



Mariposa Developments Ltd

Panshanger Airfield, Hertfordshire

GREAT CRESTED NEWT SURVEY REPORT

February 2016

FPCR Environment and Design Ltd

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1.0 INTRODUCTION

- 1.1 This report has been prepared by FPCR Environment and Design Ltd on behalf of Mariposa Developments Ltd and provides details of the results of great crested newt *Triturus cristatus* surveys undertaken between April and May 2014, at Panshanger Airfield, Hertfordshire.

Site location and context

- 1.2 The area of land encompassed by the survey area includes Panshanger aerodrome and surrounding field compartments to the north, dominated by semi-improved grassland. Ruderal and ephemeral habitat was present throughout the survey area, although mostly confined to Panshanger aerodrome. There were four areas of woodland within the survey boundary, these were broadly classified as mature "scrub woodland", plantation woodland, semi-natural woodland and ancient/semi-natural woodland. Two waterbodies were identified within the survey area boundary, and one immediately outside the survey boundary (see *Figure 1*). Eight further water bodies were identified from within 500m of the survey area boundary the location of these are shown in *Figure 2*.

2.0 RELEVANT LEGISLATION

- 2.1 Great crested newts are protected under European and UK law. They are also listed on Schedule 41 of the Natural Environment and Rural Communities Act, 2005 (NERC S41) as a species of principal importance.
- 2.2 Great crested newts are protected under Section 41 of the Conservation of Habitats and Species Regulations 2010, which transposes into UK law the EC Habitats Directive (92/43/EEC). This species is also protected under Schedule 5 of the Wildlife and Countryside Act 1981 (WCA) (as amended). Great crested newts are protected under these laws from killing, harm or disturbance as well as protecting their shelter, resting and breeding places.
- 2.3 Current national planning policy for nature conservation is provided in The National Planning Policy Framework (NPPF, 2012). This is concerned with protection through the planning system of statutory and non-statutory sites of biodiversity and/or geological conservation value, as well as species protection and biodiversity conservation in the wider environment. The Government Circular ODPM06/2005, still relevant to the NPPF states that the presence of a protected species is "... a material consideration when a planning authority is considering a development proposal which, if carried out, would be likely to result in harm to the species or its habitat". In addition to the consideration of protected species, PPS9 encourages positive biodiversity changes as a result of development.

3.0 METHODOLOGY

Desk study

- 3.1 In order to compile existing baseline information, relevant ecological information was requested from Herts Environmental Records Centre (HERC) for records of GCN within 2km of the survey area boundary.

Field survey

- 3.2 Any water bodies to which access could be legally gained were noted and described so as to indicate their potential to support an amphibian population, including great crested newts. Where access was granted ponds within a 500m radius of the site were also surveyed and assessed for suitability. These ponds were assessed using the great crested newt Habitat Suitability Index (HSI).

Habitat Suitability Index (HSI)

- 3.3 All water bodies that could be accessed were assessed for potential to support an amphibian population, including great crested newts, using the Habitat Suitability Index (HSI). This instrument assesses the ponds against ten pre-determined criteria, producing a score which indicates the degree of suitability for occupation by great crested newts.
- 3.4 The Habitat Suitability Index as described by (Oldham *et al.*, 2000¹) provides a measure of the likely suitability that a water-body will support newts. In general, ponds with a higher score are more likely to support great crested newts than those with a lower score and there is a positive correlation between HSI scores and ponds with newts recorded. Ten separate attributes are assessed for each pond:
- Geographic location
 - Pond area
 - Pond drying
 - Water quality
 - Shade
 - Presence of water-fowl
 - Presence of fish
 - Number of linked ponds
 - Terrestrial habitat
 - Macrophytic coverage
- 3.5 A score is assigned according to the most appropriate criteria level set within each attribute and a total score calculated of between 0 and 1. Pond suitability is then determined according to the following scale displayed in *Table 1*.

¹ 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.

Table 1: Habitat Suitability Index (HSI) scores and pond suitability

HSI	Pond Suitability
<0.5	Poor
0.5 - 0.59	Below average
0.6 – 0.69	Average
0.7 – 0.79	Good
>0.8	Excellent

Field surveys

- 3.6 Aquatic surveys were conducted in 2014 of Pond 1 (P1) on site. Natural England guidance was followed, as detailed in the Great Crested Newt Mitigation Guidelines, (English Nature, 2001²). To determine the presence/absence of great crested newts, an initial four surveys were performed. If GCN were observed, an additional two surveys would be conducted in order to assess population size.
- 3.7 On each survey occasion three of the four survey techniques were employed (egg search, sweep net, bottle trap and torch). A summary of these techniques is detailed below.

