

Planning Act 2008

Infrastructure Planning (Applications: Prescribed Forms and Procedure) Regulations 2009

Regulation 5(2) [a]

Document reference: TR030001/APP/14b



## **Able Marine Energy Park Environmental Statement**

*Great Crested Newt Survey*

*Supplementary Report EX 11.28*

July 2006  
Revision: 0  
Just Ecology



## **ABLE HUMBER PORTS FACILITY, KILLINGHOLME:**

### **Great crested newt survey**

**Strictly Confidential**

Report prepared to Able UK Ltd

by

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JUST ECOLOGY

July 2006

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## 1. Executive Summary

- 1.1 Eleven ponds/wetland ditches located within the application site for a ports-related development at Killingholme (Humber Estuary) were subject to appraisal for their suitability to support Great crested newts *Triturus cristatus*.
- 1.2 Seven sites were considered unsuitable and one site could not be accessed as the site owner could not be located. Habitat suitability assessment and Great crested newt survey (physical searches, netting, egg-searching, torch-light surveys and bottle trapping) were undertaken at the remaining three sites. Survey work was undertaken during 19-23<sup>rd</sup> June 2006 in suitable weather conditions.
- 1.3 Great crested newts were confirmed to be present at two of the three sites surveyed, each supporting a small breeding population. They were considered likely to be absent from the third site, a wetland ditch of marginal suitability.
- 1.4 One site supported Palmate and Smooth newts also, and Palmate newts were recorded at a location away from any of the ponds surveyed.
- 1.5 The implications of the results are discussed in the context of the proposed development.

## 2. Introduction

- 2.1 JUST ECOLOGY has been commissioned by Able UK Limited to carry out ecological surveys and assessments that will inform the preparation of an Environmental Statement for a proposed ports facility at Killingholme, Humber Estuary, North Lincolnshire. The application site is shown in Figure 2.1.
- 2.2 Important ecological receptors have been identified on the basis of desk research and Extended Phase 1 field survey (Kirby *et al.* 2006), including the possible presence of Great crested newt *Triturus cristatus*. Areas for further investigation were identified and Great crested newt survey recommended.
- 2.3 Surveys for this European protected species are important because Great crested newts are fully protected under Schedule 5 of the Wildlife and Countryside Act 1981 (as amended) and under Schedule 2 of the Conservation (Natural Habitats & c.) Regulations 1994 (as amended). The Great crested newt is also listed as a priority species within the UK

Biodiversity Action Plan, and national and local Species Action Plans are being implemented in order to protect and secure the future for this species.

- 2.4 Here we present the results of Great crested newt survey within the application site and outline the implications of our findings.

### 3. Methods

#### **3.1 Targeting & preliminary appraisal**

- 3.1.1 Five areas were identified for their potential to support newts during the 2006 Extended Phase 1 survey (see Figure 7.6 in Kirby *et al.* 2006). These included ponds and sections of wet ditch.
- 3.1.2 An additional six potential Great crested newt areas (one pond and five ditch sections) had been identified from an earlier Phase 1 survey carried out over the central part of the site (RPS 2005).
- 3.1.3 These 11 areas were mapped for further appraisal in the field with a view to checking again on their suitability to support Great crested newts.

#### **3.2 Habitat evaluation & survey**

- 3.2.1 The preliminary appraisal was based on expert opinion from an experienced Great crested newt licence holder (JK). This resulted in seven areas being excluded from any further fieldwork. Another site could not be accessed, as explained in Section 4.1 below.
- 3.2.2 This left three sites retained for detailed survey. Factors that contribute to, or detract from, each site's suitability for this species were systematically recorded. This provided an assessment of the suitability of the waterbody and surrounding land for Great crested newts.
- 3.2.3 Great crested newt survey was undertaken at these three sites also and involved:
- A search for adults and the characteristic eggs/larvae of Great crested newts within the waterbody using hand and net-based survey techniques.
  - Four evenings/mornings of targeted Great crested newt survey using torch and bottle-trapping techniques.

