Report under The Conservation of Habitats and Species Regulations 2017 (as amended), Regulation 9A

2019-2024

Conservation status assessment for the species:

S1355 - Otter

(*Lutra lutra*)

Wales

Cyfoeth Naturiol Cymru
Natural Resources Wales

JNCC

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This report was produced by JNCC in collaboration with Natural Resources Wales.

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Important note - Please read

- The information in this document represents the Wales Report under The Conservation of Habitats and Species Regulations 2017 (as amended), Regulation 9A, for the period 2019-2024.
- It is based on supporting information provided by Natural Resources Wales, which is documented separately.
- The Habitats Regulations reporting 2019-2024 Approach Document provides details on how this supporting information contributed to the UK Report and the fields that were completed for each parameter.
- Maps showing the distribution and range of the species are included.
- Explanatory notes (where provided) are included at the end. These provide additional audit trail information to that included within the assessments. Further underpinning explanatory notes are available in the related country reports.
- Some of the reporting fields have been left blank because either: (i) there was insufficient information to complete the field; (ii) completion of the field was not obligatory; and/or (iii) the field was not relevant to this species (section 12 National Site Network coverage for Annex II species).

Further details on the approach to the Habitats Regulations Reporting 2019-2024 are available on the JNCC website.

Assessment Summary: Otter

Distribution Map

Range Map

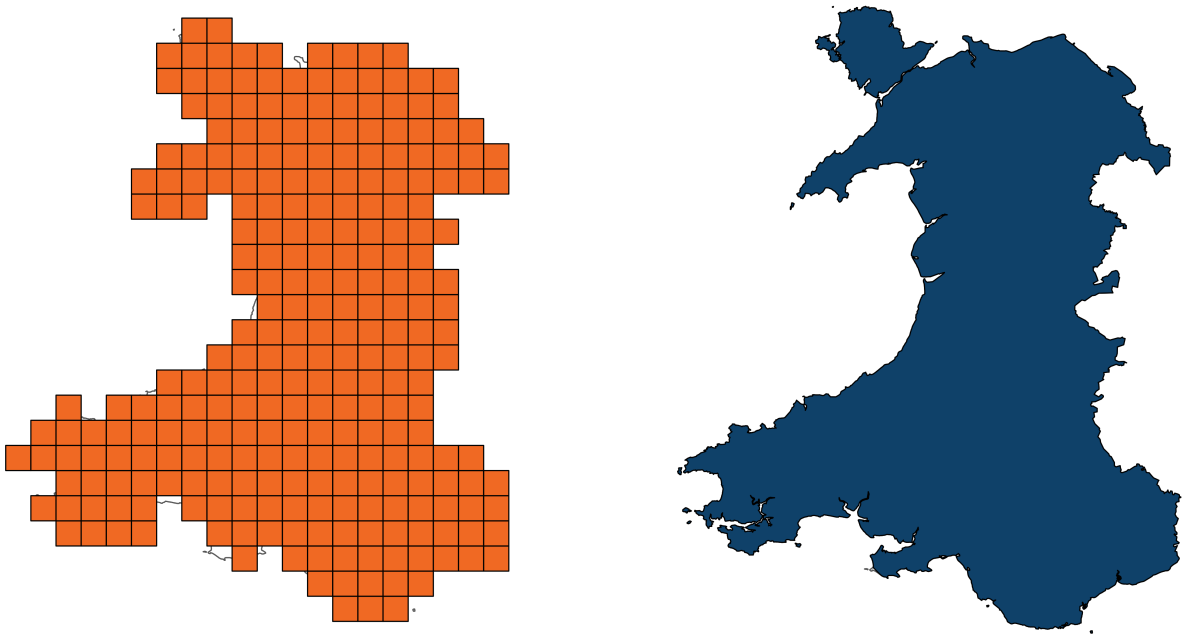

Figure 1: Wales distribution and range map for S1355 - Otter (*Lutra lutra*). Coastline boundary derived from the Oil and Gas Authority's OGA and Lloyd's Register SNS Regional Geological Maps (Open Source). Open Government Licence v3 (OGL). Contains data © 2017 Oil and Gas Authority. The 10km grid square distribution map is based on available species records within the current reporting period.

Table 1: Table summarising the conservation status for S1355 - Otter (*Lutra lutra*). Overall conservation status for species is based on assessments of range, population, habitat for the species, and future prospects.

