

South Humber Bank Energy Centre Development Consent Order

South Marsh Road, Stallingborough, DN41 8BZ

Appendix 10E: Otter and Water Vole Survey



Applicant: EP Waste Management Limited
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1.0 INTRODUCTION

- 1.1 This Appendix of the Preliminary Environmental Information (PEI) Report presents the results of the otter and water vole survey undertaken in 2018 to inform the ecological impact assessment (EclA) for the Consented Development, and is also relevant and valid to inform the EclA of the Proposed Development. The terms of reference used in this report are consistent with those defined within the main chapters of the PEI Report (Volume I).

Survey Scope

- 1.2 A survey for otter and water vole field signs was undertaken within the Survey Area. Given the previously recently recorded presence of water vole, a single visit to each ditch and pond was undertaken in early October 2018 when the ditch vegetation had been cut back. This meant that the survey was more effective because all sections of the ditches could be accessed. The otter survey was undertaken concurrently with the water vole survey.
- 1.3 The Survey Area included all ditches and ponds within the red line boundary of the Main Development Area, as well as the remaining ditches outside the red line boundary within the ownership of EP SHB. This survey area was established to give an indication of the spread of water voles throughout the Site, and thus to inform a robust assessment of the potential impacts of the Consented Development, and now the Proposed Development, on this species.

Relevant Legislation

Water Vole

- 1.4 Water vole receives full protection under Section 9 of the Wildlife and Countryside Act 1981 (as amended); as such it is illegal to intentionally or recklessly:
- capture, kill or injure water voles;
 - damage, destroy or block access to their places of shelter or protection;
 - disturb them in a place of shelter or protection; and
 - possess, sell, control or transport live or dead water voles or parts of them.
- 1.5 Water vole is a species of principal importance for nature conservation in England listed pursuant to Section 41 of the Natural Environment and Rural Communities (NERC) Act 2006. Section 40 of the same Act requires that local and regional authorities have regard to the conservation of biodiversity in England, when carrying out their normal functions.

Otter

- 1.6 Otter receives full protection under Section 9 of the Wildlife and Countryside Act 1981 (as amended) and Schedule 2 of the Conservation of Habitats and Species Regulations 2017. This legislation, when taken together, results in a level of protection that prohibits the intentional, deliberate or reckless:
- killing, injuring, taking or disturbance of otters;
 - damaging, destroying or obstructing any place used by otters for the purposes of breeding, sheltering or protection; and
 - selling and/ or advertising for sale an otter or any part thereof.
- 1.7 Otter is a species of principal importance for nature conservation in England listed pursuant to Section 41 of the NERC Act 2006.

2.0 SURVEY METHODS

Desk Study

- 2.1 A desk study was undertaken as part of the scope of works for the Phase 1 Habitat survey and is reported in detail in the PEA Report (Appendix 10C in PEI Report Volume III). Water vole records were obtained from the local ecological records centre (Greater Lincolnshire Nature Partnership) for a search radius of 1 km out from the boundary of the Site, referred to as the study area in this report.
- 2.2 In addition, water vole records were obtained from previous surveys of the Site undertaken by Humber INCA in 2010 (Humber INCA, 2010).

Field Survey

- 2.3 The water vole and otter survey was completed by suitably experienced AECOM ecologists on 3rd and 4th October 2018 in accordance with best practice guidance (Crawford, 2010; Chanin, 2003 and Strachan *et al.*, 2011).
- 2.4 Both survey visits were completed during periods of dry weather (both in the days preceding and during the survey) to increase the likelihood that field signs, such as droppings, would persist in the environment.
- 2.5 The survey involved searching the banks and margins of the relevant waterbodies for field signs of water vole and otter as detailed below.
- 2.6 It should be noted that the two ponds within the Main Development Area have recently been infilled in accordance with a Non-Licensed Method Statement for Water Voles, so these ponds are no longer present. However the survey results for these ponds are included within this report to provide contextual information on the usage of the Site by water vole and otter.
- 2.7 Water vole field signs include the following:
- faeces – these are 8-12 mm long and 4-5 mm wide, with a smooth ‘tic tac’ like shape, varying in colour from green to black, and odourless with a putty-like texture;
 - latrines – found throughout the territory, often comprising a pile of flattened droppings, with fresh droppings on top;
 - feeding stations – comprise a neat pile of chewed feeding remains, often comprising lengths of vegetation up to 10 cm long, showing the marks of the two large incisors;
 - burrows – these are typically wider than they are high, with a diameter of 4-8 cm, and are usually located along the water’s edge;
 - lawns – around burrows there is often an area of grazed vegetation, surrounded by taller vegetation, these are most often produced when the female is nursing young;
 - footprints – as with other rodents, the footprints of the fore foot show four toes in a star arrangement, with the hind foot showing five toes. The size of footprints for the hind foot is 26-34mm; and
 - runways – these are low tunnels within the vegetation, often adjacent to the water’s edge.
- 2.8 Camera traps were set up at Ponds 1 and 2 on 6th September 2018 to attempt to capture water voles and allow a very broad estimate of likely usage of the ponds by the species. The camera traps were checked on 12th and 25th September 2018.
- 2.9 Otter field signs include the following:

