

WSP Environmental



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Prepared by	Sarah Brown	Sarah Brown		
Signature				
Checked by	Sarah	Sarah		
	Brandwood	Brandwood		
Signature				
Authorised by	Sarah	Sarah		
	Brandwood	Brandwood		
Signature				
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WSP Environmental UK One Queens Drive Birmingham West Midlands B5 4PJ

Tel: +44 (0)121 352 4700 Fax: +44 (0)121 352 4701 http://www.wspgroup.com

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Executive Summary

In May 2002 an initial site survey was undertaken for the proposed development site for a new town at Longstanton, Cambridge. During this site visit suitable habitat for water vole and otter was identified at Longstanton and Oakington Brooks. A water vole and otter survey was initially undertaken in May 2003.

WSP Environmental Ltd was commissioned by Gallagher Longstanton Ltd and English Partnerships to undertake a repeat survey of Longstanton and Oakington Brooks for evidence of otter and water vole within these two water features in July 2006. The information recorded will be utilised in connection with the data collected from the previous surveys undertaken in May 2003 to assess the current status of these species. The survey followed the recommended methodology outlined in the *Water Vole Conservation Handbook* (2006) and in the Environment Agency's *Otters and River Habitat Management Handbook* (1999).

No evidence of otter or water vole was recorded during the survey undertaken in July 2006, however, the vegetation within the Oakington and Longstanton Brooks was so dense and extensive that it was impossible to carry out a thorough search along the majority of both water courses, in order to identify any signs of the presence of either water vole or otter. Some areas were accessible and these were checked thoroughly.

Due to the extent of the vegetation, the results of the site visit in July 2006 were inconclusive. A further visit was therefore undertaken in September 2006 to look for evidence of water vole and otter at the site. At the time of the September survey ditch maintenance works had been undertaken to clear the vegetation from within the Oakington and Longstanton Brooks. Consequently both water bodies were relatively clear of emergent vegetation within the central channel. However, some submerged and floating vegetation was still present within the ditches, and grass was still present on one or both sides of the ditch banks.

Evidence of otter and water vole were identified within both water bodies during the September site visit.

Recommendations have been made outlining the principles of mitigation for the presence of otters and water vole have been provided. The recommendations aim to guide the planning and implementation of the proposed work based on the results of the survey, to reduce the ecological impact of the loss of water vole and otter habitat, and protect both species during construction works.

1 Introduction

1.1.1 WSP Environmental Limited (WSPE) were commissioned by Gallagher Longstanton Ltd and English Partnerships in July 2006 to carry out a phase 2 survey to confirm the current status of otter and water vole within Longstanton and Oakington Brooks at the proposed development site of Northstowe New Town. This survey was conducted by WSP Environmental Ecologists; Sarah Brown and Angela Bond.

1.1.2 The proposed scheme involves the redevelopment of an old airfield with associated barracks and a golf course for the creation of a new town and the use of some arable land for infrastructure.

1.1.3 The site currently consists of the old airfield, barracks and golf course. There are some natural habitats in the form of semi-improved pastoral fields, hedgerows, running and standing water, marshy grassland and areas of broad leaved plantation woodland. The site is bounded to the south west by the A14, Longstanton village to the west, Oakington village to the south east and open countryside to the east.

1.1.4 A preliminary walkover of the site in May 2002 identified suitable habitat for otter and water vole. Based on the results of the walkover survey three brooks (Longstanton Brook, Oakington Brook and Reynolds Ditch) were initially surveyed in May 2003 to determine the status of both species along them. During the survey undertaken in June and September 2006 only Longstanton and Oakington brooks were re-surveyed. Reynolds Ditch does not form part of the development site and although the flow regime may be affected by the development, these alterations will be minimal and therefore are not considered within this report. WSPE will consider the effects this impact may have on this watercourse during the detailed design stage and an ecologist will input into the mitigation measures implemented.

1.1.5 This report details the methodologies and results of the otter and water vole survey, provides an evaluation of the results and details recommendations as a result of the evidence of otters and water voles recorded.

2 Legislative Background

2.1 OTTER

2.1.1 Since 1982, the otter (*Lutra lutra*) has received legal protection through its inclusion on Schedule 5 of the Wildlife and Countryside Act 1981 (as amended) and is included on Schedule 2 of the Conservation (Natural Habitats & c.) Regulations 1994. This protection makes it illegal to intentionally or deliberately kill, injure or capture otters, to deliberately disturb otters (whether in a holt or not), and to damage or destroy breeding sites or resting places. Under the Habitats Directive (EC) the UK is required to maintain populations of otters at a favourable conservation status.

