

**Lower Thames Crossing
6.3 Environmental Statement
Appendices
Appendix 8.11 – Otter**

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Lower Thames Crossing

Appendix 8.11 – Otter

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1 Introduction

- 1.1.1 This document presents the results of the otter *Lutra lutra* desk study and field surveys carried out between 2017 and 2022 to inform the Environmental Impact Assessment of the A122 Lower Thames Crossing (the Project). It forms an appendix to Chapter 8: Terrestrial Biodiversity (Application Document 6.1) of the Environmental Statement.

2 Legislation and conservation status

- 2.1.1 The otter is a European Protected Species and is also protected under Schedule 5 of the Wildlife and Countryside Act 1981 (as amended). It is a species of principal importance under section 41 of the Natural Environment and Rural Communities Act 2006. Otter is also listed as a priority species on both the Kent Biodiversity Action Plan (Kent Biodiversity Partnership, 2009) and Essex Biodiversity Action Plan (Essex Biodiversity Project, 2011).

3 Background ecology

- 3.1.1 In England, otters are mainly found along freshwater habitats. These areas can vary from canals, rivers, lakes and marshland habitat with numerous wet ditches.
- 3.1.2 Studies of otter home range sizes have led to varying results, with published data suggesting home ranges of between 14km² and 36km², depending on the habitat suitability (Chanin, 2003).
- 3.1.3 Historically, otters were widespread across the UK, but the otter population suffered serious declines in the post-war years due to persecution and the use of organochloride pesticides. Recently, the otter population has been increasing, and otters have been spreading across England from the strongholds of Scotland and the north and west of England (Chanin, 2003). The most recent national survey of otter found that, although they were spreading into the south-east, less than 10% of surveyed sites had otters (Crawford, 2010). In 2018, the otter population in the UK was estimated to be around 11,000 (Mathews *et al.*, 2018).
- 3.1.4 The Environment Agency carried out the fifth nationwide otter survey in 2009– 2010. In Kent, there were no records anywhere in the county, although presence was detected in the 2001–2002 survey. In Essex, the records were located to the north (Crawford, 2010). The species has newly recolonised Kent, although it is still only found in small numbers, and generally to the south and west of the county (Young *et al.*, 2015). In Essex, the otter population has recently recolonised the south of the county, with otter recorded in 2014 on the River Ingrebourne. It is anticipated that animals will continue to recolonise the area (Dobson and Tansley, 2014).
- 3.1.5 Within the Order Limits, suitable habitats were restricted to the marshes and ditches located next to the River Thames on both the Kent and Essex sides, the Mardyke and associated ditches to the north of the River Thames, and the ditches, streams and lakes adjacent to the M25.

4 Methodology

4.1 Desk study

- 4.1.1 A desk study was carried out in 2020 and subsequently updated in 2022, which considered all otter records from 2007 to present within 2km of the Order Limits. Records were requested from Kent & Medway Biological Records Centre (2022), Essex Wildlife Trust Biological Records Centre (2020), Essex Field Club (2022) and Greenspace Information for Greater London (2022).
- 4.1.2 The locations were obtained for designated sites of international and national importance for biodiversity within 2km, and local sites within 500m, of the Order Limits respectively. Citations for these sites, which provide information on the reasons for their designation, were reviewed to find out whether otter were cited as interest features.
- 4.1.3 Watercourses selected for otter surveys were identified from desk study data, results from the Extended Phase 1 Habitat Survey (for more details see Appendix 8.2: Plants and Habitats (Application Document 6.3)) and analysis of aerial imagery and Ordnance Survey maps.

