



KIG Water Vole Survey.

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Figure 1: Location of watercourses and survey results





1 Introduction

1.1.1 This report details the findings of a water vole survey undertaken in September 2008 at the proposed site for the Kent International Gateway (KIG) development (National Grid Reference: TQ815 155). The information within this report supplements the baseline ecological data provided within the Ecological chapter of the Environmental Statement, which was submitted in support of the proposed KIG outline planning application.

1.1.2 Water voles were assessed within the Ecological chapter of the Environmental Statement as being likely absent from the site. This was based on an appraisal of the habitats present and the absence of water vole evidence observed during the Extended Phase 1 Habitat Surveys in 2004 and 2005.

1.1.3 An additional survey has been undertaken in 2008 in recognition of recent revisions to the protected status of water vole (see below), recent changes in land use and a request for systematic surveys for water vole made by Maidstone Borough Council (Rob Jarman, 21 December 2007). The methodology and findings of this survey are presented below and should be read in conjunction with Supplementary Ecological Information Note 1: Water courses (partially reproduced here for ease of reference).

Recent legislative changes

1.1.4 In 2007 the protected status of water vole was revised. This species is now fully protected by the Wildlife and Countryside Act 1981 which means that it is an offence to kill, injure or take water voles (including trapping), and to obstruct, damage or destroy their burrows. There is no facility under the legislation to licence development works.



2 Methodology

2.1 DESK STUDY

2.1.1 As part of the Ecological Impact Assessment undertaken by WSP and reported within the Ecological chapter of the Environmental Statement (WSP, 2007), a desk study was undertaken. This involved consultation with Kent and Medway Biological Records Centre and the Environment Agency. Details of protected species records, including water voles, from within a 2km radius of the site boundary were requested and records of water vole were returned from two locations in the local area. These were;

- to the south-east of the site, associated with the River Len Mill pond and Carr SINC approximately 2.2km as the crow flies from the nearest suitable on-site watercourse (record of presence provided by the Environment Agency, but no associated date); and
- in open water surrounding Leeds Castle approximately 1.5km as the crow flies from the nearest suitable on-site watercourse (recorded 2005).

2.1.2 These recorded populations are over 4km from the on-site watercourses if measured along the river corridor, and the river system is fragmented by at least 5 culverts and one sluice gate along this corridor.

2.2 FIELD SURVEY

Survey Aim and Extent


2.2.1 The aim of the survey was to update the previous survey findings, which are now over 3 years old, and to align the methodology with current best practice survey guidelines to improve confidence in the assessment of water vole status along the watercourses within the KIG application boundary.

2.2.2 There are three watercourses on the site, all of which are drainage ditches along arable fields. The survey covered the full extent of the westernmost watercourse on the site (watercourse 1, see Figure 1) and the northern half of the central watercourse on the site (watercourse 2, see Figure 1). Land to the south of the railway line did not form part of the survey because permission to access the land was not granted. The third watercourse is not suitable for water voles.

2.2.3 Detailed descriptions and photographs of the three watercourses can be found within the Supplementary Ecological Information Note 1: Watercourses (WSPE, September 2008). The suitability of the watercourses for water vole is described within Note 1 and repeated below for ease of reference.

2.2.4 The three watercourses on site do not provide optimal habitat for water vole; more specifically;

- Watercourse 3: is not suitable for water vole due primarily to the heavily shaded nature of the banks by trees and the absence of in-stream vegetation for the voles to eat and shelter within. The banks are potentially suitable for burrowing between the tree roots present along 90% of the ditch, but the substrate becomes gravelly and banks become very shallow (less than 20cm) at the northernmost end of the ditch, which would prevent burrowing. Furthermore, ploughed arable fields on either side of the banks means that there is little vegetative cover close to the watercourse. The absence of water along many parts of this ditch (approximately 50% of the ditch in June 2008) exacerbates the low suitability of this ditch. This ditch is not suitable for water voles due to the seasonality of the watercourse, the very restricted availability of food items for year round survival and the heavily shaded nature of the banks.
 - Watercourses 1 and 2 do provide some very limited opportunity for water voles; Watercourse 1 has steeply sloping, vegetated earth banks suitable for burrowing. These banks and channel of the watercourse become very densely covered in bramble and nettle vegetation by late summer/autumn, such that the bramble in particular out-shades almost all other vegetation for over 50% of the length of the ditch, severely restricting the abundance and distribution of edible food plants for water voles. The northern section of watercourse 2 is also dominated by bramble and nettle, but has shallower banks which are lined with a synthetic membrane, restricting burrowing opportunities. Both ditches are shallow and in many places they are too shallow and/or too narrow for water vole to swim in, reducing the capacity for water voles to escape predation. In addition, the 'flashy' nature of these drainage ditches, (both of which receive run-off from the adjacent motorway) along with their location amidst
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intensively farmed arable land further reduces the suitability of the ditches for water vole. While it is possible that water voles could use watercourses 1 and 2, it is unlikely due to the sub optimal nature of the habitat, the seasonality of the watercourse and restricted availability of food items for year round survival. All these factors together with the lack of connectivity to any nearby water vole population and the lack of field evidence gathered during the extended Phase 1 habitat surveys has led to an assessment of likely absence of water vole from these two watercourses.

