

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

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

**Conservation status assessment for :
S1355: *Lutra lutra* - Otter**

Please note that this is a section of the report. For the complete report visit <http://www.jncc.gov.uk/article17>

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S1355 *Lutra lutra* Otter

Audit trail compiled and edited by JNCC and the UK Inter-Agency Mammal Working Group

This document is an audit of the data and judgements on conservation status in the UK's report on the implementation of the Habitats Directive (January 2001 to December 2006) for this species. Superscript numbers accompanying the headings below, cross-reference to headings in the corresponding Annex B reporting form. This supporting information should be read in conjunction with the UK approach for species (see 'Assessing Conservation Status: UK Approach').

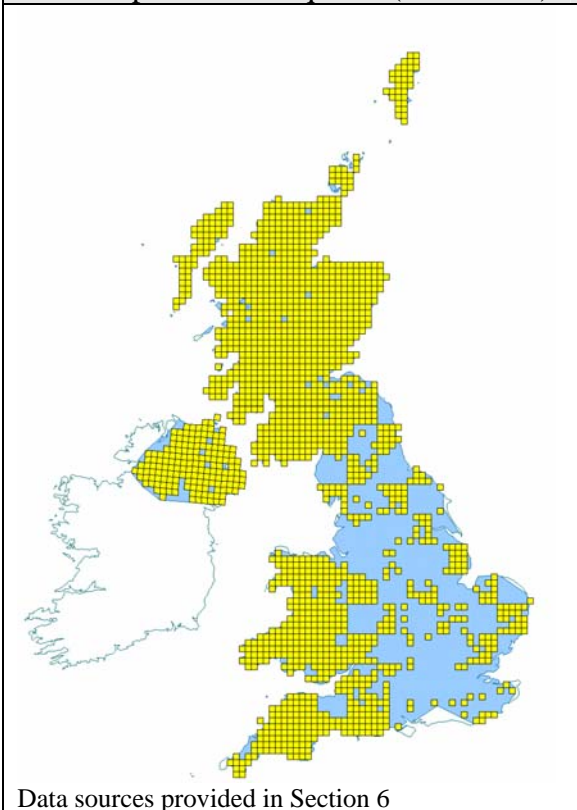
1. Range Information^{2,3}

Lutra lutra is fairly widespread throughout the UK, with strongholds in Scotland, the south west of England, and central and southern Wales.

1.1 Surface area of range^{2,3,1} 242,676km²

The above estimate was calculated within Alpha Hull software, using extent of occurrence as a proxy measure for range (as shown in Map 1.1). The value of alpha was set at 45 km to reflect the mobility of this species.

Map 1.1 Current extent of occurrence and occupied 10-km squares (1990-2006)



1.2 Date of range determination^{2,3,2} 1990 – 2006

Records from this time period provide the best representation of current range as it is understood by specialist knowledge. It incorporates the data from the latest series of national otter surveys, carried out between 2000 and 2004 and the most recent Biodiversity Action Plan reporting round (BAP 2005).

1.3 Quality of range data^{2.3.3}

Moderate

National surveys have been undertaken for England, Scotland, Wales and Northern Ireland at seven year intervals since 1979 (Crawford *et al.* 1979; Green & Green 1980, 1987, 1997; Andrews & Crawford 1986; Andrews *et al.* 1993; Strachan & Jefferies 1996). The last series of surveys took place in 2000-2004 (Crawford 2003; Jones & Jones 2004; Preston *et al.* 2004; Strachan 2007).

The method of survey adopted in England, surveying every 10-km square in alternate 50-km squares, means that the distribution within the range is likely to be an underestimate. However, the range extent is likely to reflect the real current range of the species. In all other parts of the UK every 10-km square has been surveyed at least once since 1990.

1.4 Range trend^{2.3.4} & Range trend magnitude^{2.3.5}

+

The series of national otter surveys 1979-2004 has detected a 527% increase in occupied sites in England and 268% increase in Wales up to 2002. The latest otter survey of Scotland has over 92% of sites positive for *L. lutra*, compared with 71% in the previous survey (Strachan 2007). In Northern Ireland, the most recent survey showed 65% occupancy of sites surveyed, indicating a decline of 9.9% since the first Northern Ireland Otter Survey in 1980-1981. Overall there has been > 70% increase in occupied sites across the UK throughout the specified time period.

1.5 Range trend period^{2.3.6}

1980 – 2004

The time period selected is considered to reflect the current situation regarding range change for this species and incorporates the time period since the Habitats Directive came into force.