Overall Conservation Status (see section 11)

Favourable (FV)

Breakdown of Overall Conservation Status

Range (see section 5)	**Favourable (FV)**
Population (see section 6)	**Favourable (FV)**
Habitat for the species (see section 7)	**Favourable (FV)**
Future prospects (see section 10)	**Favourable (FV)**

List of Sections

National Level

1. General information

1.1 Country	Wales
1.2 Species code	S1355
1.3 Species scientific name	*Lutra lutra*
1.4 Alternative species scientific name	
1.5 Common name	Otter
Annex(es)	II, IV

2. Maps

2.1 Sensitive species	No
2.2 Year or period	1995-2024
2.3 Distribution map	Yes
2.4 Distribution map; Method used	Complete survey or a statistically robust estimate

2.5 Additional information

No additional information

3. Information related to Annex V Species

3.1 Is the species taken in the wild / exploited?

3.2 What measures have been taken?

a) Regulations regarding access to property
b) Temporary or local prohibition on the taking of specimens in the wild and exploitation
c) Regulation of the periods and/or methods of taking specimens
d) Application of hunting and fishing rules which take account of the conservation of such populations

e) Establishment of a system of licences for taking specimens or of quotas

f) Regulation of the purchase, sale, offering for sale, keeping for sale, or transport for sale of specimens

g) Breeding in captivity of animal species as well as artificial propagation of plant species

Other measures

Other measures description

3.3: Hunting bag or quantity taken in the wild for Mammals and Acipenseridae (Fish)

a) Unit

Table 2: Quantity taken from the wild during the reporting period (see 3.3a for units). For species with defined hunting seasons, Season 1 refers to 2018/2019 (autumn 2018 to spring 2019), and Season 6 to 2023/2024. For species without hunting seasons, data are reported by calendar year: Year 1 is 2019, and Year 6 is 2024.

	Season/ year 1	Season/ year 2	Season/ year 3	Season/ year 4	Season/ year 5	Season/ year 6
b) Minimum	-	-	-	-	-	-
c) Maximum	-	-	-	-	-	-
d) Unknown	-	-	-	-	-	-

3.4: Hunting bag or quantity taken in the wild; Method used

3.5: Additional information

No additional information

Biogeographical Level

4. Biogeographical and marine regions

4.1 Biogeographical or marine region where the species occurs	ATL

4.2 Sources of information

See section 14 References

5. Range

5.1 Surface area (km²)	20,821.13
5.2 Short-term trend; Period	2013-2024
5.3 Short-term trend; Direction	Stable
5.4 Short-term trend; Magnitude	
a) Estimated minimum	
b) Estimated maximum	
c) Pre-defined range	
d) Unknown	
e) Type of estimate	
f) Rate of decrease	
5.5 Short-term trend; Method used	Based mainly on extrapolation from a limited amount of data
5.6 Long-term trend; Period	
5.7 Long-term trend; Direction	
5.8 Long-term trend; Magnitude	
a) Minimum	
b) Maximum	
c) Rate of decrease	

5.9 Long-term trend; Method used	

5.10 Favourable Reference Range (FRR)

a) Area (km²)	
b) Pre-defined increment	Current range is less than 2% smaller than the FRR
c) Unknown	No
d) Method used	Reference-based approach
e) Quality of information	moderate

5.11 Change and reason for change in surface area of range

a) Change	No
b) Genuine change	
c) Improved knowledge or more accurate data	
d) Different method	
e) No information	
f) Other reason	
g) Main reason	

5.12 Additional information

No additional information

6. Population

6.1 Year or period	1995-2024

6.2 Population size (in reporting unit)

a) Unit	number of individuals
b) Minimum	
c) Maximum	

d) Best single value	1,000
6.3 Type of estimate	Best estimate
6.4 Quality of extrapolation to reporting unit	

6.5 Additional population size (using population unit other than reporting unit)

a) Unit	
b) Minimum	
c) Maximum	
d) Best single value	
e) Type of estimate	
6.6 Population size; Method used	Based mainly on extrapolation from a limited amount of data
6.7 Short-term trend; Period	2013-2024
6.8 Short-term trend; Direction	Stable
6.9 Short-term trend; Magnitude	
a) Estimated minimum	
b) Estimated maximum	
c) Pre-defined range	
d) Unknown	
e) Type of estimate	
f) Rate of decrease	
6.10 Short-term trend; Method used	Complete survey or a statistically robust estimate
6.11 Long-term trend; Period	1991-2024
6.12 Long-term trend; Direction	Increasing
6.13 Long-term trend; Magnitude	

a) Minimum	71
b) Maximum	71
c) Confidence interval	
d) Rate of decrease	
6.14 Long-term trend; Method used	Based mainly on extrapolation from a limited amount of data

6.15 Favourable Reference Population (FRP)

ai) Population size	
aii) Unit	
b) Pre-defined increment	Current population is less than 5% smaller than the FRP
c) Unknown	No
d) Method used	Reference-based approach
e) Quality of information	moderate

6.16 Change and reason for change in population size

a) Change	No
b) Genuine change	
c) Improved knowledge or more accurate data	
d) Different method	
e) No information	
f) Other reason	
g) Main reason	

6.17 Additional information

No additional information

6.18 Age structure, mortality and reproduction deviation	No deviation from normal

7. Habitat for the species

7.1 Sufficiency of area and quality of occupied habitat (for long-term survival)

a) Is area of occupied habitat sufficient?	Yes
b) Is quality of occupied habitat sufficient?	Yes
c) If No or Unknown, is there a sufficiently large area of unoccupied habitat of suitable quality?	

