

**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

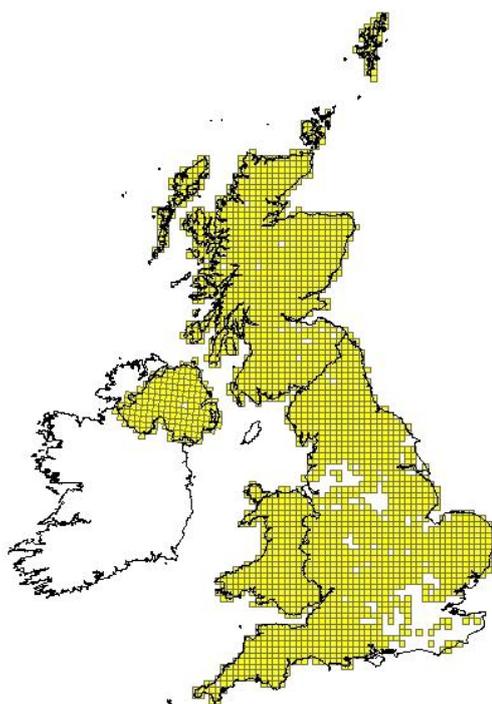
- The country-level reporting information contained in this document is a contribution to the Article 17 UK report for the habitat/species concerned.
- It has been provided by **Natural Resources Wales** and refers only to the state of the habitat/species in **Wales** - it does not constitute an assessment 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.

As of 1 April 2013, the Countryside Council for Wales, Environment Agency Wales and Forestry Commission Wales became Natural Resources Wales/Cyfoeth Naturiol Cymru

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



1.1.2 Method used - map	Complete survey/Complete survey or a statistically robust estimate
	distribution map based entirely on verified records, with no extrapolation or modelling. Wales Otter Survey Database (Environment Agency Wales unpublished data) and Wales Local Record Centre data. A series of standardised national surveys has been undertaken recording % presence at repeated sample sites and reported at a catchment level. Surveys are considered to be a good reflection of the distribution of the species and reflect the recovery of the species in Wales.

1.1.3 Year or period	2007-2012
	The period 2007-2012 is used for Wales as requested. See Note 1.1.2. The main source of data is the Otter Survey of Wales 2009 (Strachan R, in press) with additional recent records from the LRCs in Wales.
1.1.4 Additional distribution map	False
1.1.5 Range map	

2.1 Biogeographical region & marine regions	ATL
2.2 Published sources	<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>BATTERSBY, J (Ed.). 2005. UK Mammals: Species Status and Population Trends. JNCC/Tracking Mammals Partnership.</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>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.</p> <p>HOBBS, G.I., CHADWICK, E.A., BRUFORD, M.W & SLATER, F.M. 2011 Bayesian clustering techniques and progressive partitioning to identify population structuring within a recovering otter population in the UK. Journal of Applied Ecology Volume 48, Issue 5, pages 1206–1217.</p> <p>JEFFERIES, D.J. 1989. The changing otter population of Britain 1700–1989. Biological Journal of the Linnean Society 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) 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>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>KRUUK, H. 1995. Wild otters: Predation and populations. Oxford University Press, Oxford.</p> <p>LILES, G. 2003. Conserving Natura 2000 Rivers Conservation Techniques Series No. 5: Otter Breeding Sites - Conservation and Management. English Nature, Peterborough.</p> <p>LILES, G (2006) Current and potential distribution, condition and breeding success of the otter <i>Lutra lutra</i> in the River Wye SAC and catchment (within Wales), CCW Environmental Monitoring Report No. 30. Unpublished report & Confidential</p>

	Annex to CCW Bangor STRACHAN, R (in press). Otter Survey of Wales, 2009. Environment Agency Wales, Cardiff."

