



Water Vole Survey Report

Land at A28 Sturry Link Road

July 2023

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21/07/2023

Project Centre
Rutland House
8th Floor
148 Edmund Street
Birmingham
B3 2JR

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Phlorum Limited

Southern Office: Unit 12, Hunns Mere Way, Brighton, BN2 6AH

T: 01273 307 167 E: info@phlorum.com W: www.phlorum.com

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Non-technical Summary

Phlorum Ltd was commissioned by Project Centre, on behalf of Kent County Council, to undertake a water vole (*Arvicola amphibius*) survey to assess the presence/likely absence and distribution of this species within land associated with the A28 Sturry Link Road planning application (Planning ref: CA/21/01854).

The Client, Kent County Council, have planning permission to construct the north-south alignment of Sturry Link Road between 2024 and 2026 from the A28 Sturry Road south of the Great Stour River close to the Southern Water Canterbury Wastewater Treatment Works in the southwest up to the roundabout within the Land at Sturry site, north of the Canterbury to Ramsgate railway line.

The water vole survey follows on from a Preliminary Ecological Appraisal (Phlorum, 2023) which identified potentially suitable habitat for this species within and adjacent to the Site Area. It was recommended that a series of two survey visits should be carried out between April and September, spaced at least two months apart in accordance with current survey guidelines.

The main findings of the survey are as follows:

-  Water voles were confirmed to be **present** within the surveyed stretch of the Great Stour River. Water voles were captured twice by a camera trap installed adjacent to the Site Area on the riverbank of the Great Stour River. There were burrows with likely water vole latrines close to this location;
-  A high number of potential water vole burrows were found throughout much of the surveyed area, including within the Site Area, although it should be noted that these may not all be used by water voles;
-  Whilst definitive evidence of water vole presence has only been identified in one location along the Great Stour River, given its proximity and connectivity to the remainder of the surveyed stretch and the Site Area, and the high number of potential burrows seen, water voles should be assumed as likely present throughout the working area in relation to the Great Stour River;
-  A water vole mitigation licence (A11) will therefore need to be obtained prior to commencement of works on or near the Great Stour River;
-  It is considered that water voles were likely absent from the drainage ditches that were included in the survey. It is recommended that a precautionary approach to works that will impact on the drainage ditches is followed, to safeguard any water voles that could potentially be present; and
-  Further information regarding mitigation and site enhancement is provided in Section 4 of this report.

1. Introduction

Background

- 1.1 Phlorum Ltd was commissioned by Project Centre, on behalf of Kent County Council, to undertake a water vole (*Arvicola amphibius*) survey to assess the presence/likely absence and distribution of this species within land associated with the A28 Sturry Link Road planning application (Planning ref: CA/21/01854).
- 1.2 The Client, Kent County Council, have planning permission to construct the north-south alignment of Sturry Link Road between 2024 and 2026 from the A28 Sturry Road south of the Great Stour River close to the Southern Water's Canterbury Wastewater Treatment Works in the southwest up to the roundabout within the Land at Sturry site, north of the Canterbury to Ramsgate railway line.
- 1.3 The water vole survey follows on from a Preliminary Ecological Appraisal (Phlorum, 2023) which identified potentially suitable habitat for this species within and adjacent to the Site Area. It was recommended that a series of two survey visits should be carried out between April and September, spaced at least two months apart in accordance with current survey guidelines. The first survey visit was carried out concurrently with the Preliminary Ecological Appraisal, in September 2022. The second survey was carried out in April 2023.
- 1.4 The survey covered a stretch of the Great Stour River, between Vauxhall Road and White Mill Bridge on the A28 Sturry Road, and drainage ditches within and adjacent to the southern portion of the Site Area. It was considered that these watercourses could be suitable for water vole. The surveyed areas were either within or directly connected to the Site Area, therefore any water voles present in these areas could be affected by the development.
- 1.5 This report provides an assessment of the status of water voles within the Site Area and adjacent areas, providing information on their presence/likely absence and distribution. Potential impacts of the development are identified and measures to mitigate the effects of the development on water voles are discussed in outline.

Site Area Description

- 1.6 The Site Area for the proposed A28 Sturry Link Road scheme comprised three separate areas of land. These areas of land will be the responsibility of the A28 Sturry Link Road Scheme developers. See the areas highlighted in red in Figure 1 in Appendix A for the location of the three separate areas of land. The majority of the Site Area lies between the A28 Sturry Road, where the Site Area runs adjacent to Sturry Road Community Park, and the Canterbury to Ramsgate railway line. Part of a field to the north of the Canterbury to Ramsgate railway line covering the location of the proposed rail bridge is included. The Site Area also includes a section of the field to the west, providing a link road to Broad Oak Road, and a short section of Broad Oak Road and Shalloak Road immediately north of the Canterbury to Ramsgate railway line. A small area of road to the east of the main Site Area, comprising the A291 Herne Bay Road/Sturry Hill and A28 Island Road junction, also resides within the Site Area.
- 1.7 The Site Area comprised buildings, hardstanding, amenity grassland, agricultural land, improved grassland, semi-improved neutral grassland, marshy grassland, ruderal vegetation, continuous scrub, broad-leaved semi-natural woodland, water bodies, reedbed, individual trees, and hedgerow and trees.
- 1.8 The National Grid Reference for the centre of the Site Area is TR 16942 60093. The Site Area extends over approximately 7.7 hectares (ha).
- 1.9 Phlorum have considered a larger 'Survey Area' in other ecological reports, including the Preliminary Ecological Appraisal. The Survey Area covered 14.7ha and included land associated with the Greenfield Shooting Grounds and the rest of the land within the Land at Sturry Application Site (Planning ref: CA/20/02826). However, for the purposes of the water vole survey, only the Great Stour River and drainage ditches within and adjacent to the southern portion of the Site Area, close to the Great Stour River, were surveyed. It was considered that the other parts of the Site Area and Survey Area had negligible potential to support water vole.
- 1.10 The Great Stour River flows through Kent past Ashford to Canterbury and Sandwich. Within and adjacent to the Site Area, the banks of the Great Stour River were heavily vegetated with tall, dense ruderal vegetation places including species such as Himalayan balsam (*Impatiens glandulifera*), common nettle (*Urtica dioica*), hogweed (*Heracleum sphondylium*), bindweed (*Convolvulus arvensis*), common reed (*Phragmites australis*), bittersweet (*Solanum dulcamara*) and brambles (*Rubus fruticosus* agg.), hawthorn (*Crataegus monogyna*) and willow (*Salix* sp.).
- 1.11 To the south of the Great Stour River, a drainage ditch runs adjacent to the north of the A28 Sturry Road, and along the boundary between the Site Area and Southern Water's Canterbury Wastewater Treatment Works. There is also a drainage ditch within the Environmental Mitigation Area in the Site Area, between the Great Stour River and the Canterbury to Ramsgate railway line. Due to the proximity of these drainage ditches to the Great Stour River, they were included in the water vole survey.

