



Rampion Offshore Wind Farm



ES Section 24 – Terrestrial Ecology Appendix 24.6

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E.ON Climate & Renewables UK Rampion Offshore Wind Limited



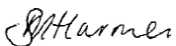
Rampion Offshore Wind Farm –
Onshore EIA

Great Crested Newt Survey
Technical Report

Prepared For E.ON Climate and
Renewables

October 2012

INTERNAL PROJECT REPORT FOR EON**RSK General Notes****Project No:** 852425**Title:** Rampion Offshore Wind Farm – Onshore EIA – Great Crested Newt Survey Technical Report**Client:** E.ON Climate and Renewables**Issue Date:** October 2012**Revision:** Rev02**Issuing Office:** Hemel Hempstead

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1 INTRODUCTION

1.1 Purpose of this Report

This report presents the findings of Great Crested Newt surveys carried out along the alignment of a proposed cable route through Sussex associated with a proposed off-shore wind farm development. An outline of the cable route is shown in *Figure 1*. The surveys comprised habitat suitability assessment surveys, scoping surveys, and presence-absence surveys carried out in March, April and May 2011.

1.2 Scheme Description

The proposed cable route is approximately 27 km long running south to north from a landfall site near East Worthing to a proposed substation site east of the existing Bolney substation near Twineham. Construction activities will be undertaken within a fenced strip of land, known as the working width. The working width is expected to be no wider than 40m, comprising 15m for the cable easement, and 25m for additional areas for storage of excavated material and access along the cable trench. The cable easement will not necessarily be central to the working width.

For the purposes of the ecological surveys, a survey corridor of 65m or 125m (depending on the survey-type) was used. Pond surveys were carried out at ponds within 250 m of the edge of the 65m working width.

The term ‘cable route’ has been used throughout this report and represents the area within the Development Boundary for the onshore cable.

As shown on *Figure 2*, the ecology survey corridor for the cable route extends further north than the Development Boundary. This is due to the fact that the cable route connection with the substation was not defined at the time of the surveys and therefore a wider survey area was covered.

Ecological surveys undertaken for the proposed substation are detailed elsewhere in the Substation Technical Report (*Appendix 24.11*), although the survey areas do overlap, as shown in *Figure 2*.

1.3 *Ecological Context*

The proposed cable route starts at the Sussex coast on the eastern outskirts of Worthing and proceeds in a general north-east direction, crossing the South Downs National Park and terminating east of Bolney Substation.

Between the coast and the A27 road, the route crosses semi-urban habitats, including a golf course, parkland and former allotments, and a section of mostly arable farmland. It then enters the South Downs NP, passing through a landscape of rolling chalk hills predominately converted to intensive arable farming. Beyond Tottington Mount the final half of the route comprises a mixture of arable and pastoral farmland enclosed by hedges.

The route generally avoids large areas of woodland and other semi-natural habitats, though it crosses a few discrete areas of unimproved grassland, most notably at Tottington Mount and Old Erringham Farm Valley and road cutting SNCI. Other noteworthy habitats crossed include coastal shingle, the tidal River Adur and a few narrow woodland corridors.

1.4 *Structure of this Report*

The remainder of the report is set out as follows:

- *Section 2* describes the survey and assessment methods;
- *Section 3* presents the results of the surveys;
- *Section 4* provides the evaluation and conclusions;
- *Section 5* is the reference section;
- *Section 6* provides the figures;
- *Appendix A* gives relevant legislation; and
- *Appendix B* contains the raw survey data.

2 ***METHODS***

2.1 ***Survey Constraints***

Access was denied by landowners for a 1 km section of the route between Horn Lane and the A281 road, although it was included in the animal walkover in December 2010 so some information is available, although limited.

A minor route change occurred subsequent to the completion of the Great Crested Newt surveys to accommodate the 'Teville Stream Restoration Project'. However, no additional ponds fell within the revised 250 m buffer and therefore no further surveys were required,

Access was denied by landowners for a number of individual ponds along the route.

2.2 ***Great Crested Newt Survey***

2.2.1 ***General***

All water bodies were identified within the survey area by using aerial photography, maps and during walkover surveys. Water bodies isolated from the working width by significant barriers to amphibian movement were discounted at this stage. This included prominent roads, rivers and densely built up areas. All waterbodies identified as having connectivity (of suitable habitat) with the works area were assessed for their potential to support Great Crested Newts.

2.2.2 ***Personnel***

Andrew Ross, Clare Parker, Jonathan Jackson and Paul Barnes carried out the surveys, (Natural England licence numbers 20110778, 20113172, 20110548 and 2011079 respectively). All personnel are experienced ecologists employed by RSK Environment and are members of the Institute of Ecology and Environmental Managers (IEEM).

2.2.3 ***Scoping Surveys***

All waterbodies were visited by an ecologist in order to determine their current status *i.e.* extant, dried up, polluted *etc.* If the water bodies were potentially suitable for Great Crested Newts then a Habitat Suitability Index (HSI) was carried out. A subjective assessment was also made based on the experience of the surveyor.

For the ditches identified at this stage a subjective recommendation for survey was made primarily based on the level of water-flow present. This is because Great

Crested Newts are not known to use water bodies with significant flow (JNCC, 2003) and so any ditches with significant flow were discounted at this stage.

2.2.4

Habitat Suitability Index

Potentially suitable waterbodies identified within 250 m of the proposed cable route were assessed to determine whether they were suitable for Great Crested Newt using a Habitat Suitability Index (HSI) developed by Oldham *et al.* (2000). Raw data for HSI scores are provided in *Appendix B*.

This is derived from assessment systems developed by the US Fish and Wildlife Service. It is a numerical index, between 0 and 1, where 0 indicates unsuitable habitat and 1 represents optimal habitat. The HSI for the Great Crested Newt uses ten factors (suitability indices (SI) 1 to 10), which are thought to affect Great Crested Newts as follows:

- geographic location (SI 1);
- surface area (SI 2);
- hydrology (drying) (SI 3);
- water quality (SI 4);
- shade (SI 5);
- presence of water fowl (SI 6);
- presence of fish (SI 7);
- number of adjacent water features (SI 8);
- terrestrial habitat (SI 9); and
- macrophyte cover (SI 10).

Each factor is scored, and the ten scores are then converted to SI scores using a scale from 0.01 to 1 from graphs given in Oldham *et al.* (2000) and a HSI result is calculated using the following formula:

$$\text{HSI} = (\text{SI1} \times \text{SI2} \times \text{SI3} \times \text{SI4} \times \text{SI5} \times \text{SI6} \times \text{SI7} \times \text{SI8} \times \text{SI9} \times \text{SI10})^{1/10}$$

Further research by Brady (unpublished) has developed a system for using HSI scores to define pond suitability for Great Crested Newts according to the following categories:

- HSI <0.5 = poor
- HSI 0.5 – 0.59 = below average
- HSI 0.6 – 0.69 = average
- HSI 0.7 – 0.79 = good
- HSI > 0.8 = excellent

There is a positive correlation between HSI scores and presence and abundance of Great Crested Newts in ponds. Generally, ponds with high HSI scores are likely to support larger populations. However, the relationship is not sufficiently precise to

conclude that a pond with a high HSI will definitely have a high newt population, or that a pond with a low HSI score will only have a low newt population or no newts at all.

During the HSI visits subjective assessments were also made based on the experience of the surveyor. This means that if ponds were extremely unlikely to support breeding Great Crested Newts then they were discounted at this stage. The HSI data was used to support these decisions. No HSI threshold was employed under which ponds were not surveyed. This resulted in ponds being surveyed even though they had a “Poor” HSI rating. No ponds were discounted with an HSI rating of “below-average” or above.

2.2.5 *Presence/Absence Survey Techniques*

All water bodies suitable for Great Crested Newts were surveyed four times (where possible) for presence or absence using the following four survey methods (where appropriate).

Egg Searching

This involves searching marginal and aquatic vegetation for Great Crested Newt eggs, which are laid individually on plant leaves, and the leaf folded characteristically around the egg. The large size and yellowish/white coloration readily distinguishes the eggs of Great Crested Newts from those of smaller species.

Netting

Netting is carried out using a long-handled dip-net with a very fine mesh. The perimeter of the water body is walked, and 15 minutes of netting is carried out for every 50 m of water-margin. The method is less effective than bottle trapping and torching when surveying for adult Great Crested Newts, but is very useful when searching for larvae. This method is used as an alternative or extra method of survey when weather conditions or other constraints did not allow bottle trapping to be carried out efficiently or safely. If a pond has significant quantities of dead leaf litter on the bottom, netting would not be carried out due to the amount of disturbance that would be caused and subsequent impact upon the water quality of the pond.

Torching

This technique is carried out at night, when newts are most active. Negative results are only meaningful when survey is carried out under suitable weather conditions. Ideal weather conditions are a night-time air temperature of more than 5° C, little or no wind, and no rain. Survey involves walking slowly around the edge of the pond and scanning the water with a torch (Clulite, 1,000,000 candle power) where access and safety permitted. Great Crested Newts can be easily identified and counted in clear water. The technique is less successful in thick weed or turbid water, but can still be used. Bright light may cause newts to seek cover where they will be undetected, but

the technique is appropriate to establish presence and for estimating populations. The species, sex (if possible), number of newts, and survey times are recorded.

Bottle Trapping

This technique is carried out at night, when newts are most active. Negative results are only meaningful when survey is carried out under suitable weather conditions. Ideal weather conditions are a night-time air temperature of more than 5° C, little or no wind, and no rain. Survey involves walking slowly around the edge of the pond and scanning the water with a torch (Clulite, 1,000,000 candle power) where access and safety permitted. Great Crested Newts can be easily identified and counted in clear water. The technique is less successful in thick weed or turbid water, but can still be used. Bright light may cause newts to seek cover where they will be undetected, but the technique is appropriate to establish presence and for estimating populations. The species, sex (if possible), number of newts, and survey times are recorded.

Population Estimate

If Great Crested Newts were detected then a further two surveys were carried out in order to gain a population estimate for the water body. This is calculated from the maximum number of newts caught or seen using one survey method. The maximum count breaks down into three size classes, presented in *Table 1*.

Table 1: Population Size Classes

Maximum Count recorded from any single survey method	Population Size Class
1-9	Small
10-99	Medium
100+	Large

3

RESULTS

3.1.1

Scoping surveys

A total of 135 water bodies were identified from maps, aerial photography and during walkover surveys in March 2011. These are presented in *Figure 2*. These waterbodies break down into the following categories shown in *Table 2*. A list of which category each of the 135 water bodies falls into is presented in *Appendix B*.

Table 2: Results of Scoping Survey

Status of Waterbody	Number of Ponds/ditches
Potentially Suitable	61
No access	18
Dry	20
Ditch with flow	36
Total	135

3.1.2

Habitat Suitability Index Scores and Subjective Assessment Conclusions

A total of 63 potentially suitable waterbodies were subject to a Habitat Suitability Assessment (or a subjective assessment if they are a ditch). Raw data for these assessments are provided in *Appendix B*. These water bodies were split into suitable and unsuitable following these assessments, see *Table 3*. Unsuitable water bodies were not surveyed further. Descriptions of the reasoning behind unsuitable classifications are provided in *Appendix B*.

Table 3: Summary of Suitability Assessments

Status of Waterbody	Number of Ponds
Suitable (HSI score of “below average” or better and/or ecologist’s assessment)	51
Unsuitable (HSI score of “poor” and ecologists assessment)	10
Total	61

3.1.3

Presence Absence Surveys

A total of 51 water bodies were surveyed, a summary of the results are shown in *Table 4* and summarised in *Table 5*. The raw data is presented in *Appendix B*.

Table4: Presence Absence Survey Results

Pond/Ditch Number	HSI Score	Great Crested Newt Present?	Population Size
1a	0.5	No	-
2	0.7	No	-
Ditch 7	N/A	No	-
Ditch 12	N/A	No	-
Ditch 13	N/A	No	-
Ditch 15	N/A	No	-
Ditch 35B	N/A	No	-
Ditch 35C	N/A	No	-
43a	0.72	No	-
43b	0.75	No	-
44	0.73	No	-
53	0.8	No	-
54	0.53	No	-
55	0.53	No	-
55b	0.64	Yes - Max count 1	Low
59	0.69	No	-
66	0.71	No	-
67	0.57	No	-
68a	0.68	No	-
68b	0.73	No	-
69	0.5	No	-
70	0.72	No	-
71a	0.52	Yes - Max count 3	Low
74a	0.75	No	-
74b	0.72	No	-
77	0.5	No	-
79	0.61	No	-
80	0.54	No	-
82	0.8	Yes - Max count 13	Medium
83	0.5	Yes - eggs only	Low
84	0.55	Yes - Max count 10	Medium
87	0.62	No	-
106	0.8	No	-
108	0.5	Yes - Max count 2	Low
109	0.61	No	-
112	0.77	Yes - Max count 2	Low
113	0.54	Yes - Max count 1	Low
115	0.5	Yes- Max count 9	Low
116	0.55	No	-
134	0.7	No	-
134b	N/A	No	-

Pond/Ditch Number	HSI Score	Great Crested Newt Present?	Population Size
134c	N/A	Yes - Max count 2	Low
137	0.59	No	-
138	0.72	No	-
139	0.58	No	-
140	0.57	No	-
141	0.75	No	-
142	0.74	Yes - Max count 142	High
144	0.59	Yes - Max count 2	Low
153	0.5	No	-
159	0.8	No	-

Table 5: Summary of Presence Absence Survey Results

Status of Waterbody	Number of Ponds
Absent	39
Low population	9
Medium Population	2
High Population	1
Total	51

4

EVALUATION AND CONCLUSIONS

4.1.1

General Evaluation

The surveys show that Great Crested Newts could be affected by the development. Therefore a Great Crested Newt development licence must be obtained to cover all areas of work where newts may be affected.

No Great Crested Newt breeding ponds will be lost as a result of the development. Newts will therefore only be at risk in their terrestrial phase. This could include individual newts being killed by machinery, either directly or as a result of vibration. Also, the works may affect dispersal routes as a linear trench is dug across suitable habitat near breeding ponds.

Figure 3 shows the 250 m buffers around the water bodies with Great Crested Newts present. These buffers overlap in several places to form six discrete areas of the cable route with a risk of Great Crested Newts being present. The ponds to which these areas relate are shown in *Table 6*.

Table 6: Areas of the route with a risk of Great Crested Newts

Area Number	Ponds with Great Crested Newts present within 250 m	Significant area
1	55b	Yes
2	71a	No
3	82, 83, 84	Yes
4	108, 113, 112, 115	Yes
5	134c	Yes
6	142, 144	Yes

4.1.2

Potential Mitigation and Working Methods

Figure 3 shows the amount of development area (working width) within *Areas 1, 3, 4, 5* and *6* is significant. This means that mitigation for the newts in the working width in these buffers is likely to include a translocation. This would involve installation of amphibian-proof fencing around the working width and using pit-fall trapping and carpet tiles to catch and remove all Great Crested Newts. This will take place during suitable conditions in the newt active season April-October inclusive for a period of time appropriate to the population size (up to 60 days). Translocated newts would be placed outside of the fencing in places of safety. The fence would remain in place until the works were complete in that area and the ground was remade.

Figure 3 also shows that *Area 2* is right on the extreme edge of the 250 m distance at which newts are likely to be found from those ponds in their terrestrial phase (*Pond*

71a). The population level in this pond was also low (*Table 4*). The risks of Great Crested Newts being in the working width of *Area 2* is therefore extremely low. The size of the areas affected is also very small and a translocation would be overly precautionary, expensive and unlikely to capture any Great Crested Newts.

In this area, an ecologist should oversee works in these areas to perform a fingertip search prior to works starting. No materials should be stored on the ground in these areas for a significant length of time that could form resting areas for newts. Any newts found would be moved to a place of safety nearby. Once the area has been stripped to below topsoil level no further actions would be needed.

If any newts are found during works on other parts of the route then an ecologist will be called to site immediately to assess the situation and advise on a course of action.

4.1.3 *Long term impacts*

The working width will be fully reinstated at the end of the proposed construction works. Therefore it is highly unlikely that there will be any long-term impacts on Great Crested Newt populations in the area.