2.3 Range	
2.3.1 Surface area Range	
2.3.2 Method used Surface area of Range	Complete survey/ Complete survey or a statistically robust estimate See Note 1.1.2
2.3.3 Short-term trend Period	
2.3.4 Short term trend Trend direction	In England and, to some extent, Wales, the otter is recovering from a population crash in the 1960s and 1970s. Recovery in Wales is more complete than in England, as the population crash was less severe. There is no real in change in range since the last reporting period as areas where there was little evidence were used by occasional animals and populations are now being consolidated.
2.3.5 Short-term trend Magnitude	a) Minimum See JEFFERIES, D.J. 1989. and JEFFERIES, D.J., et al 2003.
	b) Maximum See Note 2.3.5a
2.3.6 Long-term trend Period	See Note 2.3.4
2.3.7 Long-term trend Trend direction	See Note 2.3.6
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	
	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
	See Note 2.3.4. At a UK level. Otters populations are continuing to recover after the 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?	True
	Otters have consolidated their range in Wales in recent years. Additional data have also been obtained through more recorder effort and better recording systems.	
	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
	b) Minimum	926
	See Note 2.4.5	
	c) Maximum	926
See Note 2.4.5		
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	a) Definition of "locality"	

Optional	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	<p>Estimate based on partial data with some extrapolation and/or modelling</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</i> 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. 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 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. 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. 	
2.4.6 Short-term trend Period	2002-2012	
	See Note 2.4.5	
2.4.7 Short-term trend Trend direction	increase	

2.4.8 Short-term trend Magnitude	a) Minimum	0.27
	See Note 2.4.5	
	b) Maximum	27
	See Note 2.4.5	
	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	1994-2010	
	1994-2010 (based on 1991-1994 and 2009-2010 surveys)	
2.4.11 Long-term trend Trend direction	increase	
	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.	
2.4.12 Long-term trend Magnitude Optional	a) Minimum	71
	See Note 2.4.11	
	b) Maximum	71
	See Note 2.4.11	
	c) Confidence interval	
2.4.13 Long term trend Method used	2	
	See Note 2.4.11	
2.4.14 Favourable reference population	a) Number of individuals/agreed 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?	True
	See Note 2.3.10	
	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	<p>20179</p> <p>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. L. lutra uses linear habitats, so calculation of area is inappropriate. . It is possible to estimate total length of inland water or</p>

	<p>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 315,073km 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 10km squares in the distribution map.</p> <p>There is thought to be a sufficient amount of habitat in the UK to support a viable population of the species.</p>						
<p>2.5.2 Year or period</p>	<p>2001-2012</p>						
<p>2.5.3 Method used Habitat for the species</p>	<p>The period of reporting - refer to previous comment on this.</p> <p>Estimate based on partial data with some extrapolation and/or modelling</p> <p>See Note 2.5.1</p>						
<p>2.5.4 Quality of the habitat</p>	<table border="1"> <tr> <td data-bbox="611 981 895 1025"> <p>a) Habitat quality</p> </td> <td data-bbox="895 981 1485 1025"> <p>Good</p> </td> </tr> <tr> <td colspan="2" data-bbox="611 1025 1485 1115"> <p>The species has spread back to previously occupied areas, indicating that the habitat is able to support an expanding population.</p> </td> </tr> <tr> <td data-bbox="611 1115 895 1294"> <p>b) Assessment method</p> </td> <td data-bbox="895 1115 1485 1294"> <p>Quality of habitat is inferred from the continuing consolidation of range and the fact that the population is approaching carrying capacity in some area of Wales. Strachan, R. (in press)</p> </td> </tr> </table>	<p>a) Habitat quality</p>	<p>Good</p>	<p>The species has spread back to previously occupied areas, indicating that the habitat is able to support an expanding population.</p>		<p>b) Assessment method</p>	<p>Quality of habitat is inferred from the continuing consolidation of range and the fact that the population is approaching carrying capacity in some area of Wales. Strachan, R. (in press)</p>
<p>a) Habitat quality</p>	<p>Good</p>						
<p>The species has spread back to previously occupied areas, indicating that the habitat is able to support an expanding population.</p>							
<p>b) Assessment method</p>	<p>Quality of habitat is inferred from the continuing consolidation of range and the fact that the population is approaching carrying capacity in some area of Wales. Strachan, R. (in press)</p>						
<p>2.5.5 Short-term trend Period</p>	<p>1998-2007</p> <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.</p> <p>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>						