2. Methodology

Data Search







- 2.1 Records for water voles within a 2km radius of the Survey Area were obtained from Kent and Medway Biological Records Centre (KMBRC, 2022) as part of the Preliminary Ecological Appraisal (Phlorum, 2023).

Personnel

- 2.2 The first survey was led by Emily Phillips (BSc (Hons); QCIEEM), an ecological consultant with over three years' survey experience. The survey was assisted by Mika Valentini (BSc (Hons)), an ecological consultant with over two years' survey experience.
- 2.3 The second survey, camera trap surveys, and boat survey were led by Natalie Arscott (BSc (Hons); MRes; QCIEEM), an ecological consultant with over four years' professional survey experience. The second survey and camera trap surveys were assisted by Livia Dry (BSc (Hons), MSc), an ecological consultant with over two years' survey experience. The boat survey was assisted by Marian Cameron (BSc (Hons), MSc, MIEMA, CENV, PEIA) and Amy Fitzmaurice of Kent Wildlife Trust.
- 2.4 The survey results and assessment were reviewed by the project director Richard Schofield (BSc (Hons), MSc, CSJK, MCIEEM, MIEMA, CEnv), with over 20 years of experience in managing projects.

Water Vole Surveys

- 2.5 The first survey visit to determine the presence/likely absence of water vole was carried out on the 13th September 2022. The weather conditions during the survey were dry and overcast.
- 2.6 The second survey visit to determine the presence/likely absence of water vole was carried out on the 25th April 2023. The weather conditions during the survey were dry and sunny.
- 2.7 Photographs from the water vole surveys are provided in Appendix D.
- 2.8 The survey area for the water vole surveys included a stretch of the Great Stour River, between Vauxhall Road and White Mill Bridge on the A28 Sturry Road, and drainage ditches within and adjacent to the southern portion of the Site Area. It was considered that these watercourses could be suitable for water vole. The surveyed areas were either within or directly connected to the Site Area, therefore any water voles present in these areas could be affected by the development.

- 2.9 The surveys followed the methodology recommended in the Water Vole Mitigation Handbook (2016). The first survey, in September 2022, was carried out entirely from land. Where dense vegetation along the Great Stour River prevented close inspection of the riverbanks, binoculars were used to survey the banks from the opposite side of the Great Stour River. The lack of dense vegetation along the drainage ditches allowed for a close inspection of these features during both surveys. During the second survey, in April 2023, waders were also used to walk along the Great Stour River. This allowed the riverbanks to be surveyed concurrently from both the water and adjacent land, where water levels allowed. Two ecologists were present for both surveys.
- 2.10 The banks of the Great Stour River and surrounding ditches were systematically inspected for water vole burrows and other field signs (latrines, footprints, pathways in the vegetation, feeding remains and cropped grass at the entrance of burrows). All accessible areas of the banks of the watercourses were surveyed.
- 2.11 Numerous terms have been used to describe signs of water vole activity and features used by water vole. For the avoidance of doubt, definitions of the terms used for the purpose of this survey (which are based on available literature; see Section 6 – References) are provided below:
-  **Latrines.** The main water vole sign to confirm presence are piles of droppings, known as latrines. These are only present during the breeding season. Field signs for recognising latrines include:
 - Piles of droppings left at the water's edge or floating on material. Consider the variation in water levels, flood events or heavy rainfall will wash latrines away;
 - They are used to mark territories, so they will be visited regularly;
 - They are regular, blunt-ended, circa 1cm and generally olive green;
 - Rat droppings are similar but smell foul;
 - Variation in colour, depending on diet. They may be purple, if they eat Himalayan balsam; and
 - Latrines are found within 1m on either toe of the bank;
 -  **Burrows.** Burrows are 6-8cms across. Not sufficiently distinct to confirm presence of water voles on their own;
 -  **Feeding stations.** Piles vegetation close to the water's edge cut at a 45° angle. Typically 10cm in length, but they can be longer. Bank and field vole vegetation piles may look similar but are generally shorter in length;
 -  **Woven nests;**
 -  **Footprints.** In soft mud by the water's edge. Water vole and rat footprints are very similar and hard to distinguish apart. Star shaped and around the size of a 2p coin; and
 -  **Runs through vegetation.**

- 2.12 Water vole survey forms (Appendix B) have been used to record the above field signs.

