

Havant Thicket Reservoir Project

Environmental Statement Volume 4 - Appendices
Appendix A9 Biodiversity
A9.7 Water Vole Survey Report

Portsmouth Water Ltd.



**HAVANT THICKET WINTER STORAGE RESERVOIR,
ROWLAND'S CASTLE, HAMPSHIRE**

**APPENDIX 9.7
WATER VOLE SURVEY REPORT**

Final Document (Revision 1)

August 2019

Preliminary Ecological Appraisals • Protected Species Surveys and Licensing • NVC • EcIA • HRA • Management Plans
Habitats • Badger • Bats • Hazel Dormouse • Birds • Reptiles • Amphibians • Invertebrates • Riparian and Aquatic Species

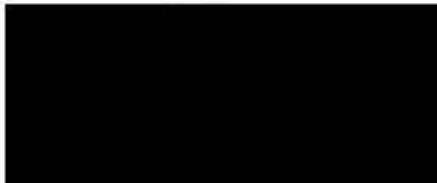
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ECOSA Quality Assurance Record

This report has been produced in accordance with the Chartered Institute of Ecology and Environmental Management (CIEEM) Guidelines for Ecological Report Writing 2017 (CIEEM, 2017). Survey work has been undertaken in line with references within CIEEM's Source of Survey Guidance (CIEEM, 2017).

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* ECOSA produced this report as a stand-alone Ecological Impact Assessment. The document was converted into an Appendix to an Environmental Statement by Atkins, with approval of ECOSA, in August 2020. This has included removal of impact assessment and mitigation text which is covered in Chapter 9 (Biodiversity) of the ES.

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HAVANT THICKET WINTER STORAGE RESERVOIR, ROWLAND'S CASTLE, HAMPSHIRE

WATER VOLE SURVEY REPORT

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1.0 INTRODUCTION

1.1 Background

Ecological Survey & Assessment Limited (ECOSA) have been appointed by Portsmouth Water Limited (Portsmouth Water) to undertake water vole survey and report of their land at Havant Thicket, Rowland's Castle, Hampshire. The site is centred on National Grid Reference (NGR): SU 715 097 (**Map F1**).

The water vole report is required as a result of Portsmouth Water's plan to construct a winter storage reservoir, Havant Thicket Winter Storage Reservoir (HTWSR), for public water supply in the centre of the site. At the time of survey, the final designs were not confirmed, although the extent of the development was proposed to be approximately 1.6 kilometres from east to west and 800 metres from north to south with a storage capacity of approximately 8,700 million litres. It was understood water would be pumped into the reservoir from Portsmouth Water sources at Havant and Bedhampton Springs, providing a sustainable supply of water with no requirement to change the existing abstraction licence.

At the time the surveys were undertaken the planning application red line boundary (see Figure 2.1 in ES Volume 3) had not been defined and therefore the Site Boundary (the site) and Ecological Enhancement Area (wider site) boundaries referred to in this report were provisional boundaries available at that time. Within this report where mention is made of 'the site' this refers to the reservoir footprint and other areas used for built development and habitat creation. This area is referred to as the 'Reservoir Footprint' in the Environmental Statement (as the Site includes the reservoir footprint, the pipeline corridor as well as land around the reservoir footprint being used for ecological mitigation and compensation). Where reference is made in this report to the 'wider site' this includes the reservoir and the area proposed for ecological enhancement within Forestry England's (FE) Havant Thicket woodland to the north and Bell's Copse to the west of the site and Staunton Country Park (SCP) to the south of the site. This area is similar to the area referred to as the 'Reservoir Site' in the Environmental Statement. The areas covered by 'the site' and 'wider site' in this report are shown in **Map F1** and the key ecological and landscape features mentioned in this report are shown in **Map F2**.

1.2 Aims and Scope of Report

The information within this report is based on water vole surveys carried out by ECOSA between 2005 and 2008 and December 2017 and October 2018. The report provides a detailed summary of the ecological survey work undertaken and an evaluation of the site in relation to water vole.

It also provides recommendations in terms of avoidance, mitigation, compensation and enhancement.

2.0 METHODS

2.1 Introduction

This section details the methods employed during the field surveys undertaken for the HTWSR site and Havant Thicket woodland during 2018. Any significant limitations to the survey methods are also discussed. This section also includes desktop study data from relevant surveys undertaken within the site by ECOSA between 2005 and 2009.