- spraints – these are usually black in colour and have a sweet smell likened to jasmine or fresh cut hay. The otter uses spraints to define its home range, and these are deposited at prominent points such as on boulders and ledges;
- footprints – the otter has five toes that are webbed. The footprints are very characteristic and easy to recognise. Each print is around 50 – 60 mm wide;
- paths - found along river banks;
- couches - flattened vegetation amongst scrub or dense vegetation, which may indicate an above ground resting area for an otter during the day;
- holts - holes in the riverbank, hollow trees, cavities amongst tree roots, piles of rocks, wood or debris may all be used as holts; and
- feeding remains – including fish remains.

2.10 The presence and distribution of these signs can be used to assess the likely importance of the relevant waterbodies for the local otter population.

2.11 Observations of the field signs of water vole and otter were also made and recorded during other protected species surveys, prior to the water vole and otter survey. These observations are included in the survey results given in this report.

Limitations

2.12 The survey guidance indicates that two surveys are usually necessary for determining the presence/ absence of water voles (Strachan *et al.*, 2011), usually with one visit between April and June and a second visit between July and September. However, only one survey was undertaken in early October 2018. This was because the presence of water vole had been confirmed in a previous survey in 2010, and therefore the purpose of the survey was to attempt to establish a population size class estimate to inform mitigation for the Proposed Development.

2.13 The survey was undertaken slightly outside of the optimum survey window, but given the mild late summer conditions is not considered to represent a limitation to the collection of data. The reason for delaying the survey was to wait for the ditch vegetation to be cut back (which is done annually at the end of September/ early October) to enable easier access for survey. Prior to cutting, the ditches were heavily overgrown and were virtually impossible to access for the purposes of survey. The surveys were undertaken 2 -3 days after the ditch vegetation was cut back, and therefore it is considered unlikely that any field signs would have been missed if present.

3.0 SURVEY RESULTS

Desk Study

- 3.1 The previous survey of the ditches at South Humber Bank Power Station in 2010 confirmed the presence of water vole on most of them, and concluded that they were all suitable for the species but that usage may vary between seasons (Humber INCA, 2010).
- 3.2 The local records centre returned numerous records of water vole within 1 km of the desk study area, indicating that this species is present in numerous drains in the Stallingborough area.

Field Survey

- 3.3 A table summarising the findings of the survey is provided as Table 10E.1. A brief discussion of the survey findings is provided below.

Water Vole

- 3.4 Water vole burrows were recorded on all surveyed ditches with the exception of Ditch 7. A small number of water vole footprints and droppings were found on several of the ditches.
- 3.5 Ad hoc records of water vole were made when undertaking other surveys on the site, for example the characteristic 'plop' sound made by water voles when entering the water was heard during the reptile survey and aquatic invertebrate survey. In addition, a water vole 'plop' sound was also heard at Pond 2 during the completion of reptile surveys in adjacent habitat. A possible water vole feeding station was recorded on the pond margin. No burrows were found on the pond margins during the water vole and otter survey, or during the subsequent ecological watching brief during pond infilling.
- 3.6 The camera traps were checked on 12th and 25th September 2018 and did not record any water voles.



Otter


- 3.7 Fresh otter spraints were found on a reptile mat close to Ditch 1 on 6th and 12th September 2018 during the reptile survey. This confirmed that otter uses the Site, presumably foraging and commuting along ditches throughout the Survey Area. The watercourses in the site have good connectivity to the wider ditch network, including the ditches on the landward side of the flood embankment to the west, and Oldfleet Drain to the south.
- 3.8 An old otter spraint was also recorded on Ditch 4 during the survey in October 2018. No other signs of otter were found at this time.


Other Riparian Mammal Species


- 3.9 A water shrew (*Neomys fodiens*) was observed during the reptile surveys near to the tarpaulin covered area at Pond 2 on 8th August 2018. It is therefore concluded that this species is present on Pond 2.


