



Water Vole Survey

Report Prepared on behalf of Claire Ray- Langstone Estates
For the site of: Southmere Farm, Langstone, Hampshire PO9 1QX

18/06/18

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Water Vole Survey

EXECUTIVE SUMMARY

Background to Survey

The client, Claire Ray of Langstone Estates has commissioned Arbtech Consulting Ltd. to undertake a water vole *Arvicola amphibius* survey at Southmere Farm, Langstone, Hampshire PO9 1QX.

The development proposals will involve demolition of all existing buildings to redevelop the site for housing - 3 x 4 bedroom detached houses, 2 with detached garage, 1 with integral garage.

On the basis of recommendations set out in a Preliminary Ecological Appraisal (PEA) carried out by Arbtech (1st March 2018), Arbtech Consulting Ltd has conducted survey work with the following aims and objectives:

1. Determine the presence/likely-absence of water voles within the construction footprint, and up to 30m upstream and downstream.
2. Map all field signs, including water vole burrows, feeding signs and spraints.

Summary of Recommendations

If the survey determines that there is a likely-absence of water vole on site it is likely that no further evaluation will be necessary to achieve planning determination. However, if it is assessed that water voles are present on site or within the zone-of-influence of the proposals then further scientific investigation may be required and it is likely that some form of mitigation/compensation will need to be offered to ensure compliance with statutory wildlife legislation. Furthermore planning authorities are now under an obligation to seek enhancements (positive improvements) for biodiversity through the planning system.

In the case of presence, it is likely that the proposals will need to be permitted by a Conservation Regulations Licence to be obtained from Natural England, once planning approval is granted.

Sufficient information will need to be provided so that the Local Planning Authority (LPA) can make a consenting decision in accordance with the obligations placed upon it under The Conservation of Habitats and Species (Amendment) Regulations 2012.

Taking into consideration the desk study and site survey findings, this report concludes that the proposed development will result in no significant impacts on water voles, and it is assessed that no further survey or licensing is necessary with regard to this species. Precautionary working methods will be put in place as water voles are known to be in the local area, even if burrows and feeding stations are not present on site.

1.0 The Company and Contact Information

Established in 2005, Arbtech Consulting Limited provides arboricultural and ecological consultancy services in respect to planning and development, throughout the UK.

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2.0 The Surveyor

The lead surveyor and principal author of this report is Natalie Evans BA (Hons), MA, MRSB

4.0 The Client

The client is Claire Ray-Langstone Developments

5.0 The Site of Proposed Development

The development proposals will involve demolition of all existing buildings to redevelop the site for housing - 3 x 4 bedroom detached houses, 2 with detached garage, 1 with integral garage.

The site is currently a group of farm outbuildings with a stream and woodland to the west.

6.0 The Survey Brief

The client commissioned Arbtech Consulting Ltd. to undertake a water vole survey in accordance with current best practice guideline standards. The aim of the survey was to confirm the presence/likely-absence of water voles in the survey area, and to identify the requirement for further assessment or mitigation measures.

7.0 Limitations

This survey provides a 'snap-shot' of the assessed habitat and wildlife value of the site at the time of survey only.

Refresher surveys may be required to support a Planning Application or to confirm likely absence, following a period of 2 years from the date of the survey.

The survey was somewhat constrained by the steep and overgrown nature of the banks, and the combined depth of the stream in some areas which meant close inspection was not always possible. However, when survey from water level had to be abandoned due to depth, the survey was carried out with binoculars from the top of the banks.

The stretch of stream to the north of the development could not be accessed as this lies within a private residence.

8.0 Data Searches

The survey preparation for grid square SU 7147 0527 has been informed by the use of a desk study utilising aerial images, the MAGIC database and other freely available information.

Biological records data has been obtained from Hampshire Biodiversity Information Centre (HBIC) from within a 2km radius of the site.

9.0 Dates of the Survey

The surveys were conducted on 10th May 2018 and 12th June 2018, within the suitable survey window for water voles.