7.2 Sufficiency of area and quality of occupied habitat; Method used

a) Sufficiency of area of occupied habitat; Method used	Based mainly on extrapolation from a limited amount of data
b) Sufficiency of quality of occupied habitat; Method used	Based mainly on extrapolation from a limited amount of data

7.3 Short-term trend; Period	2013-2024
7.4 Short-term trend; Direction	Stable
7.5 Short-term trend; Method used	Based mainly on extrapolation from a limited amount of data

7.6 Long-term trend; Period	
7.7 Long-term trend; Direction	
7.8 Long-term trend; Method used	

7.9 Additional information

No additional information

8. Main pressures

8.1 Characterisation of pressures

Table 3: Pressures affecting the species, including timing and importance/impact ranking. Pressures are defined as factors acting currently and/or during the reporting period (2019–2024). Rankings are: High (direct/immediate influence and/or large spatial extent) and Medium (moderate direct/immediate influence, mainly indirect and/or regional extent).

Pressure	Timing	Ranking
PA17: Agricultural activities generating pollution to surface or ground waters (including marine)	Ongoing and likely to be in the future	Medium (M)
PA21: Active abstraction of water for agriculture	Ongoing and likely to be in the future	High (H)
PE01: Roads, paths, railroads and related infrastructure	Ongoing and likely to be in the future	Medium (M)
PF15: Modification of coastline, estuary and coastal conditions for built-up areas	Ongoing and likely to be in the future	High (H)
PK01: Mixed source pollution to surface and ground waters (limnic and terrestrial)	Ongoing and likely to be in the future	Medium (M)
PK02: Mixed source marine water pollution (marine and coastal)	Ongoing and likely to be in the future	Medium (M)

8.2 Sources of information

See section 14 References

8.3 Additional information

No additional information

9. Conservation measures

9.1: Status of measures

a) Are measures needed?	Yes
b) Indicate the status of measures	Measures identified and taken
9.2 Main purpose of the measures taken	Increase the population size and/or improve population dynamics (related to ‘Population’)
9.3 Location of the measures taken	Both inside and outside National Site Network
9.4 Response to measures	Long-term results (after 2036)

9.5 List of main conservation measures

Table 4: Key conservation measures addressing current pressures and/or anticipated threats during the next two reporting periods (2025–2036). Measures are ranked by importance/impact: High (direct/immediate influence and/or large spatial extent) and Medium (moderate direct/immediate influence, mainly indirect and/or regional extent).

Conservation measure	Ranking
ME01: Reduce impact of transport operation and infrastructure	High (H)
MF09: Adapt the management of water abstraction for public supply and for industrial and commercial use to reduce negative impacts on habitats and species (incl. restoration of habitats)	High (H)
MG01: Management of professional/commercial fishing, shellfish and seaweed harvesting (incl. restoration of habitats)	Medium (M)
MG04: Control/eradication of illegal killing, fishing and harvesting of wild plants, fungi and anmals	Medium (M)
MG05: Reduce bycatch and incidental killing of non-target species	High (H)
MK01: Reduce impact of mixed source pollution	High (H)
MS03: Restoration of habitat of species from the directives	High (H)

9.6 Additional information

No additional information

10. Future prospects

10.1a Future trends of parameters

ai) Range	Overall stable
bi) Population	Overall stable
ci) Habitat for the species	Overall stable

10.1b Future prospects of parameters

aii) Range	Good
bii) Population	Good
cii) Habitat for the species	Good

10.2 Additional information

No additional information

11. Conclusions

11.1 Range	Favourable (FV)
11.2 Population	Favourable (FV)
11.3 Habitat for the species	Favourable (FV)
11.4 Future prospects	Favourable (FV)
11.5 Overall assessment of Conservation Status	Favourable (FV)
11.6 Overall trend in Conservation Status	Stable

11.7 Change and reason for change in conservation status

This field is not reported as the period 2019-2024 marks the first instance in which conservation status has been assessed at the national level, meaning no comparisons to previous reports can be drawn.

11.7 Change and reason for change in conservation status trend

This field is not reported as the period 2019-2024 marks the first instance in which conservation status has been assessed at the national level, meaning no comparisons to previous reports can be drawn.

11.8 Additional information

No additional information

12. UK National Site Network (pSCIs, SCIs, SACs) coverage for Annex II species

12.1 Population size inside the pSCIs, SCIs and SACs network

a) Unit	number of individuals
b) Minimum	

c) Maximum	
d) Best single value	300
12.2 Type of estimate	Best estimate
12.3 Population size inside the network; Method used	Based mainly on extrapolation from a limited amount of data
12.4 Short-term trend of population size within the network; Direction	Stable
12.5 Short-term trend of population size within the network; Method used	Based mainly on extrapolation from a limited amount of data
12.6 Short-term trend of habitat for the species inside the pSCIs, SCIs and SACs network; Direction	Stable
12.7 Short-term trend of habitat for the species inside the pSCIs, SCIs and SACs network; Method used	Based mainly on extrapolation from a limited amount of data

12.8 Additional information

No additional information

13. Complementary information

13.1 Justification of percentage thresholds for trends

No justification information

13.2 Trans-boundary assessment

No trans-boundary assessment information

13.2 Other relevant information

No other relevant information

14. References

Biogeographical and marine regions

4.2 Sources of information

Andrews E, Crawford AK. 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.