2.2 Zone of Influence

To define the total extent of the study area for this appraisal (Zone of Influence¹), the proposed scheme was reviewed to establish the spatial scale at which water vole could be affected. The appropriate survey radii for the various elements of the appraisal (i.e. desktop study and field survey) have been defined in the relevant sections below. These distances are determined based on the professional judgement of the ecologist leading the appraisal, taking into account the characteristics of the site subject to appraisal, its surroundings and the nature and scope of the development proposals and the ecology of the species of focus within this report.

2.3 Desktop Study²

2.3.1 Biological Records Centre

Hampshire Biodiversity Information Centre (HBIC) was consulted on 30th April 2018 for records of water vole located within two kilometres of the site boundary.

2.3.2 Multi-Agency Geographic Information for the Countryside

The Multi-Agency Geographic Information for the Countryside (MAGIC)³ database was reviewed on 12th June 2018 to establish the location of statutory designated sites located within the vicinity of the site which were either designated for water vole or include water vole within their citation for a reason for designation. This included a search for all internationally and nationally designated sites such as Special Areas of Conservation (SACs), Wetlands of International Importance (Ramsar sites), Sites of Special Scientific Interest (SSSIs), National Nature Reserves (NNRs) and Local Nature Reserves (LNRs) within two kilometres of the site.

2.3.3 Other Sources of Information

Online mapping resources, including aerial photography, at an appropriate scale, were used to identify the presence of habitats such as ponds and watercourses in the vicinity

¹ The Zone of Influence (Zoi), as defined by CIEEM, is the area over which ecological features may be subject to significant effects as a result of the proposed project and associated activities.

² Due to the age of this data and updated desk study has been undertaken in 2020 and details are included in Appendix 9.1.

³ www.defra.magic.gov.uk

of the site. These habitats may offer resources and connectivity between the site and suitable habitat in the local area, which may be exploited by water vole populations.

ECOSA undertook field surveys at the site between 2005 and 2009 (ECOSA, 2013). Surveys undertaken at the site between 2005-2009 included a detailed assessment of watercourses to search for evidence of riparian species such as water vole, otter and American mink. Detailed surveys of watercourses in Havant Thicket woodland were not undertaken as part of this work, this is relevant to this report as these areas were covered in 2018.

A number of other ecological assessments have been undertaken in the surrounding landscape between 2014 and 2016. The information from these surveys has been used to support this assessment:

- White Young and Green undertook an extended Phase 1 habitat survey report during 2014 (WYG, 2014) in relation to an outline planning application for new homes at land east of Horndean (East Hampshire District Council planning reference: 55562/001). This area is located to the north-west of the HTWSR site.
- RPS (RPS, 2016) undertook a Preliminary Ecological Appraisal on behalf of Hampshire County Council (HCC) in relation the proposed restoration of the SCP. This area is to the south of the HTWSR site.

2.4 Field Survey

2.4.1 Survey Methods

The field surveys were undertaken to assess the site's suitability to support water vole. The water vole appraisal was based on an assessment of the suitability of the habitat present within the site to support water vole.

A detailed investigation was undertaken of both banks of all watercourses in order to record any evidence of water vole such as burrows, latrines, trails, feeding remains and footprints. Any evidence encountered was mapped where appropriate. Where possible the survey was undertaken from within the watercourse in order to maximise the likelihood of encountering field signs.

The water vole appraisal was based on an assessment of the suitability of the habitat present within the site to support water vole by reference to habitat type (such as streams, ditches and ponds), presence of habitat features which could provide opportunities for digging burrows (steep bank profile, suitable bank substrate), and/or above-ground nest sites (extensive reed/sedge bed habitat or tussocks within ponds), as well as provision of food and cover (herbaceous vegetation). The surveys followed

the guidelines in the Water Vole Conservation Handbook (3rd Edition) (Strachen, et al., 2011) and The Water Vole Mitigation Handbook (Dean, et al., 2016).

In addition to the field survey outlined above, ecologists working on other protected species surveys during 2018 paid attention to the potential presence of water vole at the site.

2.4.2 Survey Details

A preliminary appraisal of the site's suitability to support water vole was carried out by Simon Boswell of ECOSA on 22nd December 2017. The weather conditions were overcast with 100% cloud cover, an ambient temperature of 8°C and no wind.

An additional field survey was carried out by Simon Boswell on 24th July 2018. The weather conditions were hot and sunny, an ambient temperature of 22°C and no wind.

