 2003. Fourth Otter Survey of England 2000–2002. Environment Agency, Bristol. Available to download from the Environment Agency website (www.environmentagency.gov.uk/subjects/conservation/483249/?version=1&lang=_e) CRAWFORD, A. 2010. Fifth Otter Survey of England 2009–2010. Environment Agency, Bristol. Available to download from the Environment Agency website www.environment-agency.gov.uk/static/documents/Leisure/otter_survey_oct10_full_report(1).pdf)</p> <p>Wales CRAWFORD, A., EVANS, D., JONES, A. & McNULTY, J. 1979. Otter Survey of Wales 1977–78. Society for the Promotion of Nature Conservation, Lincoln. ANDREWS, E. & CRAWFORD, A.K. 1986. Otter Survey of Wales 1984–85. Vincent Wildlife Trust, London. ANDREWS, E., HOWELL, P. & JOHNSON, K. 1993. Otter Survey of Wales 1991. Vincent Wildlife Trust, London. JONES, T. & JONES, D. 2004. Otter Survey of Wales 2002. Environment Agency, Bristol. Available to download from the Environment Agency website (www.environment-agency.gov.uk/subjects/conservation/483249/?version=1&lang=_e)</p> <p>NI PRESTON, J., PRODHOL, P., PORTIG, A. & MONTGOMERY, I. 2004. Reassessing otter <i>Lutra lutra</i> distribution in Northern Ireland. Available to download from the Environment and Heritage Service website (www.ehsni.gov.uk/pubs/publications/otterreportNov2004.pdf).</p> <p>UK JEFFERIES, D.J. 1989. The changing otter population of Britain 1700–1989. <i>Biological Journal of the Linnean Society</i> 38, 61–69. JEFFERIES, D.J., STRACHAN, C. & STRACHAN, R. 2003. Estimating numbers of the three interacting riparian mammals in Britain using</p>
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	survey data. In: JEFFERIES. D.J. (Ed) The water vole and mink survey of 1996- 1998 with a history of the long-term changes in the status of both species and their causes. pp188-197. Vincent Wildlife Trust, Ledbury.	
	b) Maximum	
2.3.9 Favourable reference range	a) Value in km²	
	b) Operator for FRR	
	c) FRR is unknown (indicated by "true")	False
	d) Method used to set FRR	
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?	True
	For UK: Continuing recovery after historic crash in 1960-1980 caused by pesticides and industrial chemicals. Recovery assisted by legal protection, improving water quality and habitat management.	
	b) Improved knowledge/more accurate data?	False
	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	number of individuals
	Scotland: >8000 based on minimum average estimate England: 2788 Wales: 926	
	b) Minimum	8000
	c) Maximum	8000

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	
	c) Maximum	
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	
2.4.4 Year or period	2010-2010	
2.4.5 Method used Population size	Estimate based on partial data with some extrapolation and/or modelling	
	<p>Scotland</p> <p>FINDLAY, M. 2012. Site condition monitoring for otters (<i>Lutra lutra</i>) in 2011-12. Unpublished interim report to Scottish Natural Heritage.</p> <p>GREEN, J. & GREEN, R. 1980. Otter Survey of Scotland 1977-79. Vincent Wildlife Trust, London.</p> <p>GREEN, J. & GREEN, R. 1987. Otter Survey of Scotland 1984-85. Vincent Wildlife Trust, London.</p> <p>GREEN, J. & GREEN, R. 1997. Otter survey of Scotland 1991-94. Vincent Wildlife Trust, London.</p> <p>STRACHAN, R. 2007. National survey of otter <i>Lutra lutra</i> distribution in Scotland 2003-04. Scottish Natural Heritage Commissioned Report No. 211 www.snh.gov.uk/publications-data-and-research/publications/search-the-catalogue/publication-detail/?id=837.</p> <p>England</p> <p>LENTON, E.J, CHANIN, P.R.F. & JEFFERIES, D.J. 1980. Otter survey of England 1977-79. Nature Conservancy Council, London.</p> <p>STRACHAN, R. BIRKS, J.D.S., CHANIN, P.R.F. & JEFFERIES, D.J. 1990. Otter survey of England 1984-86. Nature Conservancy Council, Peterborough.</p> <p>STRACHAN, R. & JEFFERIES, D.J. 1996. Otter Survey of England 1991-1994. A report on the decline and recovery of the otter in England and on its distribution, status and conservation in 1991-1994. Vincent Wildlife Trust, London</p> <p>CRAWFORD, A. 2003. Fourth Otter Survey of England 2000-2002. Environment Agency, Bristol. Available to download from the</p>	