Bottle trapping

- 3.8 Bottle traps were set within the water body in the evening at densities of one trap per two metres of shoreline (where feasible) and left overnight for inspection in the morning. Traps were partially submerged in the water leaving an air bubble in the bottle and secured by a cane marked with a high visibility tape to ensure relocation the following day. Care was taken to ensure that trapping did not occur during excessively warm weather, when the temperature inside the trap could rise considerably, reducing oxygen levels and potentially suffocating the newts.

Sweep netting

- 3.9 Long handled sweep-nets were used to sample the margins of the pond for great crested newts, with approximately 15 minutes of netting per 50 m of shoreline.

Torching

- 3.10 Torching involved searching the water body after dusk using high-powered torches to scan the margins and potential display areas for newts. The perimeter of the pond was walked slowly spending approximately 15 minutes torching each 50 m of shoreline recording any newts observed. Torch surveys are unsuitable within heavily vegetated and/or turbid ponds or after periods of heavy rain as visibility is diminished.

Egg searching

- 3.11 Newts lay single eggs on leaves of aquatic plants or other suitable pliable material, after which the material is folded over the egg to protect it. Great crested newt eggs can be

² English Nature (2001). Great crested newt mitigation guidelines.

distinguished from those of the other newts by their size, shape and colour. Submerged vegetation was examined for newt eggs and folded leaves gently opened to check for eggs. Once a great crested newt egg is identified, no further leaves need to be examined to minimise any further potential disturbance.

- 3.12 All surveys were conducted by at least one licensed ecologist from FPCR Environment and Design Ltd. All surveys were completed during suitable conditions i.e. when the ambient air temperature exceeds 5°C, with little/no wind and no rain. Below the survey dates and weather conditions are presented in *Table 2*.

Table 2: Survey dates and weather conditions 2014

Survey Dates	Weather Conditions
16.04.2014	Clear, Light Wind, 10°C
23.04.2014	Overcast, 11°C
29.04.2014	Overcast, 11°C
20.05.2014	Scattered clouds, 16°C

Population size class assessment

- 3.13 Population size class assessments are based on the highest maximum (peak) count of great crested newts observed on any one survey occasion. The population size class values were defined in English Nature (2001)², and are presented below in *Table 3*.

Table 3: Determining population size class (great crested newt mitigation guidelines, 2001²)

Population Size Class	Peak counts
Low Population	0 – 10 animals
Medium Population	11 – 100 animals
High Population	> 101 animals

4.0 RESULTS

Desk study

- 4.1 Records of GCN were returned following consultation with HERC. GCN records were found 2.42km, 1.7km and 2.8km to the north; 1.25km and 1.36km to the south and 990m, 1.77km and 2km to the south west of the site boundary. See *Figure 3*.

Habitat descriptions

- 4.2 Two waterbodies were present within the survey area boundary. P1 was located to the west of the site, east of Hillyfields Road. Pond 2 (P2) was an ornamental pond in front of the aerodrome reception, to the south of the site.
- 4.3 P1, shown in *Photograph 1*, was approximately 24m² with an estimated water depth of 0.5m. It had dried out slightly since the initial Phase 1 took place in November 2013, when the area

had been 36m² and the depth 2m. There were no fish or water fowl present. Aquatic vegetation cover varied between 40%-80% as the water table decreased. The pond had tree coverage on one side, with the remaining edge exposed to the field (giving c.30% shade).

Photograph 1: Pond 1



- 4.4 P2 is an ornamental pond present outside of the main reception building at Panshanger Aerodrome. It has vertical brick/concrete edges and a part polybutyl/part concrete liner. The pond is stocked with ornamental fish *Cyprinus carpio* and has little vegetation except for a small amount of Canadian pondweed *Elodea canadensis* and ornamental water lily *Nymphaea sp.* the pond measures approximately 4m x 2.5m and is estimated to be 1.5m deep.
- 4.5 Pond 3 (P3) was approximately 30m². It appeared to never dry out, with poor quality water, a major water fowl population and possible fish population. The pond was heavily shaded (c.80%) with low aquatic vegetation. Permission was not granted to survey, but an HSI score could be ascertained from the initial visit.
- 4.6 Ponds 4-11 were on private land and permission was not granted for survey, but they are thought to be fisheries.

HSI

- 4.7 An HSI assessment was undertaken on all ponds present within the survey area or within 500m of the survey area boundary where access was permitted or where assessments could be made from public rights of way. *Table 4* below presents a summary of the results of this assessment.