REFERENCES

Gent, T. and Gibson, S., (2003), *Herpetofauna Workers' Manual*, JNCC

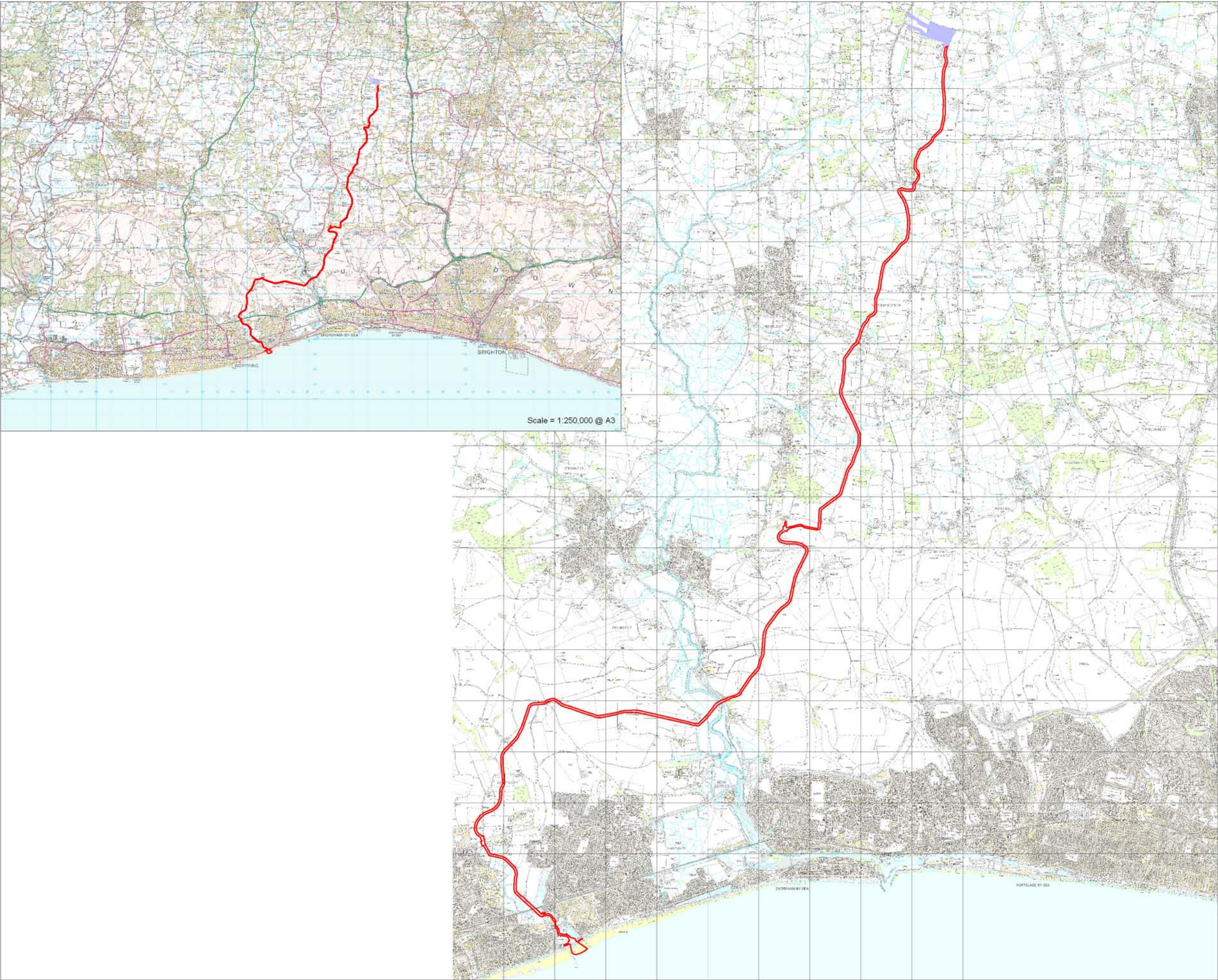
Oldham, R. S., Keeble, J., Swan, M. J. S. and Jeffcote, M. (2000) Evaluating the suitability of habitat for the great crested newt (*Triturus cristatus*), *Herpetological Journal*, **10**, 143 - 155.

FIGURE

Figure 1 – Location Plan

Figure 2 – Pond Location Plan

Figure 3 – Working areas with a risk of Great Crested Newt presence



Legend :

- Development Boundary
- Substation Development Boundary

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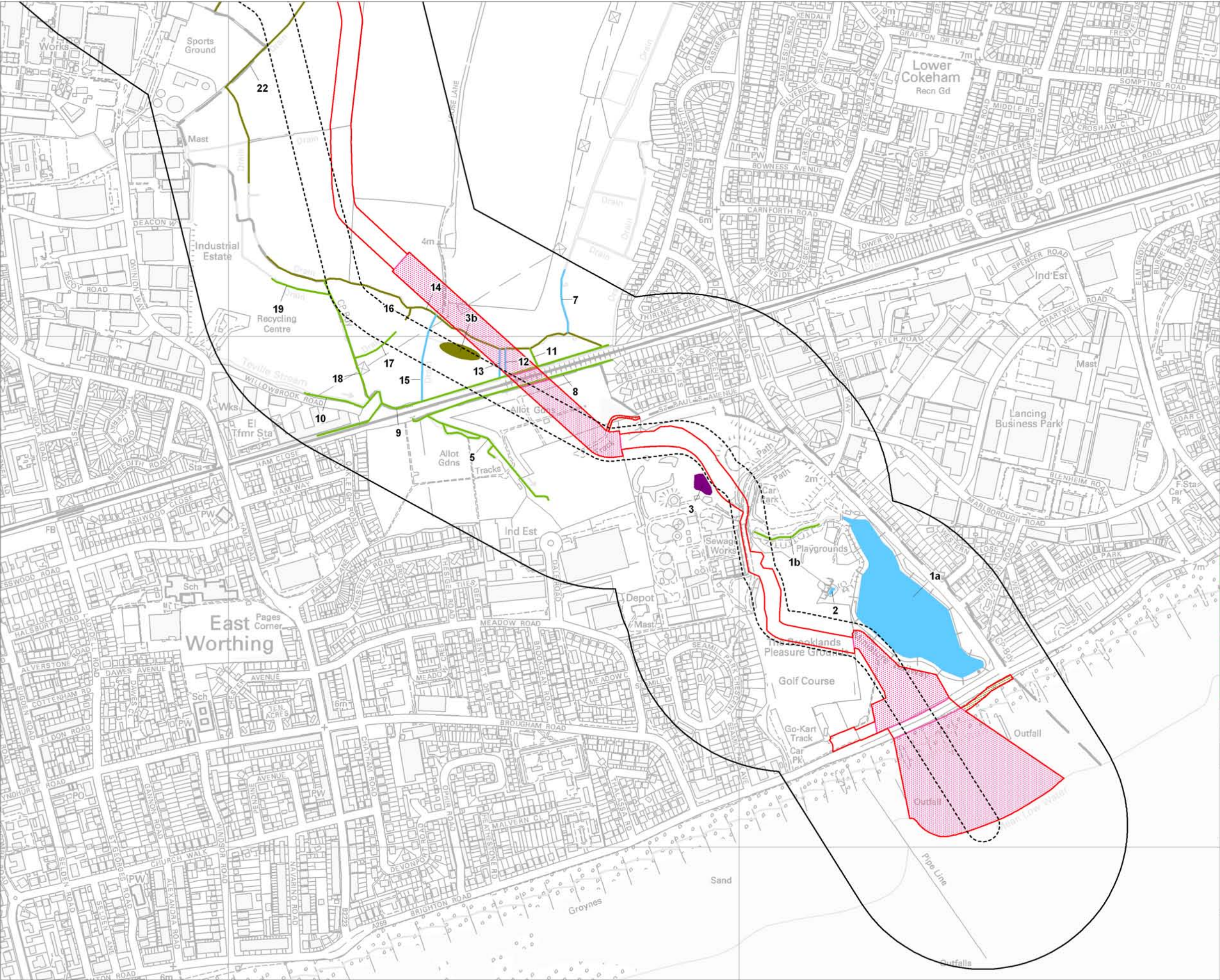
Figure 1 -
Site Location Plan



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REV 16



- Legend :**
- Ecology survey corridor (65m)
 - 250m buffer of survey corridor
 - Development Boundary
 - Side Access
 - Potential Mitigation Area
 - HDD Section
 - Temporary Construction Compound
 - Substation Development Boundary
- Water features**
- GCN present
 - 250m buffer of pond with GCN presence
 - Surveyed waterfeature
 - Dry
 - Unsuitable
 - No access

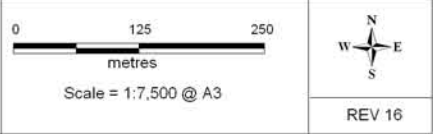


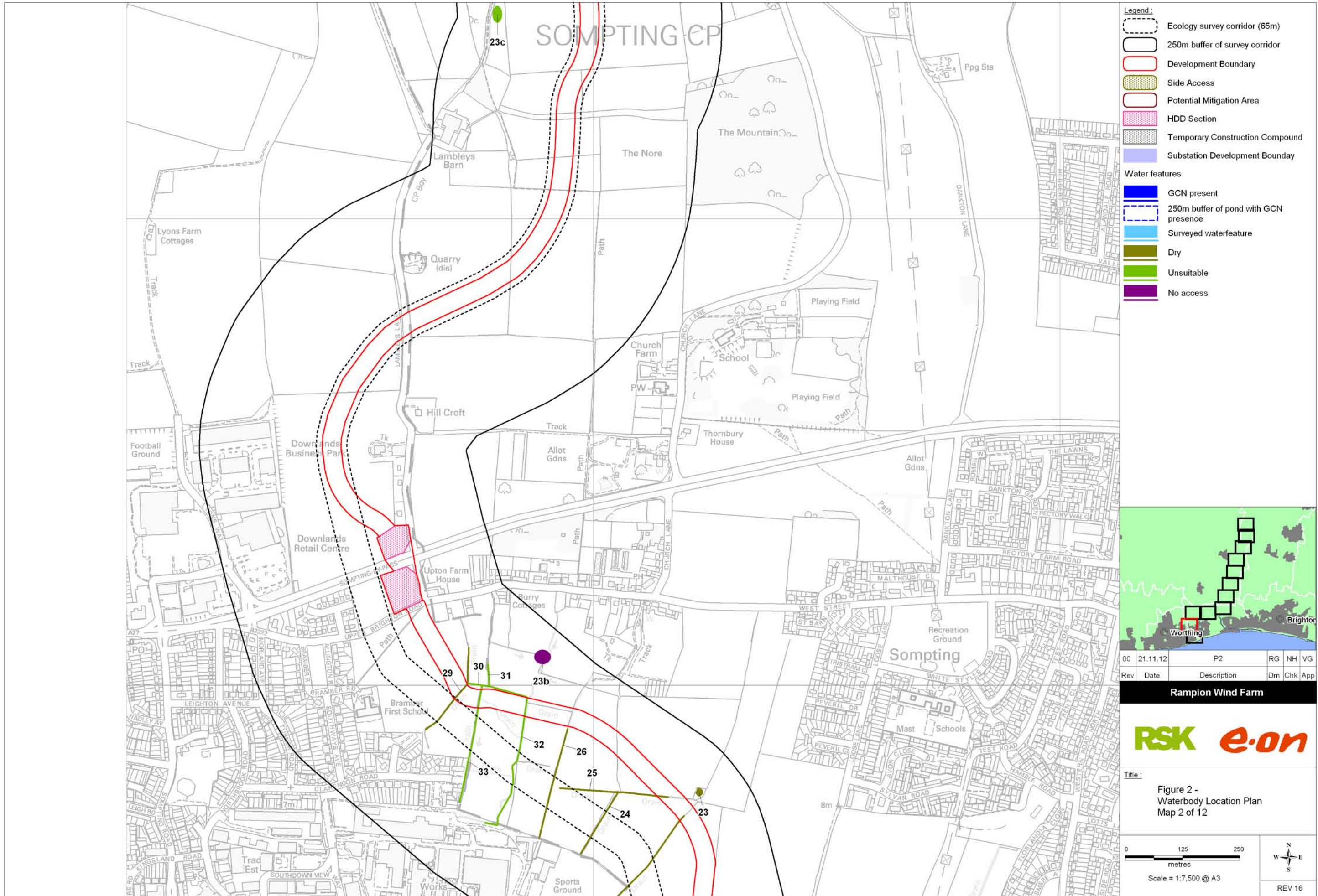
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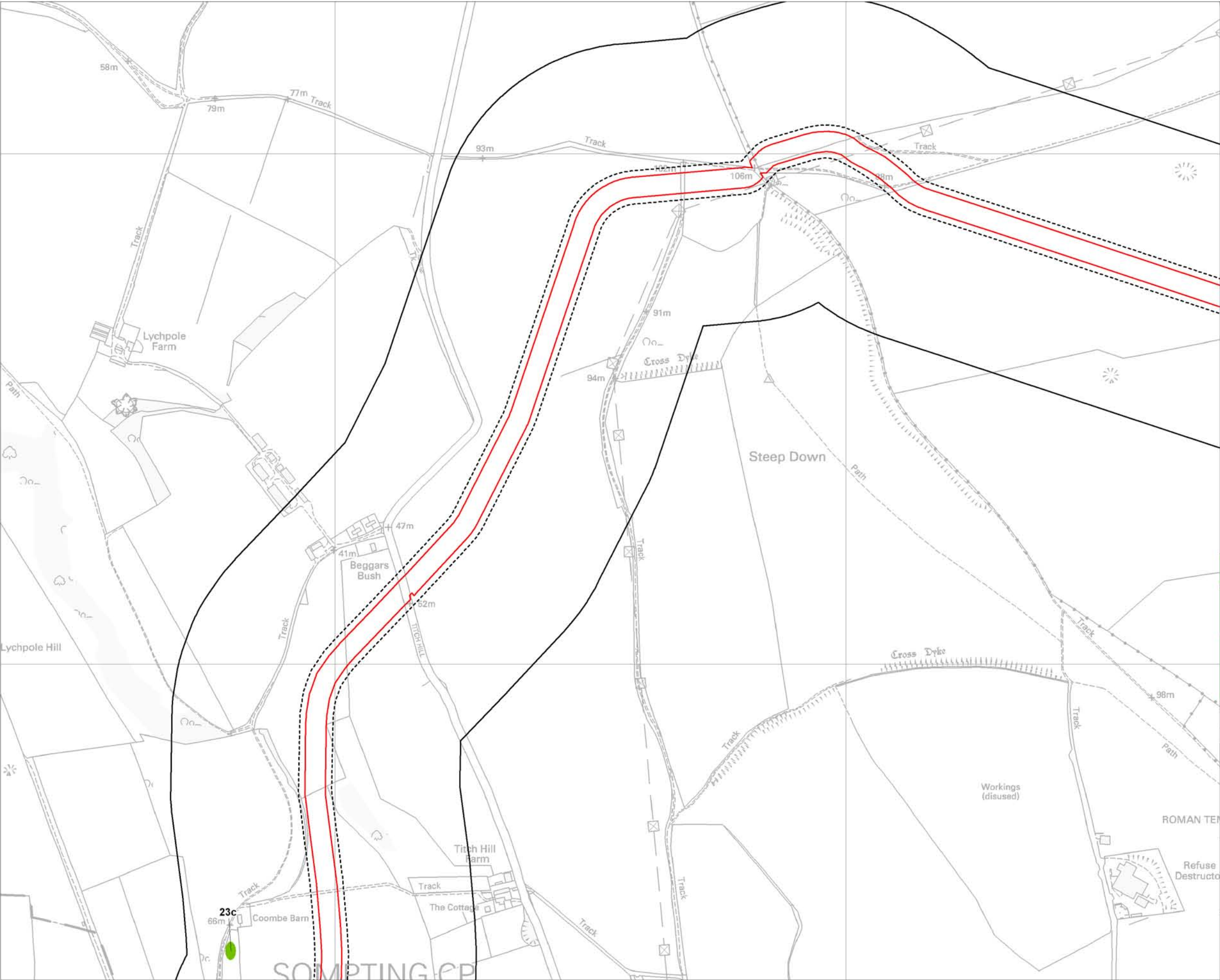


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Figure 2 -
Waterbody Location Plan
Map 1 of 12







Legend :

- Ecology survey corridor (65m)
- 250m buffer of survey corridor
- Development Boundary
- Side Access
- Potential Mitigation Area
- HDD Section
- Temporary Construction Compound
- Substation Development Boundary

Water features

- GCN present
- 250m buffer of pond with GCN presence
- Surveyed waterfeature
- Dry
- Unsuitable
- No access

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Title :

Figure 2 -
Waterbody Location Plan
Map 3 of 12

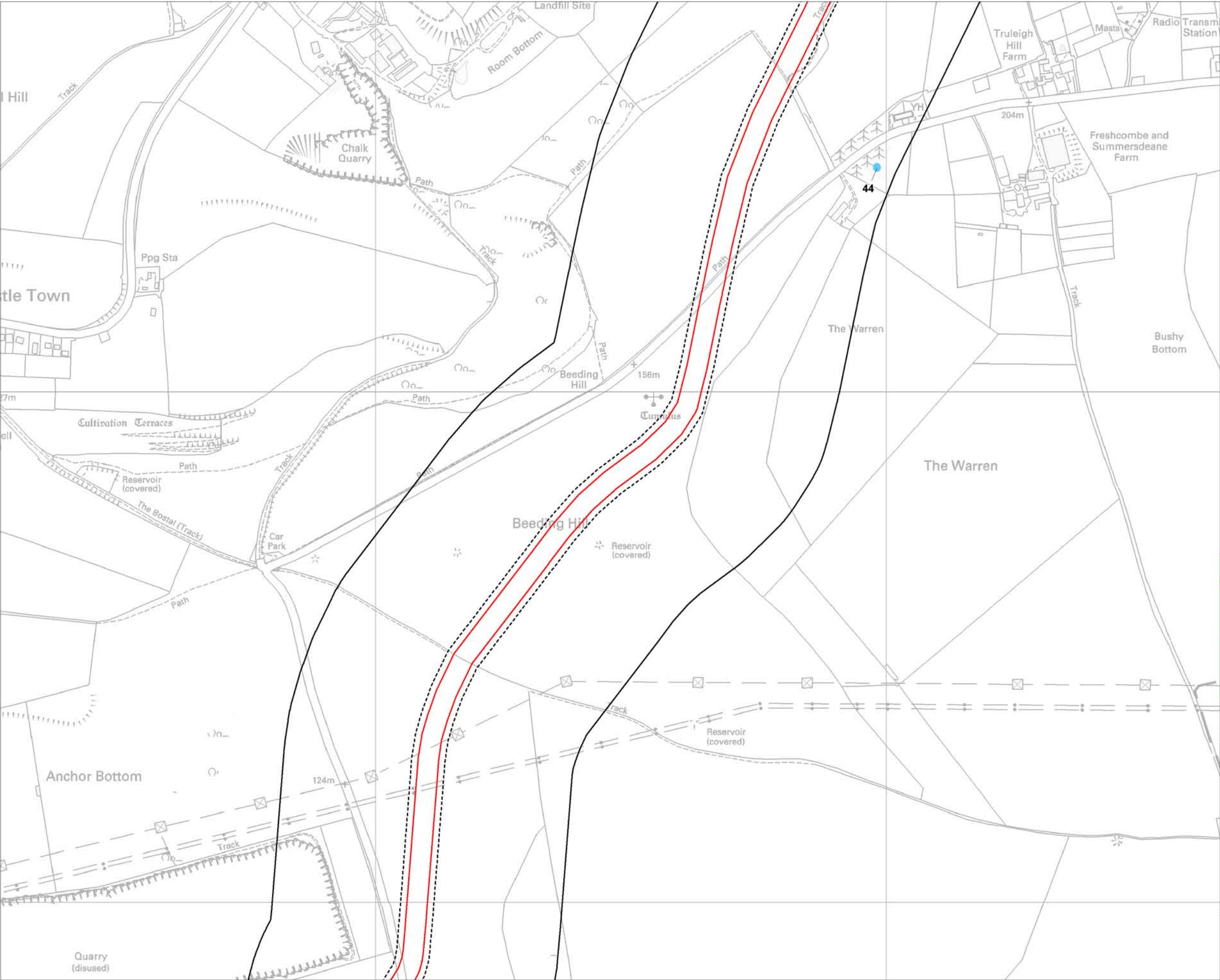
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REV 16