2.1.2 Legal protection requires that due attention is paid to the presence of otters, and that appropriate actions are taken to safeguard the places they use for shelter and protection. Licences are required from Natural England for certain activities, and are also required from the Department of Environment, Food and Rural Affairs (DEFRA) for any activities arising from development projects which may affect otters or their habitats.

2.2 WATER VOLE

2.2.1 Water voles (*Arvicola terrestris*) receive only limited protection through their inclusion on Schedule 5 of the Wildlife and Countryside Act 1981 (as amended) in respect of Section 9(4) only. This section of the Act protects the water vole's places of shelter or protection, but does not protect the voles themselves. This legal protection makes it an offence to intentionally damage or destroy or obstruct access to any structure or place which water voles use for shelter or protection, or disturb water voles while they are using such a place.

2.2.2 Legal protection does require that due attention is paid to the presence of water voles and appropriate actions taken to safeguard the places they use for shelter or protection. Although a DEFRA licence would not be required, where water voles are found to be present, a full mitigation methodology outlining measures for the protection of water voles would need to be drawn up and agreed by Natural England (formerly Natural England) prior to the commencement of any works.

2.2.3 The fourth Quinquennial review of Schedule 5 of the Wildlife and Countryside Act 1981 (as amended) is currently discussing increasing the protection that water voles have under the Act. If these amendments are implemented it would result in the species benefiting from full protection under Schedule 5 of the Act rather than just the habitat which they occupy.

3 Methodology

3.1.1 The study comprised two key phases; a desk study and a walkover field survey. The study was undertaken with reference to the Institute of Environmental Assessment's *Guidelines for Baseline Ecological Assessment*' (1997).

3.2 DESK TOP STUDY

3.2.1 The desk study was initially undertaken as part of the survey completed in May 2003. The current survey is an update to that initial site visit and therefore no additional data has been requested.

3.2.2 The purpose of the desk study was to collect baseline data held by statutory and non-statutory consultees and obtain any views and/or concerns they may have about the proposals. Information was requested for the site and a 2 km study area around the site, from the following organisations:

- Natural England;
- South Cambridgeshire District Council; and
- The Wildlife Trust for Bedfordshire, Cambridgeshire, Northamptonshire and Peterborough.

3.3 FIELD SURVEY

3.3.1 Both Longstanton and Oakington Brooks were surveyed. The methods outlined in the Water Vole Conservation Handbook (Strachan, 2006) as well as those outlined in Otters and River Habitat Management (Environment Agency, 1999) were employed during the survey work.

OTTER SURVEY

3.3.2 An otter survey includes searching for signs of otters along watercourses (including rivers, streams and ditches). Spraints, footprints and remains of kills were searched for in suitable locations throughout the area of the scheme. Locations of potential otter holt sites were also recorded. The survey was carried out on 26 July and 26 September 2006 by two ecologists walking through the base of the watercourse and searching both banks for otter evidence.

WATER VOLE SURVEY

3.3.3 The water vole survey was undertaken on the 26 July and 26 September 2006 by two WSP ecologists. The water vole survey consisted of searching the two watercourses for evidence of water vole activity. The surveys were undertaken within the optimal period for finding water vole activity (April – October), and particularly evidence of territorial marking, which increases during the breeding season. Signs that were searched for along the each of the ditches were:

- Actual sightings;
- Sounds of water vole entering the water;
- Latrines and piles of droppings;
- Burrows (above and below water);
- Cropped 'gardens' or 'lawns' around burrow entrances;
- Feeding stations or cropped vegetation;
- Paths at the waters' edge; and
- Runs in the vegetation and footprints in the mud.

3.3.4 Where burrows were recorded, they were assessed for their level of use. Active burrows are characterised by clean open tunnel entrances free of any debris or vegetation, the presence of footprints, or other sign of evidence nearby. Disused burrows tend not to show any recent signs of entering; may have become overgrown with vegetation and lack any other signs of water vole activity in the immediate vicinity.

3.3.5 All evidence that was seen of both otter and water vole was recorded on a site map and allocated a target note. Any evidence of the presence of mink or brown rat was also recorded.