Camera Trap Surveys

- 2.13 Two 3-week periods of camera trap monitoring were conducted in Spring (between March and May) 2023 along the Great Stour River.
- 2.14 Six wildlife cameras (Crenova RD1000) were installed at strategic locations along the Great Stour River, between Vauxhall Road and White Mill Bridge on the A28 Sturry Road. Some of the camera locations were moved for the second period of monitoring in accordance with the initial camera findings and findings from survey visit on the 25th April 2023. Camera locations are shown in the Survey Map in Appendix A.
- 2.15 The camera locations were selected to survey for water vole, otter (*Lutra lutra*), and beaver (*Castor fiber*), therefore not all locations were optimal for specifically detecting water vole. During the second period of monitoring, a camera was situated within bankside vegetation close to potential water vole burrows, with the specific aim of identifying whether water voles were present here.
- 2.16 The wildlife cameras were set to record 30 seconds of video footage following being triggered by motion in the focal area.
- 2.17 For the first period of camera trap monitoring, the cameras were installed on the 2nd March 2023 and removed on the 23rd March 2023.
- 2.18 For the second period of camera trap monitoring, the cameras were installed on the 25th April 2023 and removed on the 16th May 2023.

Boat Survey

- 2.19 An additional survey was carried out on the 8th June 2023, during which the riverbanks of the Great Stour River were viewed from a canoe. The purpose of this survey was to identify beaver burrows, and therefore the bank was not closely inspected for field signs of water vole. However, the survey provided an additional opportunity to assess the riverbanks for potential water vole burrows.
- 2.20 The water level of the Great Stour River was lower during the boat survey than it had been during the previous water vole surveys, therefore a greater depth of riverbank was visible to visually assess.

Constraints

Data Search Constraints

- 2.21 It is important to note that, even where data is held, a lack of records for a defined geographical area does not necessarily mean that there is a lack of ecological interest; the area may be simply under-recorded.

Survey Constraints

- 2.22 Ecological surveys are limited by factors that affect presence of plants and animals such as seasonality. Whilst every effort has been made to provide a comprehensive description of the site, no investigation can ensure the complete characterisation of the environment.
- 2.23 Accessibility along the Great Stour River for the first water vole survey was largely limited due to tall, dense ruderal vegetation along the riverbank edges which prevented the surveyors from being able to get into the riverbank to easily survey the bank sides. This was not an issue for surveying the drainage ditches, which were not bordered by dense vegetation.
- 2.24 The use of waders during the second water vole survey improved access to the riverbank edges, however the water level was too high for wading in places.
- 2.25 It is possible that signs of water vole activity may have been obscured and under-recorded in areas of dense bankside vegetation.
- 2.26 Field signs may have been removed by recent rainfall or high water levels during the second water vole survey. This was unlikely to be a constraint during the first water vole survey, due to a prolonged period of dry weather preceding the survey.

3. Results

Data Search

- 3.1 The data search returned four recent (post-2007) records of European water vole within 2km of the Survey Area. The comments in the location column suggest that two of these records were located at the land adjacent to and around the Junior King's School in 2010.

Previous Reports

- 3.2 Amey Consulting carried out a water vole survey in 2017 and concluded water voles to be absent from the survey area (Amey, 2018). No evidence of water voles was found and evidence of mink, a predator of water voles, was recorded within the survey area.

First Water Vole Survey (September 2022)

- 3.3 This survey was carried out from the land adjacent to the Great Stour River and the drainage ditches only. Whilst there was good access to the banks of the drainage ditches, dense vegetation along the riverbanks of the Great Stour River restricted access for close inspection. It is therefore possible that field signs were obscured within the vegetation.
- 3.4 During the survey, one potential water vole burrow was identified within the riverbank of the Great Stour River. This was within the Site Area, on the northern arm of the Great Stour River adjacent to the north-western corner of the playing fields at Junior King's School. The burrow was an appropriate size and shape to have been created by water vole, however no other water vole field signs were found in association with the potential burrow. Therefore, the burrow could also be associated with a different species, such as brown rat (*Rattus norvegicus*).
- 3.5 No evidence of water vole was found associated with any of the drainage ditches that were included in the survey. The drainage ditches to the south of the Great Stour River, near the A28 Sturry Road, were dry at the time of the survey and did not have densely vegetated banks, therefore were considered highly unlikely to support water vole.
- 3.6 The area surveyed is illustrated in the Survey Map in Appendix A. The survey record form is shown in Appendix B. Photographs highlighting features of particular ecological interest to water vole are provided in Appendix D.

Second Water Vole Survey (April 2023)

