

**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*)

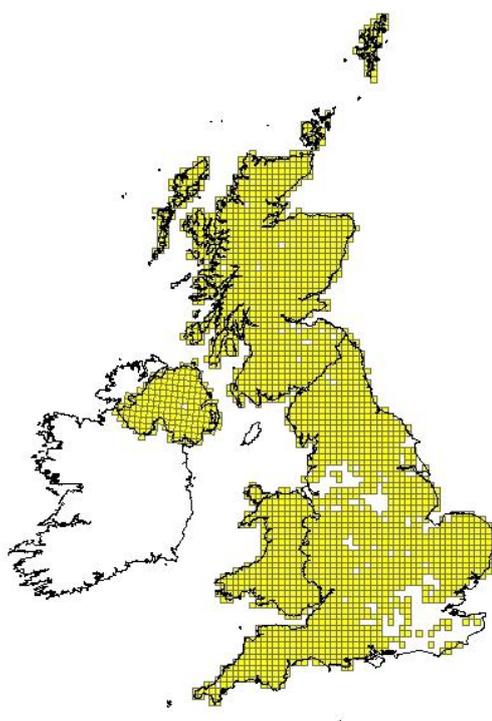
IMPORTANT NOTE – PLEASE READ

- 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 England** and refers only to the state of the habitat/species in **England** - 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. A series of standardised national surveys have documented the recovery of the species from surviving populations. Recovery is not yet complete.</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 of the north-west Midlands remaining to be recolonised.</p> <p>Data sources: England Otter Survey Database</p>	



1.1.2 Method used - map	Complete survey/Complete survey or a statistically robust estimate
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>"BATTERSBY, J (Ed.) & TRACKING MAMMALS PARTNERSHIP 2005. UK Mammals: Species Status and Population Trends. JNCC/Tracking Mammals Partnership.</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.</p> <p>CRAWFORD, A. 2003. Fourth Otter Survey of England 2000–2002. 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>CRAWFORD, A. 2010. Fifth Otter Survey of England 2009-2010. Environment Agency, Bristol. Available to download from the Environment Agency website (http://www.environment-agency.gov.uk/static/documents/Leisure/otter_survey_oct10_full_report(1).pdf)</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>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–</p>

	<p>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>JEFFERIES, D.J. & WOODROFFE, G.L. 2008. Otter <i>Lutra lutra</i>. Pp 437-447 In HARRIS, S. & YALDEN, D.W. Mammals of the British Isles: Handbook, 4th edition. The Mammal Society, Southampton. 799pp.</p> <p>KRUUK, H. 1995. Wild otters: Predation and populations. Oxford University Press, Oxford.</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>LILES, G. 2003. Conserving Natura 2000 Rivers Conservation Techniques Series No. 5: Otter Breeding Sites - Conservation and Management. English Nature, Peterborough.</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>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>
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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
2.3.3 Short-term trend Period	2001-2012
	National otter surveys for England have been undertaken on five occasions; 1977-79, 1984-86, 1991-94, 2000-02 and 2009-10.

	The method of survey adopted in England, surveying every 10km square in alternate 50km 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.	
2.3.4 Short term trend Trend direction	increase	
	The fifth national otter survey of England (2009-2010) has shown that the recovery of the otter has continued, with otter being present across all regions. However, the recovery of the otter at a regional scale differs greatly between the regions. There has been a 58.8% increase in positive site records since the last otter survey in 2000-2.	
2.3.5 Short-term trend Magnitude	a) Minimum	
	b) Maximum	
2.3.6 Long-term trend Period		
2.3.7 Long-term trend Trend direction	increase	
	<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 http://www.environment-agency.gov.uk/static/documents/Leisure/otter_survey_oct10_full_report(1).pdf</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</p>	

	both species and their causes. Pp188-197. Vincent Wildlife Trust, Ledbury.	
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
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
	Continuing recovery after historic crash between 1960 and 1980 caused by pesticides. Recovery has been 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
	b) Minimum	2788
	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	

	<p>bank or coast, and calculated density of <i>Lutra lutra</i> per km of bankside. The estimated population in 1994 was 9,465 individuals in Great Britain of which there were 977 in England.</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 2002-2004 of 1,580 in England.</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 a revised estimate of 2,788 <i>L.lutra</i> in England (56% of sites surveyed were occupied (Crawford, 2010) giving 76,157km of occupied bank and assuming a density of one <i>L.lutra</i> per 27.32km of linear bank).</p>		
	<table border="1"> <tr> <td>c) Maximum</td> <td>2788</td> </tr> </table>	c) Maximum	2788
c) Maximum	2788		
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-		
2.4.5 Method used Population size	Estimate based on partial data with some extrapolation and/or modelling		
2.4.6 Short-term trend Period	2001-2010		
2.4.7 Short-term trend Trend direction	increase		
2.4.8 Short-term trend Magnitude	a) Minimum	76	

	b) Maximum 76
	c) Confidence interval
2.4.9 Short-term trend Method used	<p>Estimate based on partial data with some extrapolation and/or modelling</p> <p>Data from the time-series of population estimates described in 2.4 were used to calculate short-term trends for England. These show the continuing recovery of the population from a nadir in the late 1970s/early 1980s, though recovery is not yet complete.</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 http://www.environment-agency.gov.uk/static/documents/Leisure/otter_survey_oct10_full_report(1).pdf</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>
2.4.10 Long-term trend –	1994-2010