- Legend:**
- Ecology survey corridor (65m)
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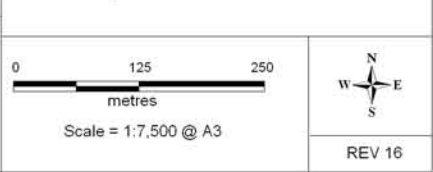


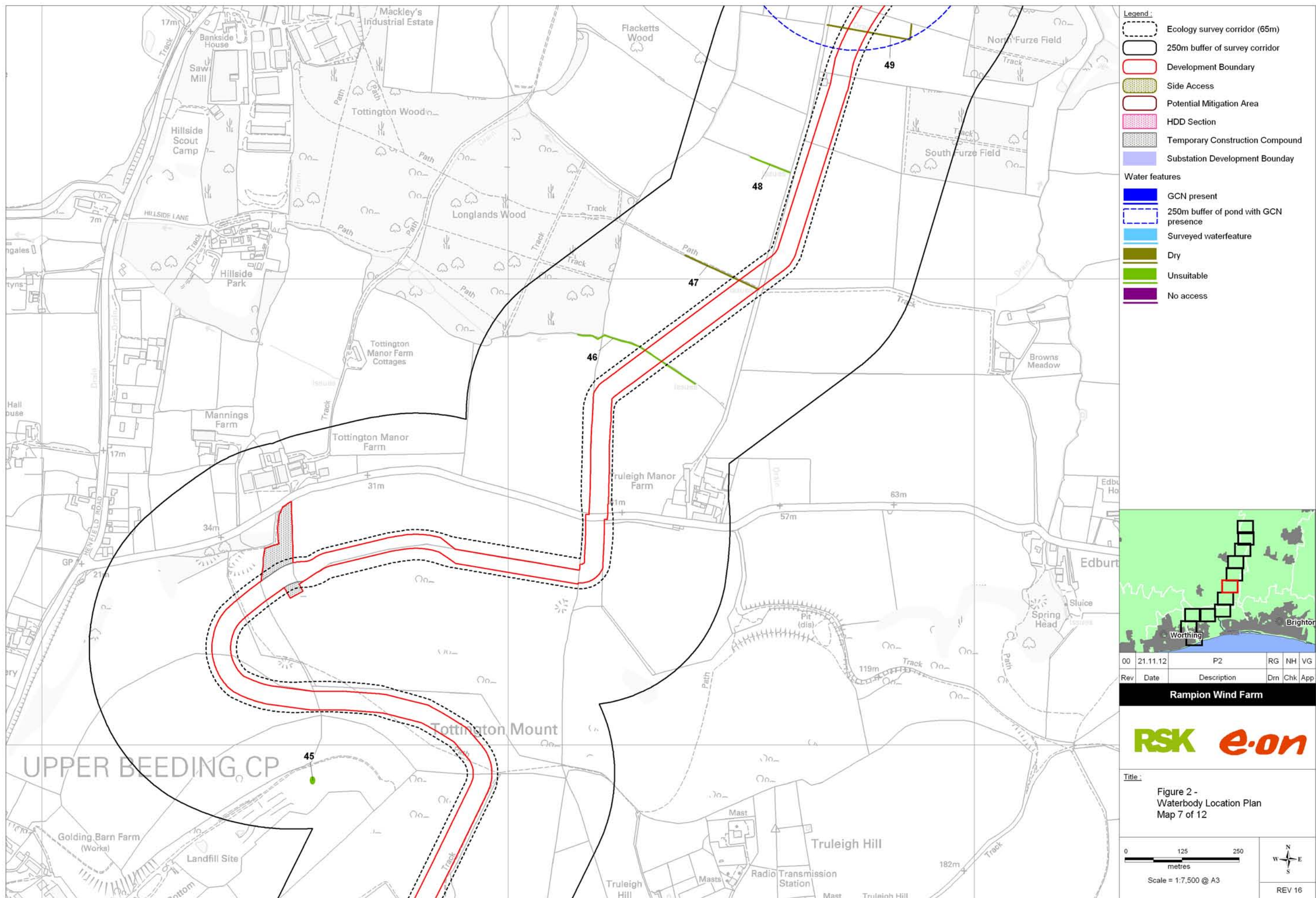
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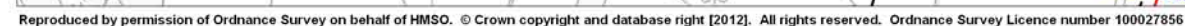
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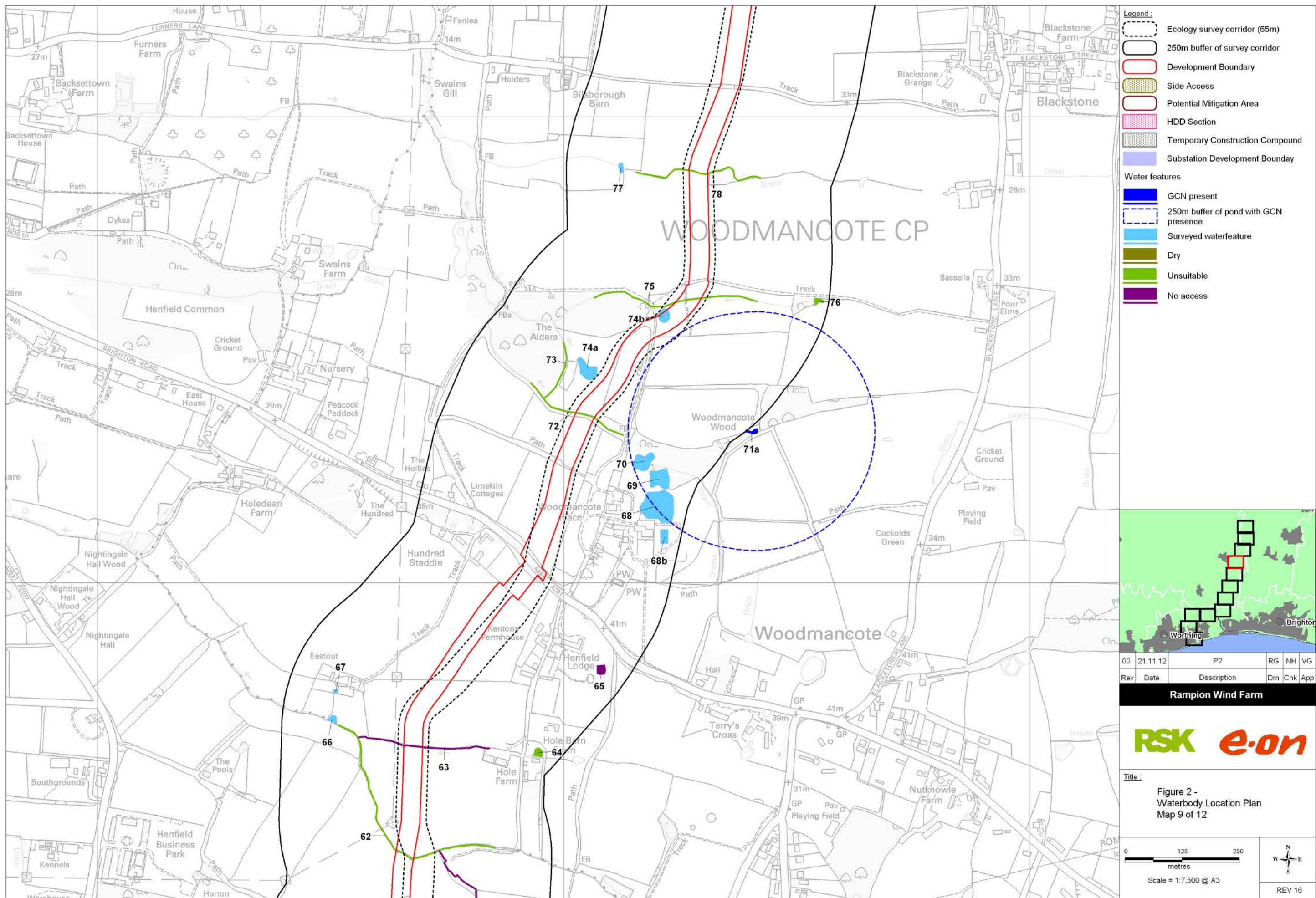


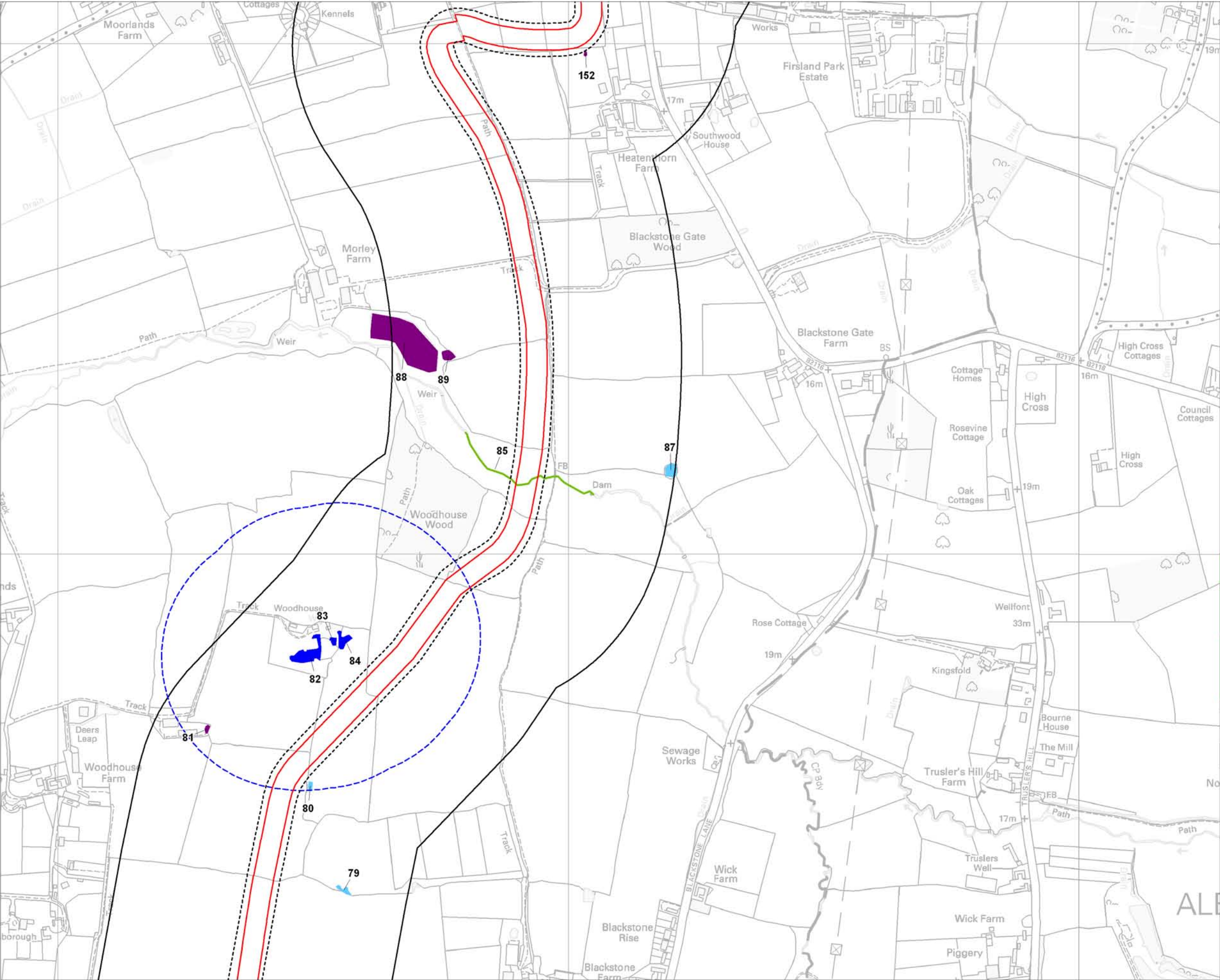
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Figure 2 -
Waterbody Location Plan
Map 6 of 12











Legend :

- Ecology survey corridor (65m)
- 250m buffer of survey corridor
- Development Boundary
- Side Access
- Potential Mitigation Area
- HDD Section
- Temporary Construction Compound
- Substation Development Boundary

Water features

- GCN present
- 250m buffer of pond with GCN presence
- Surveyed waterfeature
- Dry
- Unsuitable
- No access

00 21.11.12 P2 RG NH VG

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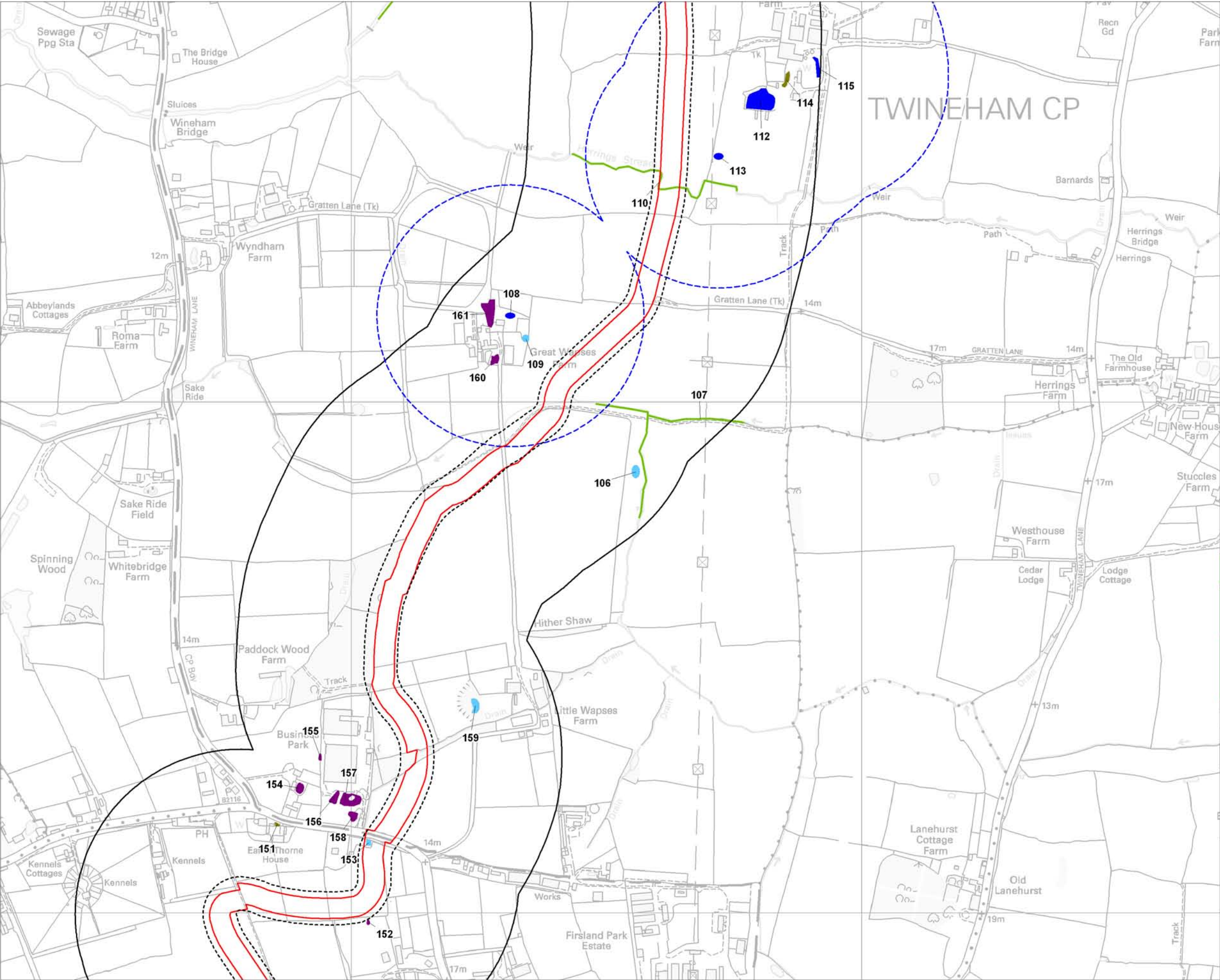
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Figure 2 -
Waterbody Location Plan
Map 10 of 12

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metres
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REV 16



Legend:

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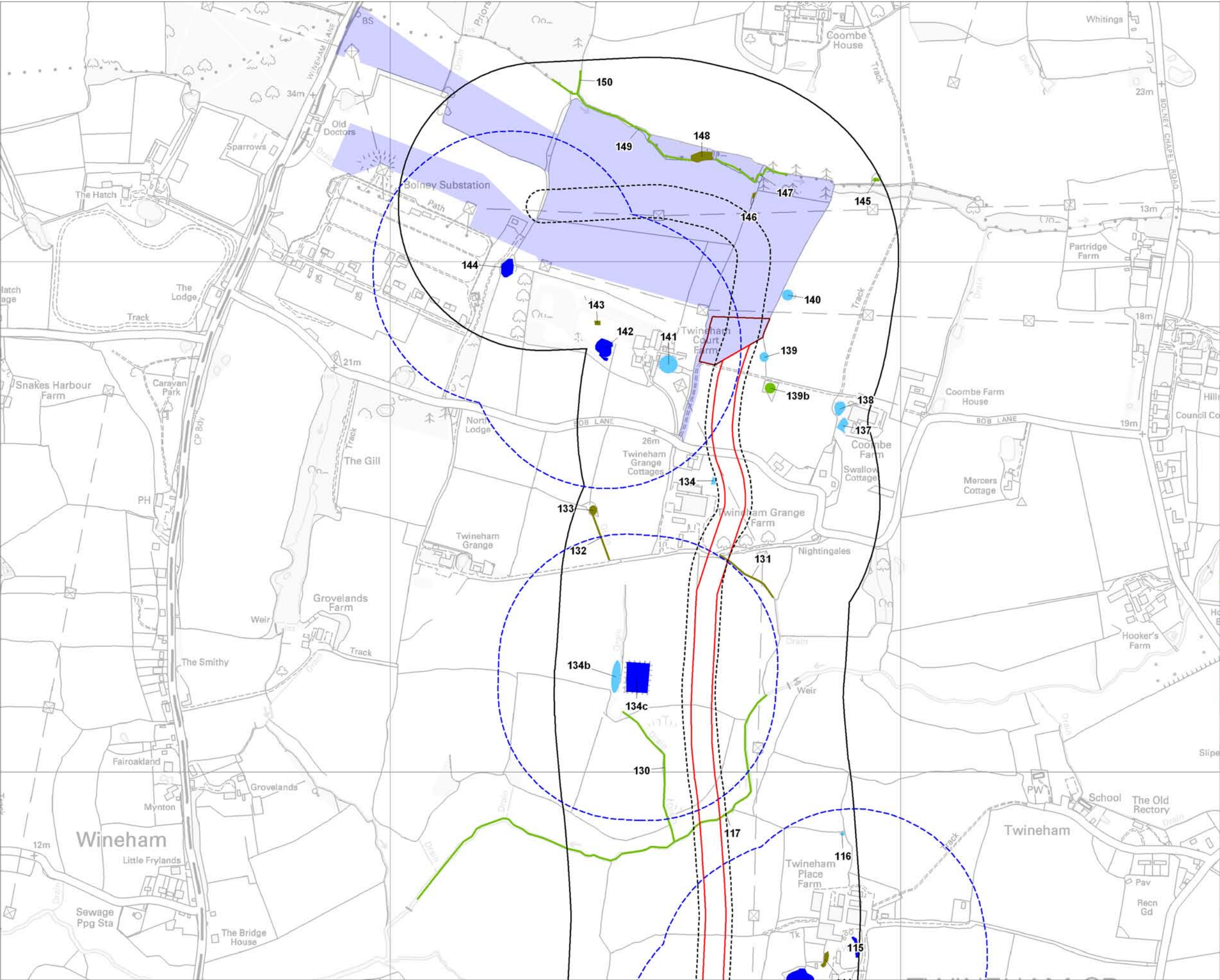
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Figure 2 -
Waterbody Location Plan
Map 11 of 12

Scale = 1:7,500 @ A3

REV 16



Legend :

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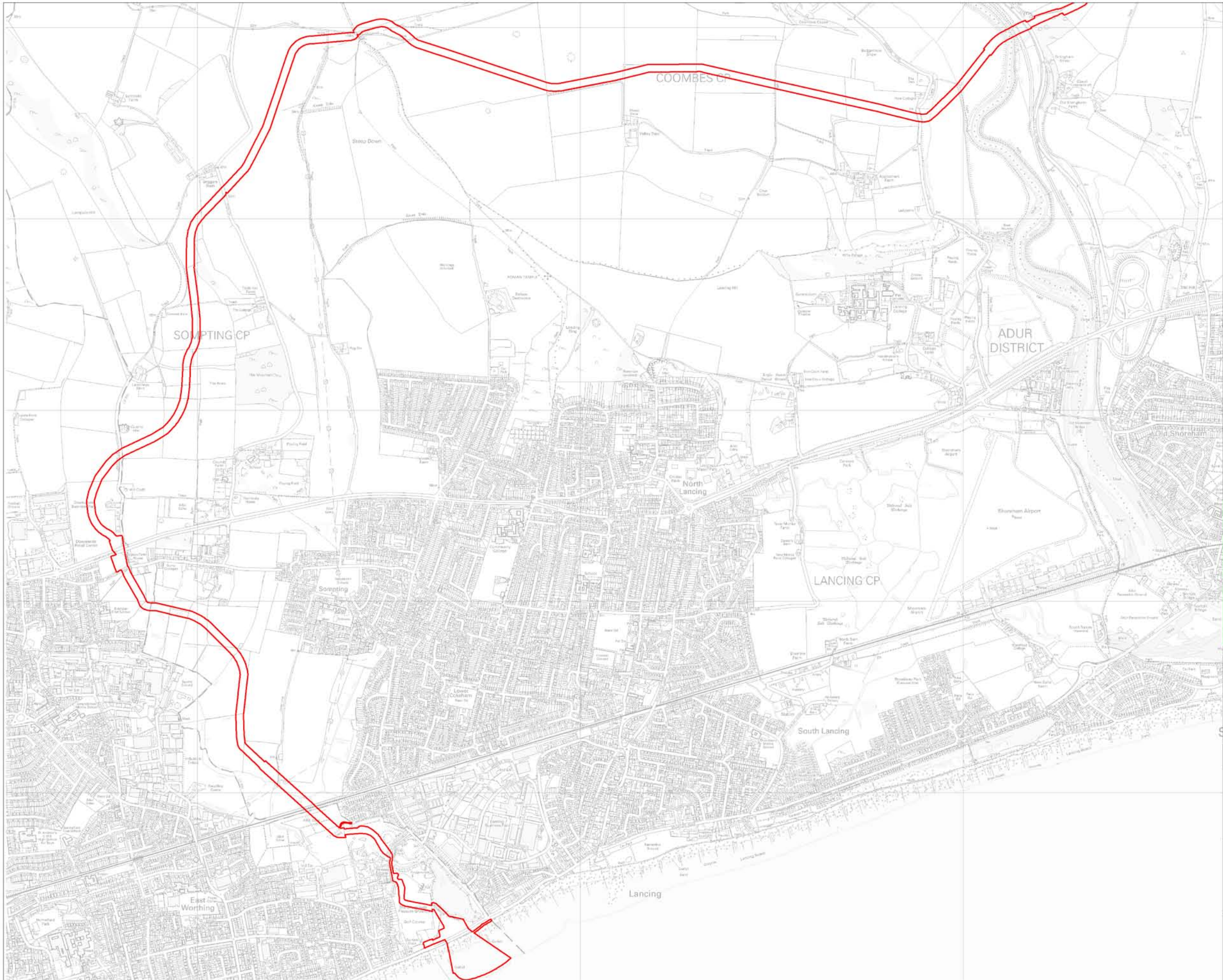
Rampion Wind Farm

Title :

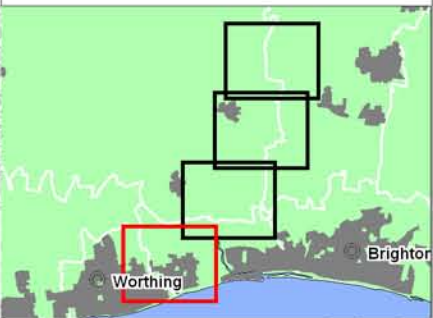
Figure 2 -
Waterbody Location Plan
Map 12 of 12

Scale = 1:7,500 @ A3

REV 16



- Legend :
- Development Boundary
 - Substation Development Boundary
 - Pond with GCN presence
 - 250m buffer of pond with GCN presence
 - Impacted area

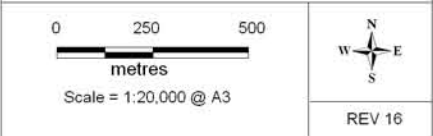


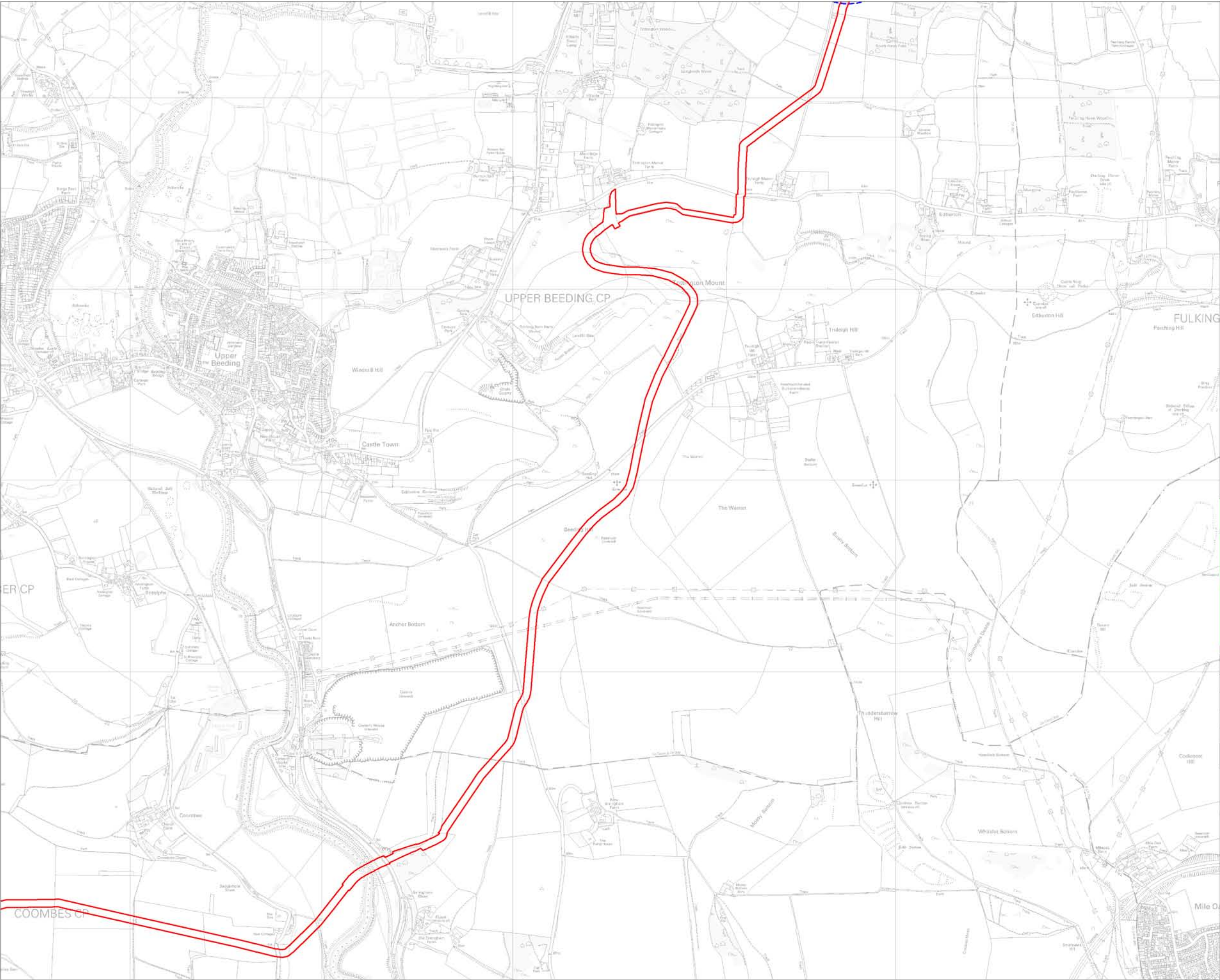
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Rev	Date	Description	Drn	Chk	App

Rampion Wind Farm



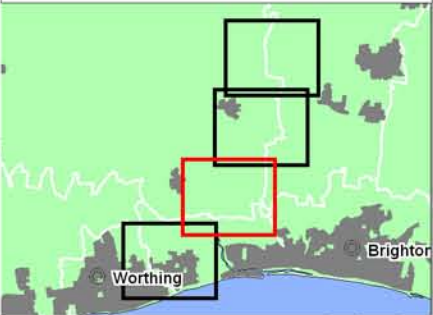
Title :
Figure 3 -
Working Areas with a Risk of Great
Crested Nwt Presence
Map 1 of 4





Legend :

- Development Boundary
- Substation Development Boundary
- Pond with GCN presence
- 250m buffer of pond with GCN presence
- Impacted area



00	21.11.12	P2	RG	NH	VG
Rev	Date	Description	Dn	Chk	App

Rampion Wind Farm

RSK e-on

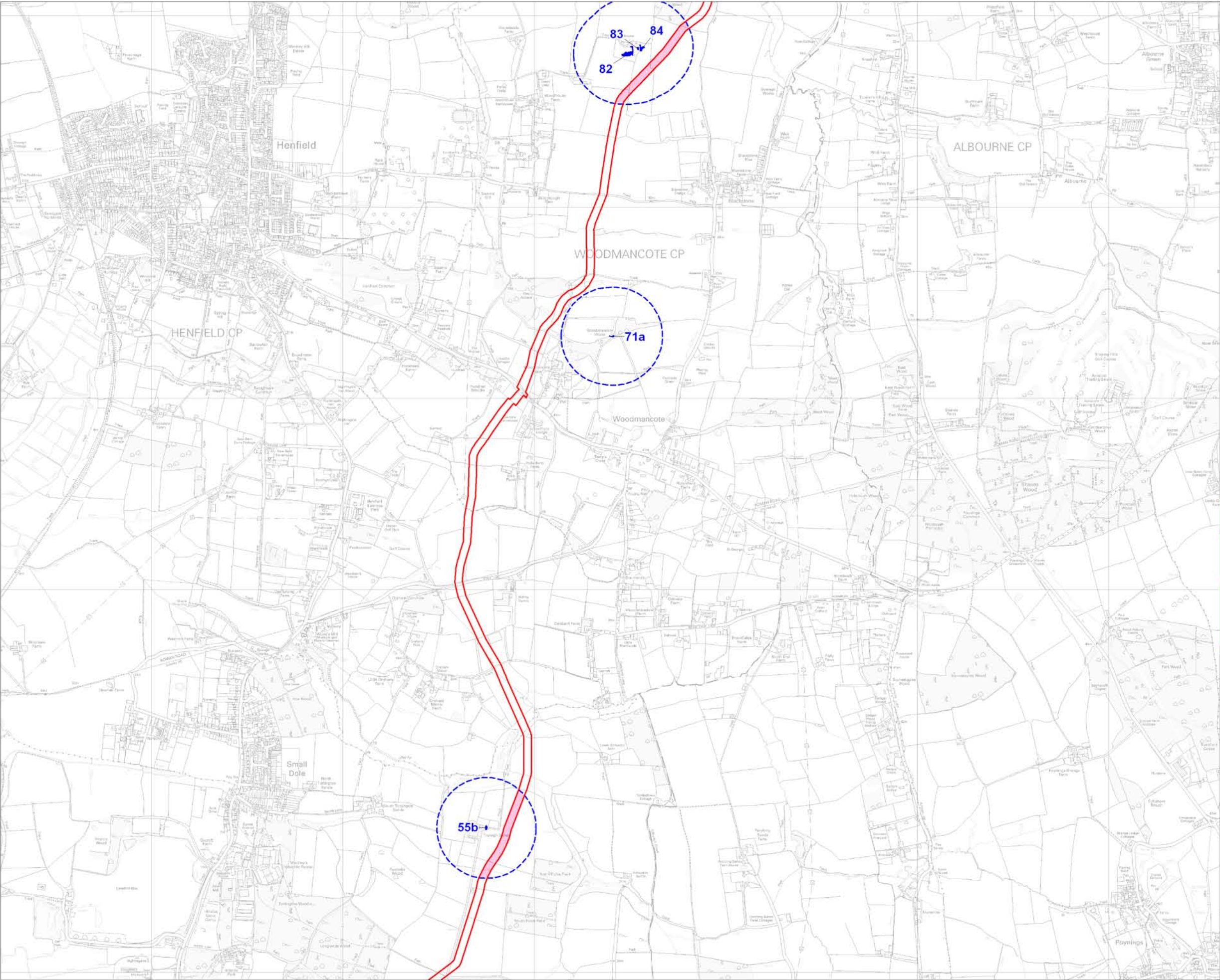
Title :

Figure 3 - Working Areas with a Risk of Great Crested Newt Presence
Map 2 of 4

0 250 500
metres
Scale = 1:20,000 @ A3

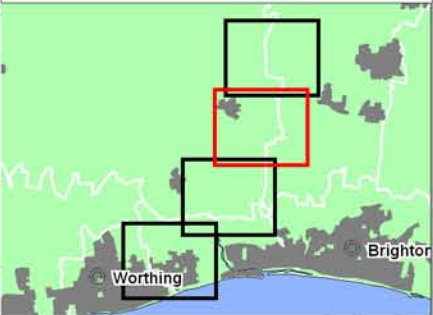
N
W E
S

REV 16



Legend :

- Development Boundary
- Substation Development Boundary
- Pond with GCN presence
- 250m buffer of pond with GCN presence
- Impacted area