- 3.7 The second water vole survey was carried out from both the land adjacent to the Great Stour River and the drainage ditches, and from within the Great Stour River using waders. There was good access to the banks of the drainage ditches. Surveying from the water allowed for a close inspection of the riverbanks of the Great Stour River, however the vegetation here was dense and therefore it is possible that field signs may have been obscured within the vegetation.
- 3.8 There were numerous potential water vole burrows along the majority of the riverbanks within the surveyed stretch of the Great Stour River, with the exception of the eastern half of the northern arm of the Great Stour River, where the river passes through Junior King's School. The highest concentration of burrows was along a stretch of the northern riverbank of the southern arm of the Great Stour River, opposite Maytree Canterbury Nurseries. Within this stretch, potential latrines were found within the entrances of two burrows. The droppings were characteristic of water vole but could not be definitively identified as belonging to this species, as they were also characteristic of brown rat. There was however nipped vegetation surrounding these burrows, indicating likely water vole presence. The other burrows identified within the surveyed area were not associated with other clear water vole field signs, and therefore may be used by other species such as brown rat.
- 3.9 Throughout the riverbanks of the Great Stour River, where there was dense vegetation, rodent-sized vegetation runs were seen. These may have been created by water vole and/or other rodent species.
- 3.10 Vegetation cut at a 45° angle was also seen at numerous locations along the riverbanks of the Great Stour River, however this may have resulted from beaver foraging activity, which have been confirmed as present.
- 3.11 No water vole footprints or woven nests were found.
- 3.12 No evidence of water vole was found associated with any of the drainage ditches that were included in the survey. The drainage ditch on the boundary between the Site Area and Southern Water's Canterbury Wastewater Treatment Works was completely dry at the time of the survey and lacked vegetation, so was considered unsuitable for water voles. The drainage ditch adjacent to the A28 Sturry Road contained a small amount of water and sparse bankside vegetation, and was considered sub-optimal for water voles.
- 3.13 The area surveyed is illustrated in the Survey Map in Appendix A. The survey record form is shown in Appendix B. Photographs highlighting features of particular ecological interest to water vole are provided in Appendix D.

Camera Trap Surveys (March – May 2023)

- 3.14 No water voles were recorded during the first 3-week period of camera trap monitoring, undertaken in March 2023. Brown rats were captured by the cameras, which may use the burrows seen.
- 3.15 For the second 3-week period of camera trap monitoring, undertaken between April and May 2023, a camera was positioned within the Great Stour River's bankside vegetation close to the burrows that contained potential water vole latrines. A foraging water vole was captured by this camera on two occasions, on the 28th April and 30th April. It is unclear whether this was the same or different individuals. These confirmed water vole sightings are immediately adjacent to the Site Area, where an access road is proposed, and approximately 120m east of the proposed road bridge that will cross the Great Stour River.
- 3.16 No water voles were recorded by any of the other cameras during the second 3-week monitoring period.
- 3.17 The location of the water vole sightings is shown in the Survey Map in Appendix A. An image of a recorded water vole is provided in Appendix D.

Boat Survey (June 2023)

- 3.18 The riverbanks of the Great Stour River were surveyed from a canoe in June 2023. A high number of potential water vole burrows were seen throughout most of the surveyed area.
- 3.19 As the purpose of this boat survey was to inspect the riverbanks for beaver burrows, the potential water vole burrows were not closely inspected nor were their exact locations recorded. It therefore cannot be confirmed whether these belong to water vole or other species, such as brown rat. The findings from this survey do however support the findings from the previous survey that water vole may be present throughout much of the riverbanks of the Great Stour River within the surveyed area.

4. Discussion and Recommendations







Discussion



- 4.1 The Client, Kent County Council, have planning permission to construct the north-south alignment of Sturry Link Road between 2024 and 2026 from the A28 Sturry Road south of the Great Stour River close to the Southern Water's Canterbury Wastewater Treatment Works in the southwest up to the roundabout within the Land at Sturry site, north of the Canterbury to Ramsgate railway line.
- 4.2 The water vole survey comprised two walkover surveys, undertaken during the optimal survey period for water voles, two 3-week periods of camera trap monitoring, and a basic survey of the riverbanks of the Great Stour River from a boat. The surveyed area included the stretch of the Great Stour River, between Vauxhall Road and White Mill Bridge on the A28 Sturry Road, and drainage ditches within and adjacent to the southern portion of the Site Area.
- 4.3 The walkover surveys and boat survey identified a high number of potential water vole burrows along the Great Stour River. The only stretch of the Great Stour River that did not contain potential burrows was along the northern arm of the Great Stour River which passes through Junior King's School. Along this stretch, the banks are shallow and sparsely vegetated in places, and therefore appear less suitable for water vole.
- 4.4 The second water vole survey, undertaken in April 2023, identified two burrows with potential water vole latrines in their entrances. These burrows were also surrounded by nipped vegetation, characteristic of water vole. These burrows were located on the northern riverbank of the southern arm of the Great Stour River, opposite Maytree Canterbury Nurseries. There was a high concentration of burrows within this area.
- 4.5 A camera trap situated adjacent to these burrows with potential latrines captured footage of a foraging water vole on two occasions in late April 2023. The footage confirms definitively that water voles are **present** along this stretch of the Great Stour River. These confirmed water vole sightings are immediately adjacent to the Site Area, where a temporary access road during construction is proposed, and approximately 120m east of the proposed A28 Sturry Link Road bridge that will cross the Great Stour River.
- 4.6 Whilst definitive evidence of water vole presence has only been identified in one location along the surveyed stretch of the Great Stour River, given its proximity and connectivity to the remainder of the surveyed stretch and the Site Area, water voles are likely to be present within the Great Stour River where it passes through the Site Area.

- 4.7 Due to the confirmed presence of water vole and the nature of the proposed construction works, which will impact upon the Great Stour River's banks, disturbance to water voles is likely and damage, destruction, and/or obstruction of places used by water voles for shelter or protection, such as their burrows or nesting sites, is possible. As such it will be necessary to obtain a water vole mitigation licence (A11) prior to commencing works on or near the Great Stour River.
- 4.8 No evidence of water voles has been identified in the drainage ditches that are located close to the Great Stour River. The drainage ditches to the south of the Great Stour River, near the A28 Sturry Road, are considered highly unlikely to support water voles due to the presence of only a small amount of water and sparse bankside vegetation. Based on these findings, any works that affect the drainage ditches will not need to be covered by a mitigation licence, however it is recommended that a precautionary approach is adopted.
- 4.9 Further information regarding mitigation and the precautionary approach is provided in the Recommendations section below.