Period	Data from the time-series of population estimates described in 2.4 were used to calculate long term trends for England. These show the continuing recovery of the population from a nadir in the late 1970s or early 1980s, though recovery is not yet complete.	
2.4.11 Long-term trend Trend direction	increase	
2.4.12 Long-term trend Magnitude Optional	a) Minimum	185
	b) Maximum	185
	c) Confidence interval	
2.4.13 Long term trend Method used	2 Data from the time-series of population estimates described in 2.4 were used to calculate long-term trends for England. These show the continuing recovery of the population from a nadir in the late 1970s/early 1980s, though recovery is not yet complete.	
2.4.14 Favourable reference population	a) Number of individuals/agreed exceptions/other units	
	<p>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.</p> <p>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 <i>L. Lutra</i> populations were increasing prior to 1994 and have continued to increase since then, as indicated in the Environment Agency surveys for the species. The species is widespread across the UK and although still at relatively low abundance in parts of the UK i.e. the South east of England, the otter 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. The figure could be revised in the future.</p>	

	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
	Recovery from historic crash 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	<p>109610</p> <p>L. lutra have been recorded using all types of waterways. Home range can be up to 40km along river stretches and as small as 4-5km in coastal situations. However, surveys indicate that natal dens and intensive L. lutra activity (sprainting, pathways through vegetation) are generally confined to the 4ha 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 England, otters are mainly confined to freshwater habitats.</p> <p>L. lutra uses linear habitats, so calculation of area is inappropriate. However, the area of occupied 10km squares is 109,610.</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	2012-

2.5.3 Method used Habitat for the species	Estimate based on expert opinion with no or minimal sampling The surface area of habitat currently used by <i>L. lutra</i> is unknown. It is possible to estimate total length of inland water or coastal bank that may 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 the 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), 76,157km of which is in England. 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.	
2.5.4 Quality of the habitat	a) Habitat quality	Good
	The species has spread back to previously occupied areas, indicating that the habitat is able to support an expanding population.	
	b) Assessment method	The species has spread back to previously occupied areas, indicating that the habitat is able to support the population.
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 Jeffries et al (2003) and a 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 with 76,157 km of this occupied habitat being found in England. However, the reliability of this estimate is very low because it is based in 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.		
2.5.5 Short-term trend Period	2001-2012	
2.5.6 Short-term trend Trend direction	increase 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 the 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 do remain a problem in some areas. 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.	

2.5.7 Long-term trend Period	1990-2007	
2.5.8 Long-term trend Trend direction	increase	
	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 the 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 do remain a problem in some areas.	
2.5.9 Area of suitable habitat for the species	a) Value in km²	109610
	L. <i>Lutra</i> uses linear habitats, so calculation of area is inappropriate. However, the area of occupied 10km squares in England is 109,610.	
	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
	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	
H03: Marine water pollution	M	

There are several important pressures and threats to this species such as transport infrastructure, the use of biocides (which caused the crash in the 1960s-1970s), accidental capture (in fishing equipment for example), pollution to surface waters and changes in hydraulic conditions.

Following a crash caused by pesticides, the otter is currently increasing its range in England. The rapid recolonisation of the species in England suggests that conditions throughout the area are adequate to support an extensive population.

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

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
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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	
	<p>14 SACs wholly or partly in England (covering over 145,000 ha) contain <i>L. lutra</i> as one of the listed features. 4 of these SACs list the species as a main feature and are Grade B sites, meaning that they are excellent examples of the feature and come significantly above the threshold for SSSI notification. Most SSSI units within these 4 SACs are in favourable, unfavourable recovering or unfavourable no change condition. The remaining 10 SACs are classified as Grade C meaning that they are of at least national importance for <i>L. lutra</i>, but not significantly above the SSSI threshold. However, this species is not the primary reason for these SACs being selected.</p> <p>Due to the way in which these SAC sites are monitored, the length of river bank is unknown for most of the sites and consequently the population of <i>L. lutra</i> within each site is impossible to estimate using the methodology in Jefferies et al (2003). However, national otter surveys indicate that the population is continuing to rise in England and as the habitat within these SACs is generally in favourable condition, or is being managed to improve its condition, it is likely that the population of <i>L. lutra</i> within SACs has also increased.</p>	
	c) Maximum	
3.1.2 Method used	Absent data	
3.1.3 Trend of population size within the network	stable	

(short-term trend)

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				
4.1: Restoring/improving water quality				Y		M			Y		Y				
4.2: Restoring/improving the hydrological regime					Y	M			Y		Y				
4.3: Managing water abstraction	Y					M			Y		Y				
6.3: Legal protection of habitats and species	Y					M	Y			Y	Y				

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