- A significant land use change has occurred at the southern section of watercourse 2 since 2006. This area was previously cattle grazed and as a result the watercourse was heavily cattle poached and largely devoid of marginal or in stream vegetation. This land has subsequently been laid to arable farming and the removal of cattle has enabled vegetation (predominantly grasses and rushes) to become established along the banks of the ditch. This section of ditch is now considered to be suitable for water vole to some extent; supporting sufficient vegetation to support water voles, but with very shallow banks and with arable planting/ vehicle tracks running close to the top-of-bank. In addition, the ditch remains narrow and shallow and is likely to be seasonally dry, which does not in itself preclude water voles from being present but does reduce the overall likelihood that they would use this ditch.

Survey Methods

2.2.5 The survey was lead by a Senior Ecologist from WSP Environmental who is a full Member of the Institute of Ecology and Environmental Management and who has five years of ecological consultancy experience which includes both professional training in water vole survey techniques and practical experience of the assessment of water vole populations in the field. The Senior ecologist was assisted by a Graduate Ecologist from WSP Environmental with one year of field experience in water vole survey. The survey was undertaken with reference to the Water Vole Conservation Handbook, (Strachen and Moorhouse, 2006).

2.2.6 The watercourses were searched for evidence of water vole such as;

- Feeding signs, including feeding stations;
- Latrines and individual droppings;
- Burrows, nests and feeding lawns (areas of shortly-grazed grassland at the entrance to a burrow);
- Footprints and obvious runways in vegetation; and
- Distinctive 'plop' sound of water voles entering the water.

2.2.7 The survey was carried out on 17 September 2008 during dry weather and the water levels were suitably low allowing good visibility of the banks. Surveys were conducted from both banks to maximise views of the banks. Where continuous access to the bank could not be achieved (due to very dense bramble vegetation), a point survey methodology was adopted, whereby surveyors pushed through vegetation to inspect the banks at 2 metre intervals.



3 Results

3.1.1 No evidence of water voles was observed during the surveys.

3.1.2 Evidence of rats was noted at several points along both watercourses and this was always in the form of droppings deposited singly or in pairs along runs in the vegetation. In addition, one burrow was observed along watercourse 1 at TN1 (see Figure 1). The burrow is on the western bank of the watercourse at the top of the bank, which is a steeply sloping grass bank at this location. The burrow is approximately 2m above water level, and oval in shape (taller than it is wide). A rat dropping was found in a vegetation run leading from the burrow and there was no eaten vegetation surrounding the burrow (i.e. no 'grazed lawn'). Only one burrow is present in this location. Due to the shape of the burrow, complete absence of any water vole signs and presence of a rats dropping in a run leading from the hole, this burrow is positively identified as a rat hole.

4 Conclusion

4.1.1 The findings of the 2008 water vole survey have confirmed that the original assessment of 'likely absence of water vole' from the site (as presented within the baseline ecological section of the Environmental Statement) is correct. No field evidence of water vole has been discovered during the systematic survey of 2008, or any of the previous site survey visits (e.g. the Extended Phase 1 habitat Surveys). Furthermore, the habitat provided by the watercourses is of very limited suitability for water vole, with very few burrowing opportunities, poor availability of food plants, very shallow and widely fluctuating water levels influenced by drainage from the M20 and a lack of connectivity to suitable riparian or terrestrial habitat (being set within large arable fields and fragmented from off-site watercourses by culverts passing under the M20, the railway and the A20).

4.1.2 Because recent land-use changes have altered the character of the southern section of watercourse 2 since its assessment for the Environmental Statement, and because access was not granted to this location during the 2008 water vole survey, water vole cannot be confirmed to be 'likely absent' from this location. However, water vole have historically been absent from this stretch of water (which was heavily cattle poached and grazed on both banks for the duration of 2005 and 2006). Furthermore, the current sub-optimal nature of the habitat, combined with the absence of water voles from the local area, lack of connectivity to off-site watercourses and intensively farmed nature of the immediately surrounding habitat (arable farming) make it highly unlikely that water vole are present along this part of the water course.