Table 4: Pond HSI results summary

Pond Reference	HSI Index Score (2dp)	Habitat Suitability
P1	0.66	Average
P2	0.57	Below average
P3	0.38	Poor

- 4.8 P1 was the only water body to obtain an HSI score of “average” suitability, largely due to the low level of shade and lack of water fowl or fish presence. P2 had “below average” suitability for GCN as it was an ornamental pond, with steep sides and a carp population. P3 was deemed “poorly” suitable, due to the probable presence of fish, water fowl being present and the water quality being poor. In addition, permission to survey P3 was not granted. Permission was not given to survey the remaining ponds (Ponds 4-11). Consequently, P1 was the only water body that required further study.

Field Survey

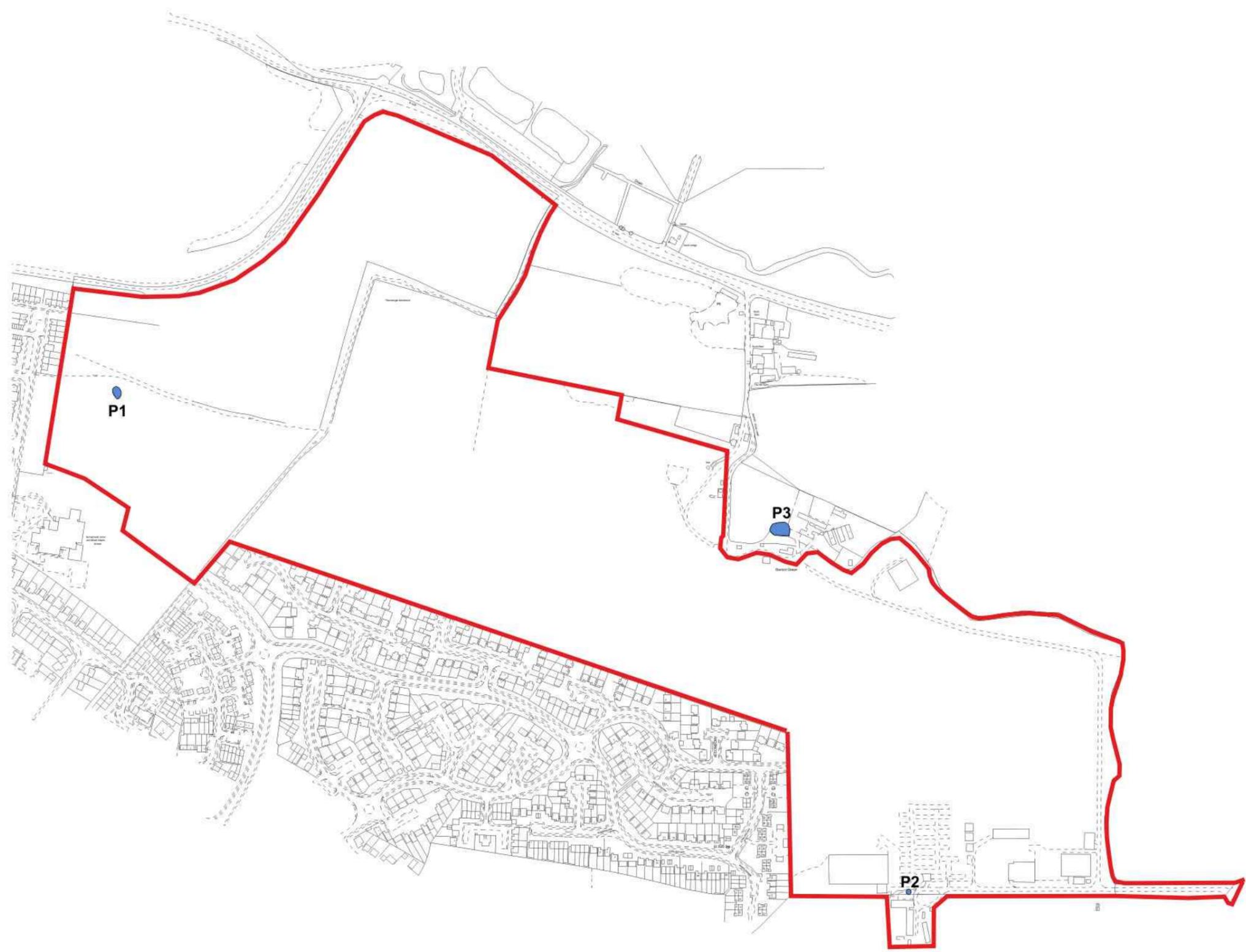
- 4.9 No great crested newts were recorded between April and May 2014; similarly no eggs were recorded from potential ‘egg laying’ substrate searched during the surveys.
- 4.10 Smooth newts *Lissotriton vulgaris* were however recorded in P1.
- 4.11 *Table 5* shows the peak counts for newts during the surveys undertaken between April and May 2014.

