

TAYLOR WIMPEY UK

LAND SOUTH OF COG ROAD, SULLY

BAT AND GREAT CRESTED NEWT SURVEY REPORT

27 NOVEMBER 2013



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DOCUMENT REF: E1237002/Doc 01 – 27 NOVEMBER 2013

Issue	Revision	Stage	Date	Prepared by	Approved by	Signed
1	-	Draft for review	06 August 2013	Annabelle Phillips	Dr. M Watts (Director)	
2	Revised site name	Final	27 November 2013	Annabelle Phillips	Dr. M Watts (Director)	

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1.0 INTRODUCTION

- 1.1 Soltys Brewster Ecology were commissioned by Taylor Wimpey UK to undertake a number of targeted species surveys to inform proposed residential development on land South of Cog Road near Sully. The survey area is located to the east of Sully, at grid reference ST161 686.
- 1.2 This report provides a summary of the bat and Great Crested Newt *Triturus cristatus* surveys undertaken between April and July 2013, and includes recommendations on any ecological constraints/ opportunities associated with development at the site.
- 1.3 The Phase 1 Habitat Survey identified that the site includes improved grassland fields surrounded by hedgerows and a single pond (see Phase 1 Habitat Survey Plan and Target Notes in Appendix I). The survey was undertaken in March 2012 and Great Crested Newt eggs were found in the pond on site. The hedgerows and trees around the site boundary were considered to offer suitable foraging habitat for local bats and other wildlife. This report should be read in conjunction with the Phase 1 Habitat Survey Report (SBE, 2012) to provide a comprehensive review of baseline ecological conditions at the site.

2.0 BAT SURVEYS - 2013

Survey Method

- 2.1. A series of two dusk (20th May and 03rd June 2013) and one dawn (04th June 2013) activity surveys were undertaken by a team of two surveyors to ascertain the level of use of the site by bats, the bat species present and the resources the site provides e.g. commuting habitat/ foraging resource. To identify areas of activity on site, walked transects were undertaken. These covered all areas of the site and generally followed linear features (i.e. hedgerows and field boundaries). Dusk surveys commenced observation 15 minutes before sunset and ran for up to 120 minutes, with dawn surveys commencing 90 minutes before sunrise and ending at sunrise. Surveys were conducted using Pettersson D-240x or Bat Box Duet ultrasound detectors and suitable recording equipment.
- 2.2. In addition, automated detector surveys were also undertaken using automated bat detectors (Anabat SD2) deployed on linear features to record bat activity overnight on 03 June and 09 July 2013. All calls were recorded and identified on computer-based sonogram analysis software (Analook or Wavesurfer).

Survey Results

- 2.3. The species recorded during the bat activity transects and their locations are displayed in Figure 1. During the dusk activity survey undertaken on the 20th May 2013, 31 separate bat observations were made during the walked transects. The majority of calls were associated with the hedgerows around the field perimeters. From both in-field and sonogram analysis it was determined that the majority of these calls were made by foraging and commuting Common Pipistrelle *Pipistrellus pipistrellus*, with 7 Soprano Pipistrelle *Pipistrellus pygmaeus*, 2 *Myotis sp.*, 2 Noctule *Nyctalus noctula*, and 1 Leisler's *Nyctalus leisleri* bat also recorded. The first bat recorded was a Common Pipistrelle at 21:16hrs, 11 minutes after sunset (21:05hrs), commuting along Swanbridge Road. During the evening activity survey weather conditions were considered of no constraint to the survey, being overcast but dry with light winds, with a minimum temperature of 15°C recorded.
- 2.4. During the evening activity survey undertaken on the 03rd June 2013 a total of 23 separate bat observations were made during the walked transects. From both in-field and sonogram analysis it was determined that these calls were made by foraging and commuting Common Pipistrelle, with 2 Soprano Pipistrelle, 2 *Myotis sp.*, 1 Noctule and 1 Serotine *Eptesicus serotinus* also recorded. The first bat recorded was a Common Pipistrelle at 21:52hrs foraging around the pond to the west of the farmhouse, 30 minutes after sunset (21:22hrs). Weather conditions were considered of no constraint to the survey, being clear and dry with light winds and a minimum temperature of 12°C record.