- 3.2.4 The field survey took place during the period 19<sup>th</sup> to 23<sup>rd</sup> June 2006, using methods consistent with English Nature (2001) guidelines, and all survey work was carried out in good weather conditions (*i.e.* when it was relatively warm, calm and dry).
- 3.2.5 Newts were also searched for incidentally as the surveyors conducted other ecology surveys in other parts of the site. This involved the checking of potential natural and artificial refugia, and ditch lengths surveyed for Water voles.

## 4. Results

### 4.1 Preliminary appraisal

- 4.1.1 The 11 areas that were subject to preliminary appraisal are shown in Figure 4.1, and the key characteristics of these areas are summarised in Table 4.1.

**Table 4.1:** Preliminary appraisal of sites potentially suitable for Great crested newts.

Site Code	Characteristics	Warrants further survey	Reject
P1	Small, 100% shaded, field pond with very little water present (moist ground only) – currently unsuitable.		√
P2	Man-made fishing lake with two small ponds nearby. Ponds look suitable, although lake heavily stocked with fish – possibly suitable.	√	
P3	Small, heavily vegetated field pond with water present – possibly suitable.	√	
P4(a)	Wetland ditch, 90% shaded with dense emergent vegetation and containing little water. Sub-merged vegetation absent - currently unsuitable.		√
P4(b)	(as above)		√
P4(c)	(as above)		√
P5	Wetland ditch, 80% shaded with dense emergent vegetation but containing water. Sub-merged vegetation absent - currently unsuitable.		√
P6	Two, small, heavily shaded field pond with water present – possibly suitable.	√	
P7	Wetland ditch, 90% shaded with dense emergent vegetation and containing little water. Sub-merged vegetation absent - currently unsuitable.		√
P8(a)	Wetland ditch, 80% shaded with dense emergent vegetation but containing water. Sub-merged vegetation absent - currently unsuitable.		√
P8(b)	Wetland ditch, 60% shaded with dense emergent vegetation but containing water. Sub-merged vegetation present within open areas of the ditch - possibly suitable.	√	

NB. Note that P3 was located on private land and viewed only from a distance.

4.1.2 Seven areas were rejected from the survey at this point because they were considered to have very low potential to support Great crested newts.

4.1.3 Another site, P3, was located on private land and, as the owner lives away from the area, permission to survey this site could not be obtained.

## 4.2 Habitat evaluation

4.2.1 Detailed habitat evaluation was undertaken for the three remaining sites: P2, P6 and P8(b), and a summary of the habitat characteristics of these sites is provided in Table 4.2.

**Table 4.2:** Habitat evaluation of sites P2, P6 and P8(b) for Great crested newts

Attribute	Optimal characteristics (from Langton <i>et al.</i> 2001)	P2: Fishing lake and associated ponds	P6: Two field ponds	P8(b): Wet ditch
Terrestrial habitat	Close proximity to grassland, scrub, woodland, hedgerows <i>etc.</i> , for cover and feeding. Close proximity to other ponds.	Surrounding by grassland, scrub, woodland, hedgerows, gardens, <i>etc.</i> Two small ponds and wet ditch present.	Surrounding by arable, grassland, scrub, hedgerows, <i>etc.</i> Wet ditch present and nearby.	Drainage ditch flanked by tall wet grassland, access tracks and industrial areas. Improved pastures nearby. Linked to other ditches.
Accessibility/ barriers	Easily accessible margins and few or no barriers to movement.	Easily accessible; no significant barriers to movement.	Easily accessible; no significant barriers to movement.	Easily accessible; no significant barriers to movement.
Pond size	Small to medium sized (50-250m <sup>2</sup> )	Lake c.500m <sup>2</sup> Ponds c.15m <sup>2</sup>	Pond 1: c.10m <sup>2</sup> Pond 2: c.15m <sup>2</sup>	c.400 x 1m
Water depth	Some deep and some shallow water. Seasonally dry ponds can be favoured.	Lake water depth variable at (0.2 to 1m plus). Ponds at 0.2 to 0.5m; Hold water in spring/summer.	Shallow margins but grading to c. 1m deep.	c.30cm, average depth