Androulakakis, Andreas, Alygizakis, Nikiforos, Gkotsis, Georgios, Nika, Maria-Christina, Nikolopoulou, Varvara, Bizani, Erasmia, Chadwick, Elizabeth , Cincinelli, Alessandra, Claßen, Daniela, Danielsson, Sara, Dekker, Rene W.R.J., Duke, Guy, Glowacka, Natalia, Jansman, Hugh A.H., Krone, Oliver, Martellini, Tania, Movalli, Paola, Persson, Sara, Roos, Anna, O'Rourke, Emily, Siebert, Ursula, Treu, Gabriele, van den Brink, Nico W., Walker, Lee Anthony, Deaville, Rob, Slobodnik, Jaroslav and Thomaidis, Nikolaos S. 2022. Determination of 56 per- and polyfluoroalkyl substances in top predators and their prey from Northern Europe by LC-MS/MS. Chemosphere 287 (P2) , 131775.

Bassett S, Wyan J. 2010. Otters in Scotland: How Vulnerable Are They to Disturbance? CIEEM In Practice

Battersby J. 2005. UK Mammals: Species Status and Population Trends. JNCC/Tracking Mammals Partnership.

Bradshaw AV, Slater FM. 2002. A Post Mortem Study of Otters in England and Wales: Environment Agency.

Carey PD, S Wallis, Chamberlain PM, Cooper A, Emmett BA, Maskell L C, McCann T, Murphy J. Norton LR, Reynolds B, Scott WA, Simpson IC, Smart SM, Ullyett JM. 2008. Countryside Survey: UK Results from 2007. CEH Project Number: C03259. N. C. f. E. Hydrology.

Chadwick EA. 2007. Post Mortem Study of Otters in England and Wales 2002 – 2003. Environment Agency Science Report SC010065/SR

Chadwick E, Kean E. (2022). Health and population structure of otters in Wales. Unpublished Report produced by Cardiff University Otter Project.

Chadwick EA and Kean EF (2025) Interim report of the 7th Otter Survey Wales. Unpublished report submitted to Natural Resources Wales, May 2025.

Chanin P. 2003. Ecology of the European otter. Conserving natura 2000 rivers. Peterborough, English Nature. Ecology series.

Crawford A, Evans D, Jones A. McNulty J. 1979. Otter Survey of Wales 1977–78. Society for the Promotion of Nature Conservation, Lincoln.

Crawford A. 2003. Fourth Otter Survey of England 2000-2002.Environment Agency-Report W1cD61/TR. Environment Agency, Bristol.

Crawford A. 2010. Fifth Otter Survey of England 2009–2010. Bristol, Environment Agency.

Dwyryd Otter Partnership. 2006. Compilation of Studies Carried out by the Dwyryd Otter Partnership 2000 to 2006. Funded by Countryside Council for Wales, Snowdonia National Park Authority, Environment Agency Wales, Species Challenge Fund.

Eposito M, De Roma A, D'Alessio N, Gallo P, Galiero G, Santoro M. 2020.First study on PCBs, organochlorine pesticides, and trace elements in the Eurasian otter (Lutra lutra) from southern Italy. Science of The Total Environment, 749, 141452.

Findlay M, Alexander L, Macleod C. 2015. Site condition monitoring for otters (Lutra lutra) in 2011-12. Scottish Natural Heritage Commissioned Report No. 521.

Foster H., Jones T.G, Jâms, I.B., Hatton-Ellis T.W. 2024. Compliance Assessment of Welsh River SACs Against Water Quality Targets. NRW Evidence Report No: 729, 106pp, Natural Resources Wales, Bangor.

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.

Harris S, Yalden D. 2008. Mammals of the British Isles: Handbook.

Hobbs GI, Chadwick EA, Bruford MW, Slater FM. 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.

Hatton-Ellis TW, Jones TG. 2021. Compliance Assessment of Welsh River SACs against Phosphorus Targets. NRW Evidence Report No: 489, 96pp, Natural Resources Wales, Bangor.

Jefferies DJ. 1989. The changing otter population of Britain 1700–1989. Biological Journal of the Linnean Society 38, 61–69.

Jefferies DJ, Strachan C, Strachan R. 2003. Estimating numbers of the three interacting riparian mammals in Britain using survey data. In: Jefferies DJ. (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.

Jones T, Jones D. 2004. Otter Survey of Wales 2002. Environment Agency Wales, Cardiff

Kean E, Lyons G, Chadwick EA. 2013. Persistent organic pollutants and indicators of otter health, CHEMTrust.

Kean EF, Chadwick EA. 2021. Otter Survey of Wales 2015-2018. NRW Report No: 519, NRW

Kean EF, Shore RF, Scholey G, Strachan R, Chadwick EA. 2021. Persistent pollutants exceed toxic thresholds in a freshwater top predator decades after legislative control.

Kruuk H. 1995. Wild otters: Predation and populations. Oxford University Press, Oxford.