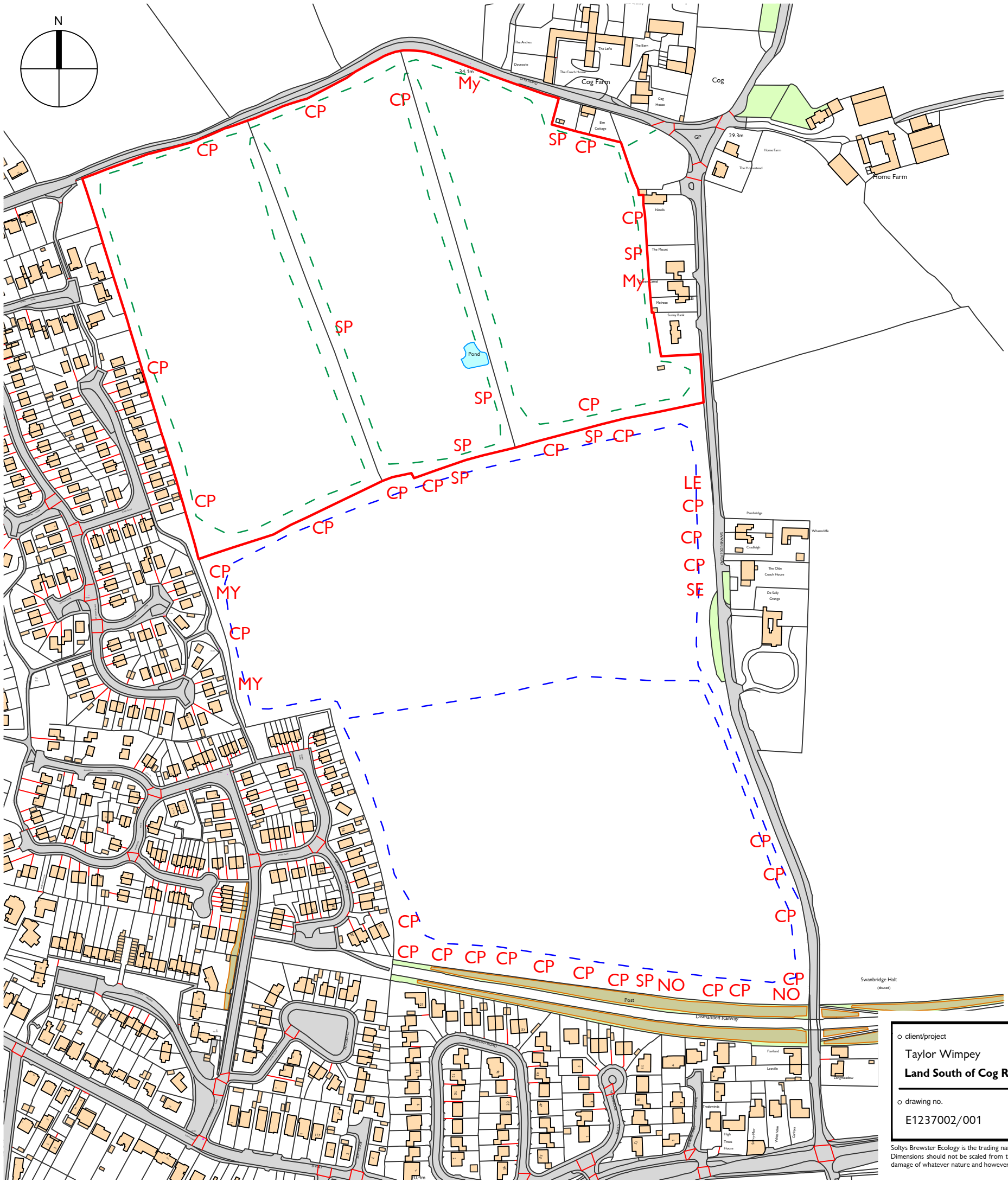
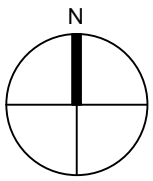
2.5. During the dawn activity survey undertaken on the 04th June 2013 a total of 9 separate bat observations were made during the walked transects. From both in-field and sonogram analysis it was determined that these calls were made by foraging and commuting Common Pipistrelle, with 1 *Myotis sp.* also recorded. The last bat recorded was a *Myotis sp.* at 04:05hrs foraging along the western boundary of the site, 54 minutes prior sunrise (04:59hrs). Weather conditions were considered of no constraint to the survey, being clear and dry with a minimum temperature of 10.5°C record.