Table 1: water vole survey dates and weather conditions

Date		Summary conditions	Cloud Cover/oktas	External Mean Temperature	Precipitation
10 th	May	Dry and sunny, rain the previous night	20% cover	16°C	None
12 th	June	Dry and sunny, no recent rain	10% cover	19°C	None

10.0 Seasonality

Water vole surveys are best conducted during the period March to October. Surveys may be affected by vegetation cover and adverse flow regimes.

11.0 Conservation status and legislation

Water Vole Ecology and Status

The water vole is adapted to living in burrows and used to occur on the majority of the river banks throughout Britain, favouring sites with lush waterside vegetation for food and shelter.

A series of nationwide surveys, have indicated that the continued decline in the water vole population since 1990 has developed into a catastrophic population crash.

The main cause of this decline was considered to be from changes in agricultural practices and river habitat management. Consequentially habitat degradation and loss resulted in isolation and fragmented populations of water voles in Britain. This increased the predation risk, especially from the introduced American mink *Mustela vison*.

Legislation protecting water voles

The water vole 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) water voles;
- Intentionally or recklessly damage, destroy or obstruct access to any structure or place used for shelter or protection;
- Intentionally or recklessly disturb water voles while they are occupying a structure or place used for shelter or protection.

Wherever development works are likely to affect habitats known to support water voles, Natural England (NE) must be consulted. It must be shown that means by which the proposal can be re-designed to avoid contravening the legislation detailed above have been fully explored e.g. the use of alternative sites, appropriate timing of works to avoid times of the year in which water voles are most vulnerable, and measures to ensure minimal habitat loss.

Conservation licences for the capture and translocation of water voles may be issued by NE 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. The licence will then only be granted to a suitably experienced person if it can be shown that adequate surveys have been undertaken to inform appropriate mitigation measures. Identification and preparation of a suitable receptor site will be necessary prior to the commencement of works.

12.0 The Survey Methodology

The aims of the survey were:

- To identify any constraints posed by the presence of water voles to the development proposal;
- To map the water vole distribution within the development site;
- To provide an evaluation of the water vole population and an understanding of how the site is used to inform its value for this species; and to
- Identify any appropriate measures to mitigate the occurrence of negative impacts upon the local water vole population.

Water Vole

Field surveys for water voles followed the standard survey methodology as outlined in the Water Vole Conservation Handbook (Strachan & Moorhouse, 2006). The field survey consisted of a walkover search for water voles and their field signs

In summary, the fringing banks were intensively examined for the field signs of water voles (which included latrines (distinct area of droppings), burrows, footprints and feeding remains, often left in discrete piles frequently accompanied by droppings). Such field signs are summarised below. Where practicable the watercourse was examined from within the channel itself. In the event of dense vegetation or other obstruction disabling a thorough

search, a series of spot checks were employed at every available access point along the fringing banks. Where present, the number of latrines and burrows found were tallied to give an indication of water vole activity. In addition to the water vole, the occurrence of two other important riparian mammals was also taken into consideration; namely American mink and brown rat.

The presence of the water vole can be determined from its droppings, which provide the most distinctive field sign. They are roughly 8-12mm long and 4-5mm wide, cylindrical with blunt ends. Their colour ranges from black, brown and green, depending on age, diet and water content. Most droppings are deposited on latrine sites, which can be found at favoured areas where the voles leave and enter the water, at discrete sites near to their burrows and are used to mark territorial boundaries. Breeding voles use regular latrine sites along water margins, and often consist of a flattened mass of old droppings with fresh ones on top.

Water vole burrows have an approximate hole size of 4-8cm. The burrows can appear as a series of holes along the water's edge, some may open below the water line, whilst others can occur amongst the vegetation up to three metres from the water. Land holes may also show evidence of a closely cropped grazed lawn, where a female water vole has gnawed the vegetation short within easy reach of the burrow.

Water voles often bring food items to favoured feeding stations along the water's edge and at burrow entrances. Feeding remains consist of neat piles of chewed off lengths of vegetation. These grazing remains typically measure 8-10cm, showing two large incisor marks. Grazing remains also double as food caches and are often accompanied by droppings.