1.6 Reasons for reported trend in range^{2.3.7}

3 = Direct human influence (restoration, deterioration, destruction)

4 = Indirect anthropo(zoo)genic influence

Wildlife legislation introduced in the 1980s and 1990s, such as the Wildlife and Countryside Act 1981 (as amended) and the Conservation (Natural Habitats, &c) Regulations 1994, gave full protection to *L. lutra*. This, accompanied by improvements in water quality, resulted in populations making a steady recovery since the early 1980s (Battersby & Tracking Mammals Partnership (TMP) 2005). The series of national surveys that have been carried out during this time period reflect the return of the species to most of its former range.

1.7 Favourable reference range^{2.7.1}

242,676km² (Equal to current)

The favourable reference range value has been derived using 1994 as the baseline and making a judgement on whether the range in 1994 was sufficient to allow the long-term survival of the species, using the decision tree in Note 1 (see 'Assessing Conservation Status: UK Approach') as a guide. Historic and current information on range size and trends have been

used to assess this and, if the 1994 level was not sufficient, then consideration has been given to what would constitute a large enough range.

Range for this species has been increasing since the 1980s and is now almost fully restored to the former range, prior to the major historic declines. The range in 1994 was probably sufficient to support a long-term viable population, but the 1994 extent is difficult to calculate. Therefore, the current range, which is approximately the whole of the UK, has been set as the favourable reference value.

1.8 Range conclusion^{2.8}

Favourable

The current range is equal to the favourable reference range and the trend in range is increasing, thus the assessment is Favourable.

2. Population of the species^{2.4}

2.1 Population estimate^{2.4.1}

>10,395 individuals

1,600 in England, >8,000 in Scotland ; 762 in Wales; no estimate for Northern Ireland.

2.2 Date of population estimate^{2.4.2}

2004

2.3 Method of population estimate^{2.4.3}

2 = extrapolation from surveys of part of the population, sampling

An attempt has been made to provide population estimates for this species by Jeffries *et al.* (2003) using data from the first three national otter surveys. An equation was devised, based on percentage of occupied sites, length in kilometres of occupied bank or coast, and calculated density of *L. lutra* per km of bankside. The original figure was 9,465 individuals in GB in 1994: 977 in England; 7,948 in Scotland; and 540 in Wales.

For the 2004 update, the figures for *L. lutra* 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 revised estimates of:

1,600 *L. lutra* in England - 34% of sites surveyed were occupied (Crawford 2003) giving 46,357 km of occupied bank and assuming a density of one *L. lutra* per 27.32km of linear bank.

762 *L. lutra* in Wales - 74% of sites surveyed were occupied (Jones & Jones 2004), giving 20,821 km of occupied bank and assuming the same *L. lutra* density as for England.

The calculation is more complicated for Scotland because of varying densities of *L. lutra* in coastal and inland waters and on the Northern and Western Isles, but the 21% increase in occupied sites between 1991-1994 survey and the 2003-2004 survey (Strachan 2007) indicates that the current population estimate is probably greater than 8,000 *L. lutra*.

There is still no estimate for Northern Ireland, but the most recent survey showed 65% occupancy of sites surveyed, indicating a decline of 9.9% since the first Northern Ireland Otter Survey in 1980-1981 (Preston *et al.* 2004).

2.4 Quality of population data^{2.4.4}

Poor

The population data are based on extrapolation from partial surveys and not on full census of the population. Furthermore, there is no clear relationship between range change as measured by the national surveys and change in population as estimated from the survey results and using other data. The quality, is therefore, assessed as poor and results should be viewed with caution.

2.5 Population trend^{2.4.5} & Population trend magnitude^{2.4.6}

+ > 3,531 individuals

Current recovery of *L. lutra* populations seems to have commenced in the early 1980s. The population estimate for Great Britain (GB) in 1979, at the beginning of the series of national surveys, was 6,864. The estimate now is >10,395, representing a >51% increase. This is equivalent to an increase of >3,531 individuals.

The National Surveys were not originally designed to detect population trends, but to assess distribution trends, largely because there were no reliable methods to measure *L. lutra* abundance. However, the change in distribution recorded in the surveys has been taken as an indication of change in abundance, although it is not possible to provide trend analyses.

2.6 Population trend period^{2.4.7}

1980 – 2004

This period represents current trends as derived from periodic national distribution surveys.

2.7 Reasons for reported trend in population^{2.4.8}

3 = Direct human influence (restoration, deterioration, destruction)

4 = Indirect anthro(zoo)genic influence

Recent increases in *L. lutra* populations are the result of full national and European protection, preventing hunting and persecution, and improved water quality.

2.8 Justification of % thresholds for trends^{2.4.9}

Not applicable

The increase in distribution measured in the national surveys since 1980, a proxy measure for population change, is greater than the specified threshold and no justification is required.