	<p>Environment Agency website (www.environmentagency.gov.uk/subjects/conservation/483249/?version=1&lang=_e)</p> <p>CRAWFORD, A. 2010. Fifth Otter Survey of England 2009–2010. Environment Agency, Bristol. Available to download from the Environment Agency website www.environment-agency.gov.uk/static/documents/Leisure/otter_survey_oct10_full_report(1).pdf)</p> <p>Wales</p> <p>CRAWFORD, A., EVANS, D., JONES, A. & McNULTY, J. 1979. Otter Survey of Wales 1977–78. Society for the Promotion of Nature Conservation, Lincoln.</p> <p>ANDREWS, E. & CRAWFORD, A.K. 1986. Otter Survey of Wales 1984–85. Vincent Wildlife Trust, London.</p> <p>ANDREWS, E., HOWELL, P. & JOHNSON, K. 1993. Otter Survey of Wales 1991. Vincent Wildlife Trust, London.</p> <p>JONES, T. & JONES, D. 2004. Otter Survey of Wales 2002. Environment Agency, Bristol. Available to download from the Environment Agency website (www.environment-agency.gov.uk/subjects/conservation/483249/?version=1&lang=_e)</p> <p>NI</p> <p>PRESTON, J., PRODHOL, P., PORTIG, A. & MONTGOMERY, I. 2004. Reassessing otter <i>Lutra lutra</i> distribution in Northern Ireland. Available to download from the Environment and Heritage Service website (www.ehsni.gov.uk/pubs/publications/otterreportNov2004.pdf).</p> <p>UK</p> <p>JEFFERIES, D.J. 1989. The changing otter population of Britain 1700–1989. <i>Biological Journal of the Linnean Society</i> 38, 61–69.</p> <p>JEFFERIES, D.J., STRACHAN, C. & STRACHAN, R. 2003. Estimating numbers of the three interacting riparian mammals in Britain using survey data. In: JEFFERIES, D.J. (Ed) <i>The water vole and mink survey of 1996- 1998 with a history of the long-term changes in the status of both species and their causes</i>. pp188-197. Vincent Wildlife Trust, Ledbury.</p>
<p>2.4.6 Short-term trend Period</p>	<p>1991-2003</p> <p>Jefferies et al. (2003) used data from the first three national otter surveys to provide population estimates. An equation was devised, based on percentage of occupied sites, length in kilometres of occupied bank or coast, and calculated density of <i>L. lutra</i> per km of bankside. The estimated population in 1994 was 9,465 individuals in GB: 977 in England; 7,948 in Scotland; and 540 in Wales.</p> <p>Applying the same calculation to the 2000-2002 survey the figures for <i>L. lutra</i> populations in England and Wales have been revised using this method and the percentage of occupied sites reported in the fourth series of surveys. This gives estimates in 2002-4 of:</p> <p>1580 <i>L. lutra</i> in England</p> <p>731 <i>L. lutra</i> in Wales.</p>