Recommendations

Mitigation Licence

- 4.10 Due to the presence of water voles along the Great Stour River adjacent to, and potentially within, the Site Area, it is recommended that a water vole mitigation licence (A11) will need to be obtained prior to commencement of construction works on or near the Great Stour River.
- 4.11 To obtain the required licence, an A11 application form will need to be completed and submitted to Natural England.
- 4.12 The application will need to include details of a named ecologist, who must be a professional ecological consultant with the relevant skills, knowledge and experience of working with water voles.
- 4.13 It must be demonstrated that the licence will be used for one of the following purposes:
-  preserving public health or safety;
 -  preventing the spread of disease;
 -  preventing serious damage to livestock, animal feed, crops,, growing timber, fisheries or any other property; or
 -  reasons of overriding public interest.
- 4.14 Details of all licensable activities or methods that will be carried out under the licence must be provided. A licence is needed to:
-  kill or injure a water vole;
 -  take, possess or control a water vole;

-  damage or destroy any structure or place a water vole uses for shelter or protection; or
 -  obstruct access to any structure or place a water vole uses for shelter or protection.
- 4.15 Alongside the A11 application form, a detailed method statement and reasoned statement will also need to be submitted. Maps and figures will be required to support the method statement.
- 4.16 Natural England will decide whether to issue a licence within 30 working days of receiving the completed application. They will provide a cost for the licence following review of the application.
- 4.17 Following completion of the licensable works, and no later than two weeks after the licence expires, a LR11 report form must be submitted to Natural England, reporting all actions taken under the licence.

Precautionary Approach

- 4.18 It is considered that water voles are likely absent from the drainage ditches that were included in the survey. However, it is recommended that a precautionary approach to any works on these ditches, if they are holding water at the time, is adopted to safeguard any water voles that could potentially be present. Precautionary measures should also be followed for work near the Great Stour River and included within the method statement for the A11 licence.
- 4.19 Immediately prior to the start of works on or adjacent to the drainage ditches, a site walkover should be carried out by a suitably qualified ecologist to check the ditches for evidence of water vole activity.
- 4.20 All on-site contractors should be made aware of the potential presence of water voles by a toolbox talk given by a suitably qualified ecologist prior to the start of works.
- 4.21 If work will directly impact a drainage ditch, it is recommended that bankside vegetation should be cut back as soon as practicable prior to the works proceeding and preferably prior to July, when young water voles begin to exploit new territories. This should be carried out using hand tools and under an ecological watching brief. This will serve to deter water voles from the working area.
- 4.22 The use of high intensity lighting which would illuminate the drainage ditches or the Great Stour River should be avoided both during the works period and following on from completion of the project, to ensure that suitable habitat for water voles is maintained.
- 4.23 It is recommended that no works within 30m of the Great Stour River are undertaken after dusk.
- 4.24 Water voles are naturally inquisitive. Any excavations that are left overnight should be covered or include a ramp of 45° or less on one face, to allow water voles and other wildlife to climb out should they fall into the excavation.

Habitat Enhancement/Retention









- 4.25 It is recommended that, as far as possible, the bankside vegetation that borders the Great Stour River is retained and protected from damage during the works.
- 4.26 Habitat enhancement could include the widening of the strip of dense, bankside vegetation that borders the Great Stour River, subject to agreement with landowners and in accordance with licence specifications. This would provide a greater area of foraging habitat for water voles.
- 4.27 Tree planting has been recommended adjacent to the Great Stour River, to benefit beavers and otters. Water voles can also benefit from tree planting since the root systems can stabilise riverbanks and create diverse habitats with various microhabitats that water voles can utilise for nesting, sheltering, and foraging. Trees also provide protection and cover from aerial predators. However, excessive shading from trees could reduce the diversity of plant species available for foraging water voles. It is therefore recommended that open areas are maintained between areas of new tree planting, to allow areas of the riverbanks to receive full sunlight.

5. Conclusions

Conclusions

- 5.1 Phlorum Ltd was commissioned by Project Centre, on behalf of Kent County Council, to undertake a water vole survey to assess the presence/likely absence and distribution of this species within land associated with the A28 Sturry Link Road planning application (Planning ref: CA/21/01854).
- 5.2 The Client, Kent County Council, have planning permission to construct the north-south alignment of Sturry Link Road between 2024 and 2026 from the A28 Sturry Road south of the Great Stour River close to the Southern Water's Canterbury Wastewater Treatment Works in the southwest up to the roundabout within the Land at Sturry site, north of the Canterbury to Ramsgate railway line.
- 5.3 The water vole survey confirmed the presence of water vole on the Great Stour River, adjacent to and potentially within the Site Area.
- 5.4 As avoidance of impact will not be possible, to comply with relevant legislation a water vole mitigation licence (A11) will need to be obtained prior to commencement of works on or near the Great Stour River. The licence application will need to include details of a named ecologist, a reasoned statement, and detailed method statement.
- 5.5 It is considered that water voles were likely absent from the drainage ditches that were included in the survey.
- 5.6 It is recommended that a precautionary approach to works that will impact on the drainage ditches is followed, to safeguard any water voles that could potentially be present.