Table 5: Peak observation counts from 2014

Pond Reference	Great Crested Newts				Smooth Newts			
	Male	Female	Unknown	Eggs	Male	Female	Unknown	Eggs
P1	0	0	0	0	2	2	0	0

- 4.12 The peak smooth newt count was two males surveyed via torching on the 29th April and two females caught by bottle trapping on the 20th May. One female smooth newt was found via bottle trapping on the 16th April.

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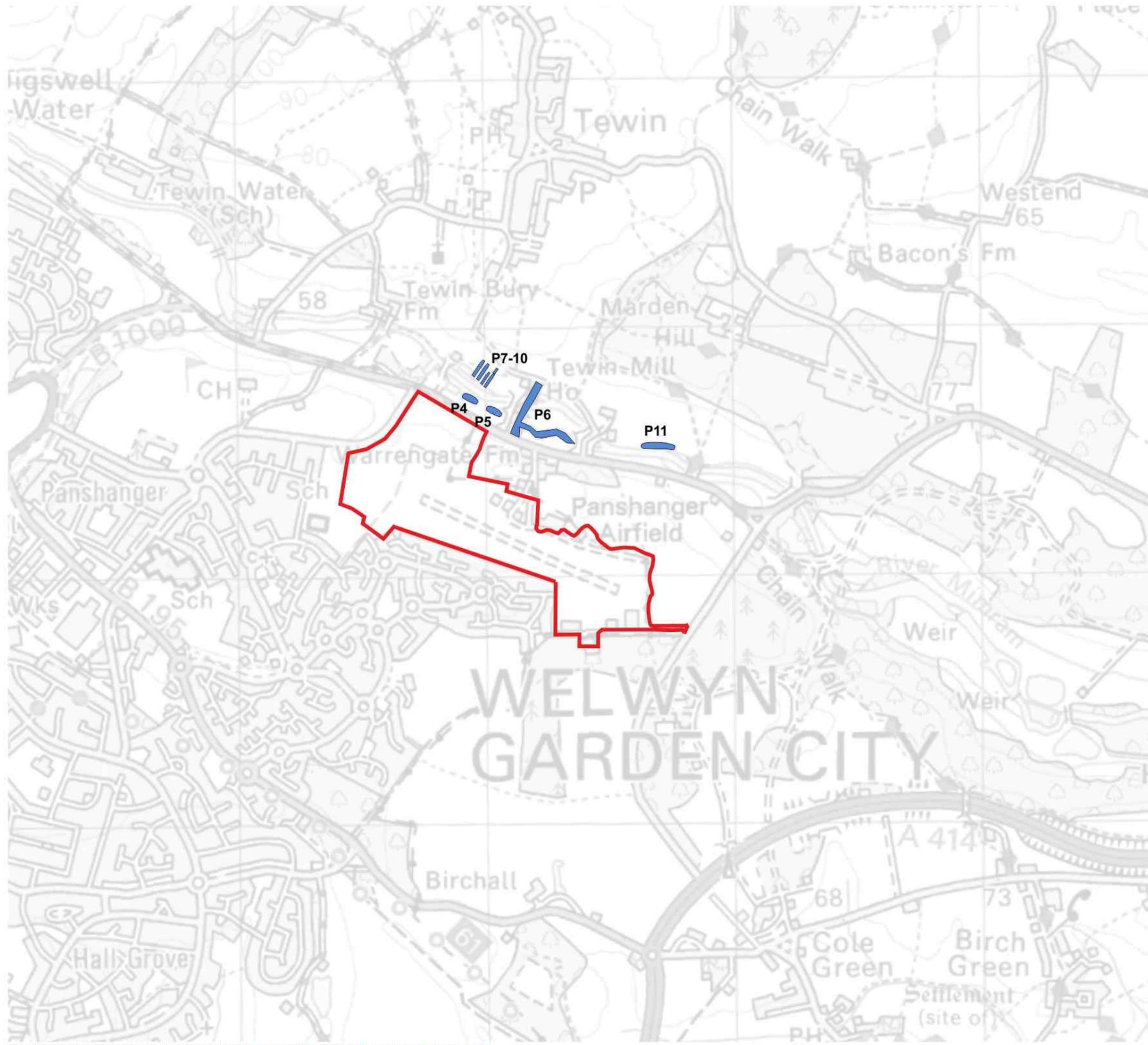