	<p>For the 2010 update, the figures for <i>L. lutra</i> populations in England and Wales have again been revised using this method and the percentage of occupied sites reported in the fifth series of surveys. This gives revised estimates of:</p> <ul style="list-style-type: none"> • 2788 <i>L. lutra</i> in England - 56% of sites surveyed were occupied (Crawford 2010) giving 76,157 km of occupied bank and assuming a density of one <i>L. lutra</i> per 27.32km of linear bank. • 926 <i>L. lutra</i> in Wales – 89.9% of sites surveyed were occupied (Strachan, 2012), giving 25,294 km of occupied bank and assuming the same <i>L. lutra</i> density as for England. <p>In Scotland, the calculation is complicated because of varying densities of <i>L. lutra</i> in coastal and inland waters and on the Northern and Western Isles, but Jefferies et.al (2003) calculated a total population in 1991-94 of 7948 individuals, at a time when 88% of surveyed sites were occupied. In the most recent survey of Scotland in 2003-4 (Strachan 2007), 92% of surveyed sites were occupied, but this survey was not entirely comparable in coverage to the earlier surveys, being more focussed on Natura 2000 sites. Nevertheless, application of the method of Jefferies et al (2003) gave a total population of 8249. As the proportion of positive sites is now close to 100%, the otter population must be close to carrying capacity and any significant increase seems unlikely. This figure can therefore be used as a 2010 estimate. As it is only 3.8% greater than the earlier estimate, this is not considered a significant change</p> <p>England & Wales: 2001 – 2010 (9 years) Scotland: 1991-2003</p>	
<p>2.4.7 Short-term trend Trend direction</p>	<p>stable Scotland 0 England + Wales + UK +</p>	
<p>2.4.8 Short-term trend Magnitude</p>	<p>a) Minimum</p>	
	<p>England: +76% Wales: +27%</p>	
	<p>b) Maximum</p>	
	<p>c) Confidence interval</p>	
<p>2.4.9 Short-term trend Method used</p>	<p>Estimate based on partial data with some extrapolation and/or modelling Scotland FINDLAY, M. 2012. Site condition monitoring for otters (<i>Lutra lutra</i>) in</p>	