Liles G. 2003. Conserving Natura 2000 Rivers Conservation Techniques Series No. 5: Otter Breeding Sites - Conservation and Management. English Nature, Peterborough.

Liles G. 2006. Current and potential distribution, condition and breeding success of the otter Lutra lutra in the River Wye SAC and catchment (within Wales),CCW Environmental Monitoring Report No. 30. Unpublished report & Confidential Annex to CCW Bangor.

Liles, G. 2023(a). Otter SAC Monitoring: Afon Teifi. NRW Evidence Report Series Report No: 689, 39pp.

Liles, G. 2023(b). Otter SAC Monitoring: Afon Cleddau. NRW Evidence Report Series, Report No: 690, 42pp.

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.

Mathews F, Kubasiewicz LM, Gurnell J, Harrower C, McDonald R, Shore R. 2018. A review of the population and conservation status of British Mammals. A report by The Mammal Society under contract to Natural England, NaturalResources Wales and Scottish Natural Heritage.

O'Rourke E, Hynes J, Losada S, Barber, JL, Pereira MG, Kean EF, Hailer F, Chadwick EA. 2022. Anthropogenic Drivers of Variation in Concentrations of Perfluoroalkyl Substances in Otters (Lutra lutra) from England and Wales. ACS Publications

Parry, RJ, Liles, G. 2023(a). Otter SAC Monitoring: Afon Tywi NRW Evidence Report Series, Report No: 691, 39pp.

Parry, RJ, Liles, G. 2023(b). Otter SAC Monitoring: Afon Usk NRW Evidence Report Series, Report No: 692, 39pp.

Pountney A, Stevens JR, Sykes T, Tyler CR. 2009. Population Genetics and PBDE Analysis of English and Welsh Otters. Science Report SC040024/SR1. Environment Agency.

Scottish Natural Heritage (SNH). 2015. Trend Note. Trends of Otters in Scotland: Prepared Using Evidence from the Otter Survey of Scotland by Leonie Alexander & Melanie Findlay.

Strachan R. 2007.National survey of otter Lutra lutra distribution in Scotland 2003-04. Scottish Natural Heritage Commissioned Report No. 211, Scottish Natural heritage.

Strachan R. 2015. Otter survey of Wales 2009-10. Natural Resources Wales, Cardiff

Walker, L.A., Chaplow, J.S., Llewellyn, N.R., Pereira, M.G., Potter, E.D., Sainsbury, A.W., Shore, R.F., 2013. Anticoagulant rodenticides in predatory birds 2011: a Predatory Bird Monitoring Scheme (PBMS) report. . Centre for Ecology & Hydrology, Lancaster, UK. , p. 17.

Welsh Parliament Senedd Research Water Quality in Wales Research Briefing. August 2023.

Williams Schwartz, Amy L., Shilling, Fraser M. and Perkins, Sarah E. 2020. The value of monitoring wildlife roadkill. European Journal of Wildlife Research 66 , 18. 10.1007/s10344-019-1357-4

Main pressures

8.2 Sources of information

No sources of information

15. Explanatory Notes

Field label	Note
2.2: Year or Period	The main source of data is the 'Review of the population and conservation status of British Mammals' (Mathews et al. 2018). This draws heavily from evidence generated over a number of years, principally 1995-2016. At a UK level. Otter populations are continuing to recover after the historic crash in 1960-1980 caused by pesticides and industrial chemicals. Recovery has been assisted by a combination of legal protection, improving water quality and habitat management. Since the last report, the 7th Otter Survey of Wales (2024 – 2025) has been completed. However, the 10km distribution maps remain unchanged.
2.4: Distribution map; Method used	The distribution map is based entirely on verified records. Several Wales national surveys since 1990, mean that the current distribution of otter is relatively well-understood.
5.3: Short-term trend; Direction	See 5.11
5.11: Change and reason for change in surface area of range	JNCC: 20821.13km2 For the purposes of this report, surface area of range has been derived from 'Review of the population and conservation status of British Mammals' 2018, Mathews et al. (2018). Data was collected between 1995 and 2016 which incorporated data from the results of the 2009/10 Otter Survey of Wales (Strachan R., 2015); there is no evidence of any reduction in range to suggest that otter is no longer occupying all of Wales.
6.2: Population size	Population estimate is taken from Mathews et al 2018 which was used in the previous reporting round as no new information is available to update the estimate.

The population size was calculated by multiplying population density with the length of suitable habitat within the otter's distribution and adjusting for occupancy. The length of total riparian habitat within the geographical range of the otter in each country was derived by multiplying the data on riparian lengths given in Table 4 of Harris et al. (1995) by the proportion of each country included in the species' distribution. The length of potentially suitable coastline was derived from table 10.3 of Jefferies et al. (2003). These values excluded areas unlikely to be included within the home ranges of otters (e.g. long lengths of sheer cliffs), whereas all riparian habitat was included. No population density estimates, or occupancy values were available for coastlines in England and Wales, so the values for inland populations were applied. This method will provide a conservative estimate of the number of coastal otters in England and Wales, but was judged preferable to applying Scottish coastal values, which are likely to be much higher than those found in England and Wales.