3.3.6 Both water courses surveyed on site are described below and shown in Figure 1:

- A Longstanton Brook: Runs north to south from Longstanton village towards the A14. Situated running adjacent to the B1050 passing through areas proposed for infra structure for the new town. The brook runs through arable farmland. Submerged vegetation is present within the ditch centre and vegetation is present along most of the banks. Some trees/shading is present at various locations along the length of brook potentially affected by the development.
- **B Oakington Brook:** Runs north to south from Oakington village towards the A14. The brook runs through adjacent to Dry Drayton Road along the majority of its length before turning towards the A14, through arable land. There is little bank side vegetation present with little emergent vegetation present within the water body itself.

3.4 SURVEY LIMITATIONS

3.4.1 Some time between the initial site visit in July 2006 and the subsequent site visit in September 2006 drainage works had been undertaken on both Longstanton and Oakington Brooks. These works had included the removal of ditch vegetation from the central channel of both brooks, along with extensive banks site vegetation removal along the majority of Oakington Brook. This may have lead to the removal of evidence such as burrows, runs, latrines and spraints.

3.4.2 The day before the second site visit on 26 September 2006 there had been very heavy rain, which may have washed away fresh evidence such as spraints, latrines and feeding stations.

4 Results

4.1 DESK TOP STUDY

4.1.1 No update desk study was undertaken for this survey. The data received for the initial survey is identified here.

4.1.2 Natural England (NE (formerly English Nature)) has provided water vole records for watercourses on the edge of the study area. Water voles have been recorded on ditches south of Girton at OS Grid Reference TL 423602 in 1997. This is located approximately 3.5km south of Oakington village and the study area boundary. Natural England also has a record of water vole on Swavesey main drain from 1999. The Swavesey main drain is located (at its southernmost point) approximately 500m north-west of the study area at TL382677 and is linked to a ditch running parallel to Gravel Bridge Road and situated within the study area.

4.1.3 South Cambridgeshire District Council have no specific records for otters or water vole within the 2km study area, however they do state that the Longstanton ditch has historically been known to support water voles and that there are populations on this ditch as it runs through Bar Hill. The Council recommends that Otter and Water Vole surveys be undertaken on all watercourses that are likely to be affected.

4.2 FIELD SURVEY

4.2.1 The results of the otter and water vole survey are shown on **Figure 1** as a series of Target Notes for both water courses surveyed.

4.3 OTTER

LONGSTANTON BROOK

4.3.1 An otter print and potential large mammal run (TN 1) was identified along the section of Longstanton Brook as it travels south east along the outskirts of Longstanton after passing under the B1050.

4.3.2 A second otter print (TN 2) was identified further along the Longstanton Brook, close to the field margin between land owned by Peterhouse and Sivewright.

4.3.3 A third otter print (TN 3) was identified within the red line boundary currently proposed for the water attenuation feature closest to Longstanton.

4.3.4 An otter spraint (TN 4) was identified on the bank adjacent to a small bridge which crosses Longstanton brook between the current proposed sites for the two attenuation features along Hattons Road.

4.3.5 No other evidence of otters were identified along Longstanton Brook.

OAKINGTON BROOK

4.3.6 An otter print (TN 5) was identified close to the bridge crossing Oakington Brook at Phypers Farm Business Park along Dry Drayton Road.

4.3.7 Two otter spraints (TN 6) were identified on a bend in Oakington Brook running through land owned by Welney Farms (close to Slate Hall Farm).

4.3.8 No other evidence of otters was identified along Oakington brook.

4.4 WATER VOLE

LONGSTANTON BROOK

4.4.1 Water vole prints (TN 7) were identified along Longstanton Brook in an area which runs through the red line boundary currently proposed for the attenuation feature closest to Longstanton village.

4.4.2 A water vole burrow (TN 8) was identified within the same red line boundary area as TN 7. Some old feeding signs were present in the entrance to the burrow.

4.4.3 Another water vole burrow (TN 9) was identified between the area identified for both attenuation features, north of the bridge at TN 4.

4.4.4 A burrow and old feeding signs considered to be a week or two old at the time of survey (TN 10) were located adjacent to TN9.

4.4.5 A number of feeding signs (TN 11) in the form of cut stems and cuttings were identified in the vicinity of TN's 9 & 10.