2.5.6 Short-term trend Trend direction	increase	
	See Note 2.5.5	
2.5.7 Long-term trend Period	1990-2007	
2.5.8 Long-term trend Trend direction	increase	
2.5.9 Area of suitable habitat for the species	a) Value in km²	20179
	This value is the same as that in 2.5.1 as the area is calculated as occupied 10km squares and virtually all these are occupied in Wales.	
	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?	True
	Habitat has improved due to improvements in water quality, appropriate riparian management and site and species protection.	
	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 (limnic & terrestrial, marine & brackish)	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. Otters use coastal areas in Wales, but to a lesser extent so that pressure has not been included for Wales.

2.6.1 Method used – Pressures	mainly based on expert judgement and other data
	Expert judgement has been used based on the knowledge of the cause of the previous decline in otter populations and current information on causes of mortality, any underlying pathology and information on populations arising from the study of otter corpses undertaken by Cardiff University Otter Project and the Wales Roads and Otters Steering Group http://www.otterproject.cf.ac.uk/research_project.html

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	
J02: human induced changes in hydraulic conditions	H	
D01: Roads, paths and railroads	M	
F03: Hunting and collection of wild animals (terrestrial)	M	

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 See Note 2.6.1
------------------------------------	---

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 individuals****b) Minimum****200**

The figure of 200 animals is a rounded figure of c 30% of the estimated population total given in 2.4.1. The estimate of 30% is taken from an unpublished JNCC report on the percentage of the resource of Habitats Directive Annex IV species within in SACs in Wales. See 2.4.5 for the method of estimating of the otter population in Wales. Both estimates have a low degree of confidence as there is currently no available robust data on otter numbers against which to test the extrapolations.

c) Maximum**200**

See Note 3.1.1b.

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)****increase**

The trend is assumed to be positive as this is the case for the otter population throughout the UK. Populations associated with more highly protected areas would be expected to benefit from the additional protection and better management, although as a wide-ranging species, any otter would be dependent on habitat within and outside protected sites. In the last SAC monitoring reporting round 9 SAC sites with otter as a feature were considered to be in Favourable Condition. Four were considered to be in Unfavourable Condition, but this was mainly due to the difficulty in confirming breeding (one of the main performance indicators) Liles 2006.

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
4.0: Other wetland-related measures					Y	M			Y		Y	Y			
4.1: Restoring/improving water quality	Y	Y		Y		H			Y		Y	Y			
4.2: Restoring/improving the hydrological regime	Y	Y		Y		H			Y		Y	Y			
6.3: Legal protection of habitats and species	Y	Y			Y	M			Y		Y	Y			
7.1: Regulation/Management of hunting and taking	Y	Y				L			Y		Y	Y			
8.2: Specific management of traffic and energy transport systems		Y		Y		L			Y		Y	Y			

Water quality has improved with a subsequent positive impact on otter populations and this needs to be maintained in order to prevent a recurrence of the decline in otter populations. This includes continuing to monitor water quality, the presence of pollutants and their impact on this top predator. Legal and administrative measures continue to be required to ensure that the protection provided by the legislation is effective and that protected habitats for the species are managed appropriately. Advice and enforcement in relation to hunting (pest control) and fishing (e.g. fyke nets) are required to reduce the incidental killing of otters. Road design, construction and operation need to take into account the likely impact on otters, e.g. in relation to the provision of safe crossing structures and the possible loss of otter habitat.