

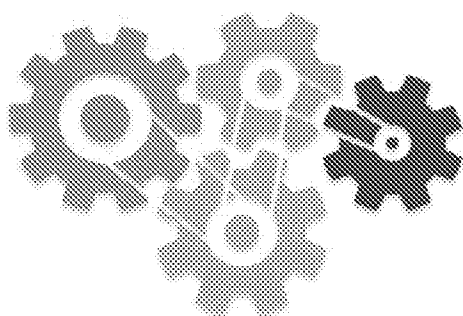


Land at Tars
Farm,
Barnham,
West Sussex,
PO22 0AW

Water Vole Survey Report

June 2018

Ref: 17-3878



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<i>Revision</i>	-	<i>B</i>
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Executive Summary

Syntegra group were instructed by Mr Patrick Barry of Nova Planning on behalf of the client, Mr Paul Voller, to undertake a water vole survey at land known as land at Tars Farm, Barnham. With the aim to determine the presence or likely absence of water vole on site.

The site is adjunct to an active agricultural site that includes a livery, agricultural buildings, a farmhouse and grazing land (horses) and minor roads. The site is currently used as a hard standing for parking and a barn. The proposed works are to enlarge the hardstanding towards the bank. A previous PEA survey identified potential habitat for water voles.

Water vole (*Arvicola amphibious*) are protected under Schedule 5, Section 9 of The Wildlife and Countryside Act 1981 (as amended).

A walkover survey was carried out on 29th of June by Trish Holden MSc MCIEEM, who has undertaken various surveys and training in line with the water vole conservation handbook by Strachan *et al* (2011). In line with best practice, an assistant, Veerle Herzberg, was present for health and safety purposes. The survey was carried out after a prolonged period of dry weather and that maximizes the chances of finding field signs.

From the proposed extension of the hardstanding a total of 50m of the bank was surveyed with 25m each way. The bank top near the hardstanding and the stream was surveyed, both upstream and downstream, with a 2m buffer.

Land at Tars Farm supports a population of water vole along the stream. The site is considered to be of **high** value for this species, and care will need to be taken when designing the development to ensure it does not adversely affect the water vole population.

Recommendations have been made for site enhancement in order to maintain and increase the population on the site. Additionally, the enhancement recommendations provide for biodiversity gain on the site as required under the National Planning Policy Framework. Therefore, with a maintained buffer of 5 meters from the bank along with enhancements, the scheme is entirely deliverable.

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1. INTRODUCTION AND AIMS

Syntegra group were instructed by Mr Patrick Barry of Nova Planning on behalf of the client, Mr Paul Voller to undertake a water vole survey at land known as Land at Tars Farm, Barnham with Grid Reference SU 959041

The site is part equestrian and part agricultural use. The site directly adjacent to the stream contains hard standing areas currently used for access and parking, a stable block and pasture land. The proposed works are to create a drainage attenuation pond between the proposed residential development and the stream.

The objectives of this water vole survey were to:

- determine the presence or likely absence of water vole on the site;
- If present, the survey will have the following aims;
 - Assess the status of the populations and the proportions of the population likely to be affected
 - Assess the value of the habitat affected, as well as that adjunct to the site, and provide a comparison between the site;
 - To map the relative value of the habitat and the relative density of water voles at a scale which would inform either the location of the development to minimize impacts
 - Provide a baseline for monitoring the success of any mitigation plans implemented
- make recommendations for enhancements on site;
- identify any legal and planning policy constraints relevant to nature conservation which may affect the development.

The site survey was undertaken by suitably qualified ecologist Patricia Holden MSc MCIEEM and her assistant, Veerle Herzberg, on the 29th June 2018. The weather conditions were suitable with no overcast with a slight breeze.

2. Methodology

Desk study

A designation search for the water vole was used, up to 2 km from the Site using the Multi Agency Geographic Information for the Countryside (MAGIC) website (www.magic.gov.uk). A record search

using NBN Atlas (formally known as database) was also used to inform the surveyor if populations are present within the wider landscape, however, due to copyright, the results cannot be replicated into the report. Please note that reviewing the atlas is not in breach of their set terms and conditions and no records are disclosed within this report.