	<p>2011-12. Unpublished interim report to Scottish Natural Heritage.</p> <p>GREEN, J. & GREEN, R. 1980. Otter Survey of Scotland 1977-79. Vincent Wildlife Trust, London.</p> <p>GREEN, J. & GREEN, R. 1987. Otter Survey of Scotland 1984-85. Vincent Wildlife Trust, London.</p> <p>GREEN, J. & GREEN, R. 1997. Otter survey of Scotland 1991-94. Vincent Wildlife Trust, London.</p> <p>STRACHAN, R. 2007. National survey of otter <i>Lutra lutra</i> distribution in Scotland 2003-04. Scottish Natural Heritage Commissioned Report No. 211 www.snh.gov.uk/publications-data-and-research/publications/search-the-catalogue/publication-detail/?id=837.</p> <p>England</p> <p>LENTON, E.J, CHANIN, P.R.F. & JEFFERIES, D.J. 1980. Otter survey of England 1977-79. Nature Conservancy Council, London.</p> <p>STRACHAN, R. BIRKS, J.D.S., CHANIN, P.R.F. & JEFFERIES, D.J. 1990. Otter survey of England 1984-86. Nature Conservancy Council, Peterborough.</p> <p>STRACHAN, R. & JEFFERIES, D.J. 1996. Otter Survey of England 1991-1994. A report on the decline and recovery of the otter in England and on its distribution, status and conservation in 1991-1994. Vincent Wildlife Trust, London</p> <p>CRAWFORD, A. 2003. Fourth Otter Survey of England 2000-2002. Environment Agency, Bristol. Available to download from the Environment Agency website (www.environmentagency.gov.uk/subjects/conservation/483249/?version=1&lang=_e)</p> <p>CRAWFORD, A. 2010. Fifth Otter Survey of England 2009-2010. Environment Agency, Bristol. Available to download from the Environment Agency website www.environment-agency.gov.uk/static/documents/Leisure/otter_survey_oct10_full_report(1).pdf</p> <p>Wales</p> <p>CRAWFORD, A., EVANS, D., JONES, A. & McNULTY, J. 1979. Otter Survey of Wales 1977-78. Society for the Promotion of Nature Conservation, Lincoln.</p> <p>ANDREWS, E. & CRAWFORD, A.K. 1986. Otter Survey of Wales 1984-85. Vincent Wildlife Trust, London.</p> <p>ANDREWS, E., HOWELL, P. & JOHNSON, K. 1993. Otter Survey of Wales 1991. Vincent Wildlife Trust, London.</p> <p>JONES, T. & JONES, D. 2004. Otter Survey of Wales 2002. Environment Agency, Bristol. Available to download from the Environment Agency website (www.environment-agency.gov.uk/subjects/conservation/483249/?version=1&lang=_e)</p> <p>NI</p> <p>PRESTON, J., PRODHOL, P., PORTIG, A. & MONTGOMERY, I. 2004. Reassessing otter <i>Lutra lutra</i> distribution in Northern Ireland. Available to download from the Environment and Heritage Service website (www.ehsni.gov.uk/pubs/publications/otterreportNov2004.pdf).</p> <p>UK</p> <p>JEFFERIES, D.J. 1989. The changing otter population of Britain 1700-1989. <i>Biological Journal of the Linnean Society</i> 38, 61-69.</p>
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	<p>JEFFERIES, D.J., STRACHAN, C. & STRACHAN, R. 2003. Estimating numbers of the three interacting riparian mammals in Britain using survey data. In: JEFFERIES, D.J. (Ed) The water vole and mink survey of 1996- 1998 with a history of the long-term changes in the status of both species and their causes. pp188-197. Vincent Wildlife Trust, Ledbury.</p> <p>Data from the time-series of population estimates described in 2.4 were used to calculate short term trends for England and Wales. These show the continuing recovery of the population from a nadir in the late 1970s or early 1980s, though recovery is not yet complete. The population increase in Wales is lower than in England because the otter population was less marked and the population is now approaching carrying capacity.</p> <p>In Scotland, the otter population has remained widespread and close to carrying capacity throughout the period, with no significant national population trend discernible.</p>	
2.4.10 Long-term trend – Period	1994-2010	
	1994-2010 (based on 1991-1994 and 2009-2010 surveys)	
2.4.11 Long-term trend Trend direction	stable	
2.4.12 Long-term trend Magnitude	Optional	
	a) Minimum	
	England: +185% Wales: + 71%	
	b) Maximum	
	c) Confidence interval	
2.4.13 Long term trend Method used	2	
	<p>As for short-term population trend.</p> <p>Data from the time-series of population estimates described in 2.4 were used to calculate long term trends for England and Wales. These show the continuing recovery of the population from a nadir in the late 1970s or early 1980s, though recovery is not yet complete. The population increase in Wales is lower than in England because the otter population was less marked and the population is now approaching carrying capacity.</p> <p>In Scotland, the otter population has remained widespread and close to carrying capacity throughout the period, with no significant national population trend discernible.</p>	
2.4.14 Favourable	a) Number of individuals/agreed	

reference population	exceptions/other units		
	b) Operator		
	c) FRP is unknown indicated by "true"	False	
	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
		Recovery from historic crash, particularly in England	
	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	76432 L. lutra have been recorded using all types of waterways. In Scotland, it is estimated that around one third of the L. lutra population occurs in predominantly coastal habitats. Home range can be up to 40 km along river stretches and as small as 4-5 km in coastal situations. Breeding sites are generally accepted as being located within the home range. They may comprise land, or open water and land, but be large enough to provide security from disturbance; one or more potential natal den sites; play areas for cubs; no risk of flooding and access to a good food supply. It seems that these can be located anywhere within river systems. The major habitat types associated with breeding sites are extensive reed beds; ponds and lakes; deciduous woodlands ranging in size from a 20 m wide strip to several hectares; young conifer plantations; and large areas of scrub (Liles 2003). In coastal areas, such as Shetland and the Outer Hebrides otter dens frequently consist of burrows in peat (Kruuk 1995). Coastal holts are mostly within 100 m of the shore and may be very frequent with densities up to three or four per kilometre in some areas (Conroy & Kruuk 1995). In England and Wales, otters are mainly confined to freshwater habitats.