4.4.6 A feeding station considered to be a number of weeks old (TN 12) was located close to TN's 9-11.

4.4.7 A water vole burrow and old feeding station (TN 13) was identified close to TN's 9-12.

4.4.8 No other evidence of water vole was identified along Longstanton brook.

OAKINGTON BROOK

4.4.9 Water vole prints (TN's 14, 15 & 17) were identified in the soft mud at the edges of the Oakington Brook within land owned by Welney Farms currently identified as a location for an attenuation feature along Dry Drayton Road.

4.4.10 A potential water vole burrow (TN 16) was identified adjacent to TN's 14, 15 & 17.

4.4.11 Water vole prints and a burrow (TN 18) were identified on the Oakington Brook adjacent to the field boundary between land owned by Dennis Freeman and Welney Farms.

4.4.12 Water vole prints (TN 19) were identified on the Oakington Brook close to the entrance driveway to Slate Hall Farm.

4.4.13 No other evidence of water vole was identified along Oakington brook.

OTHER

4.4.14 Rat droppings (TN's 20 - 24) were recorded along a small stretch of Longstanton brook.

4.4.15 Three badger setts (TN's 25 - 27) were identified along a short stretch of Oakington Brook. For further information on badgers please refer to WSPE Badger Activity Survey August 2006.

5 Evaluation and Recommendations

5.1.1 Based on the results of the otter and water vole surveys undertaken along the Longstanton and Oakington Brooks, an evaluation of the importance of the site for both species can be made in order to assess the potential impacts of the scheme.

5.2 EVALUATION

5.2.1 The levels of usage recorded for water vole and otter within Longstanton and Oakington Brooks are comparable to the levels identified during the 2003 survey. It is believed that otters utilise these water features for commuting rather than as a primary habitat due to the lack of suitable holts within the proposed site. Drainage works undertaken within Oakington and Longstanton Brooks may have affected the water vole populations currently present.

OTTER

5.2.2 The relative importance of habitat features of these water courses is difficult to assess and can vary according to many factors, such as the level of disturbance and the availability of any other suitable watercourse habitat.

5.2.3 The presence of otter evidence (prints and spraints), indicates that the Longstanton Brook has recently been used by this species.

5.2.4 The level of activity on Longstanton Brook recorded in 2006 is comparable with that recorded in 2003, when spraints and prints were recorded, this suggests that otters use the Brook on a regular basis, albeit at a low intensity of use.

5.2.5 The level of usage by otters seen in Oakington Brook was less widespread during the 2006 update survey when compared to levels seen during 2003. **Figure 2** illustrates the location of evidence of water vole and otter recorded during the 2003 survey. However, the identification of prints and spraints shows that otters are still present along this water course in low numbers.

5.2.6 The presence of the River Great Ouse within 3 km of the site and other larger and more extensive watercourses in the vicinity suggests that these areas of habitat provide more suitable areas of foraging and commuting, and would probably be the mainstay habitat, with the Brooks on site used much less. The ditch habitat is probably not sufficient to provide all the otters requirements and, although woodland and scrub areas are present adjacent to the ditches, the level of activity suggests that while part of a wider range of wildlife corridors for otters, the study area does not contain any well used holts.

5.2.7 Longstanton Brook runs, to the south west of the study area over the A14 towards the A428, past areas of plantation (Honeyhill Wood, Westerfield Orchard and Double Plantation), which would provide greater opportunity for holts. It is therefore believed that this linear habitat is utilised by this species for commuting between more ideal habitats.

WATER VOLE

5.2.8 During the 2006 survey a large amount of drainage clearance works had been undertaken on both Longstanton and Oakington Brooks and it is likely that this disturbance has resulted in reduced evidence remaining. However, where suitable habitat was identified, evidence recorded during the 2006 shows comparable levels of usage to those seen in the 2003 survey.

5.2.9 The drainage clearance works also resulted in reduced emergent vegetation present within the water courses on which the water voles would have fed, therefore reducing the suitability of these areas for this species.

5.2.10 The cycle of drain maintenance that the Longstanton and Oakington Brooks are subject to means that the water vole populations in the area are likely to be influenced by this work. However, persistence of the species at the site suggests that individual water voles retreat to unmanaged areas when works have been carried out and recolonise cleared areas when the vegetation recovers to provide sufficient cover and food supplies.