Field Study

A walkover survey was carried out on 29th of June by Trish Holden MSc MCIEEM and her assistant Veerle Herzberg, in line with the water vole conservation handbook. The survey was carried out after a prolonged period of dry weather and that maximizes the chances of finding field signs.

From the proposed extension of the hardstanding a total of 50m of the bank was surveyed with 25m each way. The bank top near the hardstanding and the stream was surveyed, both upstream and downstream, with a 2m buffer.



Figure 1: Surveyed Area in Red

Any field signs were noted and mapped, these include:

- Sightings of live or dead water voles;
- Faeces and latrines;
- Feeding stations (with characteristic piles of clipped vegetation);
- Burrows;
- Footprints;
- Runways (low tunnels in the vegetation)

Water vole presence can also be confirmed by the characteristic ‘plop’ of a water vole entering the water or sightings.

3. Constraints

The survey was undertaken during the optimal period in the year for both Water Vole and botanical surveys. Although some short-lived annual plant species may not have been identified. Therefore, the timing of the survey does not significantly impact upon the findings detailed in this report.

The stream inspections were undertaken during the active period by water vole (Strachan *et al* 2011).

Due to overgrown vegetation along both sides of the bank, locating of burrows higher than 50 cm above the water bank was very limited.

Due to the activity of the water voles being very close to the water levels the latrines and footprints were harder to identify. The count of older droppings in latrines was difficult and sometimes educated estimations were made.

The NBN gateway is useful to inform the ecologist of known records of species within a gridsquare area, however these often do not include local record centres records and due to copyrights, the information cannot be replicated in the report. It is always advised that a record search is commissioned from a local biological records centre as this information is useful to inform what species have been recorded within a 2km radius of the site and aid in informing precautionary and/or mitigation measures at the site.

The client is responsible for reading and understanding the advice given in this report. The client must ensure that, where recommended, mitigation is followed through.

4. Results

Syntegra group undertook a Preliminary Ecological Appraisal on the 23rd of February 2018 and noted potential water vole signs, such as potential burrows within the bank sides. The survey was taken outside of the optimal survey season and other field signs were lacking.

Desk Study Results

There are no national/international or local sites designated for water voles (*Refer to Figure Two*).