Population size is based on a single population density estimate for riparian habitats (and coastlines). These density estimates are applied to all occupied riparian habitats and coastlines, so variation due to habitat heterogeneity is not accounted for. This is a particular problem for coastlines in England and Wales, as the density estimates for riparian habitats were applied in the absence of any population density estimates for coastlines and is highly likely to be inaccurate.

Length of suitable habitat within the otter's range in Wales was 29,000km and density estimates for Wales were obtained from a review of the literature from 1995 to 2015 giving a density of 0.037 per km2 in riparian coastal habitats in Wales. Occupancy of 89.9% was taken from Otter Survey of Wales 2009/2010 Strachan (2015).

However, note that this occupancy value has not been updated since the 2013 report so the change from 926 to

	1000 is presumed to be as a result of change in the length of suitable habitat.
6.3: Type of estimate	Estimate based on partial data with some extrapolation and/or modelling.
6.6: Population size; Method used	Estimate based on partial data with some extrapolation and/or modelling. This is based on Mathews et al 2018 and there is no reason to believe that there has been any change.
6.8: Short-term trend; Direction	Mathews et al. 2018 gives a population estimate of 1000. When compared with the 2013 report population estimate of 926, this suggests a population increase of 8%. Otters have been recovering their range across Britain since the 1980s. The 5th otter survey (2009-10) (Strachan, R. 2015) found that 90% of sites had signs of otter presence. However, in the 6th otter survey (2015-2018) this fell to 70% (Kean et al 2021), and was the first decline in percentage positive sites recorded in Wales since national surveys began in the 1970s. However, changes in methodology, with greater reliance on less experienced surveyors, cast some doubt on the validity of these findings. The 7th Otter Survey of Wales (2024-2025) included explicit comparison of expert v. less experienced surveyors. Initial analysis suggests that 93% of sites surveyed by expert surveyors had signs of otter presence, suggesting parity with the 5th survey at a national level, whereas totals from all surveyors (i.e. mixed experience) gave a 66% total (similar to the 6th survey) (Chadwick and Kean 2025). It is therefore considered that the decline suggested by the 6th survey was likely to be anomalous, with more recent expert survey results suggesting a stable population status for otters in Wales. However, both the 6th and 7th surveys suggest that there may be some localised declines which require further investigation.
6.10: Short-term trend; Method used	7th Otter Survey of Wales 2024 - 2025

6.11: Long-term trend; Period	Based on 1991-1994 and 2015-2018 and 2024-2025 National surveys for Wales.
6.12: Long-term trend; Direction	The total pre-breeding population in Harris et al. (1995) was estimated for the mid-1980s, as 400 in Wales. The method of calculating total population size was based on calculations from D. J. Jefferies (pers. comm.) which were later published in Jefferies et al. (2003) and used as the basis for the 2013 Article 17 report. The same population density was used in the current report A review of the population and conservation status of British Mammals Mathews et al. (2018), so relative trends identified by comparison between estimates highlights differences in the species range and percentage of occupied habitat only. A comparison of figures from Harris et al. (1995) and the current estimate suggest an increase in population size of 49% in Britain. This increase is entirely due to an increase in the percentage of occupied areas in England and Wales. A series of national surveys in Wales have been carried out to detect the rate of change in the otter's distribution. The surveys were not, however, designed to provide information on population trends. There has been an increase in the number of occupied 10km squares with an increase from 38% in 1977-89 to 72% in 2002-03 and 90% in 2009 in Wales (Strachan, R. 2015). The 6th OSW (2015-2018) resulted in 70%, a decrease due to a change in methodology as described earlier . The 7th Otter Survey of Wales resulted in 93% occupied sites. Over the long term, this is an increase from the 1980's when records began for the species. Data from the time-series of population estimates 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

	depleted. Jefferies et al. (2003) estimated GB otter populations in 1994 as 9,465 individuals : 977 in England; 7,948 in Scotland; and 540 in Wales. In the fourth series of surveys (2002-2004) estimates were: 1580 otter in England and 731 otter in Wales. For the 2010 population update, the figures in England and Wales have again been derived using the same method. This gives revised estimates of: • 2,788 in England - 56% of sites surveyed were occupied (Crawford, A. 2010) giving 76,157 km of occupied bank and assuming a density of one otter per 27.32km of linear bank. • 926 in Wales – 89.9% of sites surveyed were occupied (Strachan, R. 2012), giving 25,294 km of occupied bank and assuming the same density as for England. The 2018 data from Mathews et al (2018) calculated 1000 individuals with a range of 20,643 km but there has been no further update for this report.
6.13: Long-term trend; Magnitude	See note in 6.12
6.14: Long-term trend; Method used	See note in 6.12
6.18: Age structure, mortality and reproduction	The Cardiff University, Otter Project (www.otterproject.cf.ac.uk) runs a long term environmental surveillance scheme, using otters found dead to investigate contaminants, disease, and population biology across the UK. The data analysis completed in 2022 (and which included the time series 1992-2021) showed no significant change in age structure over time, no significant change in sex ratios, and no significant change in the proportion of adult females