5.3 RECOMMENDATIONS

GENERAL

5.3.1 The following recommendations have been made based on the results of the survey and aim to reduce impact of any future development on otters and water voles during both the construction and the operational phase of the scheme. The recommendations made are general as the specific detail of the development scheme in relation to the two ditches is not known at this time.

5.3.2 Where possible impacts on water voles and otters should be avoided or minimised through design measures. The continued liaison between the drainage engineers and the ecologists working on the project should ensure that this is the case.

5.3.3 It is recommended that repeat surveys for water vole and otter are undertaken, by which the results can inform the adopted masterplan. Ecological input to Detailed design will be required and should be undertaken prior to the works, in specific locations, on ditches to be affected in order that appropriate mitigation can be formalised.

5.3.4 All water courses should be retained in their current form, where possible. Within the local context the brook habitat at the site is a significantly important ecological feature which provides a corridor and potential foraging habitat and has the potential, through enhancement to provide higher quality habitat for both otter and water vole.

OTTER

5.3.5 In order to maintain the habitat in a suitable condition for continued use by otters, it is recommended that a buffer strip be retained along the water courses. This should take the form of a strip of land approximately 8m wide on which the natural habitat is retained, and management work is undertaken to ensure it remains suitable for otters. The buffer should be 8m on either side of the watercourse, with the width taken from the bank top.

5.3.6 In order to keep the habitats found in the buffer zone in a suitable condition for otters it is recommended that a management plan is submitted at the detailed design application stage of the of the Off Site Infrastructure Areas (in particular Hatton's Road link and Dry Drayton Road). This plan will detail how these habitats are to be managed in accordance with best practice.

5.3.7 In addition, any roads that are to be constructed as part of the development should incorporate otter ledges under bridges if they cross the water courses. Culverting of the watercourses should be avoided, and any otter ledges should follow the specification outlined in the DMRB Nature Conservation Advice in Relation to Otters (Highways Agency 1999).

WATER VOLE

5.3.8 Water voles will confine the majority of their activity to within 5m of the water course and therefore it is highly possible to attract and accommodate water vole population within the existing water corridors if they are retained and protected from adjacent development works. This will result in beneficial biodiversity net gain which is sought for the site.

5.3.9 Current best practice guidelines in *The Water Vole Conservation Handbook* (Strachan, 2006) provides specific details of undertaking exclusion exercises.

Recommendations within this document and from Natural England should, where possible, be adhered to. The requirement to relocate, translocate or exclude water voles from an area of ditch habitat will depend entirely on the specifics of the scheme and any programme of mitigation works should be agreed with Natural England. Where possible, temporary displacement of water voles, rather than relocation by trapping should be the preferred mitigation measure, although this is only possible over very short distances (where less than 50m of ditch would be affected). Where any loss of ditch habitat occurs inclusion of similar replacement habitat of the same length, or greater, and of equal or better quality should be achieved.

5.3.10 Where substantial sections of ditch may be either temporarily or permanently affected it may be necessary to relocate water voles into entirely new sections of ditch. Water voles should only be relocated in to suitable receptor sites where there are no existing water vole populations.

5.3.11 As the lengths of ditch currently proposed to be affected are greater than 50m in length, displacement through vegetation removal is not considered a viable option (Strachan, 2006) and therefore relocation through trapping and release would be required. To reduce disturbance, timing of such an exercise should be limited to outside the main breeding season and should be undertaken between mid-March to mid-June, with the last release prior to the end of June allowing the water voles sufficient time to raise enough young to compensate for over-wintering fatalities.

5.3.12 Water voles are known to be highly loyal to their burrows and will return to them, even if there is no nearby foraging habitat. Therefore vole-proof fencing would be required around the affected area and receptor areas to prevent re-colonisation pre/post trapping.

5.3.13 Any works undertaken on stretches of ditch occupied by or providing suitable habitat for water vole will need to be undertaken under the scope of a method statement produced and agreed in consultation with Natural England. After the new legislation, as discussed in **Section 2** above, is implemented, licences may be required for works to be undertaken.

RECOMMENDATIONS SPECIFIC TO POTENTIAL WORKS

5.3.14 Where operational works may only temporarily affect ditch habitat e.g. bank modification works, it is recommenced that the habitat be enhanced after works are complete for both otters and water voles.

5.3.15 The creation of suitable banks in which to burrow and the establishment of appropriate emergent and bankside vegetation will encourage water voles and otters into new areas. Any new aquatic habitat created should be designed to maximise the value for both otters and water voles.