	<p>There is thought to be a sufficient amount of habitat in the UK to support a viable population of the species. <i>L. lutra</i> uses linear habitats, so calculation of area is inappropriate. However the area of occupied 10 km squares is England: 109,610 Scotland:76,432 Wales: 20,179</p> <p>There is thought to be a sufficient amount of habitat in the UK to support a viable population of the species.</p>	
2.5.2 Year or period		
2.5.3 Method used Habitat for the species	Absent data	
2.5.4 Quality of the habitat	a) Habitat quality	Good
	<p>Scotland: The otter occurs throughout Scotland, with no evidence of population decline or range contraction.</p> <p>England, Wales: The species has spread back to previously occupied areas, indicating that the habitat is able to support an expanding population.</p> <p>It is possible to estimate total length of inland water or coastal bank that might be occupied by <i>L. lutra</i> currently, using the estimate of total length of riparian habitats provided in Harris et al. (1995), population densities provided by Jefferies et al. (2003) and number of occupied sites in the most recent national surveys. These give a total of 315,073 km of linear riparian habitat currently occupied by <i>L. lutra</i> in Great Britain (GB): 76,157 in England; 25294 km in Wales; and 150,592 km in Scotland, which represents approximately 76% of the total riparian habitat across GB (92% for Scotland). However, the reliability of this estimate is very low because it is based on expert opinion and extrapolation from densities in local surveys to a national scale estimate. It also does not provide an area estimate because the measurement is of linear features.</p> <p>If an area of distribution is needed, the area of distribution can be used as an estimate of habitat area. This is calculated from the number of filled 10 km squares in the distribution map.</p>	
	b) Assessment method	<p>It is possible to estimate total length of inland water or coastal bank that might be occupied by <i>L. lutra</i> currently, using the estimate of total length of riparian habitats provided in Harris et al. (1995), population densities provided by Jefferies et al. (2003) and number of occupied sites in the most recent national surveys. These give a total of 315,073 km of linear riparian habitat currently occupied by <i>L. lutra</i> in Great Britain (GB): 76,157 in England; 25294 km in Wales; and 150,592 km in Scotland, which represents approximately 76% of the total riparian habitat across GB (92% for Scotland).</p>

		<p>However, the reliability of this estimate is very low because it is based on expert opinion and extrapolation from densities in local surveys to a national scale estimate. It also does not provide an area estimate because the measurement is of linear features.</p> <p>If an area of distribution is needed, the area of distribution can be used as an estimate of habitat area. This is calculated from the number of filled 10 km squares in the distribution map.</p>
		<p>HARRIS, S., MORRIS, P., WRAY, S. & YALDEN, D. 1995. A review of British Mammals: population estimates and conservation status of British mammals other than cetaceans. JNCC, Peterborough http://jncc.defra.gov.uk/page-2759.</p> <p>JEFFERIES, D.J., STRACHAN, C. & STRACHAN, R. 2003. Estimating numbers of the three interacting riparian mammals in Britain using survey data. In: JEFFERIES, D.J. (Ed) The water vole and mink survey of 1996-1998 with a history of the long-term changes in the status of both species and their causes. pp188-197. Vincent Wildlife Trust, Ledbury.</p>
2.5.5 Short-term trend Period	1998-2007	
2.5.6 Short-term trend Trend direction	increase	<p>MALTBY, E., ORMEROD, S., ACREMAN, M., BLACKWELL, M., DURANCE, I., EVERARD, M., MORRIS, J. & SPRAY, C. 2011. Freshwaters – Openwaters, Wetlands and Floodplains in: The UK National Ecosystem Assessment Technical Report. UK National Ecosystem Assessment, UNEP-WCMC, Cambridge http://uknea.unep-wcmc.org/Resources/tabid/82/Default.aspx.</p> <p>Although the actual area of habitat required by a favourable reference population of <i>L. lutra</i> in unknown, there is some information on trends in quality and amount of suitable habitat used by <i>L. lutra</i> in the UK. River and riparian habitat suffered degradation in the UK during the 20th century. However, there is evidence to suggest that these trends are now in reverse. Riparian habitats and water courses have been assessed in the Countryside Surveys of 1990, 1998 and 2007 and a comparison of results in the National Ecosystem Assessment (Maltby et al, 2011, concluded that the biological condition of streams and small rivers improved throughout GB during this period. The extent of open water also increased, though water quality issues remain a problem in some areas.</p>
2.5.7 Long-term trend Period	1990-2007	
2.5.8 Long-term trend Trend direction	increase	<p>MALTBY, E., ORMEROD, S., ACREMAN, M., BLACKWELL, M., DURANCE, I., EVERARD, M., MORRIS, J. & SPRAY, C. 2011. Freshwaters – Openwaters, Wetlands and Floodplains in: The UK National Ecosystem Assessment Technical Report. UK National Ecosystem Assessment, UNEP-WCMC, Cambridge http://uknea.unep-wcmc.org/Resources/tabid/82/Default.aspx.</p>