The Havant Thicket woodland field survey was carried out by Simon Boswell on 21st September 2018. The weather conditions were sunny, an ambient temperature of 12-18°C and a light breeze.

During the survey, the surveyor was equipped with 10x40 binoculars, a digital camera and information on previous survey work undertaken at the site.

2.4.3 Field Survey Limitations

There were no significant limitations to the field survey.

3.0 BASELINE ECOLOGICAL CONDITIONS

3.1 Introduction

This section details the results of the 2005-2006, and 2017-2018 water vole *Arvicola amphibius* survey work undertaken for the HTWSR site, along with survey data from previous years. It assesses the baseline ecological conditions of the site in respect to water vole at the time the desktop study and field surveys. The baseline draws on a wealth of historical and present data, relevant data from historic surveys has been included in the report to increase the understanding of the site in terms of water vole.

3.2 Baseline Ecological Conditions

Desktop Study Results

Field survey work undertaken by ECOSA between 2005 and 2009 did not record water vole or signs of water vole on the site despite extensive survey effort including a detailed inspection of watercourses for evidence of water vole.

Consultation with HBIC produced records of water vole at Langbrook Stream and Dolphin Court pond located approximately 2.75 kilometres south of the site, with the most recent record from 2014. This is likely to be the nearest population of water vole to the site. The landscape between these records and the site is characterised by dense housing and industrial land uses. There are no riparian linkages between the site and these records.

The 2016 RPS Preliminary Ecological Appraisal did not consider the presence of water vole and therefore it is assumed that the ecologists considered them to be absent from SCP. During 2013 and 2014 WYG assessed the ditches within land East of Horndean to have negligible suitability for water vole.

2018 Field Survey Results

Riparian habitat within the site and Havant Thicket woodland consists of a number of narrow streams and ditches and a small lake at the northern end of The Avenue. A small number of ponds are also present in Havant Thicket woodland. These habitats were considered to offer limited suitability for water vole given the narrow and ephemeral nature of the streams and ditches and lack of other suitable habitat in the local landscape.

Given the poor quality of habitats within the site for water vole and lack of other more suitable water vole habitat in the local landscape, it is very unlikely that this species would visit the site or be able to colonise it from the nearest population last recorded in 2014.

During the 2005-2006 surveys, no evidence of water vole was recorded. Evidence of American mink *Mustela vison* was recorded from several locations along the watercourse situated immediately north of The Avenue, indicating that an animal(s) had passed through the site. The presence of mink would suggest that water vole is less likely to be present since the species predates water vole. No evidence of mink was recorded during 2018, possibly as a result of the on-site ephemeral stream being dry for much of the year.

Other survey work identified that all watercourses within the site and Havant Thicket woodland were dry by the end of May 2018 and remained dry until late-autumn 2018, significantly reducing the suitability of the site for water vole.

The only water remaining on-site past this time was Upper Lake at the top of The Avenue, although this waterbody became extremely shallow as the 2018 summer progressed. Following the drying of the on-site watercourses Upper Lake was isolated from other suitable water vole habitat. No evidence of water vole has ever been recorded from this waterbody. Overall, Upper Lake is therefore considered unsuitable for water vole.

A small man-made pond in Havant Thicket woodland (SU 71506 10673) remained wet throughout the period, however this waterbody, contains limited aquatic vegetation, has heavily eroded and unvegetated banks from heavy use by dogs. Following the drying of the watercourses on-site and in Havant Thicket woodland this pond was isolated from other suitable water vole habitat. No evidence of water vole has ever been recorded from this waterbody. The Havant Thicket waterbody is considered unsuitable for water vole.

A scattering of small, ephemeral ponds, which have mainly developed from historic brick pits are also present within SCP and the eastern edge of Havant Thicket woodland. These waterbodies are isolated from stream / river habitats, are ephemeral and contain limited aquatic vegetation. No evidence of water vole has ever been recorded from these waterbodies and the species is considered absent from these ponds.

Given these factors, the previously recorded drying of these watercourses, lack of previous evidence of the species and remoteness of the nearest records from the site, it is considered that water vole is absent from the site and Havant Thicket woodland.