6. References

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Figures and Appendices

Appendix A

Site Area and Water Vole Survey Map

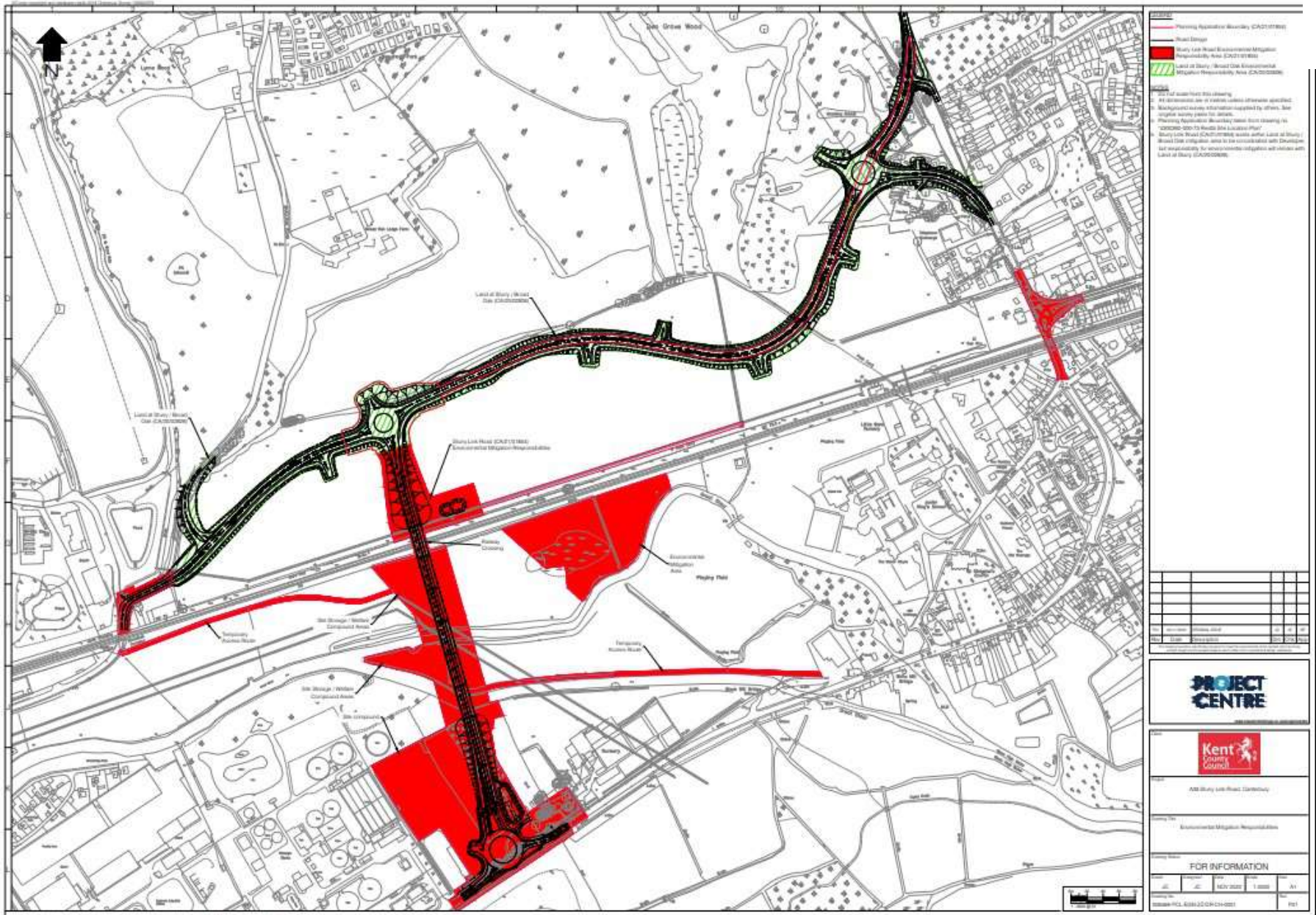


Figure 1: The Site Area

Drawn by: EP
 On the: 19/12/2022
 Not to Scale
 Ref: 11112



Phlorum Limited, 12 Hunns Mere Way,
 Woodingdean, Brighton, East Sussex,
 BN2 6AH
 Tel: +44(0)1273 307167
 Web: www.phlorum.com
 Email: info@phlorum.com



Legend





-  **Surveyed Area**
-  **Drainage Ditches**
no evidence of water vole
-  **Stretch of River with Burrows**
-  **Highest Density of Burrows**
-  **Water Vole Sighting**
recorded by wildlife camera
-  **Camera Trap Location**

Figure 2: Land at A28 Sturry Link Road Water Vole Survey Map

Drawn by: NA
 On the: 05/07/2023
 Not to Scale
 Ref: 11112



Phlorum Limited, 12 Hunns Mere Way,
 Woodingdean, Brighton, East Sussex,
 BN2 6AH
 Tel: +44(0)1273 307167
 Web: www.phlorum.com
 Email: info@phlorum.com

Appendix B

Survey Record Forms

Water Vole Survey Recording Forms.