	<p>wcmc.org/Resources/tabid/82/Default.aspx. Although the actual area of habitat required by a favourable reference population of <i>L. lutra</i> is unknown, there is some information on trends in quality and amount of suitable habitat used by <i>L. lutra</i> in the UK. River and riparian habitat suffered degradation in the UK during the 20th century. However, there is evidence to suggest that these trends are now in reverse. Riparian habitats and water courses have been assessed in the Countryside Surveys of 1990, 1998 and 2007 and a comparison of results in the National Ecosystem Assessment (Maltby et al, 2011, concluded that the biological condition of streams and small rivers improved throughout GB during this period. The extent of open water also increased, though water quality issues remain a problem in some areas.</p>	
2.5.9 Area of suitable habitat for the species	a) Value in km²	
	<p><i>L. lutra</i> uses linear habitats, so calculation of area is inappropriate. However the area of occupied 10 km squares is England: 109,610 Scotland: 76,432 Wales: 20,179</p>	
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	b) Absence of data indicated as '0'	
	a) Genuine change?	True
	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	
D01: Roads, paths and railroads	H	
F03: Hunting and collection of wild animals (terrestrial)	H	
J02: human induced changes in hydraulic conditions	H	
A07: use of biocides, hormones and chemicals	M	
H01: Pollution to surface waters	M	O

(limnic & terrestrial, marine & brackish)		
H03: Marine water pollution	M	

Following a crash caused by pesticides, the otter is currently increasing its range in England and Wales and is found throughout Scotland. In England and Wales, the rapid recolonisation of the species suggests that conditions throughout the area are adequate to support an extensive population. In Scotland, about one third of the population is associated with coastal waters, where it could be vulnerable to oil-spill, as recorded in Shetland.

2.6.1 Method used – Pressures	mainly based on expert judgement and other data

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	
H03: Marine water pollution	H	
J02: human induced changes in hydraulic conditions	H	
D01: Roads, paths and railroads	M	
F03: Hunting and collection of wild animals (terrestrial)	M	
H01: Pollution to surface waters (limnic & terrestrial, marine & brackish)	M	O

The otter previously suffered heavily through the use of toxic pesticides. This could remain a threat, though a more rigorous system of approvals is now in place. Road deaths and accidental capture in fish traps continue to cause mortality, though probably not sufficient to affect the population at this time.

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	a) Unit	number of individuals
Estimation of population size included in the SAC network	b) Minimum	873
	c) Maximum	873
3.1.2 Method used	Estimate based on partial data with some extrapolation and/or modelling	
	The estimate was calculated using the same approach as described in the audit for 2.4. Data on the length of riparian and littoral habitat in SACs were extracted from a GIS.	
	The above is a minimum estimate based on the estimated length of riverbank, standing water and coastline in the 44 Scottish Special Areas of Conservation (SACs) for which the otter is a qualifying feature. As otters also occur in many of the other SACs where suitable habitat exists, the actual figure is likely to be considerably higher than this.	
3.1.3 Trend of population size within the network (short-term trend)	stable	

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
1.1: No measures needed for the conservation of the habitat/species															

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