Table 10E.1: Water vole and otter survey results


DITCH/ POND REFERENCE	DESCRIPTION	RELATIONSHIP TO THE SITE AND MAIN DEVELOPMENT AREA	WATER VOLE FIELD SIGNS	OTTER FIELD SIGNS	PHOTOGRAPH
1	A wet drain supporting a continuous linear stand of emergent and marginal common reed (<i>Phragmites australis</i>) dominated swamp vegetation	Outside Main Development Area. Runs along southern boundary of Site.	✓	✓	
2	A wet drain supporting a continuous linear stand of emergent and marginal common reed dominated swamp vegetation	Outside Main Development Area. Runs along southern boundary of Site.	✓	x	

DITCH/ POND REFERENCE	DESCRIPTION	RELATIONSHIP TO THE SITE AND MAIN DEVELOPMENT AREA	WATER VOLE FIELD SIGNS	OTTER FIELD SIGNS	PHOTOGRAPH
3	<p>A wet drain with locally abundant emergent bulrush (<i>Typha latifolia</i>). Semi-improved neutral grassland riparian habitat with frequent herb species e.g. great willowherb (<i>Epilobium hirsutum</i>) and water mint (<i>Mentha aquatica</i>).</p> <p>The vegetation had been cut at the time of the survey.</p>	<p>Within Main Development Area.</p> <p>Runs along northern boundary of Site to South Marsh Road.</p>	✓	×	

DITCH/ POND REFERENCE	DESCRIPTION	RELATIONSHIP TO THE SITE AND MAIN DEVELOPMENT AREA	WATER VOLE FIELD SIGNS	OTTER FIELD SIGNS	PHOTOGRAPH
4	A wet drain with occasional emergent and marginal common reed semi-improved neutral grassland riparian habitat with occasional herb species. The vegetation had been cut at the time of the survey.	Outside Main Development Area. Runs along eastern boundary of Site.	✓	✓	

DITCH/ POND REFERENCE	DESCRIPTION	RELATIONSHIP TO THE SITE AND MAIN DEVELOPMENT AREA	WATER VOLE FIELD SIGNS	OTTER FIELD SIGNS	PHOTOGRAPH
5	A wet drain supporting a continuous linear stand of emergent and marginal common reed dominated swamp vegetation. The vegetation had been cut at the time of the survey.	Outside Main Development Area. Runs along southern boundary of Site.	✓	×	
6	Occasional marginal common reed, with abundant submerged water star-wort (<i>Callitriche</i> spp.)	Outside Main Development Area. Runs along northern boundary of Site.	✓	×	No photograph available
7	Occasional marginal common reed, with abundant submerged	Outside Main Development Area. Runs along northern boundary of Site.	×	×	No photograph available

DITCH/ POND REFERENCE	DESCRIPTION	RELATIONSHIP TO THE SITE AND MAIN DEVELOPMENT AREA	WATER VOLE FIELD SIGNS	OTTER FIELD SIGNS	PHOTOGRAPH
	water star-wort (<i>Callitriche</i> spp.)				
Pond 1	Small pond with dense marginal fringe of common reed. No longer present in 2019.	Within Main Development Area.	x	x	

DITCH/ POND REFERENCE	DESCRIPTION	RELATIONSHIP TO THE SITE AND MAIN DEVELOPMENT AREA	WATER VOLE FIELD SIGNS	OTTER FIELD SIGNS	PHOTOGRAPH
Pond 2	Small pond with dense marginal fringe of common reed. No longer present in 2019.	Within Main Development Area.	✓	x	

4.0 CONCLUSIONS AND EVALUATION

Water Vole

- 4.1 The surveys confirmed that water vole was present on all ditches in the Survey Area (as in the findings of the previous 2010 survey). Given the lack of latrines recorded it was not possible to undertake a population size class estimate based on the guidance in Strachan *et al.* 2011. However, given the relatively low number of water vole field signs recorded, it is reasonable to conclude that a small population of water voles was present on the ditches surveyed.
- 4.2 There was also field evidence to suggest that water voles were likely to be using Pond 2 for foraging, although it was not considered that water voles would be resident on the pond given its small size. No burrows or droppings were found to indicate permanent presence during the survey (or the subsequent ecological watching brief during pond infilling). It is more likely that occasional foraging activity occurred by the population present on the surrounding ditches. Pond 1 was also in close proximity to a ditch in which water vole field signs were found, and therefore may also have been used on occasion by foraging water vole. The ponds were infilled in 2019 under ecological supervision and no water voles were found during these works.
- 4.3 The desk study returned numerous records of water vole in the desk study area, and it appears that the species is widespread and common in the local area, including on Oldfleet Drain to the south of the Site (Atkins, 2018; Manning, 2016). Water vole is considered to be endangered in Great Britain (Mathews, 2018), and the Lincolnshire BAP states that the county is considered a national stronghold for water vole; this is further evidenced by a recent study of the UK-wide distribution of this species (McGuire *et al.*, 2014). Given the small size of the population within the Site, which is only a small part of the wider population in Lincolnshire, it is evaluated to be of District nature conservation value.
- 4.4 Mitigation for water vole will be required where there are any direct impacts on habitats, and (as described above) was implemented in 2019 during the draining and infilling of Ponds 1 and 2.