5.3.16 Enhancement of ditch habitat by the planting of broad-leaved emergent vegetation and grass mixes which provide food and cover for water voles should be considered along all sections of the ditches where works may have taken place. Areas of backwater channels could be created to improve the suitability of the ditches at the site for water voles and to provide habitat area that would also benefit other species of wildlife.

5.3.17 Where ditch habitat is to be significantly lost or culverted as a result of the proposals, replacement habitat of equal or greater value should be created where possible and new sections of ditch or channel should be incorporated into the final design proposals. Where new drainage channels are to be incorporated into the scheme these should be designed in such a way that the ecological benefits for otter and water voles are considered.

6 Conclusions

6.1.1 The aim of this report was to provide an update on the status of otters and water voles within the Oakington and Longstanton Brooks as previously identified in surveys undertaken in 2003.

6.1.2 Evidence of the presence of water voles and otters has been found to date within the study area (**Figure 1**). This evidence indicates that water voles are inhabiting Longstanton and Oakington Brooks and that otters are also utilising the brooks for commuting and foraging.

6.1.3 Recommendations for further survey work informed by more detailed information on the proposals have been made in order to re-assess the status of both species, to determine the impacts and to finalise mitigation measures that would be required.

6.1.4 It is not known when the new proposed legislation pertaining to water voles, which would see an increase in protection from just their habitat (current situation) to the animal itself (proposed legislation) would come into force. The Quinquennial review of the Wildlife and Countryside Act is currently being undertaken, and if the amendments suggested come into force, then mitigation including relocation and translocation, would require a licence from Natural England.

6.1.5 Species specific and general recommendations have been suggested to increase the suitability of these water courses for both otter and water vole, to maintain the attractiveness of the area for both species.

6.1.6 Where possible, existing ditches should be retained and not be directly disturbed by construction activities. Where any ditches will be either directly altered or lost to the development, specific mitigation strategies will need to be adopted. In certain instances, particularly where water vole habitat may be directly affected, an exclusion and relocation exercise may be required to allow works to proceed.

6.1.7 These types of works should always be undertaken in liaison with Natural England. The protection of both species during construction can be achieved through the implementation of best practice site procedures in accordance with the statutory requirement for these two species. Where habitat is to be permanently lost or altered new areas of water vole and otter habitat should be included in the overall scheme design and further measures to enhance the site for each species should be adopted.

6.1.8 Currently works affecting water voles and their habitats do not require a licence, and only a method statement needs to be agreed by Natural England prior to works commencing. Therefore, it may be prudent to implement advanced mitigation works at the earliest opportunity. This would negate any possible licensing issues that might be involved if mitigation is left until later stages within the phasing of the proposed development. It is acknowledged that this may not be possible due to other project constraints, such as required drainage works.