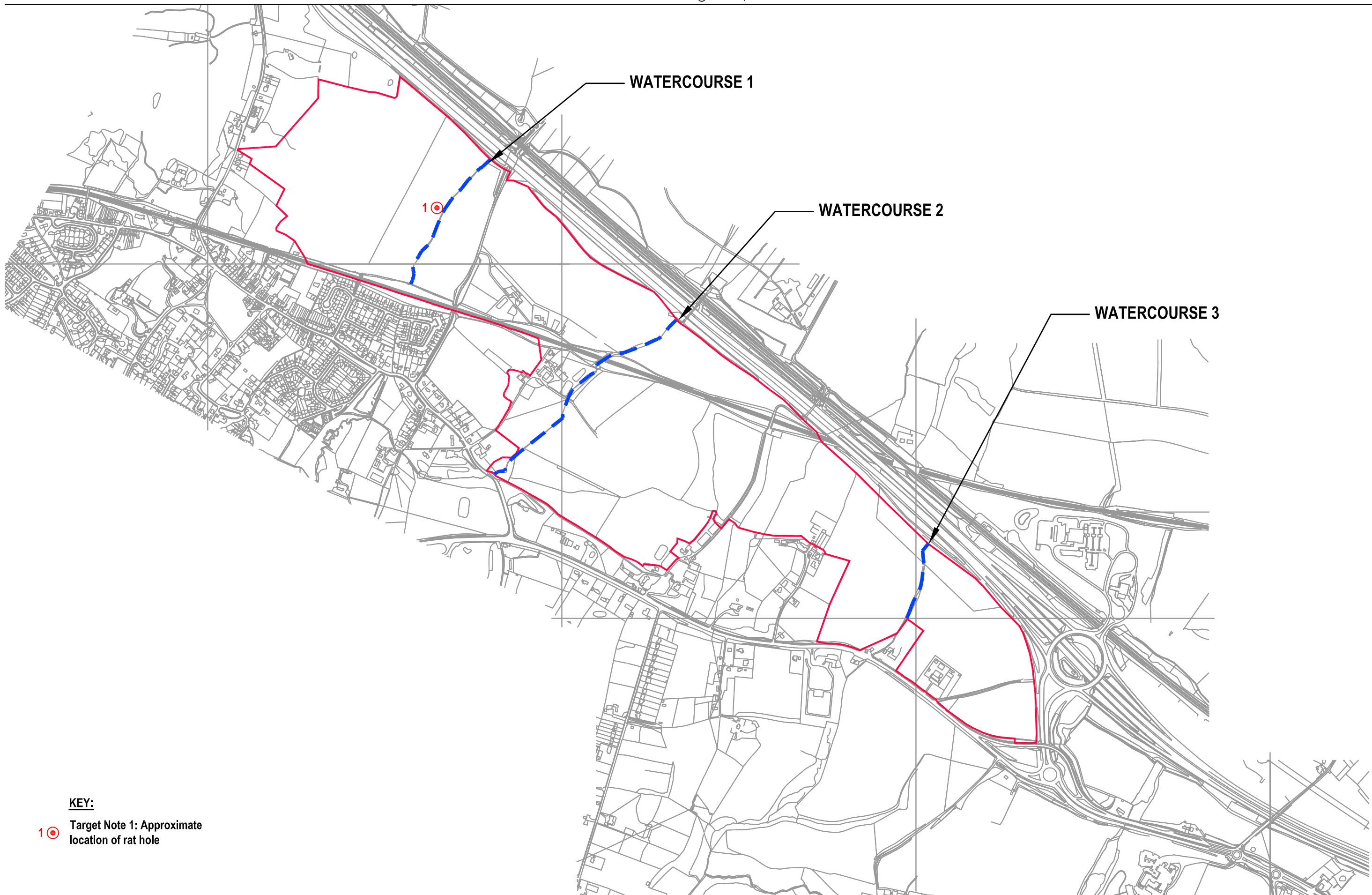
References

Strachan and Moorhouse (2006) *Water Vole Conservation Handbook* (second edition). Wildlife Conservation Research Unit, Oxford.

WSP Environmental Limited (2007) Chapter 8: Ecology and Nature Conservation in the Kent International Gateway Environmental Statement.

WSP Environmental Limited (2008) Kent International Gateway. Supplementary Ecological Information Note 1: Watercourses.





KEY:

1 Target Note 1: Approximate location of rat hole