Attribute	Optimal characteristics (from Langton <i>et al.</i> 2001)	P2: Fishing lake and associated ponds	P6: Two field ponds	P8(b): Wet ditch
Water quality	Good water quality preferred.	Lake water of poor quality; sediment rich. Ponds appear of good quality.	Poor quality; some algae and stagnating sediments present.	Appears of good quality.
Shade/cover	Mixture of shaded and open areas.	Lake has mostly an open aspect. Ponds c.40% shade from scrub.	60-80% shaded by hawthorn scrub.	60% shaded with dense emergent vegetation.
Marginal vegetation	Emergent vegetation for cover, shade and food sources. 25-50% cover is good.	Lake at c.10%, and ponds at c.25% emergent, inc. plants suitable for egg-laying.	Pond 1: 10& reed Pond 2: None	Much reed cover, interspersed with more open areas.
Foods	Healthy invertebrate fauna and amphibian spawn on which to feed.	Invertebrates present in abundance in the ponds.	Invertebrates present.	Invertebrates present, as well as tadpoles.
Aquatic vegetation	Submerged vegetation on which newts can egg lay. 60% cover is good.	c.20% in the lake and c.50% in the ponds, including pond weeds and other plants suitable for egg-laying.	None. Much leaf litter present.	Some patches of weed present.
Predators: waterbirds	Birds may predate and consume eggs and larvae.	Lake attracts a variety of birds, including herons.	Birds mostly absent.	May attract bird such as herons.
Predators: fish	Fish may predate and consume all eggs and larvae.	Large numbers of stocked coarse fish, inc. carp. Ponds may hold small fish species (e.g. sticklebacks, minnows).	May hold small fish species (e.g. sticklebacks, minnows).	May hold small fish species (e.g. sticklebacks, minnows).
<b>Potential for GCN</b>		<b>Lake:</b> Low <b>Ponds:</b> Medium	Low/medium	Low

4.2.2 Though far from ideal, these waterbodies are suitable for occupation by Great crested newts but a number of key factors are sub-optimal, in particular the presence of fish in the lake, much shade, poor water quality at some sites, and the general absence of suitable marginal or aquatic vegetation.

4.2.3 The suitability of the terrestrial habitat surrounding these waterbodies for Great crested newts was considered reasonable, although these sites sit within a landscape dominated by agriculture and industrial land uses. The landscape generally represents a relatively hostile environment for newts.

### 4.3 Amphibians recorded

4.3.1 The results obtained from our surveys of sites P2, P6 and P8(b) are provided in Table 4.3.

**Table 4.3:** Survey results for sites P2, P6 and P8(b) for Great crested newts, 19<sup>th</sup> to 23<sup>rd</sup> June 2006

Site	Method	Newts	Other
P2 (lake)	Search	<ul style="list-style-type: none"> <li>Max. 3 GCN, 2 SN and 2 PN</li> </ul>	-
	Bottle traps (n=25)	<ul style="list-style-type: none"> <li>No newts</li> </ul>	1 roach
P2 (pond 1)	Search	<ul style="list-style-type: none"> <li>GCN eggs recorded</li> </ul>	-
	Torch	<ul style="list-style-type: none"> <li>Max. 3♂, 1♀ GCN</li> <li>Max. 4 PN</li> </ul>	-
P2 (pond 2)	Search	<ul style="list-style-type: none"> <li>No newts; no eggs found</li> </ul>	-
	Torch	<ul style="list-style-type: none"> <li>No newts</li> </ul>	-
P6 (pond 1)	Search	<ul style="list-style-type: none"> <li>No newts</li> </ul>	-
	Bottle traps (n=10)	<ul style="list-style-type: none"> <li>Max. 4♂, 2♀ GCN adults</li> <li>Max. 1 larvae</li> </ul>	-
P6 (pond 2)	Search	<ul style="list-style-type: none"> <li>No newts</li> </ul>	-
	Bottle traps (n=8)	<ul style="list-style-type: none"> <li>No newts</li> </ul>	Several minnows trapped
P8(b) (ditch)	Search	<ul style="list-style-type: none"> <li>No newts; no eggs found</li> </ul>	-
	Torch	<ul style="list-style-type: none"> <li>No newts</li> </ul>	Tadpoles