WSP Environmental Ltd



References

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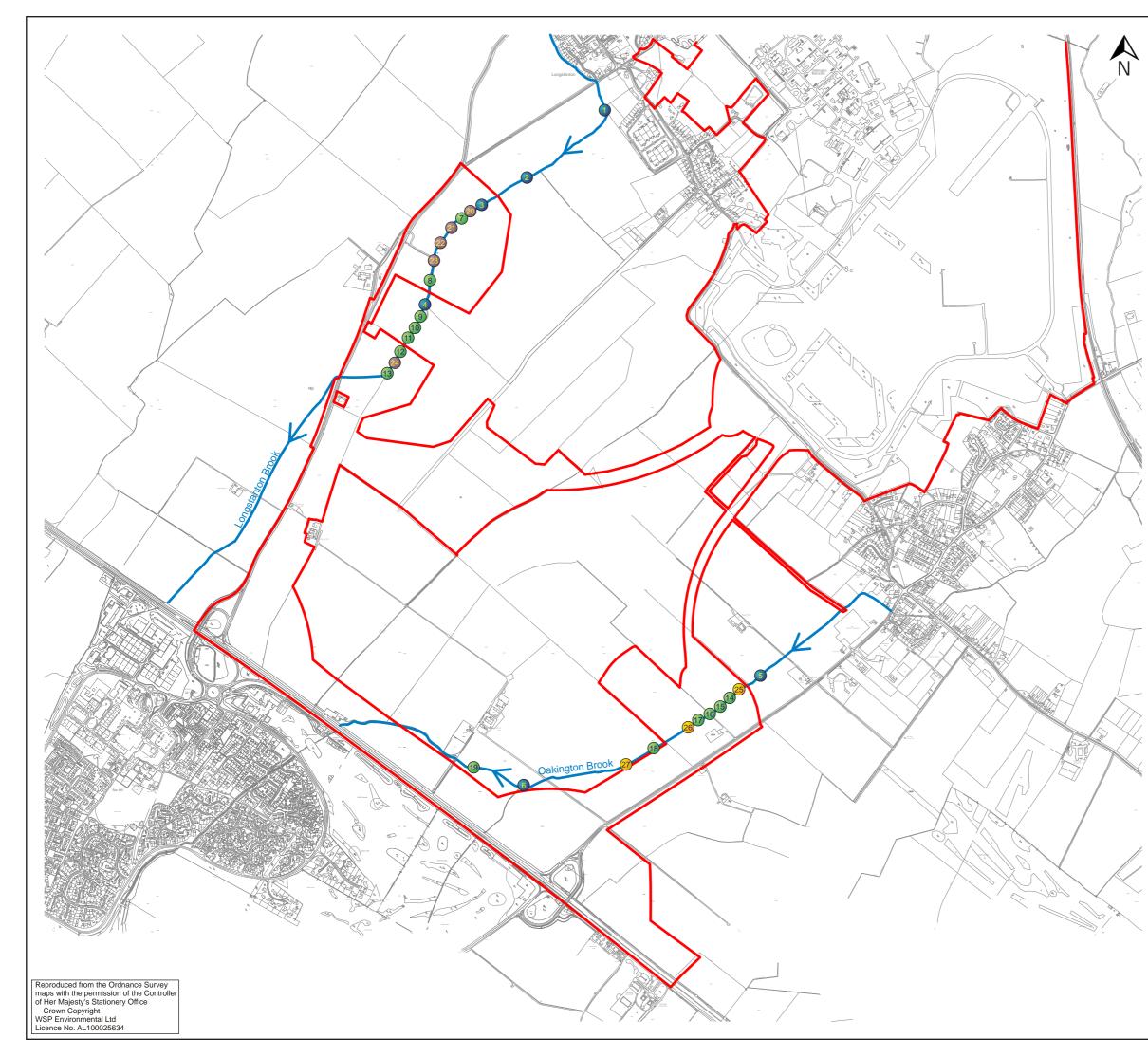
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Figure 1: Location of Water vole and Otter Evidence