Imprints from water voles show four digits from the fore foot and five digits in the hind foot. The imprinted digits form a star shape of splayed-out toes. Water vole tracks are very difficult to distinguish between tracks made from the brown rat, particularly young animals. Generally, water vole prints tend to be much smaller than rat prints, but it is important to note that they cannot always be used as reliable indicators in the absence of other water vole field signs.

Water Vole and Latrine Densities

Latrine counts not only provide a useful index of water vole activity they can also give an indication of the strength of the water vole colony. A predictive equation has been established to estimate the numbers of water voles from the number of latrines found in a given area (Morris *et al.* in Strachan, 1998):

$$y = 1.48 + 0.683x$$

[where y = number of water voles inhabiting a stated length of waterway, and x = number of latrines counted in that same length].

The original research leading to the equation was not aimed at producing a formula for estimating population density from latrine density. As a result it may not be applicable to all habitats and situations where water voles occur, but it still gives a useful index of water vole densities, particularly where mitigation is required.

Survey Area

The principal survey area has covered Langstone Brook from grid reference SU 7144 0520 to SU 7144 0531.

13.0 Survey Results

Desk Study

Biological records data has been obtained from HBIC and is summarised below:

Table 2: Summary of water vole records found within 2km of the proposed sites boundary.

Common Name	Scientific Name	No. of Records	Closest record	Comments
Water vole	<i>Arvicola amphibius</i>	32	420m north up stream	The nearest record has direct connectivity to the site. Most records are from beyond the A27 to the north east.

Habitat Description

Adjacent to the site to the west there is a stream (Langstone Brook) which flows south into the designated sites to the south associated with Langstone Harbour and surrounding habitats. The banks are vegetated with bramble *Rubus fruticosus*, willow *Salix* sp. and alder *Alnus glutinosa*. The stream lies within deciduous woodland priority habitat which extends out to the west and is partially within the site boundaries. Emergent vegetation in the stream includes water starwort *Callitriche stagnalis*, brooklime *Veronica beccabunga* and water mint *Mentha citrate*. The water appears clear and unpolluted.

Water vole

Although the habitat provides the necessary resources to support a water vole population, no evidence of water voles was found. The banks were searched both from water level and from the top of the banks, and no latrines, feeding stations, footprints, burrows or pathways were found. Water voles are known to be in the area and are likely to pass through the site to access surrounding territories and habitats.

14.0 Assessment, Conclusions and Recommendations

The survey was somewhat constrained by the steep and overgrown nature of the banks, and the combined depth of the stream in some areas which meant close inspection was not always possible. However, when survey from stream level had to be abandoned due to depth, the survey was carried out with binoculars from the top of the banks.

The stream to the north of the site could not be accessed as this lies within a private residence. Despite these limitations, the survey is considered sufficiently robust in order to determine the likely absence of water voles on and around the site because sufficient points of access could be gained to representatively sample the extent of the watercourse.

Recommendations

Precautionary working methods will be put in place:

- There will be no development activity within 8m of the stream
- Vegetation clearance on site will be undertaken under ecological supervision
- If any water voles are found present then work must stop and a licence will be required from Natural England to proceed.
- All vegetation must be strimmed/cut to around 300mm. A second cut to 150mm should then be taken 24 to 48 hours later. All arising should be removed.
- The top soil within the works area should then be removed using a long-armed excavator with a toothed bucket.

Environment Agency pollution prevention guidelines will need to be followed to protect the water course during the development.

15.0 Document Production and Approval Record

Status	Issue	Author/reviewer	Date
Draft	0	Natalie Evans BA (Hons), MA, MRSB	14/06/18
Reviewed	0	Chris Formaggia BSc (Joint Hons) CBiol CEnv MCIEEM MRBS VR - Principal	18/06/18
Final	1	Natalie Evans BA (Hons), MA, MRSB	18/06/18

16.0 Limitations

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Appendix I - Field Survey Map



Appendix II - Proposed site plan





Figure 1: stream looking north



Figure 2: stream looking south