4.2 Field study

- 4.2.1 Otter surveys were carried out in suitable habitat within, and up to 500m from, the Order Limits ('survey boundary'). This was in accordance with the Design Manual for Roads and Bridges (DMRB) guidance (Highways Agency, 1999), which has now been superseded by the release of the new DMRB LA 108 Biodiversity guidance (Highways England, 2020). The watercourses surveyed were not limited to major rivers/streams, as otter are known to use smaller waterways, especially breeding females, where they can use holts located well away from major watercourses.
- 4.2.2 The DMRB guidance (Highways Agency, 1999) states that four surveys should be carried out over the course of a year, as habitats can be used more or less often depending on factors such as the season, weather conditions and habitat type. Otter surveys were undertaken in September and December 2017; February, May/June, September and November 2018; and February, May/June and September/October 2019, with all surveys carried out by suitably experienced ecologists. Surveys were targeted to be carried out within a 12-month period. However, due to access restrictions and poor weather conditions, in some cases the four visits needed to be carried out over a longer period. Otter surveys in the spring and late summer/early autumn months were carried out at the same time as the water vole surveys (see Appendix 8.10: Water Vole (Application Document 6.3)).
- 4.2.3 A variety of methods were used to survey for otter. One method used was to survey the bankside from within the channel. This was carried out by two suitably experienced ecologists, with one person walking through the water channel searching for otter signs and the other surveying features higher up the bank away from the channel.

- 4.2.4 Boat surveys were undertaken in water bodies that were deemed too deep to wade through safely. These surveys involved a pair of experienced ecologists using an inflatable kayak to survey the bank for signs of otter. These surveyors were accompanied by a second pair of ecologists surveying from the bank. This allowed any features higher up the bank or located away from the water's edge to be checked.
- 4.2.5 Water bodies that contained deep water, and that were heavily overgrown with vegetation, were surveyed from the bank only.
- 4.2.6 Each survey area was assessed for its suitability to support otter. All survey areas were surveyed, even if they were thought to be suboptimal or unsuitable for otter. This was to confirm if they could be used as commuting routes, or whether they could be more suitable in different seasons or during different weather conditions, for example.
- 4.2.7 During the surveys, the following field signs were recorded:
- a. spraints
 - b. lying up sites and holts
 - c. footprints
 - d. otter paths/slides
- 4.2.8 All field signs were recorded using a mobile Geographical Information System. Although potential holts and lying up sites were identified, they were not examined in detail with an endoscope, since this could have disturbed any otters present and would therefore be a licensable act.
- 4.2.9 A total of 219 water bodies were assessed for otter within the survey boundary, with a total distance of 92km surveyed. Of these, 63 water bodies were located to the south of the River Thames, covering a distance of 18.1km within the survey boundary. The remaining 156 water bodies were to the north of the River Thames, covering a distance of 74km within the survey boundary. For a full description of each water body surveyed, refer to Appendix 8.10: Water Vole (Application Document 6.3).
- 4.2.10 An additional 23 water bodies, covering a total length of 9.9km within the survey boundary, were identified as potentially suitable. However, access to survey these areas was not granted so these water bodies were not surveyed. All 23 of these water bodies were located to the north of the River Thames.
- 4.2.11 No access was granted to survey the water bodies within the old Tilbury Power Station site, since this was an active construction site at the time of the baseline surveys being completed for the Project. As such, data that was gathered as part of the Tilbury2 Environmental Statement (WYG, 2018) has been used to assess the otter population within this area.
- 4.2.12 Areas that were subject to otter surveys, including those areas near Tilbury Power Station where third party data has been used to inform this assessment, are shown on Figure 8.27: Otter and Water Vole Survey Results (Application Document 6.2) and Figure 8.28: Tilbury 2 Water Vole Survey Results (Application Document 6.2).

5 Results

5.1 Desk study

- 5.1.1 The desk study revealed no sites within the survey boundary that were designated for otter. To the south of the River Thames, no records of otter were identified within 2km of the Order Limits. To the north of the River Thames, three records of otter were identified within 2km of the Order Limits. These were located at the far northern end of the Project on the River Ingrebourne near the M25, with two records relating to the same day in 2014, and a further record also in 2014.
- 5.1.2 The Tilbury2 Environmental Statement recorded no otter records within the survey boundary (WYG, 2018).