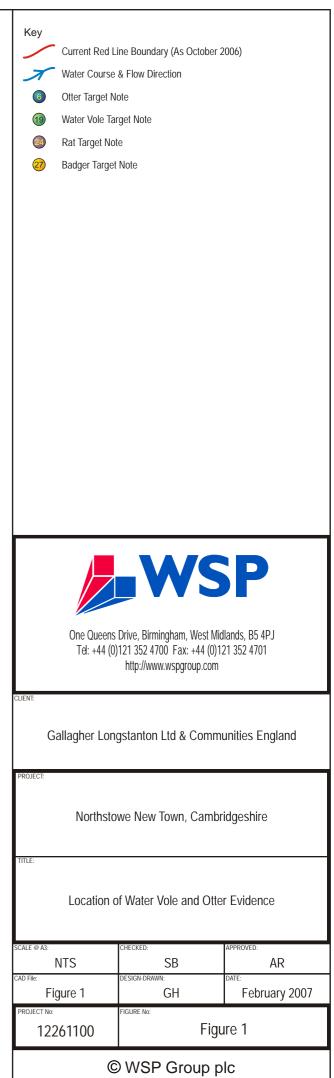
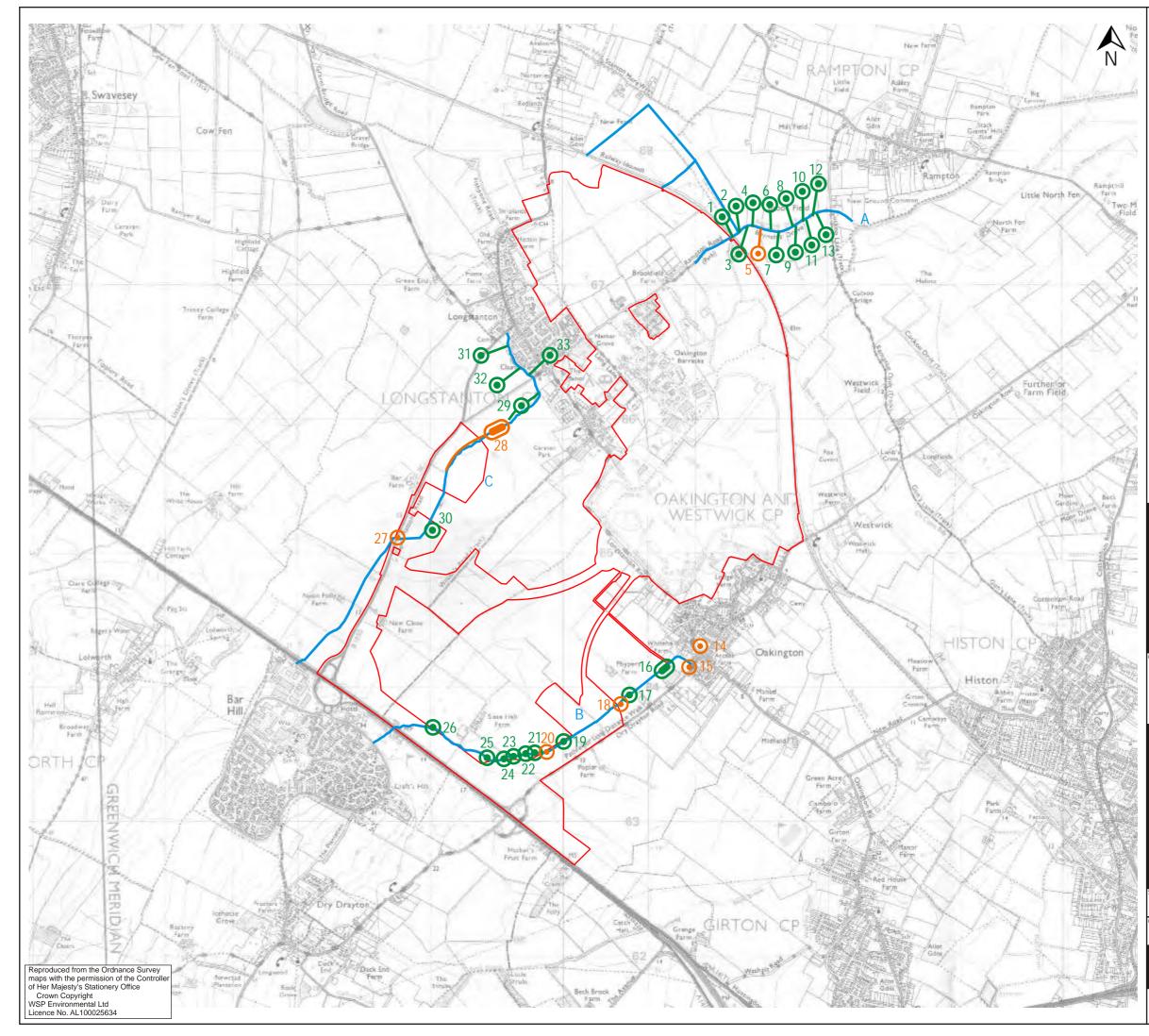




Figure 2: Location of Water vole and Otter Evidence (2003 Survey)





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Annexe A: Notes and Limitations

These Notes and Limitations cover ecological work undertaken by WSP Environmental and its sub-contractors. They are additional and complimentary to WSP Environmental's Standard Terms and Conditions, and should be read in association with them.

- 1. WSP Environmental staff and their sub-consultants have endeavoured to identify the presence of protected species wherever possible on site, where this falls within the agreed scope of works.
- 2. Up to date standard methodologies have been used, which are accepted by Natural England and other statutory conservation bodies. No responsibility will be accepted where these methodologies fail to identify all species on site. WSP cannot take responsibility where Government, national bodies or industry subsequently modify standards.
- 3. The results of the survey and assessment work undertaken by WSP Environmental are representative at the time of surveying.
- 4. WSP Environmental will advise on the optimum survey season for a particular habitat/species prior to undertaking the survey work. However, WSP cannot accept responsibility for the accuracy of surveys undertaken outside this period.
- 5. WSP Environmental cannot accept responsibility for data collected from third parties