NB. GCN = Great crested newt; SN = Smooth newt; PN = Palmate newt

4.3.2 Great crested newts were found to be present around the perimeter of the fishing lake at P2, and were present in small numbers, and breeding, in Pond 1 at P2. Both Smooth and Palmate newts were also present under refugia in the vicinity of P2.

4.3.3 Great crested newts were found to be present in small numbers and breeding in one of the ponds at P6. They seemed to be absent from the second pond at this site, perhaps due to the presence of minnows.

4.3.4 No newts were observed in the ditch at P8(b), though tadpoles were present.

- 4.3.5 Two Palmate newts were recorded under a discarded carpet at the location shown on Figure 4.2.

## 5. Implications

- 5.1.1 Although supporting only small populations, the breeding ponds at P2 and P6 are protected by law. The legislation protects the animals themselves and their places of shelter, which may extend 500m from the breeding pond.
- 5.2 The surrounding areas are protected because Great crested newts spend much of their year on land, frequenting ponds only when displaying, mating and egg-laying. Indeed, by August most adult Great crested Newts have left their breeding ponds to feed in terrestrial habitats around the pond prior to selecting terrestrial hibernating sites including underground crevices, tree root systems, mammal burrows, log piles, old walls with plenty of holes, rubble piles, and spaces under paving slabs, tarmac and concrete (English Nature 2001, Langton *et al.* 2001).
- 5.2.1 At P6, this 500m protection zone overlaps with Areas 4 and 5 of the application site (Figure 4.2). At P2, the protection zone overlaps with Area 2a in the application site. If these areas are to be developed, appropriate plans for impact minimisation and mitigation will need to be developed. This may involve re-design, translocation of breeding populations, or mitigation through habitat enhancements in areas away from the development. Discussions with English Nature will be required and a licence from Defra may be needed.
- 5.3 In the meantime, it should be noted that any development or maintenance works in areas used by Great crested newts will require a licence from Defra. Licence applications need to be accompanied by full planning permission.
- 5.4 Many of the ponds at Killingholme are in need of management and, in general, these pond sites could be greatly improved for this species. Connectivity between ponds and feeding/hibernation areas is also important and will need to be considered if there is to be any management that aims to create a more favourable landscape for newts and amphibians generally. If optimally managed, the wet many wet ditches on site could assist with providing good connectivity and good foraging habitats, and potentially could offer additional breeding habitat.