	with signs of breeding (lactation, pregnancy). There was a weak trend towards declining body condition over time 1992-2021, but this was not statistically significant. (Chadwick and Kean 2022).
7.1: Sufficiency of area and quality of occupied habitat	Although we do not have a reliable measure of the quality of the occupied habitat the population and range trend for the species is considered relatively stable and therefore the area and quality of occupied habitat is likely to be sufficient to maintain the species at FCS. In the early 2000s studies were undertaken on breeding sites within 4 SACs with otter as a feature. In 2022, 10 of the breeding sites within each of the 4 SAC's previously studied in the early 2000s, were revisited and checked for suitable potential breeding. Of the 40 sites revisited, 17 were reported to no longer be suitable as potential breeding sites compared to when they were surveyed in the early 2000's (Liles 2023(a) and (b); Parry and Liles 2023 (a) and b)). This study suggests a decline in availability of potential breeding sites although the sample size is too small to provide an understanding of the availability of suitable breeding habitats across all of Wales. Otter have been recorded using all types of waterways. 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 must 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 20m wide strip to several hectares; young conifer plantations; and large areas of scrub (Liles 2003). In Wales, otters are mainly confined to freshwater habitats. Since otters use linear habitats, calculation of area is inappropriate. It is possible to estimate total length of inland

	water or coastal bank that might be occupied by otter 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. Mathews et al. 2018 give a total length of coastal and riparian habitat of 29,000 km in Wales. This does not provide an area estimate because the measurement is of linear features. There is thought to be sufficient habitat in Wales to support a viable population of the species, this being based upon the results of the 7th Otter Survey of Wales where 93% of sites surveyed were occupied.
7.2: Sufficiency of area and quality of occupied habitat; Methods used	Quality of habitat is inferred from the continuing consolidation of range.
7.3: Short-term trend; Period	Although the actual area of habitat required by a favourable reference population of otter is unknown, there is some information on trends in quality and amount of suitable habitat used in Wales. River and riparian habitat suffered degradation in the UK during the 20th century. Whilst some evidence shows a reverse in these trends and efforts are being made on river restoration, there are still concerns regarding levels of chemicals in riverine habitats in Wales (Hatton-Ellis and Jones 2021). The Water Framework Directive (WFD) requires that water bodies are classified and reasons for failure are listed for those failing to meet Good Ecological Status. In Wales, 36 % of all water bodies achieved Good Ecological Status in 2012. In 2014, 42% of water bodies achieved good ecological status (National Assembly Wales, 2015). In the second cycle (2021) 40% of water bodies achieved good or better ecological and chemical status. There are, however, continued reported failings. Following substantially tightened targets for levels of Phosphorous set

	by JNCC, 107 water bodies were assessed between 2017 and 2019 with 39% passing the new targets and 61% having failed. Most failing water bodies were in mid and south Wales (Hatton-Ellis and Jones 2021). During the same study, other water quality attributes within the 9 Riverine SACs in Wales were assessed. A total of 119 waterbodies were assessed for more than one chemical attribute against targets set by JNCC. Failures to meet water quality targets were reported in the River Dee and Bala Lake, Afon Eden - Cors Goch Trawsfynydd, Afon Gwyrfai a Llyn Cwellyn, Afonydd Cleddau, Afon Teifi, River Usk and River Wye SACs. The majority of failures were for Biochemical Oxygen Demand (BOD) (41% of assessed water bodies failed to meet the target) and Trophic Diatom Index (TDI) (45% of assessed water bodies failed to meet the target), with a small number of failures for Dissolved Oxygen (DO) and Total Ammonia, and one failure each for Unionised Ammonia and Acid Neutralising Capacity (ANC) (Hatton-Ellis and Jones 2021). On a positive note, between 2020 – 2024 funded River Restoration work totalled 855km of river environment being improved, protected or restored; 100ha of habitat created, protected or restored; and 967km of habitat connectivity gained (NRW total river restoration projects - unpublished). This will be of benefit for all species using the riverscape in Wales. Whilst some of the above evidence suggests an improvement in quality of freshwater habitats since the degradation suffered in the 20th century, the possible stabilisation in occupancy suggests the underlying short-term trend in habitat of direct relevance to the species, appears to be stable.
7.4: Short-term trend; Direction	See 7.3

7.5: Short-term trend; Method used	See 7.3
8.1: Characterisation of pressures	The main pressures that affect otter in Wales are in the form of activities that affect their resting and natal sites as well as those that affect commuting and foraging behaviour with prey availability being included in that. Otters are distributed widely throughout freshwater and coastal systems which makes them vulnerable to pressures throughout the landscape. PF15, PA21, PA17, PK01, PK02 – Otter in Wales forage throughout marine and freshwater habitats. Inappropriate development, coastal defence schemes and alterations to inland water bodies can result in loss of foraging habitats and prey availability. Toxic pesticides that enter waterways are the likely cause of historic declines in otter populations (Harris and Yalden 2008). Although widespread application of persistent organochlorine pesticides (POPs) was stopped in the 1980s, these legacy chemicals are still being found in otter carcasses (e.g. Eposito et al. 2020, Kean et al. 2021) and so it remains a pressure. New chemical threats include widespread contamination with polyfluoronated chemicals (PFAS; the so-called 'forever chemicals') (Walker et al. 2013, O'Rourke et al. 2022) and anticoagulant rodenticides (Regnery et al. 2024), and pharmaceuticals (Gkotsis et al. 2022). PE01 and PG13 Otters suffer from road traffic accidents and from accidental capture in fish traps though probably not sufficient to affect the population at this time.
9.5: List of main conservation measures	MK01, MF09: 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. Between 2020 – 2024 funded River Restoration work totalled 855km of river environment being improved, protected or restored; 100ha of habitat