Otter

- 4.5 There were two records of otter spraints within the Survey Area. It is therefore likely that otters are foraging throughout the ditch network within the Site, which is well connected to coastal habitats and further ditches running north-south along the landward base of the flood embankment, as well as other good quality otter foraging habitat on Middle Drain (north of the Site) and Oldfleet Drain (south of the Site).
- 4.6 Otter is noted in the Lincolnshire BAP to be present in all river catchments in the county, and was subsequently removed from the list of Species Action Plans in the third edition of the BAP (having been included in the second edition) due to its widespread nature. Otters within the Site boundary are therefore evaluated as being of Local nature conservation value.
- 4.7 It is unlikely that there will be any adverse effects on otter as a result of the Proposed Development given the limited impacts on otter habitats, and therefore no specific mitigation for this species is recommended.

Water Shrew

- 4.8 Water shrew was recorded on Pond 2. Given the similar habitat that was present on Pond 1 and the nearby drains, and its proximity to the former Pond 2, this species is likely to use all waterbodies in the Survey Area.

- 4.9 This species has a widespread but scattered distribution in Lincolnshire, thought to reflect a lack of recording effort rather than a restricted distribution (Manning, 2016). It is not considered to be threatened nationally (Mathews *et al.* 2018), and it does not have a species action plan in the Lincolnshire BAP. Given the wide distribution of suitable habitats there are no grounds to believe that the species is rare or threatened within the county. The water shrew population is therefore evaluated to be of negligible nature conservation value, and has not been considered within the ecological impact assessment except for mitigation requirements. Appropriate mitigation measures were employed to protect water shrew welfare during the draining and infilling of the ponds.

5.0 REFERENCES

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- McGuire, C., Whitfield, D., Perkins, H. & Owen, C. (2014) *National Water Vole Database Mapping Project, Guide to the Use of Project Outputs to End of 2012*. Published by the Environment Agency, Royal Society of Wildlife Trusts, People's Trust for Endangered Species and Scottish Natural Heritage
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ANNEX A: SURVEY DATA

Ditch	Date	OS NGR	Sign	Notes
1	3.10.18	523096 413312	water vole burrow	
2	3.10.18	523090 413252	water vole burrow	
2	3.10.18	523093 413076	water vole burrow	
2	3.10.18	523092 413063	water vole burrow	
3	4.10.18	522581 413442	water vole burrow	
3	4.10.18	522862 413483	water vole burrow	
3	4.10.18	523064 413510	water vole prints	Located close to water vole droppings
3	4.10.18	523065 413511	water vole droppings x 2	
3	4.10.18	523129 413523	water vole burrow	
3	4.10.18	523152 413522	water vole burrow	
3	4.10.18	523156 413522	water vole droppings x 3	
3	4.10.18	523160 413524	water vole burrow	
4	3.10.18	522582 413391	water vole burrow	
5	3.10.18	523010 413031	water vole burrow	
5	3.10.18	522981 413013	otter spraint	On culvert pipe - old
5	3.10.18	522968 413008	water vole burrow	
5	3.10.18	522963 413003	water vole burrow	
5	3.10.18	522913 412992	water vole burrow	
6	4.10.18	523169 413521	water vole burrow x 2	
6	4.10.18	523169 413516	water vole burrow	
6	4.10.18	523188 413175	water vole burrow	
6	4.10.18	523219 413443	water vole burrow	
Pond 2	3.10.18	523153 413501	potential water vole feeding remains	Pond access difficult due to dense Phragmites

FIGURE 10E.1: LOCATION OF WATER VOLE SURVEY

File Name: \\uk\d2\pfs\w001\LE_Projects\Newproj\60580855 - Project Koola aka SHBECCAD_GIS\Workspace\PEI\Appendix\10E.1_Otter_and_Water_Vole_Survey_AG.mxd



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LEGEND

- Application Boundary
- G2.1 - Running water - eutrophic
- J2.1.2 - Intact hedge - species-poor
- A1.1.2 - Broadleaved woodland - plantation
- A2.1 - Scrub - dense/continuous
- B2.2 - Neutral grassland - semi-improved
- F1 - Swamp
- G1.1 - Standing water - eutrophic
- J1.1 - Cultivated/disturbed land - arable
- J1.2 - Cultivated/disturbed land - amenity grassland
- J2.1.2 - Intact hedge - species-poor
- J3.6 - Buildings & Structures
- J4 - Bare ground
- J5 - Other Habitat - Hard Standing

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FIGURE 10E.1	