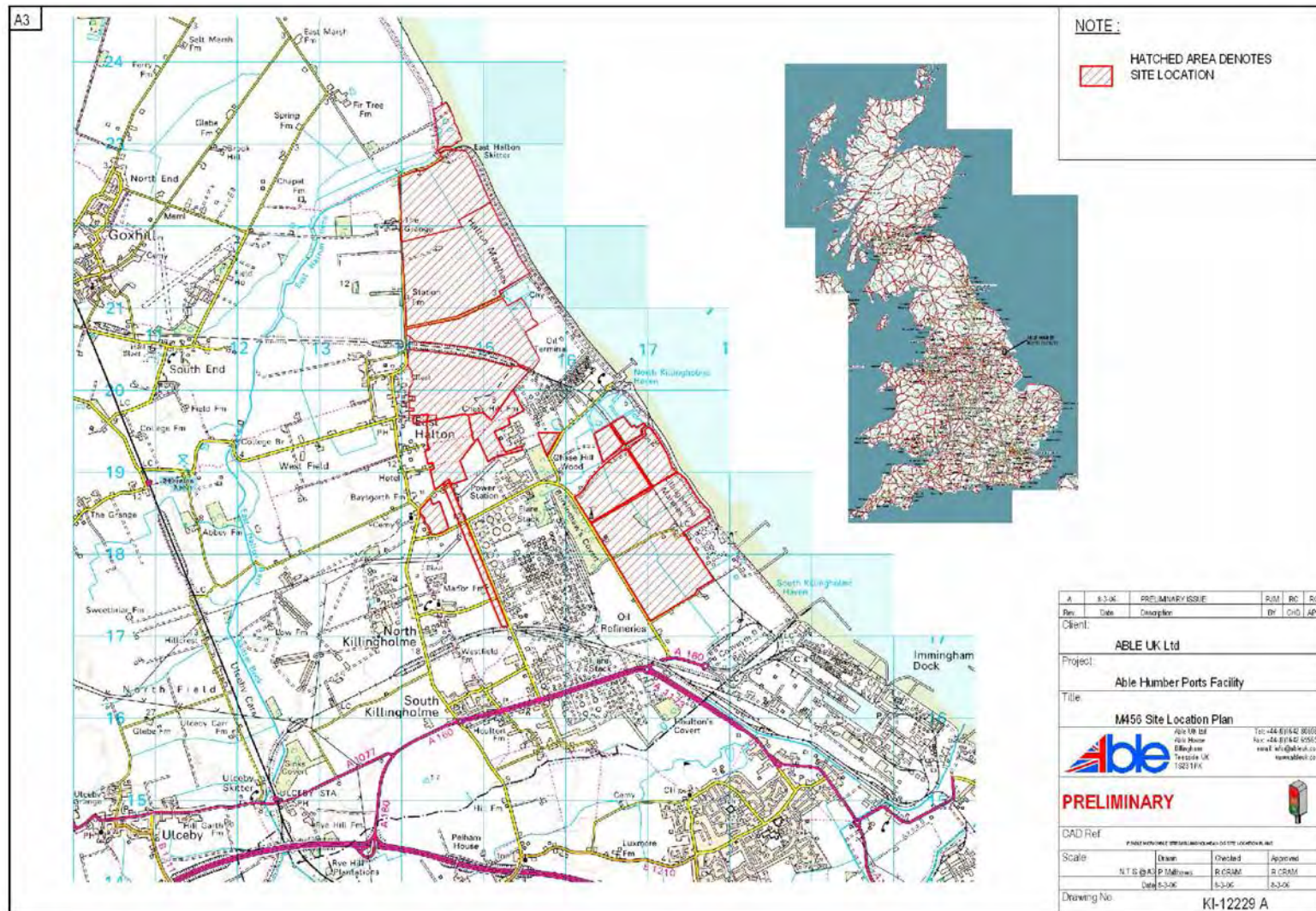
- 5.5 It should be noted that P3 could not be surveyed. However, as this site lies very close to proposed development Areas 2a, 2b and 3, it will need to be surveyed in the Spring of 2007. It should also be noted that the surveys were undertaken in mid- to late-June, an acceptable period for Great crested newt survey, though April and May are the optimal survey months (English Nature 2001).
- 5.6 Because of this, and because our survey efforts had, by necessity, to be targeted, it would be prudent to remain alert to the possibility of newts in other parts of the site. Should newts be located then any works underway should stop and advice sought regarding the best course of action to take.