00	21.11.12	P2	RG	NH	VG
Rev	Date	Description	Drn	Chk	App

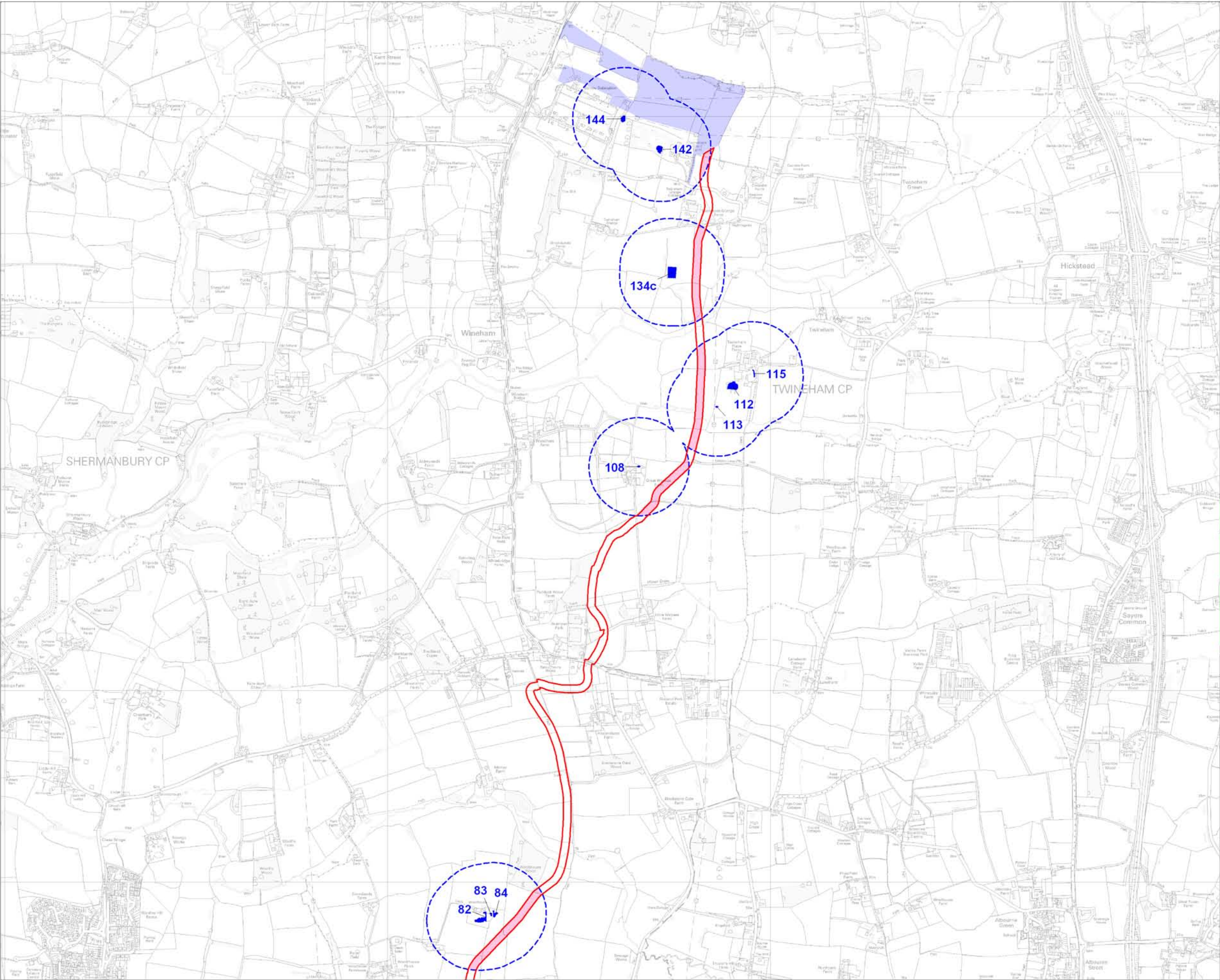
Rampion Wind Farm



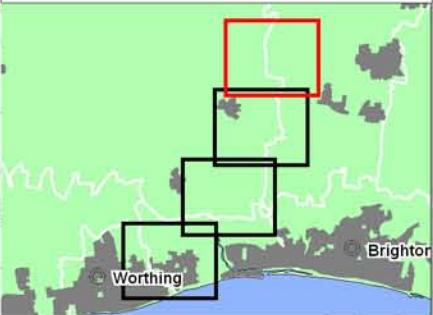
Title :
Figure 3 - Working Areas with a Risk of Great Crested Newt Presence
Map 3 of 4

0 250 500
metres
Scale = 1:20,000 @ A3

N
W E
S
REV 16



- Legend :
- Development Boundary
 - Substation Development Boundary
 - Pond with GCN presence
 - 250m buffer of pond with GCN presence
 - Impacted area

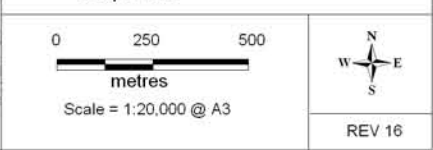


00	21.11.12	P2	RG	NH	VG
Rev	Date	Description	Drn	Chk	App

Rampion Wind Farm



Title :
Figure 3 -
Working Areas with a Risk of Great
Crested Newt Presence
Map 4 of 4



7

APPENDIX A – LEGISLATION

7.1.1

General

This section briefly describes the legal protection afforded to the protected species referred to in this report. It is for information only and is not intended to be comprehensive or to replace specialised legal advice. It is not intended to replace the text of the legislation, but summarises the salient points.

7.1.2

Great Crested Newt

Great Crested Newts are protected by *The Wildlife and Countryside Act 1981 (as amended)*, extended by the *Countryside and Rights of Way Act 2000*. This legislation makes it an offence to:

- intentionally kill, injure or take;
- possess or control;
- intentionally or recklessly damage, destroy or obstruct access to a breeding site or resting place; and
- intentionally or recklessly disturb whilst the animal occupies a breeding site or resting place.

Great Crested Newts are also European Protected Species listed on *The Conservation (Natural Habitats, & c.) Regulations 1994 (as amended)*. This legislation makes it an offence to:

- deliberately capture, injure or kill;
- deliberately disturb, including in particular any disturbance which is likely (a) to impair their ability - (i) to survive, to breed or reproduce, or to rear or nurture their young; or (ii) hibernate or migrate, where relevant; or (b) to affect significantly the local distribution or abundance of the species to which they belong.
- damage or destroy a breeding site or resting place; and
- possess, control, transport, sell, exchange, or offer for sale or exchange.

All breeding sites and resting places receive legal protection even if the animals are not present at the time.

8

APPENDIX B – SURVEY DATA

8.1.1

HSI Data

Pond ref	1a	2	43a	43b	44
SI1 - Location	1	1	1	1	1
SI2 - Pond area	1	0.2	0.3	0.3	0.1
SI3 - Pond drying	0.9	0.9	0.5	0.5	0.5
SI4 - Water quality	0.33	0.9	0.67	0.67	1
SI4 - Shade	1	1	1	1	1
SI6 - Fowl	0.01	0.67	0.67	1	1
SI7 - Fish	0.67	1	1	1	1
SI8 - Ponds	1	1	1	1	1
SI9 - Terr'l habitat	0.67	0.33	1	1	1
SI10 - Macrophytes	0.35	0.8	0.55	0.55	0.9
HSI	0.46	0.70	0.72	0.75	0.73
Rating	Poor	Good	Good	Good	Good

Pond ref	53	54	55	55b	59
SI1 - Location	1	1	1	1	1
SI2 - Pond area	0.4	1	1	0.2	0.2
SI3 - Pond drying	0.5	0.9	0.9	0.5	0.5
SI4 - Water quality	0.67	0.67	0.67	0.67	0.67
SI4 - Shade	1	1	1	1	0.7
SI6 - Fowl	1	0.67	0.67	1	1
SI7 - Fish	0.67	0.01	0.01	0.67	1
SI8 - Ponds	1	1	1	1	1
SI9 - Terr'l habitat	1	1	1	0.33	1
SI10 - Macrophytes	0.9	0.4	0.4	0.8	0.55
HSI	0.78	0.53	0.53	0.64	0.69
Rating	Good	Below Average	Below Average	Average	Average

Pond ref	66	67	68a	68b	69
SI1 - Location	1	1	1	1	1
SI2 - Pond area	0.2	0.15	1	0.2	1
SI3 - Pond drying	0.9	0.1	0.9	0.9	0.9
SI4 - Water quality	0.67	0.67	0.67	1	0.67
SI4 - Shade	1	1	1	1	1
SI6 - Fowl	0.67	1	0.67	1	0.67

SI7 - Fish	0.67	1	0.33	1	0.01
SI8 - Ponds	1	1	1	1	1
SI9 - Terr'l habitat	0.67	0.67	0.33	0.33	0.67
SI10 - Macrophytes	0.9	0.55	0.35	0.7	0.37
HSI	0.71	0.57	0.66	0.73	0.50
Rating	Good	Below Average	Average	Good	Poor

Pond ref	70	71a	74a	74b	77
SI1 - Location	1	1	1	1	1
SI2 - Pond area	1	0.2	1	0.2	0.05
SI3 - Pond drying	0.9	0.5	0.9	0.5	1
SI4 - Water quality	0.67	0.33	0.67	0.67	0.33
SI4 - Shade	1	0.2	1	1	0.2
SI6 - Fowl	0.67	1	0.67	1	1
SI7 - Fish	0.33	0.67	0.33	0.67	1
SI8 - Ponds	1	1	1	1	1
SI9 - Terr'l habitat	0.67	1	1	1	1
SI10 - Macrophytes	0.4	0.3	0.4	0.8	0.3
HSI	0.72	0.52	0.75	0.72	0.50
Rating	Good	Below Average	Good	Good	Poor

Pond ref	79	80	82	83	84
SI1 - Location	1	1	1	1	1
SI2 - Pond area	0.2	0.15	1	0.2	1
SI3 - Pond drying	1	1	0.9	0.1	0.1
SI4 - Water quality	0.33	0.33	0.67	0.33	0.33
SI4 - Shade	0.7	0.2	1	0.4	0.4
SI6 - Fowl	1	1	0.67	1	0.67
SI7 - Fish	0.67	1	0.67	1	1
SI8 - Ponds	1	1	1	1	1
SI9 - Terr'l habitat	0.67	0.67	1	1	1
SI10 - Macrophytes	0.35	0.3	0.4	0.35	0.3
HSI	0.61	0.54	0.80	0.50	0.55
Rating	Average	Below Average	Excellent	Poor	Below Average

Pond ref	87
SI1 - Location	1
SI2 - Pond area	0.6

SI3 - Pond drying	0.9
SI4 - Water quality	0.33
SI4 - Shade	0.2
SI6 - Fowl	1
SI7 - Fish	0.67
SI8 - Ponds	1
SI9 - Terr'l habitat	0.33
SI10 - Macrophytes	1
HSI	0.62
Rating	Average

Pond ref	106	108
SI1 - Location	1	1
SI2 - Pond area	0.5	0.15
SI3 - Pond drying	1	0.1
SI4 - Water quality	0.67	0.33
SI4 - Shade	1	0.2
SI6 - Fowl	0.67	0.67
SI7 - Fish	0.67	0.67
SI8 - Ponds	1	1
SI9 - Terr'l habitat	1	0.67
SI10 - Macrophytes	0.7	0.3
HSI	0.80	0.39
Rating	Excellent	Poor

Pond ref	109	112	113	115	116
SI1 - Location	1	1	1	1	1
SI2 - Pond area	0.5	0.95	0.2	0.6	0.1
SI3 - Pond drying	1	0.9	0.5	0.9	0.1
SI4 - Water quality	0.33	0.67	0.33	1	0.67
SI4 - Shade	0.2	1	1	1	1
SI6 - Fowl	1	0.67	1	0.67	1
SI7 - Fish	1	0.67	1	0.01	1
SI8 - Ponds	1	1	1	1	1
SI9 - Terr'l habitat	0.67	1	0.33	0.67	0.67
SI10 - Macrophytes	0.3	0.3	0.5	0.4	0.6
HSI	0.61	0.77	0.59	0.50	0.55
Rating	Average	Good	Below Average	Poor	Below Average

Pond ref	134	134b	134c	137	138
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SI1 - Location	1	1	1	1	1
SI2 - Pond area	0.1	1	1	0.2	0.4
SI3 - Pond drying	0.9	1	0.1	1	1
SI4 - Water quality	1	0.67	0.67	0.33	0.67
SI4 - Shade	1	1	1	0.4	1
SI6 - Fowl	1	0.67	0.6	1	0.67
SI7 - Fish	0.67	0.67	1	0.67	0.67
SI8 - Ponds	1	1	1	1	1
SI9 - Terr'l habitat	1	0.67	0.67	1	1
SI10 - Macrophytes	0.5	1	0.9	0.3	0.3
HSI	0.70	0.85	0.69	0.59	0.72
Rating	Good	Excellent	Average	Below Average	Good

Pond ref	139	140	141	142	144
SI1 - Location	1	1	1	1	1
SI2 - Pond area	0.1	0.8	0.8	0.98	0.8
SI3 - Pond drying	0.5	0.5	0.8	0.9	1
SI4 - Water quality	0.33	0.33	0.67	0.67	0.33
SI4 - Shade	1	0.4	1	0.4	0.2
SI6 - Fowl	1	0.67	1	1	0.67
SI7 - Fish	1	1	0.67	0.67	0.67
SI8 - Ponds	1	1	1	1	1
SI9 - Terr'l habitat	0.33	0.33	1	1	0.67
SI10 - Macrophytes	0.8	0.3	0.3	0.33	0.3
HSI	0.58	0.57	0.78	0.74	0.59
Rating	Below Average	Below Average	Good	Good	Average

Pond ref	153	159
SI1 - Location	1	1
SI2 - Pond area	0.1	1
SI3 - Pond drying	1	0.5
SI4 - Water quality	0.67	0.67
SI4 - Shade	0.8	1
SI6 - Fowl	1	0.67
SI7 - Fish	1	1
SI8 - Ponds	1	0.8
SI9 - Terr'l habitat	0.33	1
SI10 - Macrophytes	1	0.6
HSI	0.67	0.80

Rating	Average	Excellent
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8.1.2

Justification for waterbodies not surveyed

A total of 10 water bodies were classified as not being suitable for Great Crested Newts following the HSI survey visit. This conclusion was reached based on a combination of factors. These included:

- a low HSI score;
- distance from the working area; and,
- a subjective assessment that included factors not considered as part of the HSI analysis.

Descriptions for these unsuitable ponds are provided below.

Pond 1b

Pond 1b is located to the north of Pond 1a in the pleasure ground amenity area at the southern extreme of the route. The pond is located in a semi-urban environment and is largely isolated from suitable nearby habitat. The pond is highly impacted by both fish and waterfowl. This results there being a high likelihood of predation of adults, larvae and eggs. This also causes there to be no suitable egg laying material for the species. The HSI analysis presented below supports the assessment of the pond as having an extremely low likelihood of supporting Great Crested Newts.

Pond 1b - HSI analysis

Pond ref – 1b	Notes	
SI1 - Location	A	1
SI2 - Pond area	Optimal	1
SI3 - Pond drying	3 years in 10	0.5
SI4 - Water quality	Moderate	0.67
SI4 - Shade	25%	1
SI6 - Fowl	Very high impact, 20+ water fowl observed	0.01
SI7 - Fish	High numbers of small fish	0.01
SI8 - Ponds	2	0.55
SI9 - Terr'l habitat	Moderate	0.67
SI10 - Macrophytes	None – emergent plants only	0.3
HSI		0.29
Rating		Poor

Pond 19

Pond 19 comprises a stagnant section of the ditch network in the south of the cable route. The ditch is < 1 m wide and 15 m in length. The water quality is extremely

poor and is heavily polluted by iron oxides leaching from surrounding debris. The water also appears to be heavily eutrophic as there are significant amounts of algae present. There is no egg laying material present. The HSI analysis presented in below supports the assessment of the pond as having an extremely low likelihood of supporting Great Crested Newts.

Pond 19 - HSI analysis

Pond ref – 19	Notes	
SI1 - Location	A	1
SI2 - Pond area	Optimal	1
SI3 - Pond drying	Annually	0.1
SI4 - Water quality	Poor	0.01
SI4 - Shade	100	0.2
SI6 - Fowl	No impact	1
SI7 - Fish	No impact	1
SI8 - Ponds	4	0.95
SI9 - Terr'l habitat	Moderate	0.67
SI10 - Macrophytes	None	0.3
HSI		0.36
Rating		Poor

Pond 23c

Pond 23c is a small newly dug pond measuring 60 m². The pond is extremely turbid and does not support any aquatic plants or invertebrates. The relative age of the pond combined with the high turbidity and lack of egg laying material are all factors not conducive to the pond being used by Great Crested Newts. The low HSI rating shown below supports this conclusion.

Pond 23c - HSI analysis

Pond ref – 23c	Notes	
SI1 - Location	A	1
SI2 - Pond area	Optimal	0.1
SI3 - Pond drying	Annually	0.1
SI4 - Water quality	Poor	0.33
SI4 - Shade	0%	1
SI6 - Fowl	Unknown	1
SI7 - Fish	Possible	0.67
SI8 - Ponds	0	0.1
SI9 - Terr'l habitat	Moderate	0.67
SI10 - Macrophytes	5% - Float Grass	0.35
HSI		0.37

Rating	Poor
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Pond 38b

Pond 38b comprises the remnants of a ditch and measures 10 m long and not wider than 2 m. The pond is surrounded by poor terrestrial habitat comprising a ploughed field and a river. There is only one other pond within 1 km of *Pond 38b* but a river and a flowing ditch separate them. The pond is also choked with Common Reed that inhibits the growth of plants suitable for egg laying. The small size, isolation and poor water quality all suggest that there is an extremely low risk of Great Crested Newts being in the pond. The low HSI score presented below supports this.