4.0 DISCUSSION AND CONCLUSIONS

4.1 Discussion and conclusion

Water vole is considered likely to be absent from the site and Havant Thicket woodland. The species is also unlikely to commute to the site from the nearest population at Langbrook Stream and Dolphin Court pond some 2.75 kilometres south last recorded in 2014. Therefore, there will be no negative impact on this species as a result of the development proposals and the development of the reservoir and a retained wetland (Portsmouth Water, 2009) may provide suitable habitat for future colonisation / release of water vole

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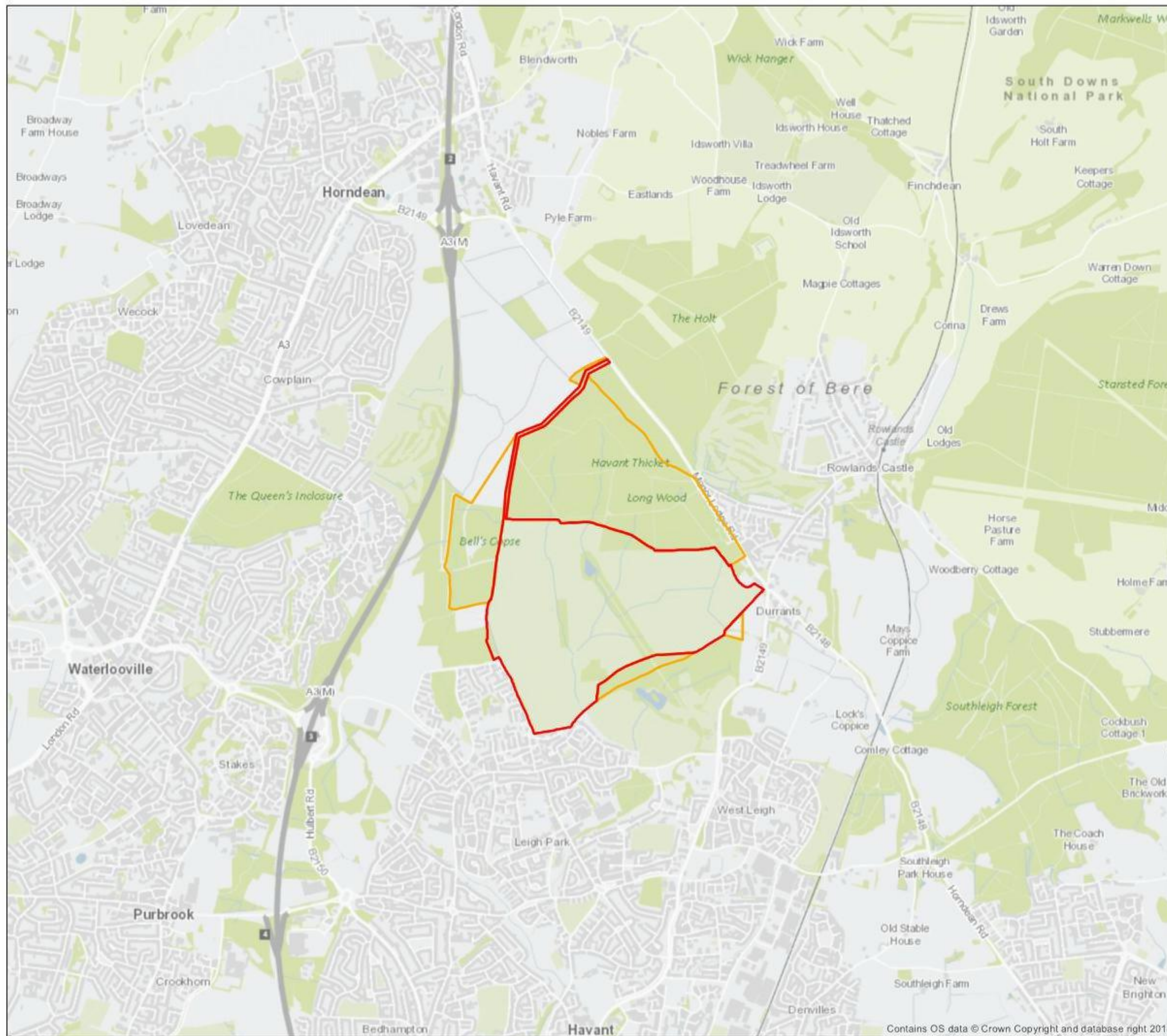
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Map F1 Site Location Plan



HAVANT THICKET WINTER STORAGE RESERVOIR

WATER VOLE ASSESSMENT

Map F1 - Site Location Plan

Client: Portsmouth Water

Date: December 2018

Status: Final

KEY

- Site Boundary (the site)
- Ecological Enhancement Area (wider site)