## 6. References

- English Nature. 2001. Great crested newt mitigation guidelines. August 2001. English Nature, Peterborough
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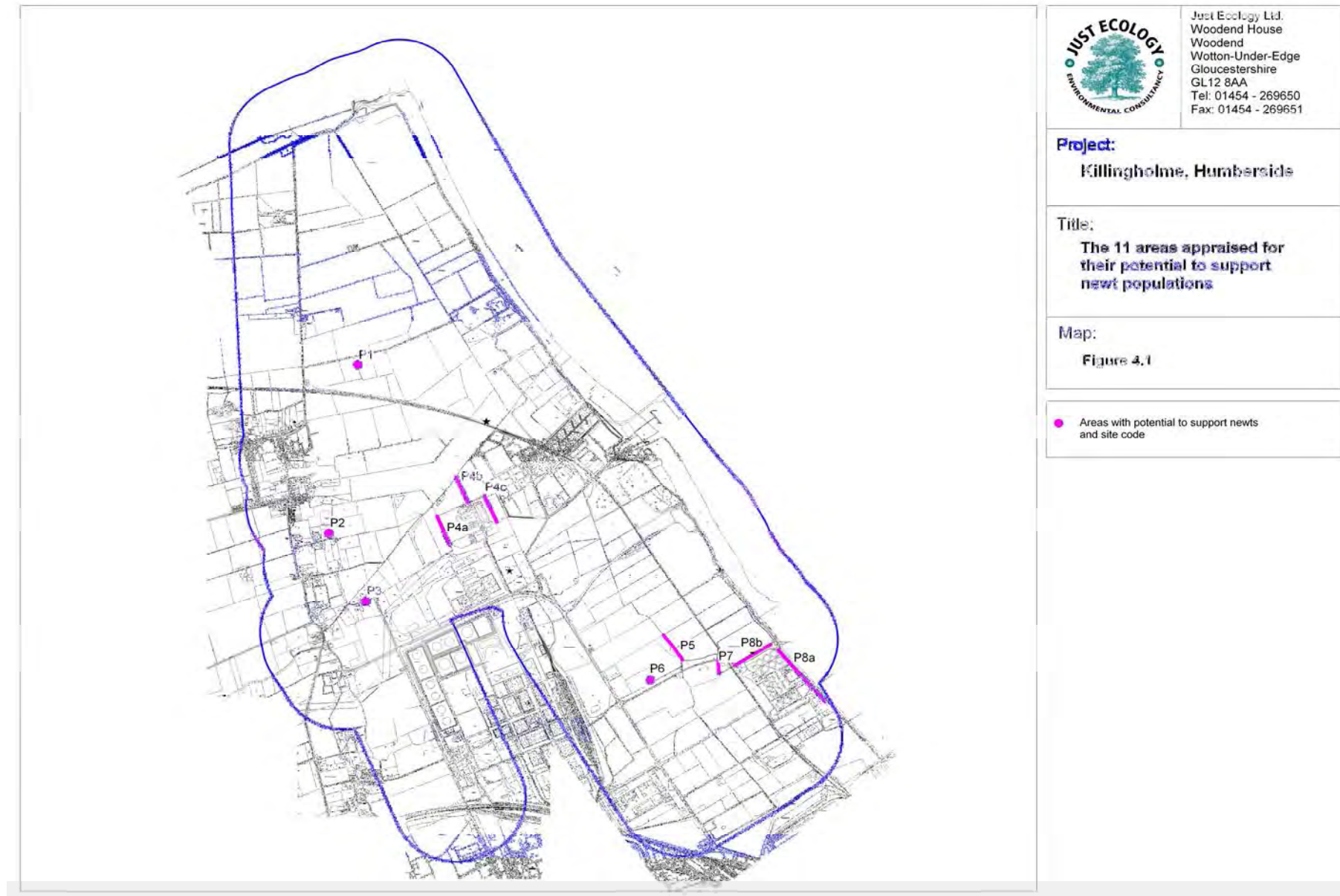
## 7. Figures

**Figure 2.1:** Site location (courtesy of Able UK)





**Figure 4.1:** The 11 areas appraised for their potential to support newt populations.



**Figure 4.2:** The two sites known to support Great crested newts, application areas and the 500m protection zones. Also the location of the Palmate newts.