5.2 Field study

- 5.2.1 To the south of the River Thames, a single record of a potential otter spraint was noted within the Thames Estuary and Marshes Ramsar site. However, this could not be confirmed as being that of an otter. No other field signs that are attributed to otter were identified to the south of the River Thames.
- 5.2.2 To the north of the River Thames, there were three confirmed otter spraints found on two separate watercourses.
- 5.2.3 Two otter spraints were recorded on the Mardyke, both in the same location over two different surveys. An otter footprint was also recorded on the same watercourse. An additional spraint was located on an unnamed watercourse that runs through Puddledock Farm Fishery. This watercourse flows into the Mardyke, so it is likely that this record is related to the Mardyke records noted above.
- 5.2.4 One observation of a probable otter footprint was recorded on a ditch near the River Thames. However, this was unconfirmed as to whether it was an otter track, and there were no other signs to indicate otter presence in this area.
- 5.2.5 To the north of the River Thames, a number of features were recorded as potential otter lying-up sites. However, this list is not exhaustive due to the difficulty in identifying such sites, and it is likely that such sites remain under-recorded within the survey boundary.
- 5.2.6 The locations of all otter field signs recorded are presented on Figure 8.27: Otter and Water Vole Survey Results (Application Document 6.2).

6 Limitations and assumptions

6.1 River Thames

- 6.1.1 The River Thames itself was not surveyed for otter field signs due to the highly tidal nature of the river and the issues of both health and safety constraints, and the difficulty in finding field signs on a tidal estuary. It is considered that the river is not regularly used by otter, because there are very few records located in the watercourses next to the River Thames in both Kent and Essex.

6.2 Unsurveyed water bodies

- 6.2.1 Surveys were either not undertaken, or only partially undertaken, at 37 water bodies identified within the survey boundary:
- 20 water bodies were not surveyed at all due to access restrictions.
 - One water body (W030) was assessed as suitable for otter, but it was deemed unsafe to survey and so no otter field signs were found. This water body was found within the ditch network next to the River Thames where a single potential otter footprint was found.
 - Three water bodies only had one survey carried out, 12 had two surveys carried out and one water body had three surveys carried out. This was due to access either being granted too late in the survey season to carry out the full four visits or because access was revoked during the survey season.

6.3 Amendments to the Order Limits

- 6.3.1 The Order Limits were extended in spring 2021 to include the upgrading of roads on the existing road network. This extension took place outside of the survey season. As such, none of the extra areas within 500m of these extensions have been subject to detailed otter surveys. Desk study data for these areas has been included within this report. Most of these works would be contained to the working width of the current road, with only two watercourses being crossed (W242 and W243). These watercourses would be surveyed for signs of otter before any construction is carried out.

6.4 Weather

- 6.4.1 Surveys were timed to avoid heavy rain, as this can wash away otter field signs. However, due to the number of water bodies that were surveyed, some surveys did take place within seven days of heavy rain. Repeat survey visits were carried out at all water bodies, so heavy rain is not considered to be a significant limitation to this assessment.
- 6.4.2 The extremely dry weather of the spring and summer 2018 led to a number of water bodies drying out completely. It is probable that during more typical summers these water bodies would have contained water. It is anticipated that, with the climate expected to get warmer, these dry weather conditions will become more typical. Therefore, the results from these surveys are likely to be more representative of the future baseline conditions.

6.5 Breeding bird constraints

- 6.5.1 During the spring surveys, a number of breeding bird species that are listed under Schedule 1 of the Wildlife and Countryside Act 1981 (as amended) were identified, including a pair of breeding marsh harriers. In order to avoid disturbance to these breeding birds, the water bodies within 200m of the nest sites were not surveyed during the spring or summer, with surveys instead carried out in the autumn and winter seasons. This is not considered to be a significant limitation, since four surveys during the appropriate season were still carried out.

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