MAGIC

Land at Tars Farm Magic map

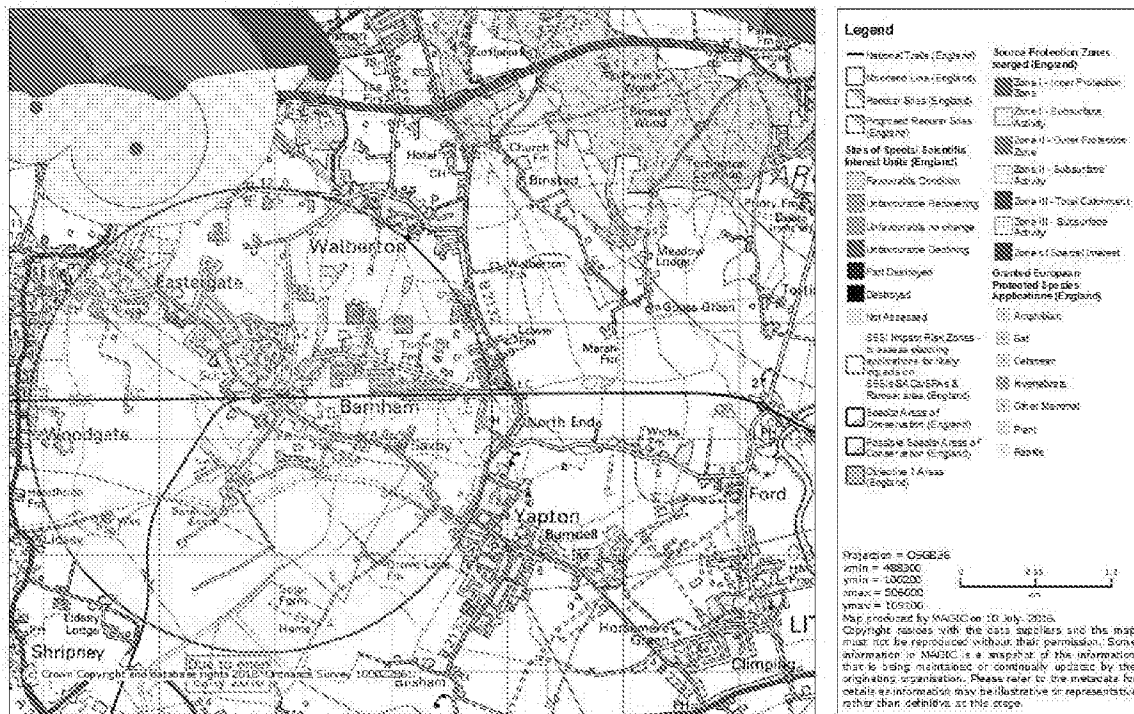


Figure 2: Results of The MAGIC MAP search, 2 km radius

Vegetation

There is one broad habitat type found within the site and within the stream bank, is:

- Hard Scrub

The habitat type is described below:

Scrub

The survey area was divided into 2 areas; area A and area B (See map 1). The stream was surrounded on both sides by shrub. Species in area include: False/purple nettle (*Lamium purpureum*), giant hogweed (*Heracleum mantegazzianum*), thistle (*Asteraceae sp.*), elder (*Sambucus sp.*), bramble (*Rubus sp.*), horse tail fern (*Equisetum sp.*), sticky weed (*Galium aparine*), water drop wart (*Oenanthe sp.*), water crowfoot (*Ranunculus aquatilis*), cocks foot grass (*Dactylis sp.*), brome (*Bromus sp.*), bindweed (*Convolvulaceae sp.*) and dock (*Rumex obtusifolius*). Species in area B include: purple loosestrife (*Lythrum salicaria sp.*), thistle (*Asteraceae sp.*), bramble (*Rubus sp.*), sticky weed (*Galium aparine*), stinging nettle (*Urtica dioica*), broom grass (*Thysanolaena sp.*), bind weed (*Convolvulaceae sp.*), cocks foot (*Dactylis sp.*), dock (*Rumex obtusifolius*), water crowfoot

(*Ranunculus aquatilis*), water drop wort (*Oenanthe sp.*), sedge pendulous (*Carex pendula*), red champion (*Silene dioica*) and typha (*Typha latifolia*).

Field signs

The survey identified latrines, footprints, likely paths, path, feeding stations, burrows and runways on the eastern side of the stream (see Figure 3 below).