SITE: Land at A28 Sturry Link Road, Kent		Date: 13/09/2022
RIVER: Great Stour River and associated drainage ditches		
MAP REF: TR 16958 60042		
WEATHER: Warm and overcast	RECENT WEATHER: Warm/dry	
WATER LEVELS: End of summer, high flow.	CLIENT: Project Centre	
WATER VOLE RECORDS: Great Stour River: One potential burrow. No field signs in drainage ditches.	TRACKS: None	
COMMENTS: Several sections of the riverbank were inaccessible because of dense, overgrown, tall ruderal vegetation. Large sections of the riverbank were observed by dense vegetation.		
MINK RECORDS: No signs	Scats = 0	Tracks = 0
COMMENTS: Mink unlikely to be present.		
<p>HABITAT DESCRIPTION: The Great Stour River is a river corridor that flows past Ashford, Kent, to Canterbury and Sandwich. Within the survey area, the riverbank was heavily vegetated with tall, dense ruderal vegetation places including species such as Himalayan balsam (<i>Impatiens glandulifera</i>), common nettle (<i>Urtica dioica</i>), hogweed (<i>Heracleum sphondylium</i>), bindweed (<i>Convolvulus arvensis</i>), common reed (<i>Phragmites australis</i>), bittersweet (<i>Solanum dulcamara</i>) and brambles (<i>Rubus fruticosus</i> agg.), hawthorn (<i>Crataegus monogyna</i>) and willow (<i>Salix</i> sp.). This made some areas of the river difficult to access, particularly the banks along the river where the Great Stour River forks. Drainage ditches are found to the north and south of the river. The ditch to the north of the river is well vegetated and contains a small amount of water. The ditches to the south of the river are dry and sparsely vegetated.</p>		
<p>HABITAT EVALUATION: The section of the river in the eastern region of the site within the school grounds would be prone to disturbance due to school activities. The drainage ditches to south of the river did not appear to contain the water or vegetation required for water voles.</p>		
<p>HUMAN IMPACT: The areas within the school ground will be frequently used for school activities. The drainage ditch adjacent to the A28 Sturry Road would be subject to high levels of human disturbance.</p>		
OTHER NOTABLE SPECIES: Signs of beaver and possible otter.		
RECOMMENDATIONS		
<p>(1) A second survey visit be carried out in 2023 between mid-April and the end of June in accordance with the accepted survey guidance.</p>		
SURVEYOR(S): Emily Phillips and Mika Valentini		

SITE: Land at A28 Sturry Link Road, Kent		Date: 25/04/2023
RIVER: Great Stour River and associated drainage ditches		
MAP REF: TR 16958 60042		
WEATHER: Dry and sunny	RECENT WEATHER: Wet	
WATER LEVELS: Spring, high flow.	CLIENT: Project Centre	
WATER VOLE RECORDS: Great Stour River: Numerous potential burrows. Two potential latrines. Nipped vegetation in numerous locations. Numerous vegetation runs. No field signs in drainage ditches.	TRACKS: None	
COMMENTS: Water vole presence likely in Great Stour River. Camera trap deployed in an attempt to confirm.		
MINK RECORDS: No signs	Scats = 0	Tracks = 0
COMMENTS: Mink unlikely to be present.		
HABITAT DESCRIPTION: The Great Stour River is a river corridor that flows past Ashford, Kent, to Canterbury and Sandwich. Within the survey area, the riverbank was heavily vegetated with tall, dense ruderal vegetation places including species such as Himalayan balsam (<i>Impatiens glandulifera</i>), common nettle (<i>Urtica dioica</i>), hogweed (<i>Heracleum sphondylium</i>), bindweed (<i>Convolvulus arvensis</i>), common reed (<i>Phragmites australis</i>), bittersweet (<i>Solanum dulcamara</i>) and brambles (<i>Rubus fruticosus agg.</i>), hawthorn (<i>Crataegus monogyna</i>) and willow (<i>Salix sp.</i>). Drainage ditches are found to the north and south of the river. The ditch to the north of the river is well vegetated and contains a small amount of water. The ditches to the south of the river are either dry or contain a small amount of water, and are sparsely vegetated.		
HABITAT EVALUATION: The section of the river in the eastern region of the site within the school grounds would be prone to disturbance due to school activities. The drainage ditches to south of the river did not appear to contain the water or vegetation required for water voles.		
HUMAN IMPACT: The areas within the school ground will be frequently used for school activities. The drainage ditch adjacent to the A28 Sturry Road would be subject to high levels of human disturbance.		
OTHER NOTABLE SPECIES: Signs of beaver.		
RECOMMENDATIONS		
(1) Mitigation licence recommended for Great Stour River. (2) Precautionary approach recommended for drainage ditches.		
SURVEYOR(S): Natalie Arcscott and Livia Dry		

Appendix C

Legislation

Legislation

This section contains information pertaining to the legislation and planning policy applicable in Britain. This information is not applicable to Northern Ireland, the Republic of Ireland the Isle of Man or the Channel Islands. Information contained in the following appendix is provided for guidance only.

Species

The objective of the EC Habitats Directive¹ is to conserve plants and animals which are considered to be rare across Europe. The Directive is transposed into UK law by The Conservation of Habitats and Species Regulations 2017 (as amended) (formerly The Conservation (Natural Habitats, &c.) Regulations 1994 (as amended) and The Offshore Marine Conservation (Natural Habitats, &c.) Regulations 2007 (as amended).

The Wildlife and Countryside Act 1981 (as amended) implements the Convention on the Conservation of European Wildlife and Natural Habitats (Bern Convention) and also implements the obligations set out for species protection from the Council Directive 2009/147/EC (formerly 79/409/EEC) on the Conservation of Wild Birds (EC Birds Directive) in Great Britain.

Various amendments have been made since the Wildlife & Countryside Act came into force in 1981. Further details pertaining to alterations of the Act can be found on the following website: www.opsi.gov.uk. Key amendments have been made through the Countryside and Rights of Way (CRoW) Act (2000) and Nature Conservation (Scotland) Act 2004.

There are a number of other legislative Acts affording protection to species and habitats. These include:

- 🌿 Countryside and Rights of Way (CRoW) Act 2000;
- 🌿 Deer Act 1991;
- 🌿 Natural Environment & Rural Communities (NERC) Act 2006;
- 🌿 Protection of Badgers Act 1992; and
- 🌿 Wild Mammals (Protection) Act 1996.