2.9 Main pressures^{2.4.10}

110 Use of pesticides

212 trawling

290 Hunting, fishing or collecting activities not referred to above

700 Pollution

2.10 Threats^{2.4.11}

110 Use of pesticides

211 fixed location fishing

502 routes, autoroutes

700 Pollution

701 water pollution

803 infilling of ditches, dykes, ponds, pools, marshes or pits

810 Drainage

811 management of aquatic and bank vegetation for drainage purposes

830 Canalisation

840 Flooding

850 Modification of hydrographic functioning, general

852 modifying structures of inland water courses

853 management of water levels

2.11 Favourable reference population^{2.7.2}

9,465 individuals (Equal to 1994 GB estimate)

The favourable reference population value has been derived using 1994 as the baseline and making a judgement on whether the population in 1994 was viable in the long-term, using the decision tree in Note 1 (see 'Assessing Conservation Status: UK Approach') as a guide. Historic and current information on population size, distribution and trends have been used in order to assess viability and, if the 1994 level was not viable, then consideration has been given to what would constitute a viable population.

The population estimate for this species in GB in 1994 was 9,465 individuals. The reliability of this estimate is very low because the estimate is based on extrapolation from distribution survey data. However, the indications are that *L. lutra* populations were increasing prior to 1994 and have continued to increase since then. The species is widespread across the UK and although still at relatively low abundance in parts of the UK, was probably long-term viable in 1994. The 1994 estimate has, therefore, been set as the favourable reference population value. It is important to note that the relationship between distribution change and population recovery is not clear. This figure has been set with limited information and could be revised in the future if better information becomes available.

2.12 Population conclusion^{2.8}

Favourable

Populations of *L. lutra*, using the proxy measure of periodic distribution surveys, are increasing in all parts of the UK, except Northern Ireland and the overall population is above the favourable reference value. The conclusion is, therefore, Favourable.

3. Habitat for the species in the Biogeographic region or sea^{2.5}

L. lutra have been recorded using all types of waterways. However, in England and Wales, they are mainly confined to freshwater. In Scotland, it is estimated that around half 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. However, surveys indicate that natal dens and intensive *L. lutra* activity (sprainting, pathways through vegetation) are generally confined to the 4 ha block (Liles 2003).

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).

3.1 Surface area of habitat^{2.5.2}

Unknown

The surface area of habitat currently used by *L. lutra* is unknown. It is possible to estimate total length of inland water or coastal bank that might be occupied by *L. lutra* 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 198,362 km of linear riparian habitat currently occupied by *L. lutra* in Great Britain (GB): 46,357 in England; 20,821 km in Wales; and 131,184 km in Scotland, which represents approximately 64% of the total riparian habitat across GB. There is no estimate for Northern Ireland. 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.

3.2 Date of estimation^{2.5.3}

Not applicable

3.3 Quality of data on habitat area^{2.5.4}

Poor

Habitat used by *L. lutra* has been relatively well documented. However, there are no estimates pertaining to habitat area used by, or available to, current *L. lutra* populations.

3.4 Habitat trend^{2.5.5}

Stable

Although the actual area of habitat required by a favourable reference population of *L. lutra* is unknown, there is some information on trends in quality and amount of suitable habitat used by *L. lutra* 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 two most recent Countryside Surveys, in 1990 and 1998 (Haines Young *et al.* 2000) and a comparison of results showed that the biological condition of 25% of streams and small rivers improved in GB during this period. Fen, marsh and swamp expanded by 27% in England and Wales and by 19% in Scotland, but declined by 19% in Northern Ireland. The total area of inland water bodies has not changed, but there has been an increase in the number of small inland water bodies, by 6%, which reverses the losses observed in the 1980s.

Overall the loss of wetland areas in the 1980s appears to have stabilised with some return to pre 1980 figures. Water quality has improved during the trend period.

3.5 Habitat trend period^{2.5.6}

1990 – 1998

The time period selected reflects the results of two Countryside Surveys carried out in 1990 and 1998 (Haines-Young *et al.* 2000).

3.6 Reasons for reported trend in habitat^{2.5.7}

3 = Direct human influence (restoration, deterioration, destruction)

4 = Indirect anthropo(zoo)genic influence

Agricultural intensification, the draining of wetlands and river engineering for land works, and pollution incidences associated with these factors caused historic declines. However,

tighter restrictions against the release of toxic chemicals in UK waters, and small and large scale riparian enhancement projects and wetland creation schemes have contributed to recent upward trends in water quality and increase in number of small waterbodies.