Scale at A3: 1:25,000

0 500 1,000 Metres



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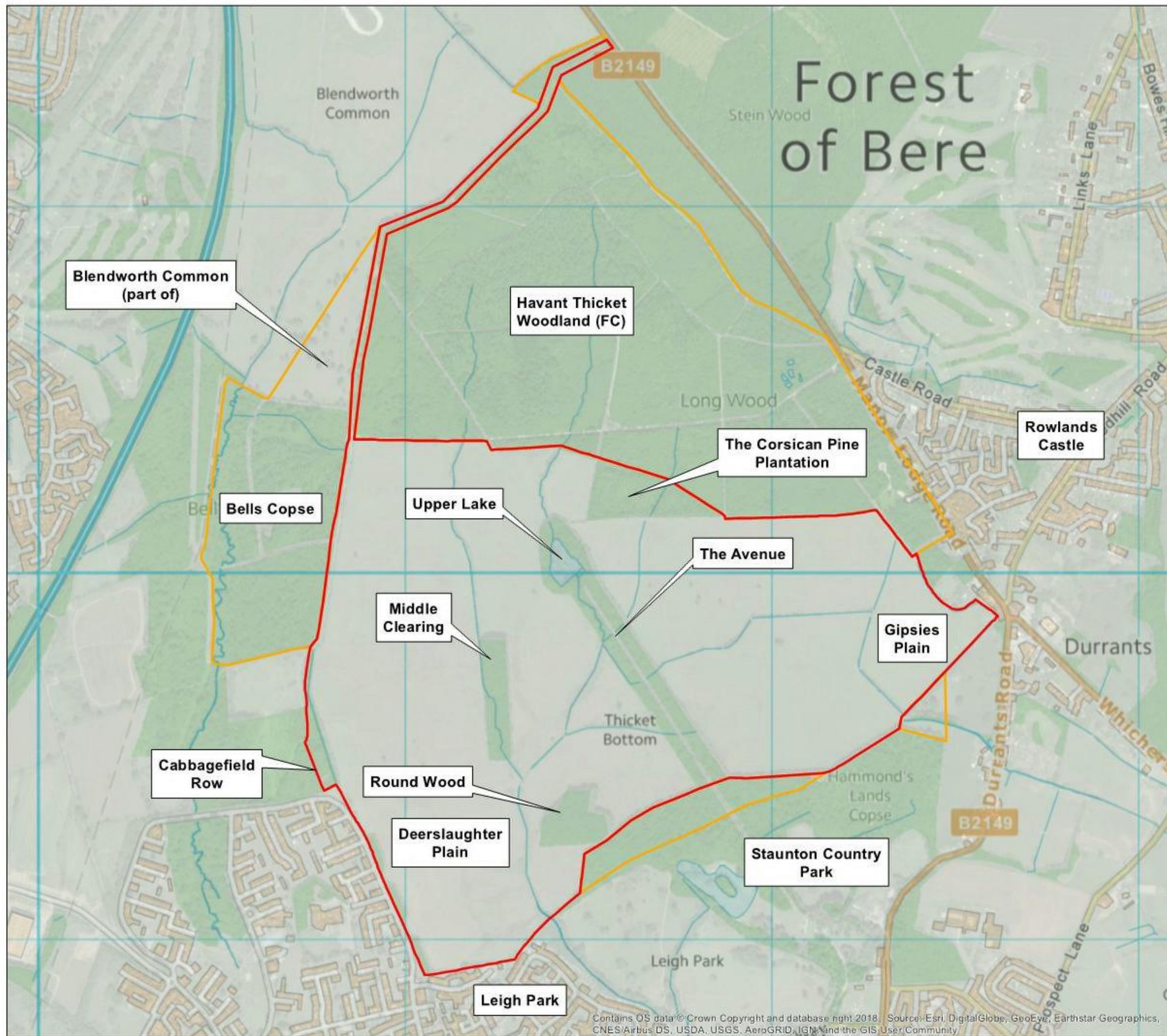
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Map F2 Key Site Features



HAVANT THICKET WINTER STORAGE RESERVOIR

WATER VOLE ASSESSMENT

Map F2 - Key Site Features

Client: Portsmouth Water

Date: March 2019

Status: Final

KEY

- Site Boundary (the site)
- Ecological Enhancement Area (wider site)

Scale at A3: 1:10,000

0 250 500 Metres



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