Pond 38b - HSI analysis

Pond ref – 38b	Notes	
SI1 - Location	A	1
SI2 - Pond area	20 m ²	0.05
SI3 - Pond drying	Annually	0.1
SI4 - Water quality	Poor	0.33
SI4 - Shade	0%	1
SI6 - Fowl	None	1
SI7 - Fish	None	1
SI8 - Ponds	1	0.35
SI9 - Terr'l habitat	Poor	0.33
SI10 - Macrophytes	None – Covered in Common Reed	0.3
HSI		0.38
Rating		Poor

Pond 45

Pond 45 is a newly dug pond used to drain the scramble bike track above. The pond is less than 2 months old (following conversations with the landowner) and has steeply cut bare mud sides. There is no vegetation present and no signs of any aquatic life. The water turbidity was extremely high, as the pond is filled with surface runoff carrying a high concentration of mud particles. The bad water quality combined with the lack of vegetation for egg laying and the ponds age suggest an extremely low likelihood of Great Crested Newts being present. This is supported by the low HSI score presented below.

Pond 45 - HSI analysis

Pond ref – 45	Notes	
SI1 - Location	A	1
SI2 - Pond area	60 m ²	0.05

SI3 - Pond drying	Annually	0.1
SI4 - Water quality	Bad	0.33
SI4 - Shade	5%	1
SI6 - Fowl	None	1
SI7 - Fish	None	1
SI8 - Ponds	0	0.1
SI9 - Terr'l habitat	Moderate	0.33
SI10 - Macrophytes	None	0.3
HSI		0.33
Rating		Poor

Pond 64

Pond 64 is located in an area of amenity grassland. The pond is maintained to keep fish. The landowner informed surveyors that the pond holds large numbers of Carp, Eels and Rudd. Although the water quality is good and caddis fly larvae were seen, no amphibians have ever been seen by the owner. This is most likely due to predation by both fish and waterfowl. Both Mallard and Moorhens are known to nest by the pond. The surrounding habitat comprises mainly amenity grassland with some trees. There were no hibernation sights recorded nearby. The HSI score below supports the conclusion that the pond is highly unlikely to support breeding Great Crested Newts.

Pond 64 - HSI analysis

Pond ref – 64	Notes	
SI1 - Location	A	1
SI2 - Pond area	500 m ²	1
SI3 - Pond drying	Never	0.9
SI4 - Water quality	Excellent	1
SI4 - Shade	70%	0.8
SI6 - Fowl	Minor	0.67
SI7 - Fish	High	0.01
SI8 - Ponds	1	0.4
SI9 - Terr'l habitat	Poor	0.33
SI10 - Macrophytes	5%	0.35
HSI		0.43
Rating		Poor

Pond 76

Pond 76 is a very small pond measuring 10 m² and < 5 cm deep. The pond is very likely to be very temporary and probably does not form every year. The depth of water could not support breeding Great Crested Newts. The water quality was also bad with no invertebrates found during a brief netting survey. The pond is also located in a woodland belt that causes the pond to be 100% shaded by over-hanging trees. This would inhibit aquatic vegetation growth so that little egg laying material would ever be present. There is therefore an extremely low risk of Great Crested Newts being present in this pond. This is supported by the low HSI score presented below.

Pond 76 - HSI analysis

Pond ref – 76	Notes	
SI1 - Location	A	1
SI2 - Pond area	10 m ²	0.05
SI3 - Pond drying	Annually - 3 cm water present at time of survey	0.1
SI4 - Water quality	Bad	0.01
SI4 - Shade	100%	0.2
SI6 - Fowl	None	1
SI7 - Fish	None	1
SI8 - Ponds	7	0.85
SI9 - Terr'l habitat	Good	1
SI10 - Macrophytes	0%	0.3
HSI		0.28
Rating		Poor

Pond 139b

Pond 139b is 40 m² and is very shallow, < 20 cm deep in most places. The pond dries annually and is 100% shaded by trees. The woodland does provide some suitable terrestrial habitat although connectivity to other areas is poor. The water quality is poor as indicated by the lack of macrophytes, and pond lice population. The temporary nature of the pond combined with the lack of egg laying material suggests that the pond is not suitable for Great Crested Newts. The poor HSI score supports the likelihood that there is a very low risk of Great Crested Newts being present.

Pond 139b - HSI analysis

Pond ref – 139b	Notes	
SI1 - Location	A	1
SI2 - Pond area	40 m ²	0.1
SI3 - Pond drying	Annually	0.1
SI4 - Water quality	Poor – lots of pond lice and leaf litter, no macrophytes	0.33
SI4 - Shade	100%	0.2

SI6 - Fowl	None	1
SI7 - Fish	None	1
SI8 - Ponds	13	1
SI9 - Terr'l habitat	Poor – Arable fields on either side of woodland	0.33
SI10 - Macrophytes	None	0.3
HSI		0.38
Rating		Poor

Pond 145

Pond 145 is 50 m² and is very shallow (< 25 cm) in most places. The pond is highly unlikely to be permanent and supports no macrophyte flora suitable for egg laying newts. The water quality is poor with many pond lice and fly larvae. The low HSI score presented below supports the conclusion that there is a very low likelihood Great Crested Newts ever being present in this pond.

Pond 145 - HSI analysis

Pond ref – 145	Notes	
SI1 - Location	A	1
SI2 - Pond area	50 m ²	0.1
SI3 - Pond drying	Annually	0.1
SI4 - Water quality	Poor – lots of leaf litter, pond lice and fly larvae	0.33
SI4 - Shade	100%	0.2
SI6 - Fowl	None	1
SI7 - Fish	None	1
SI8 - Ponds	11	1
SI9 - Terr'l habitat	Moderate – in wet woodland surrounded by pasture	0.67
SI10 - Macrophytes	None	0.3
HSI		0.41
Rating		Poor

Pond 147a

Pond 147a is 120 m² and is very shallow < 20 cm deep in most places. The pond is temporary and would not persist for the whole breeding season for Great Crested Newts. The pond is 100% shaded and does not support any macrophytes suitable for egg laying. The water quality is poor with large amounts of leaf litter and pond lice. The poor HSI analysis shown below suggests that there is an extremely low likelihood of the pond supporting Great Crested Newts.

Pond 147a - HSI analysis

Pond ref – 147a	Notes
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SI1 - Location	A	1
SI2 - Pond area	105 m ²	0.25
SI3 - Pond drying	Annually	0.1
SI4 - Water quality	Poor – probably affected by run-off from road	0.33
SI4 - Shade	100%	0.2
SI6 - Fowl	None	0.67
SI7 - Fish	None	1
SI8 - Ponds	9 approximately	0.9
SI9 - Terr'l habitat	Poor – Arable field and busy road on either side	0.33
SI10 - Macrophytes	None	0.3
HSI		0.40
Rating		Poor

8.1.3

Presence Absence Data Sheets

Raw data for the presence absence surveys are provided below. These data tables use the following abbreviations:

Bb – *Bufo bufo* (Common Toad)

Lh – *Lisotriton helveticus* (Palmate Newt)

Lv – *Lisotriton vulgaris* (Common/Smooth Newt)

Rt – *Rana temporaria* (Common Frog)

Tc – *Triturus cristatus* (Great Crested Newt)

U – Unknown small newt

A – Adult (F – Female, M – Male)

SA – Sub-adult

J – Juvenile

L - Larvae

Waterbody Name	Pond	1a		
Visit	1	2	3	4
Date	28/03/2011	11/04/2011	26/04/2011	11/05/2011
Surveyors	JJ CP	JJ TS	JJ TS	JJ RK
Air temperature at dusk (°C)	6.1	8.5	13.2	11.7
Water temperature at dusk (°C)	7.2	12.5	Not recorded	17.3
Egg search	0	0	0	0
Torching	0	0	0	0
Bottle trapping	-	-	-	-
Netting	0	0	0	0
Other species recorded	-	-	-	-
Notes	Not trapped due to public access	Not trapped due to public access	Not trapped due to public access	Not trapped due to public access

Waterbody Name	Pond	2		
Visit	1	2	3	4
Date	28/03/2011	11/04/2011	26/04/2011	11/05/2011
Surveyors	JJ CP	JJ TS	JJ TS	JJ RK
Air temperature at dusk (°C)	6.1	8	13.6	12.2
Water temperature at dusk (°C)	7.5	13.4	Not recorded	16.5
Egg search	0	0	0	0
Torching	3 Lv (1AM, 2AF)	0	0	0
Bottle trapping	-	-	-	-
Netting	0	0	0	0
Other species recorded	0	0	-	-
Notes	Not Trapped due to pond liner	Not Trapped due to pond liner	Not trapped due to public access	Not trapped due to public access

Waterbody Name	Pond	7		
Visit	1	2	3	4
Date	05/04/2011	18/04/2011	26/04/2011	11/05/2011
Surveyors	JJ CP	JJ TS	JJ TS	JJ RK
Air temperature at dusk (°C)	11.5	9.2	12	12
Water temperature at dusk (°C)	10	9.6	Not recorded	11.9
Egg search	0	0	0	0
Torching	0	0	0	0
Bottle trapping	-	-	-	-
Netting	0	0	0	0
Other species recorded	-	-	-	-
Notes	Not tapped due to shallow pond depth	Not tapped due to shallow pond depth	Not tapped due to shallow pond depth	Not tapped due to shallow pond depth

Waterbody Name	Pond	12		
Visit	1	2	3	
Date	05/04/2011	18/04/2011	26/04/2011	
Surveyors	JJ SW	JJ TS	JJ TS	
Air temperature at dusk (°C)	11.4	9.8	-	
Water temperature at dusk (°C)	9.8	9.8	-	
Egg search	0	0	-	
Torching	0	0	-	
Bottle trapping	-	-	-	
Netting	0	0	-	
Other species recorded	-	-	-	
Notes	Not tapped due to shallow pond depth	Not tapped due to shallow pond depth	Ditch dried up	

Waterbody Name	Pond	13		
Visit	1	2	3	4
Date	05/04/2011	18/04/2011	26/04/2011	11/05/2011
Surveyors	JJ SW	JJ TS	JJ TS	JJ RK
Air temperature at dusk (°C)	11.5	7.6	12.4	10
Water temperature at dusk (°C)	10	8.8	Not recorded	10
Egg search	0	0	0	0
Torching	0	0	0	0
Bottle trapping	0	-	0	-
Netting	0	0	0	0
Other species recorded	-	-	-	-
Notes	-	Not tapped due to shallow - pond depth		Not tapped due to shallow pond depth

Waterbody Name	Pond	15		
Visit	1	2	3	4
Date	05/04/2011	18/04/2011	26/04/2011	11/05/2011
Surveyors	JJ SW	JJ TS	JJ TS	JJ RK
Air temperature at dusk (°C)	11.5	11	12.8	10.6
Water temperature at dusk (°C)	10	10.2	Not recorded	11.4
Egg search	0	0	0	0
Torching	2 Rt (2A)	0	0	0
Bottle trapping	0	0	-	-
Netting	0	0	0	0
Other species recorded	-	-	-	-
Notes	-	-	Not tapped due to shallow pond depth	Not tapped due to shallow pond depth

Waterbody Name	Pond	35b		
Visit	1	2	3	4
Date	05/04/2011	18/04/2011	11/05/2011	25/05/2011
Surveyors	AR CP	AR RG	AR SD	JJ ZG
Air temperature at dusk (°C)	11.4	8	10.2	9
Water temperature at dusk (°C)	10.2	10.4	13.1	11.2
Egg search	0	0	0	0
Torching	0	0	0	0
Bottle trapping	0	0	1 Lh (1AM), 3 Lv (1AF, 1AM)	0
Netting	0	0	0	0
Other species recorded	-	-	-	-
Notes	-	-	-	-

Waterbody Name	Pond	35c		
Visit	1	2	3	4
Date	05/04/2011	18/04/2011	11/05/2011	25/05/2011
Surveyors	AR CP	AR RG	AR SD	JJ ZG
Air temperature at dusk (°C)	10.6	7	9.5	8.6
Water temperature at dusk (°C)	10.2	10.4	12.2	10.8
Egg search	0	0	0	0
Torching	0	0	0	0
Bottle trapping	0	0	0	0
Netting	0	0	0	0
Other species recorded	-	-	-	-
Notes	-	-	-	-

Waterbody Name	Pond	43A
Visit	1	2
Date	28/03/2011	12/04/2011
Surveyors	JM ZG	PB RK
Air temperature at dusk (°C)	5.7	-
Water temperature at dusk (°C)	9.4	-
Egg search	0	-
Torching	0	-
Bottle trapping	-	-
Netting	0	-
Other species recorded	-	-
Notes	Not trapped due to predicted temperature being too low	Pond dry

Waterbody Name	Pond	43b	
Visit	1	2	3
Date	28/03/2011	12/04/2011	03/05/2011
Surveyors	JM ZG	PB RK	AR MC
Air temperature at dusk (°C)	4.6	4.5	-
Water temperature at dusk (°C)	10.8	14	-
Egg search	0	Rt	-
Torching	0	0	-
Bottle trapping	-	-	-
Netting	0	0	-
Other species recorded	-	-	-

Notes	Not trapped due to predicted temperature being too low	Not trapped due to predicted temperature being too low	Pond dry
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Waterbody Name	Pond	44	
Visit	1	2	3
Date	28/03/2011	12/04/2011	03/05/2011
Surveyors	JM ZG	PB RK	-
Air temperature at dusk (°C)	4.5	4.7	-
Water temperature at dusk (°C)	8.9	10	-
Egg search	0	0	-
Torching	1 U (Lh/Lv)	1 Lh (1AM)	-
Bottle trapping	-	-	-
Netting	1 Lh (1AF)	6 Lh (5AF, 1AM)	-
Other species recorded	-	-	-
Notes	Not trapped due to predicted temperature being too low	Not trapped due to predicted temperature being too low	Pond dry

Waterbody Name	Pond	53	
Visit	1	2	3
Date	29/03/2011	13/04/2011	12/05/2011
Surveyors	JM ZG	PB RK	-
Air temperature at dusk (°C)	11.2	8.9	.-
Water temperature at dusk (°C)	9.5	14.8	-
Egg search	0	0	-
Torching	0	0	-
Bottle trapping	3 Lh (3AF), 1 Lv (1AM)	0	-

Netting	0	0	-
Other species recorded	-	-	-
Notes	-	-	Pond dry

Waterbody Name	Pond	54		
Visit	1	2	3	4
Date	29/03/2011	13/04/2011	12/05/2011	26/05/2011
Surveyors	JM ZG	PB RK	AR SD	CP MC
Air temperature at dusk (°C)	11.2	9.1	5.1	11.4
Water temperature at dusk (°C)	11.3	14.4	not recorded	17.6
Egg search	Bb, Lh/Lv	0	0	0
Torching	20 Bb (20A), 3 Lh (3AM), 18 U (Lh/Lv) 8 U (Lh/Lv)		1 Bb (1A), 1000+ Rt (L)	1 Rt (1A), Rt (L), 5 U (Lh/Lv)
Bottle trapping	1 Bb (1A), 1 Lh (1AF), 1 Bb (L), Rt (L) Lv (1AM), 2 Rt (2A)		-	1 Lv (1AF), Rt (L)
Netting	0	0	25+ Bb (L), 25+ Rt (L)	0
Other species recorded	-	-	-	-
Notes	-	-	-	-

Waterbody Name	Pond	55		
Visit	1	2	3	4
Date	29/03/2011	13/04/2011	12/05/2011	26/05/2011
Surveyors	JM ZG	PB RK	AR SD	CP MC
Air temperature at dusk (°C)	11.2	8.5	7.4	13.5
Water temperature at dusk (°C)	11.5	14.6	18.4	Not recorded
Egg search	Bb, Lh/Lv	0	0	0

Torching	16 Bb (16A), 11 Lh (11AM), 2 Lv (2AM), 16 U (Lh/Lv)	Bb (L), 1 Lv (1AM), Rt (L), 5 U (Lh/Lv)	2 Bb (2A), 1000+ Rt (L)	500+ Rt (L)
Bottle trapping	4 Lh (2AF, 2AM), 1 Lv (1AF)	2 Lv (1AF), Bb (L), Rt (L) -	-	-
Netting	0	-	12 Rt (12A)	12 Rt (12L)
Other species recorded	-	-	-	-
Notes	-	-	Temperature dropped below 5°C so traps were removed	Not trapped due to high likelihood of trapping large numbers of tadpoles

Waterbody Name	Pond	55b				
Visit	1	2	3	4	5	6
Date	03/05/2011	12/05/2011	16/05/2011	19/05/2011	24/05/2011	26/05/2011
Surveyors	AR MC	AR SD	AR MC	AR MC	CP MC	CP MC
Air temperature at dusk (°C)	5.2	5.2	11.6	8.1	7.5	11.4
Water temperature at dusk (°C)	11.3	not recorded	16	16.2	Not recorded	Not recorded
Egg search	0	Lh/Lv	Lh/Lv	0	0	0
Torching	3 Lh (1AF, 2AM), 5 Lv (1AF, 4AM), 2 U (Lv/Lh)	5 Lv (5AM), 5 Lv (4AF, 1AM), 1 Tc (1AM), 10 U (Lh/Lv)	1 Lh (1AM), 4 Lv (4AM), 3 U (Lh/Lv)	1 Lh (1AM), 3 Lv (3AF), 2 U (Lh/Lv), Lh/Lv (L)	4 Lv (4AF)	1 Lh (1AM), 1 Lv (1AF), 6 U (Lh/Lv)
Bottle trapping	-	-	-	-	-	-
Netting	0	0	1 Lv (1AF)	1 Lh (1AM), 3 Lv (2AF, 1AM)	0	0
Other species recorded	-	-	-	-	-	-
Notes	Not trapped due to pond liner	Not trapped due to pond liner	Not trapped due to pond liner	Not trapped due to pond liner	Not trapped due to pond liner	Not trapped due to pond liner

Waterbody Name	Pond	59
Visit	1	2
Date	29/03/2011	13/04/2011
Surveyors	JM ZG	PB RK
Air temperature at dusk (°C)	11	-
Water temperature at dusk (°C)	9.1	-
Egg search	0	-
Torching	0	-
Bottle trapping	0	-
Netting	0	-
Other species recorded	-	-
Notes	-	Pond dry