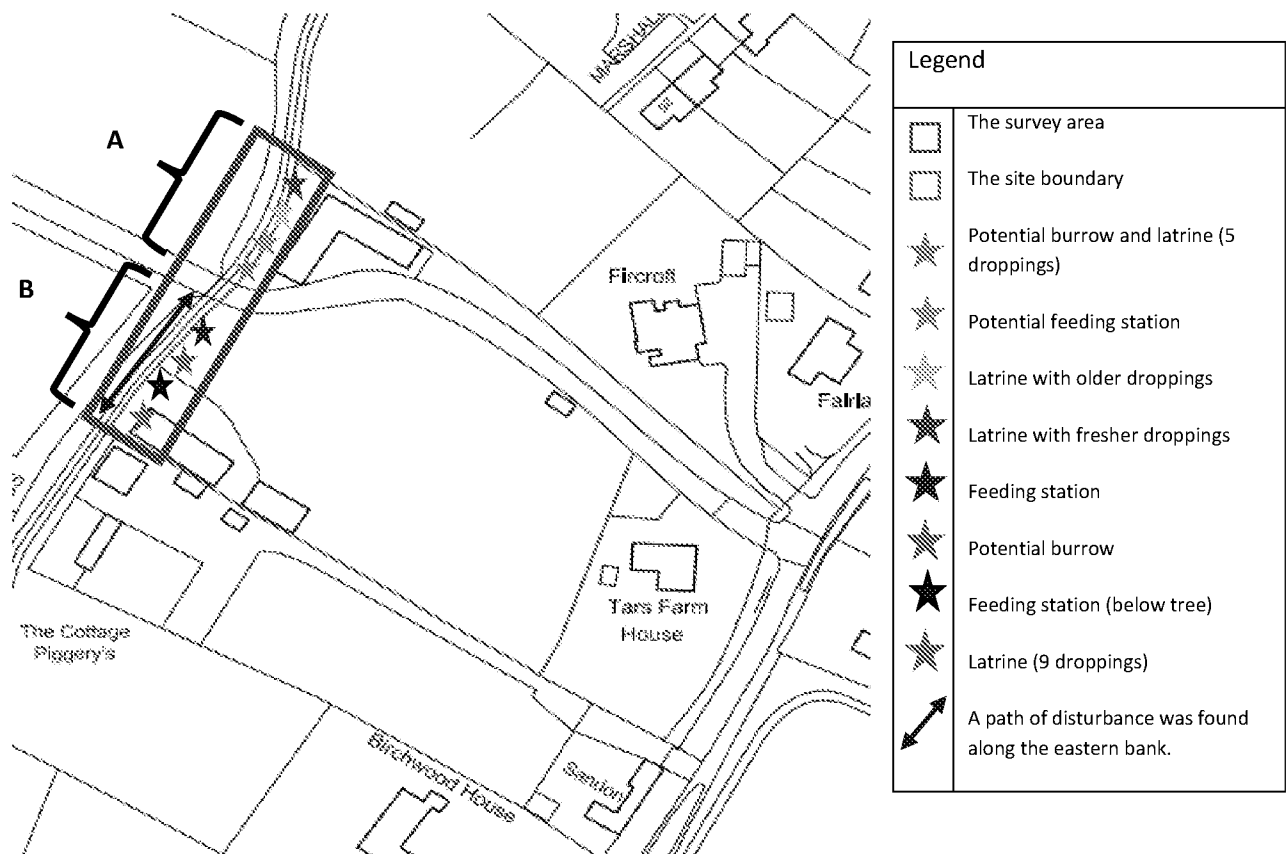


Figure Three: Confirmed Field Signs Within the Surveyed Areas

It is possible that some of the burrows identified could be used by the brown rat (*Rattus norvegicus*), however it should be assumed that water vole is present along the banks of the stream on site, given the identified signs including feeding stations and latrines.

The current habitat is sub-optimal as the preferred species of vegetation are not present and the boundary vegetation is heavily managed.

5. Impact Assessment and Recommendations

The stream as it runs through the land at Tars Farm site supports a population of water vole. This species and its habitat is protected by law. The site is important for water vole, which is a nationally rare species, listed on the UK BAP and therefore a Section 41 species. Significant declines in water vole populations have been noted throughout the whole of the UK and water voles are listed as a priority species in the county of Sussex. Therefore, Land at Tars Farm is of high ecological importance for this species. The site has been identified as of **Local** Importance for Water Vole.

Potential burrow were identified along the bank. Due to the overgrown nature of the bank, including nettles and bramble, a full detailed inspection was not achievable to completely confirm the use by water vole. However, the key characteristics of water vole borrows were present.

It is assumed, based on the potential burrows and latrines, that there is one, possible breeding, female within the site boundary. However, this could not be confirmed due to the dense overgrown vegetation.

The site proposals include work outside of the bank boundary. Works proposed outside the 5 metres buffer include the creation of an attenuation drainage pond. It is not considered that the proposed works will cause a disturbance with precautionary and mitigation measures in place.