	created, protected or restored; and 967km of habitat connectivity gained for fish and other species (NRW total river restoration projects – unpublished spreadsheet). MG01, MG04, MG05, MS03: 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 with measures in place to avoid by-catch during fishing practices. ME01: 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.
10.1: Future trends and prospects of parameters	Future prospects of population In 2009, the 5th Otter survey of Wales reported that otter were likely to be at carrying capacity with 90% of sites found to be positive. The 6th Otter Survey of Wales (2015 – 2018) found a decrease of 22% in population since the 5th survey with 70% of sites positive. The interim results from the 7th Otter Survey of Wales (2024-2025) showed 93% of sites were positive which leads to the conclusion that the decrease seen in the 6th survey was a result of a change in methodology. There is scope for more otters in Wales to move into marine habitats similar to the habitat utilisation seen in the Scottish population. It is currently considered that the future prospects for the otter population in Wales are stable as there is nothing to indicate a negative population trend in the future. Future prospects of habitat for species Habitat has improved since the 20th Century due to improvements in water quality, appropriate riparian

	management and site and species protection. Assessments of water quality from monitoring in 2017-2019 has raised some concerns, solutions are being considered so as long as these are implemented the future prospects for the habitat in Wales is considered to be stable.
11.1: Range	Conclusion on Range reached because: (i) the short-term trend direction in Range surface area is stable; and (ii) the current Range surface area is approximately equal to the Favourable Reference Range.
11.2: Population	Conclusion on Population reached because:(i) the short-term trend direction in Population size is stable; (ii) the current Population size is approximately equal to the Favourable Reference Population; and iii) reproduction, mortality and age structure not deviating from normal.
11.3: Habitat for the species	Conclusion on Habitat for the species reached because: i) the area of occupied habitat is sufficiently large for the long-term survival of the species (ii) the quality of occupied habitat is suitable for the long-term survival of the species; and (iii) the short-term trend in area of habitat is stable.
11.4: Future prospects	Conclusion on Future prospects reached because: (i) the Future prospects for Range are good; (ii) the Future prospects for Population are good; and (iii) the Future prospects for Habitat for the species are good.
11.5: Overall assessment of Conservation Status	Overall assessment of Conservation Status is Favourable because all of the conclusions are Favourable.
12.1: Population size inside the pSCIs, SCIs and SACs network	It is estimated that approximately 30% of the otter population is within Natura sites. The figure of 300 animals is derived from 30% of the estimated population total given in 6.2. See 6.2 for the method of estimating the otter population in Wales. The estimate has a low degree of confidence as there is currently no available robust data on otter numbers against which to test the extrapolations.
12.3: Population size inside the network; Method used	See 12.1

12.4: Short-term trend of the population size within the network; Direction	See 12.1 The trend is assumed to be stable in Wales. 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. Short-term trend data is limited as no SAC otter condition assessments have been undertaken since the 2013 Article 17 report. In the early 2000's studies were undertaken on breeding sites within 4 SACs with otter as a feature. In 2022, 10 of the breeding sites within each of the 4 SAC's previously studied in the early 2000s, were revisited and checked for suitable potential breeding. Of the 40 sites revisited, 17 were reported to no longer be suitable as potential breeding sites compared to when they were surveyed in the early 2000's (Liles a and b 2023 and Liles and Parry a and b 2023). This study suggests a decline in availability of potential breeding sites although the sample size is too small to provide an understanding of the availability of suitable breeding habitats across all of Wales.
12.5: Short-term trend of population size within the network; Method used	The trend is assumed to be stable 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.
6.15: Favourable Reference Population (FRP)	The UK-level FRV for population was developed by JNCC using an audit trail based on the year the FRV was first established and any changes made in subsequent reporting rounds. The audit may draw from any combination of the 2007, 2013, or 2019 Habitats Directive reports and reflects the full rationale used for the 2019

	Article 17 reporting. This FRV was reviewed by Welsh experts and considered appropriate for use in Wales based on current population trends and abundance.
5.10: Favourable Reference Range (FRR)	The UK-level FRV for range was developed by JNCC using an audit trail based on the year the FRV was first established and any changes made in subsequent reporting rounds. The audit may draw from any combination of the 2007, 2013, or 2019 Habitats Directive reports and reflects the full rationale used for the 2019 Article 17 reporting. This FRV was reviewed by Welsh experts and considered appropriate for use in Wales based on current distribution and trends.