Waterbody Name	Pond	66		
Visit	1	2	3	4
Date	30/03/2011	19/04/2011	27/04/2011	03/05/2011
Surveyors	JM ZG	JJ TS	JJ AR	JJ AR
Air temperature at dusk (°C)	9.9	10.6	4.9	-
Water temperature at dusk (°C)	9.2	6.8	9.3	-
Egg search	0	0	0	-
Torching	0	0	0	-
Bottle trapping	-	-	-	-
Netting	0	0	0	-
Other species recorded	-	-	-	-
Notes	Not trapped due to shallow pond depth	Not trapped due to shallow pond depth	Not trapped due to predicted temperature being too low	Pond dry

Waterbody Name	Pond	67		
Visit	1	2	3	4
Date	30/03/2011	19/04/2011	27/04/2011	03/05/2011
Surveyors	JM ZG	JJ TS	JJ AR	JJ AR
Air temperature at dusk (°C)	9.9	9.6	-	-
Water temperature at dusk (°C)	10.1	10.8	-	-
Egg search	0	0	-	-
Torching	2 U (Lh/Lv)	2 Lh (1AF, 1AM)	-	-
Bottle trapping	5 Lh (1AF, 4AM), 5 Lv (1AF, 4AM)	-	-	-
Netting	0	0	-	-
Other species recorded	-	-	-	-
Notes	-	Not trapped due to shallow pond depth	Pond dry	Pond dry

Waterbody Name	Pond	68		
Visit	1	1b	3	4
Date	06/04/2011	19/04/2011	30/05/2011	
Surveyors	AR CP	JJ TS	JJ SD	
Air temperature at dusk (°C)	10.8	8.8	6.3	
Water temperature at dusk (°C)	15.5	17.4	7.4	
Egg search	0	0	0	
Torching	0	0	0	
Bottle trapping	-	0	0	
Netting	0	0	-	
Other species recorded	-	-	-	

Notes	Not trapped at landowners - request	Not trapped or netted due to shallow pond depth	Not surveyed at owners request
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Waterbody Name	Pond	68b			
Visit	1	2	3	4	
Date	06/04/2011	19/04/2011	-		
Surveyors	AR CP	JJ TS	-		
Air temperature at dusk (°C)	9.5	9.1	-		
Water temperature at dusk (°C)	14.6	13.3	-		
Egg search	Lh/Lv	0	-		
Torching	3 Lv (3AM), 13 U (Lh/Lv)	1 Bb (1AF), 1 Lh (1AF), 3 - Lv (3AF), 6 U (Lh/Lv)			
Bottle trapping	-	0	-		
Netting	1 Lv (1AM)	0	-		
Other species recorded	-	-	-		
Notes	Not trapped at landowners - request		Not surveyed at owners request		

Waterbody Name	Pond	69			
Visit	1	1b	2	3	4
Date	06/04/2011	14/04/2011	19/04/2011	27/04/2011	03/05/2011
Surveyors	AR CP	JJ TS	JJ TS	AR TS	JJ SD
Air temperature at dusk (°C)	-	8.4	6.9	5.6	6.2
Water temperature at dusk (°C)	-	10.7	16.9	16.7	15.4
Egg search	-	Lh/Lv	0	0	0
Torching	-	0	0	0	0
Bottle trapping	-	1 Lh (1AF)	0	-	-
Netting	-	-	0	0	0

Other species recorded	-	-	-	-	-
Notes	Survey abandoned	-	-	Not trapped due to predicted temperature being too low	Not trapped due to predicted temperature being too low

Waterbody Name	Pond	70			
Visit	1	1b	2	3	4
Date	06/04/2011	14/04/2011	19/04/2011	27/04/2011	03/05/2011
Surveyors	AR CP	PB TS	JJ TS	JJ TS	AR MC
Air temperature at dusk (°C)	-	9.7	9	6.2	6.2
Water temperature at dusk (°C)	-	14.4	16.6	17	16.1
Egg search	-	0	0	0	0
Torching	-	Bb (L), Rt (L)	0	0	0
Bottle trapping	-	0	0	-	-
Netting	-	-	0	0	0
Other species recorded	-	-	-	-	-
Notes	Survey abandoned	-	-	Not trapped due to predicted temperature being too low	Not trapped due to predicted temperature being too low

Waterbody Name	Pond	71a				
Visit	1	2	3	4	5	6
Date	06/04/2011	19/04/2011	27/04/2011	03/05/2011	10/05/2011	18/05/2011
Surveyors	AR CP	AR RG	JJ TS	JJ SD AR MC	AR SD	JJ TS
Air temperature at dusk (°C)	8.1	9.5	7.6	5.8	11.7	12
Water temperature at dusk (°C)	11.6	12.4	9.8	6.1	13.1	11.8
Egg search	0	0	0	0	0	0
Torching	0	0	2 Lh (2AF), 1 Lv (1AF)	0	0	0

Bottle trapping	3 Lh (3AM), 2 Tc (2AM)	2 Lh (1AF, 1AM), 4 Lv (1AF, 3AM)	-	-	13 Lh (3AF, 9AM), 8 Lv (2AF, 6AM)	6 Lh (4AF, 2AM), 1 Lv (1AM), 3 Tc (1AF, 2AM)
Netting	0	0	0	1 Lh (AF), 1 Lv (AF)	0	0
Other species recorded	-	-	-	-	-	-
Notes	-	-	Not trapped due to predicted temperature being too low	Not trapped due to predicted temperature being too low	-	-

Waterbody Name	Pond	74a		
Visit	1	2	3	4
Date	06/04/2011	19/04/2011	27/04/2011	03/05/2011
Surveyors	AR CP	JJ TS	JJ AR TS	JJ SD AR MC
Air temperature at dusk (°C)	8.3	6.8	6.8	3.9
Water temperature at dusk (°C)	15.7	16.4	16.7	12.7
Egg search	0	Lh/Lv	0	Lv/Lh
Torching	2 Lv (1AM, 1L), 1 Rt (1A)	2 Bb (2AF), 3 Rt (3A)	2 Bb (2A)	0
Bottle trapping	Rt (L)	0	-	-
Netting	Rt (L)	0	0	0
Other species recorded	-	-	-	-
Notes	-	-	Not trapped due to predicted temperature being too low	Not trapped due to predicted temperature being too low

Waterbody Name	Pond	74b		
Visit	1	2	3	4

Date	06/04/2011	19/04/2011	27/04/2011	03/05/2011
Surveyors	AR CP	AR RG	JJ AR TS	JJ SD AR MC
Air temperature at dusk (°C)	8	6.7	7.2	6.5
Water temperature at dusk (°C)	10.4	11.5	9.9	8
Egg search	0	Lv, Lh	0	0
Torching	0	0	1 Bb (1AF), 8 Lh (4AF, 4AM), 6 U (Lh/Lv)	1 Bb (1A), 2 Lh (2AM), 1 U (Lv/Lh)
Bottle trapping	2 Lh (1AF, 1AM)	0	-	-
Netting	1 Lh (1AM)	0	0	3 Lh (3AF)
Other species recorded	-	-	-	-
Notes	-	-	Not trapped due to predicted temperature being too low	Not trapped due to predicted temperature being too low

Waterbody Name	Pond	77		
Visit	1	2	3	4
Date	30/03/2011	11/04/2011	04/05/2011	
Surveyors	JJ CP	PB RK	-	
Air temperature at dusk (°C)	8.2	12.3	-	
Water temperature at dusk (°C)	10	10.4	-	
Egg search	0	0	-	
Torching	0	0	-	
Bottle trapping	-	-	-	
Netting	0	0	-	
Other species recorded	-	-	-	
Notes	Not trapped due to shallow pond depth	Not trapped due to predicted temperature being too low	Pond dry	

Waterbody Name	Pond	79		
Visit	1	2	3	4
Date	30/03/2011	11/04/2011	05/05/2011	16/05/2011
Surveyors	JJ CP	PB RK	AR MC	AR MC
Air temperature at dusk (°C)	7.5	10.3	8.5	12.2
Water temperature at dusk (°C)	9.3	11.3	9	12.4
Egg search	0	0	0	0
Torching	2 Lv (1AF, 1AM)	0	0	0
Bottle trapping	0	-	0	0
Netting	0	0	0	0
Other species recorded	-	-	-	-
Notes	-	Not trapped due to predicted temperature being too low	-	-

Waterbody Name	Pond	80		
Visit	1	2	3	4
Date	30/03/2011	11/04/2011	05/05/2011	16/05/2011
Surveyors	JJ CP	PB RK	AR MC	AR MC
Air temperature at dusk (°C)	7.8	10.7	7.4	11.2
Water temperature at dusk (°C)	9.4	12.8	8.4	12.2
Egg search	0	0	0	0
Torching	0	0	0	0
Bottle trapping	0	-	0	0
Netting	0	0	0	0
Other species recorded	-	-	-	-

Notes	-	Not trapped due to predicted temperature being too low	-	-
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Waterbody Name	Pond	82				
Visit	1	2	3	4	5	6
Date	29/03/2011	11/04/2011	04/05/2011	16/05/2011	23/05/2011	26/05/2011
Surveyors	JJ CP	JJ TS	JJ SD	JJ TS	JJ ZG	JJ ZG
Air temperature at dusk (°C)	7	8.5	7.2	12.2	7.5	10.1
Water temperature at dusk (°C)	8.9	14.2	11.5	13.6	14.1	13.4
Egg search	Tc, Lh/Lh	Tc, Lh/Lh	Tc, Lh/Lh	Tc, Lh/Lh	Tc, Lh/Lh	Tc, Lh/Lh
Torching	3 Bb (3A), 26 Lv (15AF, 11AM), 13 Tc (5AF, 8AM)	5 Lh (3AF, 2AM), 18 Lv (17AF, 1AM), 6 Tc (5AF, 1AM)	2 Lh (1AF, 1AM), 1 Lv (1AF), 4 Tc (2AF, 2AM) 1 U (Lh/Lv)	3 Lh (1AF, 2AM), 2 Lv (2AF), 8 Tc (3AF, 5AM) 1 U (Lh/Lv)	4 Tc (2AF, 2AM), 1 U (Lh/Lv)	1 Bb (1AF), 7 Lv (7AF), 3 Lv (3AM), 3 Tc (3AF)
Bottle trapping	-	-	6 Lh (1AF, 5AM), 2 Lv (2AM), 2 Tc (2AM)	7 Lh (7AM), 6 Lv (6AM), - 3 Tc (1AF, 2AM)	-	22 Lh (8AF, 14AM), 2 Lv (2AM)
Netting	0	-	-	-	-	-
Other species recorded	-	-	-	-	-	-
Notes	Not trapped due to predicted temperature being too low	Not trapped due to predicted temperature being too low	-	-	Not trapped due to predicted temperature being too low	-

Waterbody Name	Pond	83				
Visit	1	2	3	4	5	6
Date	29/03/2011	11/04/2011	04/05/2011	16/05/2011	24/05/2011	26/05/2011
Surveyors	JJ CP	JJ TS	JJ SD	JJ TS	JJ ZG	JJ ZG

Air temperature at dusk (°C)	7	5.8	6.8	13	7.5	10.2
Water temperature at dusk (°C)	7.1	10.5	10.5	14.4	14.1	11.5
Egg search	Tc	Tc	Tc	Tc	Tc	Tc
Torching	1 U (Lh/Lv)	0	0	1 Lh (1AF)	0	0
Bottle trapping	-	-	0	0	0	0
Netting	0	-	-	-	-	-
Other species recorded	-	-	-	-	-	-
Notes	Not trapped due to predicted temperature being too low	Not trapped due to predicted temperature being too low	-	-	Not trapped due to predicted temperature being too low	-

Waterbody Name	Pond	84				
Visit	1	2	3	4	5	6
Date	29/03/2011	11/04/2011	04/05/2011	16/05/2011	23/05/2011	26/05/2011
Surveyors	JJ CP	JJ TS	JJ SD	JJ TS	JJ ZG	JJ ZG
Air temperature at dusk (°C)	7	5.8	7	14.1	7.5	10.2
Water temperature at dusk (°C)	6.3	10.8	8	12	10.2	11.3
Egg search	Tc	Tc	Tc	Tc	Tc	Tc
Torching	3 Lv (1AF, 2AM), 8 Tc (3AF, 5AM)	3 Tc (2AF, 1AM)	0	1 Tc (1AM)	0	0
Bottle trapping	-	-	1Tc (1AF)	2 Lv (1AM), 10 Tc (8AF, 0 2AM)		1 Tc (1AF)
Netting	0	-	-	-	-	-
Other species recorded	-	-	-	-	-	-
Notes	Not trapped due to predicted temperature being too low	Not trapped due to predicted temperature being too low	-	-	Not trapped due to predicted temperature being too low	-

Waterbody Name	Pond	87		
Visit	1	2	3	4
Date	30/03/2011	11/04/2011	05/05/2011	16/05/2011
Surveyors	JJ CP	PB RK	AR MC	AR MC
Air temperature at dusk (°C)	7.8	9	10.2	11.9
Water temperature at dusk (°C)	8.3	12.5	9.7	12.5
Egg search	0	0	0	0
Torching	0	1 Rt (1A)	0	0
Bottle trapping	-	-	0	0
Netting	0	0	0	0
Other species recorded	-	-	-	-
Notes	Not trapped due to predicted temperature being too low	Not trapped due to predicted temperature being too low	-	-

Waterbody Name	Pond	106		
Visit	1	2	3	4
Date	31/03/2011	14/04/2011	05/05/2011	12/05/2011
Surveyors	JJ CP	JJ TS	JJ SD	JJ RK
Air temperature at dusk (°C)	11.3	9.6	6.7	6
Water temperature at dusk (°C)	12	10.6	13.5	10.5
Egg search	0	0	0	0
Torching	6 Bb (6A), 1 Rt (1A)	1 Lh (1AF), 3 Lv (2AF, 1AM), 1 U (Lh/Lv)	4 Lh (1AF, 3AM), 7 Lv (6AF, 1AM)	1 Lv (1AF)
Bottle trapping	0	4 Lh (2AF, 2AM), 1 Lv (1AM)	1 Lv (1AF), 10 U (Lv/Lh)	0
Netting	0	0	1 Lh (1AF)	0
Other species recorded	-	-	-	-

Notes - - - -

Waterbody Name	Pond	108		
Visit	1	2	3	4
Date	17/05/2011	19/05/2011		
Surveyors	JJ TS	JJ TS		
Air temperature at dusk (°C)	13.1	7.4		
Water temperature at dusk (°C)	12.3	11.7		
Egg search	0	0		
Torching	1 Lh (1AF), 1 Lv (1AF), 2 Tc (1AF), 1 Tc (1AF), 1AM	1 Lh (1AF), 1 Tc (1AF), 1 U (1AF)		
Bottle trapping	1 Lv (1AF), 2 Tc (2AF)	1 Lv (1AF), 1 Tc (1AF)		
Netting	-	-		
Other species recorded	-	-		
Notes	-	-	Survey cancelled	

Waterbody Name	Pond	109		
Visit	1	2	3	4
Date	05/04/2011	14/04/2011	09/05/2011	17/05/2011
Surveyors	JJ SW	JJ TS	JJ RK	JJ TS
Air temperature at dusk (°C)	11.3	8.5	10.7	12
Water temperature at dusk (°C)	8	9.5	12.5	11.8
Egg search	0	0	0	0
Torching	0	0	0	0
Bottle trapping	0	0	0	0
Netting	0	0	0	0

Other species recorded	-	-	-	-
Notes	-	-	-	-

Waterbody Name	Pond	112				
Visit	1	2	3	4	5	6
Date	31/03/2011	12/04/2011	05/05/2011	12/05/2011	23/05/2011	25/05/2011
Surveyors	JM ZG	JJ TS	JJ SD	JJ RK	CP MC	CP MC
Air temperature at dusk (°C)	11.6	4.7	6.7	6.2	9.2	10
Water temperature at dusk (°C)	12.6	14.5	11.4	12.8	Not recorded	Not recorded
Egg search	0	0	0	0	0	0
Torching	3 Bb (3A), 8 Lv (8AM), 11 U (Lh/Lv)	15 Lv (10AF, 5AM)	2 Lv (2AM), 10 U (Lv/Lh)	6 Lv (6AF), 1 Tc (1AF)	0	0
Bottle trapping	4 Lv (2AF, 2AM), 2 Tc (2AM)	-	0	0	0	0
Netting	0	-	-	-	-	-
Other species recorded	-	-	-	-	-	-
Notes	-	Not trapped due to predicted temperature being too low	-	-	-	-

Waterbody Name	Pond	113				
Visit	1	2	3	4	5	6
Date	31/03/2011	12/04/2011	05/05/2011	12/05/2011	23/05/2011	25/05/2011
Surveyors	JM ZG	JJ TS	JJ SD	JJ RK	JCP MC	cp mc
Air temperature at dusk (°C)	11.2	0.5	6.7	7	9.1	10
Water temperature at dusk (°C)	12.3	9.9	11.4	16.5	Not recorded	Not recorded
Egg search	0	0	0	0	0	0

Torching	2 U (Lh/Lv)	4 Lh (4AM), 1 Lv (1AF), 1 Tc (1AM), 1 U (Lh/Lv)	15 Lh (10AF, 5AM), 20 Lv (15AF, 5AM), 1 Tc (1AM)	2 Lv (2AF), 1 Tc (1AF)	6 Lv (6AF)	0
Bottle trapping	0	-	1 Lv (1AM)	-	-	-
Netting	0	0	-	-	-	-
Other species recorded	-	-	-	-	-	-
Notes	-	-	A Water Shrew was found dead in a bottle trap, no further trapping at this pond	A Water Shrew was found dead in a bottle trap, no further trapping at this pond	A Water Shrew was found dead in a bottle trap, no further trapping at this pond	A Water Shrew was found dead in a bottle trap, no further trapping at this pond