A buffer of 5 meters on each side of the stream is recommended and work must not take place in this zone. Works must only be undertaken outside of the hibernation season (*November till February inclusive*).

In line with best practice mitigation measures, an erosion guard must be erected along the stream boundary and maintained during all stages of the development. The fence must be erected outside of the hibernation season and installed under a suitably qualified ecologist. Regular fence checks will be required daily to ensure that the fence is in a good state of repair and any rips, tears, gaps or damage must be repaired immediately.

It is recommended to plant sedges and rushes plugs within the banks to improve the quality and diversity of the stream area.

The creation of the new drainage pond would be an overall positive enhancement for local water voles, as long as there is a shallow shelf area to accommodate marginal vegetation suitable for use as foraging areas. Additional, if a higher bank area is provided above the shallow shelf and pond, this could provide future burrow sites for potential water vole. The shallow shelf margin areas are to be planted with a range of native species including soft rush (*Juncus effuses*), yellow flag iris (*Iris pseudacorus*), sedges (*Carex* spp.), and reed sweet-grass (*Glyceria maxima*). The pond margins once established are to have patchy rotational cutting every two years (best carried out in October) ensuring that sections of the pond remain to ensure adequate cover and protection for potential water vole. These should be cut by hand tools only and first checked before strimming. Arisings are to be removed and placed within a compost bin.

A hedge is recommended at the edge of the 5 metre buffer point to aid dispersal and limit disturbance of the future residential development to the water vole population.

Consideration should be given to control of vermin such as rats and mink (*Neovison vison*), since these species will predate and outcompete water vole. Domestic cats are a known predator for Water Vole, therefore at this stage it is unknown will own household cats. Thus, mitigation measures have incorporated to offset any risk of introduced cats in this area. Measures will include retaining dense vegetation within the 5 meter buffer and the bankside areas, along with infrequent strimming of this habitat.

The Environment Agency's Pollution Prevention Guidelines should be implemented to ensure that the stream is protected throughout the works as well as post development. Drainage would be best directed away from the stream and use of a SUDs system would be highly recommended.

The stream habitat would be best strimmed infrequently once every 2 years, at the end of August, to heights of 35mm and ensure that the clippings do not sit in or around the stream and bank. The strimming is to take place once the sedge and rush plugs have taken.

6. Conclusions

Land at Tars Farm supports a population of water vole along the stream. The site is considered to be of high value for this species, and care will need to be taken when designing the development to ensure it does not adversely affect water vole.

Recommendations have been made for site enhancement in order to maintain and increase the population on the site.

Additionally, the enhancement recommendations provide for biodiversity gain on the site as required under the National Planning Policy Framework.

7. References

Department for Communities and Local Government (2012). *National Planning Policy Framework*.
www.communities.gov.uk

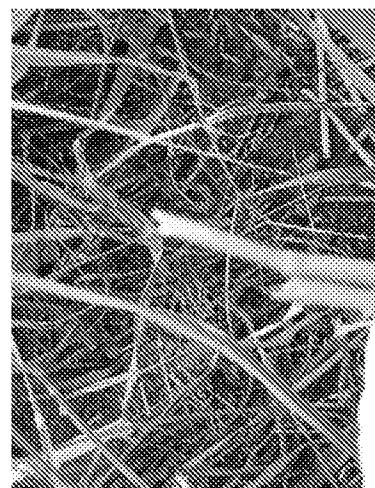
Stace, C. A. (1997). *New Flora of the British Isles, 2nd Edition*. Cambridge University Press. Cambridge.

Strachan, R., Moorhouse, T. and Gelling, M. (2011). *Water vole conservation handbook*. 3rd ed. Wild Cru.