3.7 Suitable habitat for the species (in km²)^{2.73}

Unknown

An estimate of total length of riparian habitats in Great Britain has been provided by Harris *et al.* (1995), including length of river systems, streams, canals, lake and coastal (in Scotland) shores. The estimate is 136,345 km in England, 144,365 km in Scotland and 28,136 km in Wales. There is no estimate for Northern Ireland. This gives a total of 308,846 km of riparian habitats that could potentially be used by *L. lutra*. However, there is no information on how much of this is currently suitable habitat for *L. lutra*.

3.8 Habitat conclusion^{2.8}

Unknown

Declining trends in *L. lutra* habitat have been reversed in recent years as a result of small and large scale riparian enhancement projects, wetland creation schemes, and improved legislation dealing with the release of toxic chemicals into UK rivers. However, it is not possible to assess at present whether there is sufficient suitable habitat to support a favourable reference population of *L. lutra* in the long-term. The conclusion is, therefore, unknown at present.

4. Future Prospects^{2.6}

Good prospects

The species is expected to survive and prosper.

Factors likely to affect the species over the next 12-15 years are considered below.

Legislation. The species has full national, European and international legal protection. *L. lutra* is listed on Schedules 5 & 6 of the Wildlife and Countryside Act 1981 (as amended) and the Conservation (Natural Habitats, &c.) Regulations 1994 (and equivalent legislation in Northern Ireland), and is listed on Annex IIa and IVa of the Habitats Directive. The species is also listed on Appendix I of the Convention on International Trade in Endangered Species and on Annex A of the European Union equivalent, Council Regulation (EC) No 338/97.

Conservation action. *L. lutra* is a UK priority species with a Biodiversity Action Plan. There are 168 Special Areas of Conservation (SACs) where the species has been recorded, with 22 of those where the species is the primary reason for designation and 52 sites where the species is a qualifying feature. The most recent national survey in Scotland, where the largest SACs are located, showed that all but one of the SACs were in favourable condition, although some of the smaller sites would not be able to sustain the presence of *L. lutra* in isolation from adjacent river systems and coastal habitat outside SAC boundaries (Strachan 2007).

The main causes of the decline of *L. lutra* have been identified and addressed. As water quality continues to improve across the areas currently unoccupied by *L. lutra*, the species is expected to continue to expand its range.

Threats. There are some important and growing threats to this species, such as routes and autoroutes and wetland and waterway management. The effects of these should be monitored in the future.

4.1 Future prospects conclusion^{2.8}

Favourable

The main pressures and threats to the species are not significant and the species will remain viable in the long-term. The conclusion is, therefore, Favourable

5. Overall Assessment^{2.8}

Favourable

Range, population and future prospects for this species are all Favourable and the habitat conclusion is Unknown at present because of insufficient information on habitat area and trends. Following the guidance the overall assessment is, therefore, Favourable.

Table 5.1 Summary of conclusions

Parameter	Judgement	Grounds for Judgement (in accordance with Annex C)	Reliability*
Range	Favourable	Range increasing and not smaller than the favourable reference range	2
Population	Favourable	Population(s) not lower than favourable reference population	3
Habitat	Unknown	No or insufficient reliable information available	N/A
Future Prospects	Favourable	Main pressures and threats to the species not significant; species will remain viable on the long-term	2
Overall Assessment	Favourable	Three Favourable and one Unknown	2

*1=High, 2=Moderate, 3=Low

High – Expert opinion is that the concluding judgement accurately reflects the current situation based on a professional understanding of the species. For range, population, and habitat, quality of data used to establish the current estimate has been identified as “good”; data used to inform trends is comprehensive and up to date.

Moderate – A greater understanding of the feature, or the factors affecting it, is required before a confident concluding judgement can be made by experts. For range, population, and habitat, the current estimate and/or trend are based on recent, but incomplete or limited survey data; or alternately, a comprehensive, but outdated (pre-1994) review.

Low – Judgements, and comprising estimates, are based predominately on expert opinion.

N/A – Assessment conclusion is “unknown”, on the basis of insufficient reliable information

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Map Data Sources

Biological Records Centre - Mammals Database; Devon incidental species records 1950-2002; Dorset SW Pilot species dataset; Highland Biological Recording Groups - Mammals dataset; Irish otter dataset; BTO/JNCC/RSPB Breeding Birds Survey mammal data (1995-2005); Marine Nature Conservation Review; National Trust Selected BAP Species; Otters: Pembrokeshire Marine Species Atlas; Staffordshire Wildlife Trust Nature Reserves Inventory; SWT Scottish Borders Local Wildlife Site Survey data 1996-2000 - species information; Wiltshire BAP Priority Species Distribution Records; England Otter Survey Database; Northern Ireland Otter Survey Database; Scotland Otter Survey Database; Wales Otter Survey Database (via the National Biodiversity Network (NBN) Gateway).