Waterbody Name	Pond	115				
Visit	1	2	3	4	5	6
Date	31/03/2011	12/04/2011	05/05/2011	12/05/2011	23/05/2011	26/05/2011
Surveyors	JM ZG	JJ TS	JJ SD	JJ RK	CP MC	CP MC
Air temperature at dusk (°C)	11.3	4.4	10	10.1	9.7	10
Water temperature at dusk (°C)	11.9	13.1	11.9	14	14.5	Not recorded
Egg search	Tc, Lh/Lv	Tc, Lh/Lv	Tc, Lh/Lv	Tc, Lh/Lv	Tc, Lh/Lv	Tc, Lh/Lv
Torching	2 U (Lh/Lv)	7 Lh (3AF, 4AM), 4 U (Lh/Lv)	3 Lh (3AF), 5 Lv (2AF, 3AM), 1 Tc (1AM)	13 Lv (10AF, 3AM), 28 Lv (20AF, 8AM), 9 Tc (4AF, 5AM)	27 Lv (25AF, 2AM), 2 Tc (1AM, 1AF)	34 Lv (29AF, 5AM), 2 Tc (1AF, 1AM)
Bottle trapping	1 Lh (1AM), 4 Lv (3AF, 1AM), 4 Tc (3AF, 1AM)	-	5 Lh (3AF, 2AM), 9 Lv (4AF, 5AM) 2 Tc (2AM)	5 Lh (3AF, 2AM), 17 Lv (6AF, 11AM), 2 Tc (1AF, 1AM)	1 Lv (1AF), 1 Tc (1AF)	8 Lv (3AF, 5AM)
Netting	0	-	-	-	-	-
Other species recorded	-	-	-	-	-	-
Notes	-	Not trapped due to predicted temperature	-	-	-	-

being too low

Waterbody Name	Pond	116	
Visit	1	2	3
Date	31/03/2011	12/04/2011	40668
Surveyors	JM ZG	JJ TS	JJ SD
Air temperature at dusk (°C)	11.3	5.6	-
Water temperature at dusk (°C)	12.1	9.1	-
Egg search	0	0	-
Torching	1 Rt (1A)	0	-
Bottle trapping	0	-	-
Netting	0	0	-
Other species recorded	-	-	-
Notes	-	-	Pond dry

Waterbody Name	Pond	122				
Visit	1	2	3	4	5	6
Date	07/04/2011	18/04/2011	05/05/2011	18/05/2011	23/05/2011	25/05/2011
Surveyors	AR CP	AR RG	MC AR	AR MC	CP MC	CP MC
Air temperature at dusk (°C)	12.4	11.6	11.6	15.7	10	11.5
Water temperature at dusk (°C)	12.1	15.6	14.2	15.6	9.5	Not recorded
Egg search	Tc	Tc	Tc	Tc	Tc	Tc
Torching	1 Lh (1AM), 2 Lv (1AF, 1AM), 13 Tc (8AF, 5AM), 4 U (Lh/Lv)	2 Lh (2AM), 1 Lv (1AF), 12 Tc (5AF, 7AM), 4 U (Lh/Lv)	1 Lv (1AM), 9 Tc (1AF, 8 AM), 2 U (Lv/Lh)	10 Tc (5AF, 5AM), 1 U (Lh/Lv)	4 Tc (3AF, 1AM), 1 U (Lh/Lv)	7 Tc (3AF, 4AM)
Bottle trapping	1 Tc (1AF)	1 Lv (1AF)	2 Tc (2AF)	0	0	0

Netting	0	-	-	-	-	-
Other species recorded	-	-	-	-	-	-
Notes	-	-	-	-	-	-

Waterbody Name	Pond	123				
Visit	1	2	3	4	5	6
Date	05/04/2011	18/04/2011	05/05/2011	18/05/2011	23/05/2011	25/05/2011
Surveyors	AR CP	AR RG	MC AR	AR MC	CP MC	CP MC
Air temperature at dusk (°C)	11.1	10.5	11.2	15.2	9.2	12
Water temperature at dusk (°C)	11.4	15.6	15.5	15.6	15.9	Not recorded
Egg search	Tc	Tc	Tc	Tc	Tc	Tc
Torching	6 Lv (3AF, 3AM), 16 Tc (7AF, 9AM), 11 U (Lh/Lv)	2 Lv (2AM), 1 Rt (1A), 2 Tc (1AF, 1AM), 6 U (Lh/Lv)	2 U (Lv/Lh)	4 Lh (1AF, 3AM), 3 Lv (1AF, 2AM), 11 Tc (4AF, 7AM), Rt (L), 4 U (Lh/Lv)	3 Lh (1AF, 2AM), 5 Lv (3AF, 2AM), 37 Tc (32AF, 5AM, L), 2 U (Lh/Lv), Lh/Lv (L)	7 Lv (5AF, 2AM), 46 Tc (44AF, 2AM), Rt (L)
Bottle trapping	2 Lh (1AF, 1AM), 1 Lv (1AM), 46 Tc (41AF, 5AM)	1 Lh (1AM), 1 Lv (1AF), 26 Tc (23AF, 3AM)	2 Lv (1AF, 1AM), 9 Tc (5AF, 4AM)	3 Lv (1AF, 2AM), 3 Tc (1AF, 2AM), Tc (L)	2 Lv (1AF, 1AM), 4 Tc (4AF)	1 Lv (1AM), 6 Tc (3AF, 3AM), Rt (L)
Netting	0	-	-	-	-	-
Other species recorded	-	-	-	-	-	-
Notes	-	-	-	-	-	-

Waterbody Name	Pond	127		
Visit	1	2	3	4
Date	06/04/2011	26/04/2011	05/05/2011	18/05/2011
Surveyors	JJ SW	AR VG	MC AR	JJ TS
Air temperature at dusk (°C)	11.5	11.3	9.1	11.7
Water temperature at dusk (°C)	10.2	Not recorded	13.1	13.3

Egg search	0	Lh/Lv	0	0
Torching	11 Tv (9AF, 2AM)	1 U (Lh/Lv)	0	4 Lh (3AF, 1AM), 2 U (Lh/Lv)
Bottle trapping	0	1 Lh (1AM), 2 U (Lh/Lv)	0	1 Lh (1AF), 4 Lv (3AF, 1AM)
Netting	0	0	0	0
Other species recorded	-	-	-	-
Notes	-	-	-	-

Waterbody Name	Pond	128		
Visit	1	2	3	4
Date	06/04/2011	26/04/2011	05/05/2011	18/05/2011
Surveyors	JJ SW	AR VG	MC AR	JJ TS
Air temperature at dusk (°C)	11	11.3	9.1	12.2
Water temperature at dusk (°C)	12.1	Not recorded	13.1	13.6
Egg search	Lh/Lv	Lh/Lv	Lh/Lv	Lh/Lv
Torching	21 Tv (16AF, 5AM)	0	0	1 Lv (1AF)
Bottle trapping	0	1 Lv (1AM)	0	0
Netting	0	0	0	0
Other species recorded	-	-	-	-
Notes	-	-	-	-

Waterbody Name	Pond	129		
Visit	1	2	3	4
Date	30/03/2011	14/04/2011	05/05/2011	18/05/2011
Surveyors	JM ZG	PB RK	MC AR	JJ TS
Air temperature at dusk (°C)	10	9.7	10.7	11.9
Water temperature at dusk (°C)	10.4	12.4	14.4	13.7

Egg search	Lh/Lv	0	0	0
Torching	1 Lh (1AM), 7 U (Lh/Lv)	Bb (L), 4 Lv (4AM), 1 Rt (A), Rt (L), 13 U (Lh/Lv)	9 Lv (9AF), 1 Lh (1AM)	1 Lh (1AF), 2 Lv (2AF), 1 U (1AF)
Bottle trapping	3 Lh (2AF, 1AM), 5 Lv (1AF, 4AM)	7 Lh (2AF, 5AM), 6 Lv (6AF)	1 Lh (1AF), 8 Lv (1AF, 7AM)	1 Lh (1AF), 3 Lh (1AF, 2AM), Rt (L)
Netting	0	0	0	0
Other species recorded	-	-	-	-
Notes	A Water Shrew was found - dead in a bottle trap, no further trapping at this pond		-	-

Waterbody Name	Pond	134		
Visit	1	2	3	4
Date	30/03/2011	14/04/2011	09/05/2011	17/05/2011
Surveyors	JM ZG	JJ TS	JJ RK	JJ TS
Air temperature at dusk (°C)	9.5	7.7	8	12.8
Water temperature at dusk (°C)	9.9	9.2	14	13.2
Egg search	0	0	0	0
Torching	2 Lv (2AM), 3 U (Lh/Lv)	0	1 Lh (1AM), 1 Lv (1AM)	1 Lv (1AM), 1 U (1AF)
Bottle trapping	9 Lv (4AF, 5AM)	13 Lv (7AF, 6AM)	4 Lv (3AF, 1AM)	0
Netting	0	0	3 Lv (1AF, 2AM)	0
Other species recorded	-	-	-	-
Notes	-	-	-	-

Waterbody Name	Pond	134b		
Visit	1	2	3	4
Date	07/04/2011	20/04/2011	10/05/2011	19/05/2011

Surveyors	AR CP	AR RG	AR SD	AR MC
Air temperature at dusk (°C)	11.2	14.5	7.1	14.8
Water temperature at dusk (°C)	12.6	not recorded	14.1	15.1
Egg search	0	0	0	0
Torching	1 U (Lh/Lv)	0	4 Bb (4A)	0
Bottle trapping	1 Lh (1AF)	0	2 Rt (2L)	2 Lh (1AF, 1AM)
Netting	0	0	1 Lh (1AF)	0
Other species recorded	-	-	-	-
Notes	-	-	-	-

Waterbody Name	Pond	134c				
Visit	1	2	3	4	5	6
Date	07/04/2011	20/04/2011	10/05/2011	19/05/2011	24/05/2011	26/05/2011
Surveyors	AR CP	AR RG	AR SD	AR MC	JJ ZG	JJ ZG
Air temperature at dusk (°C)	12	14.5	7.1	14.8	8	10.6
Water temperature at dusk (°C)	11.5	Not recorded	Not recorded	Not recorded	Not recorded	Not recorded
Egg search	0	0	0	0	0	0
Torching	2 Tc (1AF, 1AM), 4 U (Lh/Lv)	1 Rt (1A)	Bb (L), 10 U (10F)	0	0	0
Bottle trapping	-	-	-	-	-	-
Netting	0	0	4 Lv (1AF, 1AM, 2L)	0	0	0
Other species recorded	-	-	-	-	-	-
Notes	Not trapped due to pond liner	Not trapped due to pond liner	Not trapped due to pond liner	Not trapped due to pond liner	Not trapped due to pond liner	Not trapped due to pond liner

Waterbody Name	Pond	137		
Visit	1	2	3	4
Date	07/04/2011	20/04/2011	10/05/2011	19/05/2011
Surveyors	JJ SW	AR RG	JJ RK	AR MC
Air temperature at dusk (°C)	14	14.5	8.8	10.9
Water temperature at dusk (°C)	13	not recorded	11.2	14.6
Egg search	0	0	0	0
Torching	9 Lv (5AF, 4AM)	7 U (Lh/Lv)	2 Lv (2AF)	0
Bottle trapping	2 Lh (1AF, 1AM), 8 Lv (7AF, 1AM)	1 Lh (1AF), 8 Lv (2AF, 6AM)	-	3 Tc (1AF, 2AM)
Netting	0	0	0	0
Other species recorded	-	-	-	-
Notes	-	-	Pond not trapped due to shallow pond depth	-

Waterbody Name	Pond	138		
Visit	1	2	3	4
Date	07/04/2011	20/04/2011	10/05/2011	19/05/2011
Surveyors	JJ SW	AR RG	JJ RK	AR MC
Air temperature at dusk (°C)	15	14.5	10.8	-
Water temperature at dusk (°C)	14	not recorded	12.8	-
Egg search	0	0	Lh/Lv	-
Torching	23 Lv (17AF, 6AM)	4 Lh (4AM), 20 U (Lh/Lv)	15 Lv (10AF, 5AM)	-

Bottle trapping	4 Lv (3AF, 1AM)	5 Lh (3AF, 2AM), 7 Lv (1AF, 6AM)	1 Lh (1AM), 3 Lv (1AF, 2AM)	-
Netting	0	0	0	-
Other species recorded	-	-	-	-
Notes	-	-	-	Pond dry

Waterbody Name	Pond	139		
Visit	1	2	3	
Date	07/04/2011	20/04/2011	10/05/2011	
Surveyors	JJ SW	JJ TS	JJ RK	
Air temperature at dusk (°C)	10	9.9	-	
Water temperature at dusk (°C)	11	13.3	-	
Egg search	0	0	-	
Torching	0	0	-	
Bottle trapping	0	-	-	
Netting	0	0	-	
Other species recorded	-	-	-	
Notes	-	Pond not trapped due to shallow pond depth	Pond dry	

Waterbody Name	Pond	140		
Visit	1	2	3	4
Date	06/04/2011	20/04/2011	10/05/2011	19/05/2011
Surveyors	JJ SW	JJ TS	JJ RK	JJ TS
Air temperature at dusk (°C)	12	14.2	9.8	8.8
Water temperature at dusk (°C)	11	12.8	11.9	11.1
Egg search	0	0	0	0
Torching	0	3 Lv (3AF)	0	0

Bottle trapping	1 Lv (1AM)	0	0	0
Netting	0	0	0	0
Other species recorded	-	-	-	-
Notes	-	-	-	-

Waterbody Name	Pond	141		
Visit	1	2	3	4
Date	06/04/2011	20/04/2011	10/05/2011	19/05/2011
Surveyors	JJ SW	JJ TS	AR SD	JJ TS
Air temperature at dusk (°C)	10.5	14.8	9.1	11.3
Water temperature at dusk (°C)	10	14.3	13.1	13.8
Egg search	-	-	-	-
Torching	0	0	0	0
Bottle trapping	-	-	-	-
Netting	-	-	-	-
Other species recorded	-	-	-	-
Notes	95% not accessible, access to banks too dangerous to trap or net			

Waterbody Name	Pond	142				
Visit	1	2	Not surveyed due to route change	3	4	Not surveyed due to route change
Date	06/04/2011	20/04/2011		19/05/2011	23/05/2011	
Surveyors	JJ SW	JJ TS	-	JJ TS	JJ ZG	-

Air temperature at dusk (°C)	9.5	15.1	-	11.1	8.5	-
Water temperature at dusk (°C)	9.3	15	-	13.9	12.1	-
Egg search	Tc	Tc	-	0	Tc	-
Torching	200+ Lh/Lv, 142 Tc (56AF, 86AM)	200+ Lh/Lv, 103 Tc (42 AF, 61AM)	-	2 Lh (1AF, 1AM), 4 Lv (4AF), 2 Tc (2AF)	9 Lh (5AF, 4AF), 1 Lv (1AM), 3 Tc (3AF), 2 U (Lh/Lv)	-
Bottle trapping	3 Lv (1AF, 2AM), 57 Tc (20AF, 37AM)	-	-	-	-	-
Netting	0	-	-	-	-	-
Other species recorded	-	-	-	-	-	-
Notes	High population of Tc found, no further trapping for welfare reasons	High population of Tc found, no further trapping for welfare reasons	-	High population of Tc found, no further trapping for welfare reasons	High population of Tc found, no further trapping for welfare reasons	-

Waterbody Name	Pond	144				
Visit	1	2	3	4	5	5
Date	06/04/2011	20/04/2011	10/05/2011	19/05/2011	23/05/2011	25/05/2011
Surveyors	JJ SW	JJ TS	AR SD	JJ TS	JJ ZG	JJ ZG
Air temperature at dusk (°C)	11	15.3	9.1	8.8	8.5	10.7
Water temperature at dusk (°C)	10	14.6	13.1	12.3	12.5	12.3
Egg search	0	0	0	0	0	0
Torching	3 Lv (2AF, 1AM), 1 Tc (1AF)	7 Lv (7AF), 2 Tc (2AF)	50 Bb (50+L)	1 Tc (1AF), 1 U (1AF)	Bb (L), 1 U (AF)	0
Bottle trapping	4 Lv (3AF, 1AM)	3 Lh (3AM), 1 Lv (1AF)	25 Bb (25+L)	0	0	1 Lv (1AM), 1 Tc (1AF)
Netting	0	-	-	-	-	-
Other species recorded	-	-	-	-	-	-
Notes	-	-	-	-	-	-

Waterbody Name	Pond	153		
Visit	1	2	3	4
Date	17/05/2011	19/05/2011	23/05/2011	25/05/2011
Surveyors	AR MC	AR MC	JJ ZG	JJ ZG
Air temperature at dusk (°C)	12.5	8.8	10	13.6
Water temperature at dusk (°C)	13.9	14.4	12.6	11.6
Egg search	0	0	0	0
Torching	1 Rt (1AM)	0	3 Lv (1AF, 2AM)	2 Lv (2AF)
Bottle trapping	0	0	0	0
Netting	0	0	0	0
Other species recorded	-	-	-	-
Notes	-	-	-	-

Waterbody Name	Pond	159		
Visit	1	2	3	4
Date	17/05/2011	19/05/2011	23/05/2011	25/05/2011
Surveyors	JJ TS	JJ TS	JJ ZG	JJ ZG
Air temperature at dusk (°C)	13.5	8.8	8.1	9.7
Water temperature at dusk (°C)	13.8	13.8	12.8	13.3
Egg search	0	0	0	0
Torching	10 Lh (3AF, 7AM), 1 Lv (1AF), 1 U (1AF)	0	1 U (Lh/Lv)	0
Bottle trapping	1 Lh (1AM), 2 Lv (1AF, 1AM)	1 Lv (1AM), 4 U (L)	0	0
Netting	-	0	0	0
Other species recorded	-	-	-	-
Notes	-	-	-	-