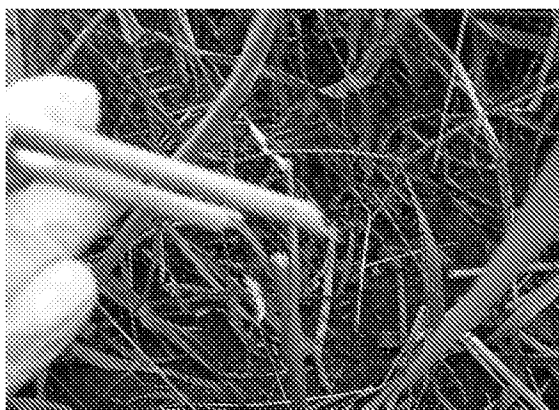
Pic 1: The 5m buffer zone



Pic 2: 5 m on the measuring tape



Pic 3: Typical gnawed vegetation



Pic 4: Typical gnawed vegetation



Pic 5: Disturbed and trampled vegetation



Pic 6: Bridge dividing area A and B



Pic 7: A latrine with fresh droppings



Pic 8: Overgrown vegetation



Pic 9: A potential path used



Pic 10: Potential burrow



Pic 11: A potential burrow



Pic 12: A second latrine with fresh droppings

Appendix II: Legislation

This section details the legislation relevant to the protection of species and habitats. It also details the relevant policies within national, regional, and local planning policy.

NPPF

The National Planning Policy Framework in summary requires that the planning system should aim to contribute and enhance the natural and local environment. The aims are to: protect and enhance valued landscapes as well as geological conservation interests and soils; recognising the wider benefits of ecosystem services; and minimising impacts on biodiversity and providing net gains in biodiversity where possible.

UK BAP

The UK Biodiversity Action Plan was published in 1994 in response to the Biodiversity Convention. The plan aims to enhance biological diversity of the UK through implementation of the Habitat Action Plans (HAPs) and Species Action Plans (SAPs), written for priority habitats and species.

Biodiversity Laws

Statutory protection is afforded to certain wild habitats and species through European Directive 92/43/EEC on the conservation of natural habitats and wild fauna and flora (the 'Habitats Directive'). This has been adopted into UK legislation under the 2017 Habitats Regulations. At the national level protection is found in the Wildlife and Countryside Act (WCA 1981; as amended) and it is designed to protect species and habitats considered to be of principal importance in order to conserve biodiversity.

Under Regulation 43 of the 2017 Habitats Regulations it is an offence to deliberately capture or kill a wild animal of a European protected species, deliberately disturb any such animal and to damage or destroy a breeding site or resting site. Since August 2007 amendments to the Conservation (Natural Habitats) Regulations 1994 have changed the term 'deliberately disturb' such that it is an offence if the species are disturbed in such a way that it is likely to significantly affect the colony's ability to survive, breed or rear their young; or affect the local distribution or abundance of that species.

The WCA 1981 (as amended) is the principle mechanism for the statutory protection of wild flora and fauna in the United Kingdom. Reptiles, including slow worms and grass snakes, are protected under Schedule 9(1) against intentional killing and injuring. Nesting birds are also protected under the WCA 1981 (as amended) which makes it an offence to intentionally kill, injure or take them, take, damage or destroy their nest whilst in use or being built, or to take or destroy their eggs.

All species of bats are strictly protected through UK and European regulations. Bats have been placed on protected lists due to the overall steady decline of species over the last century. Under section 9 in conjunction with Schedule 5 of the WCA 1981 (as amended), all bats are protected from intentional or reckless disturbance. Additional protection for all bat species is provided under

Schedule 2 of The Conservation of Habitats and Species Regulations 2017 Licences are needed if the disturbance is to produce a significant effect on the bat colony, which would otherwise be an offence. These may be granted for the purposes specified under section 16 of the WCA 1981 as well as under Section 55 under the Habitat Regulations, following the submission of a licence application to Natural England.

Badgers are protected under the Badger Protection Act 1992 and under Schedule 6 of the Wildlife and Countryside Act 1981 (as amended); badgers are classified as a species of conservation concern under the UK Biodiversity Action Plan and listed under Appendix III of the Bern Convention.