-  Development Boundary
-  Pond with Reference

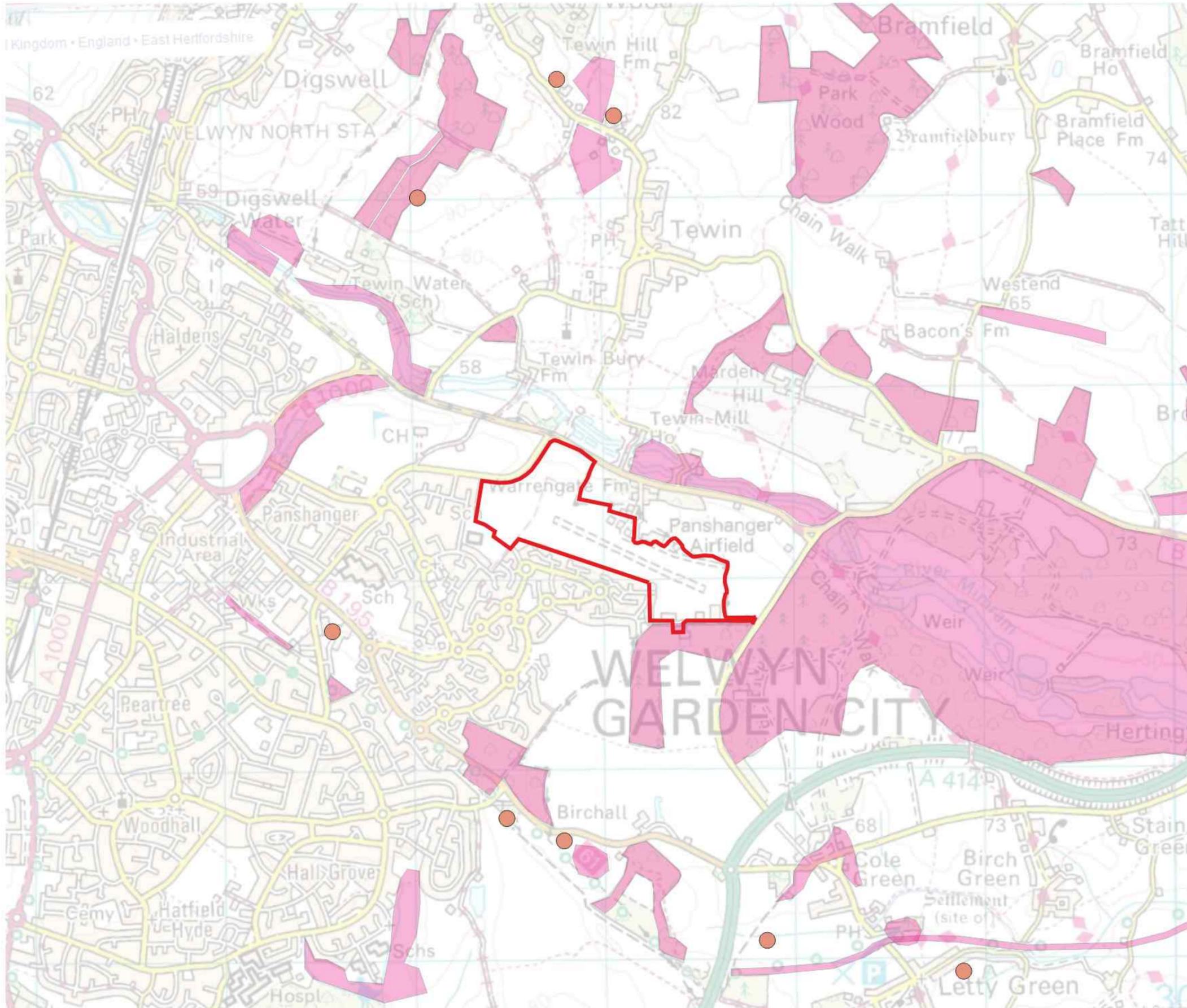
 Mariposa Developments Ltd
Panshanger Airfield, Hertfordshire
POND LOCATION PLAN
NTS @ A3 BL/MEL 26.01.2016
 **Figure 1** 5705-E-01B

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-  Development Boundary
-  Pond with Reference



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 ADDITIONAL POND LOCATION PLAN
 NTS @ A3 BL/MEL 26.01.2016
Figure 2 **5705-E-02B**



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-  Boundary
- Non-statutory Sites**
-  Local Wildlife Sites (LWS)
- Protected and Notable Species**
-  Great crested newt


 Mariposa Developments Ltd
 Panshanger Airfield, Hertfordshire
**GREAT CRESTED NEWT
 CONSULTATION PLAN**
 NTS @ A3 JRM/MEL 22.02.2016
Figure 3 5705-E-03A