Water Vole

The water vole (*Arvicola amphibius*) (=terrestris) is fully protected under Schedule 5 of the Wildlife and Countryside Act 1981 (as amended). This makes it an offence to:

- 🌿 intentionally kill, injure or take (capture) this species;
- 🌿 intentionally or recklessly damage, destroy or obstruct access to any structure or place used for shelter or protection;

¹ Council Directive 92/43/EEC on the Conservation of Natural Habitats and of Wild Fauna and Flora.



- 🌿 intentionally or recklessly disturb water voles while they are occupying a structure or place used for shelter or protection; and
- 🌿 sell, offer or expose for sale, or have in his possession or transport for the purpose of sale, any live or dead water vole or part of this species.

Where development works are liable to affect habitats known to support water voles, Natural England must be consulted. All alternative design options must have been explored and communicated to Natural England in order to demonstrate that works have tried to avoid contravening the legislation e.g. the use of alternative sites, appropriate timing of works to avoid times of the year in which water voles are most vulnerable etc. Conservation licences for the capture and translocation of water voles may be issued by Natural England for the purpose of development activities if it can be shown that the activity has been properly planned and executed and thereby contributes to the conservation of the population.

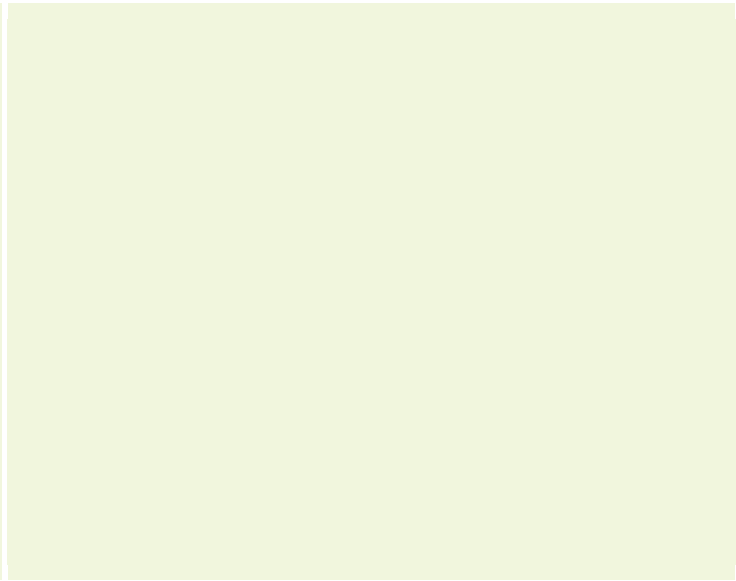
Appendix D

Survey Photographs

Survey Photographs

Photo	Feature	Photograph of Feature
1	Suitable habitat to support water vole.	 <p>14 Sept 2022 14:19:40 51.29814598564124N 1.1108553546767814E 90° E Kent England</p>
2	Potential water vole burrow, noted during the first water vole survey.	 <p>14/9/22 14:04 51°17'52.52111"N 1°6'38.17475"E Sturry Road Kent England #Phlorum Ltd</p>

Potential water vole burrow in the riverbank of the Great Stour River, seen during the second water vole survey.



4 Potential water vole latrine in the entrance of a burrow, seen during the second water vole survey.

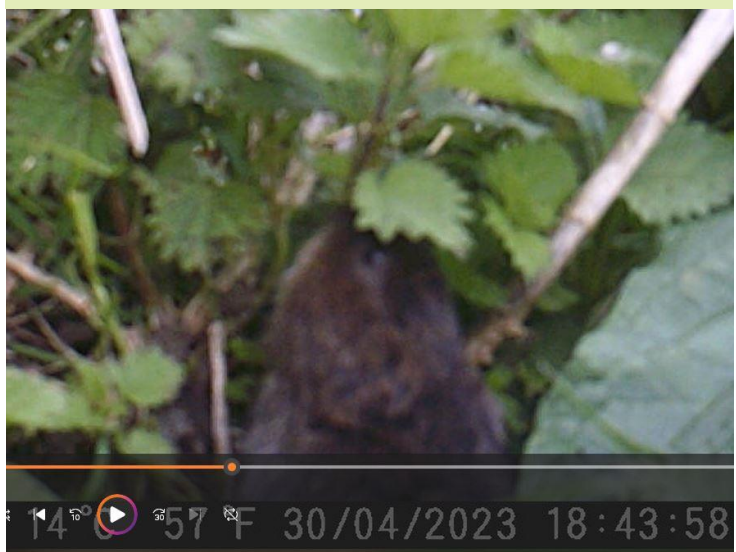


5 Nipped vegetation, cut at a 45° angle, around potential water vole burrows, seen during the second water vole survey.



6

Water vole captured by a camera trap on the riverbank of the Great Stour River.



7

Drainage ditch adjacent to the A28 Sturry Road. Sub-optimal for water voles and no field signs found.



Treatment Works, dry and



Phlorum Limited

Head Office & Registered Office:

Unit 12
Hunns Mere Way
Woodingdean
Brighton
East Sussex
BN2 6AH
T: 01273 307 167

Northern Office:

Ground Floor
Adamson House
Towers Business Park
Wilmslow Road
Didsbury
Manchester
M20 2YY
T: 0161 955 4250

Western Office:

One Caspian Point
Pierhead Street
Cardiff Bay
Cardiff
CF10 4DQ
T: 029 2092 0820