Automated Detector surveys

2.6. The Anabat SD2 were deployed as indicated in Figure 2, with description of the results provided in Table 1 below. The maximum number of bat passes recorded in a single location was 301 passes on 03 June 2013 along the disused railway corridor to the south of the site. The maximum number on bat passes recorded within the site itself were 127 on 09 July 2013, along the northern boundary hedgerow (along Cog Road) including 107 Common Pipistrelle, 12 Soprano Pipistrelle, 3 Leisler's, 3 *Myotis sp.*, 1 Noctule and 1 Lesser Horseshoe Bat. Overall, calls were dominated by Common Pipistrelle (90%), with small numbers of Soprano Pipistrelle, Noctule, Leisler's, Serotine and *Myotis sp.*. A single Lesser Horseshoe call was also recorded along the hedgerow on Cog Road.

Table 1. Results of automated bat detector surveys (Anabat SD2)

Anabat Number/ location	Date	Bat calls/ passes recorded
A1 – Northern Hedgerow	03 June 2013	44 Common Pipistrelle 5 Soprano Pipistrelle 1 Noctule
	09 July 2013	107 Common Pipistrelle 12 Soprano Pipistrelle 3 Leisler's 3 <i>Myotis sp.</i> 1 Noctule 1 Lesser Horseshoe
A2 – Railway Corridor	03 June 2013	282 Common Pipistrelle 7 Soprano Pipistrelle 3 <i>Myotis sp.</i> 1 Noctule 3 Leisler's 1 Serotine 4 <i>Nyctalus sp.</i>
A3 – Eastern Hedgerow	09 July 2013	83 Common Pipistrelle 5 Soprano Pipistrelle 3 Leisler's 1 <i>Myotis sp.</i> 4 Noctule



- Key:**
- CP Common Pipistrelle
 - SP Soprano Pipistrelle
 - MY *Myotis sp.*
 - NOC Noctule
 - SE Serotine
 - LE Leisler's
 - Transect Route 1
 - Transect Route 2
 - Site Boundary

Plan indicates bat passes/ locations recorded, not number of individual bats.

o client/project	Taylor Wimpey Land South of Cog Road, Sully		o drawing	Figure 1.0 Bat Survey Plan	
o drawing no.	o revision	o scale	o drawn	o date	
E1237002/001	*	NTS @ A3	AP	Jul 2013	

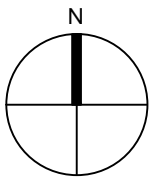
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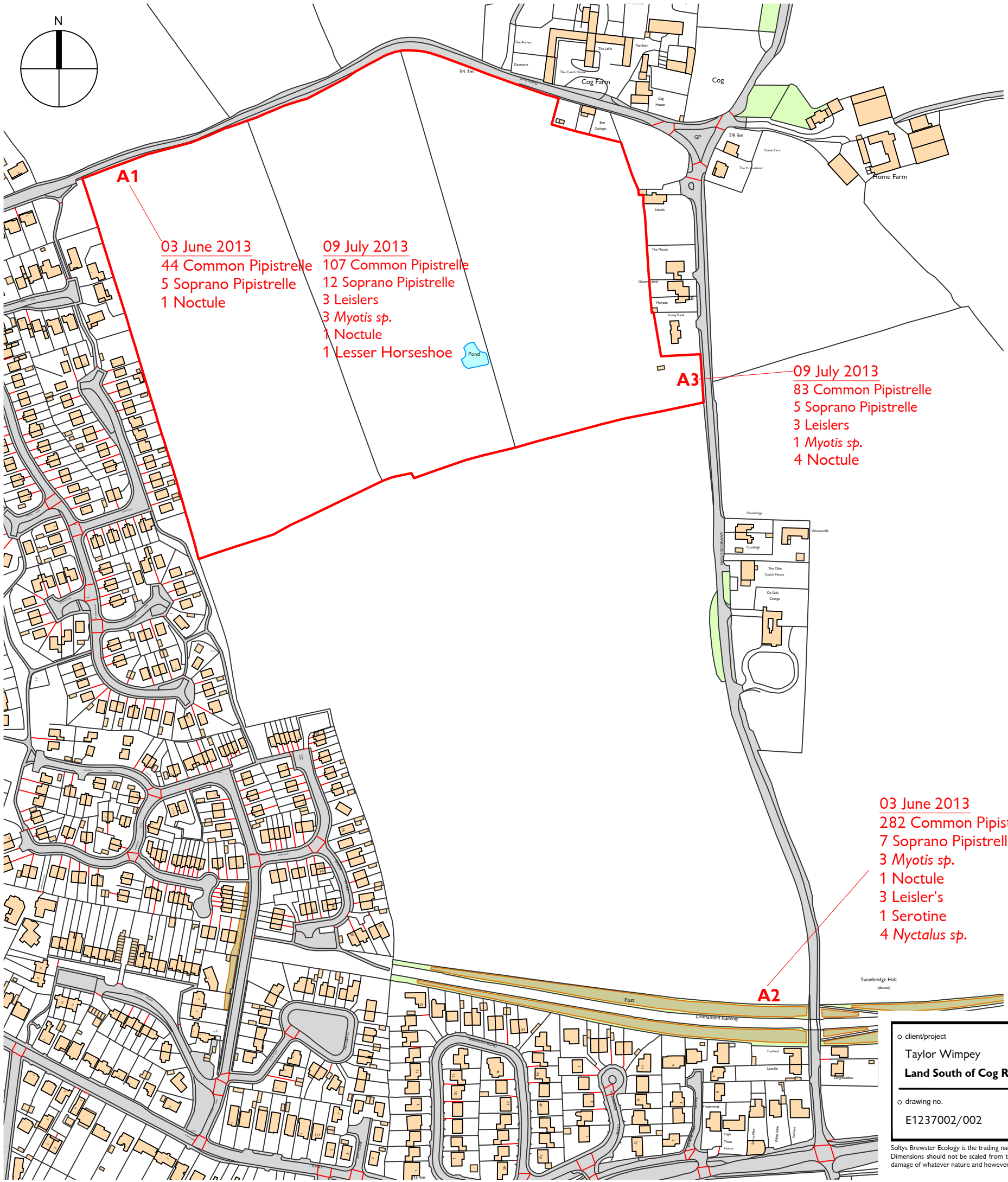
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Key:

- A Automated bat detector location
- Site boundary

Numbers indicate calls recorded/ bat passes, not number of individual bats.



A1

03 June 2013
 44 Common Pipistrelle
 5 Soprano Pipistrelle
 1 Noctule

09 July 2013
 107 Common Pipistrelle
 12 Soprano Pipistrelle
 3 Leislars
 3 *Myotis sp.*
 1 Noctule
 1 Lesser Horseshoe

A3

09 July 2013
 83 Common Pipistrelle
 5 Soprano Pipistrelle
 3 Leislars
 1 *Myotis sp.*
 4 Noctule

03 June 2013
 282 Common Pipistrelle
 7 Soprano Pipistrelle
 3 *Myotis sp.*
 1 Noctule
 3 Leisler's
 1 Serotine
 4 *Nyctalus sp.*

A2

o client/project	Taylor Wimpey				o drawing	Figure 2.0	
	Land South of Cog Road, Sully					Automated Bat Detector Survey Results	
o drawing no.	o revision	o scale	o drawn	o date			
E1237002/002	*	NTS @ A3	AP	Jul 2013			

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Conclusions/ Recommendations

- 2.7. The 2013 bat activity surveys demonstrated that the site is used by a variety of foraging and commuting bat species, dominated by Common Pipistrelle with a small number of other species also recorded. The majority of bat activity was associated with the boundary hedgerows and any development should seek to retain the existing hedgerows where practicable in view of their use as foraging and commuting habitat.
- 2.8. Species recorded on the site such as Lesser Horseshoe and *Myotis sp.* are notably light intolerant and the design of site lighting should seek to maintain the retained hedgerows and boundary features as dark as possible (advice on the use of street lighting and bats is included in Appendix II).

3.0 AMPHIBIAN SURVEYS

Methodology

- 3.1 Amphibian surveys at the pond located in the northern area of the site (Plate 1 and front cover) were carried out using techniques recommended by the Herpetological Conservation Trust and followed guidelines issued by English Nature (2001) to determine the likely presence/ absence of Great Crested Newts *Triturus cristatus*. The surveys were conducted by Countryside Council for Wales (CCW) licenced surveyors¹ (Natural Resources Wales (NRW) from 1st April 2013).
- 3.2 The surveys were conducted under suitable weather conditions between 08th April and 20th May 2013 utilising a range of standard methodologies including torchlight searches and bottle trapping. Each technique is described below. Six survey visits were scheduled to be undertaken between April and June, although only 5 visits (incorporating 4 bottle-trapping sessions) were completed as the pond had dried out before the final visit could be undertaken, with too little water present to allow bottle trapping during the penultimate visit (visit No. 5 on 20th May).

Torchlight Search

- 3.3 Torch surveys to detect adult or juvenile newts were performed each visit after sunset. The surveys were conducted using 1,000,000 candlepower torch. The whole pond was searched with particular attention paid to marginal vegetation and potential open display areas. All species encountered were recorded.

¹ Licence numbers 38872:OTH:SA:2012 & 40130:OTH:SA:2012

Bottle trapping

3.4 Bottle trapping was undertaken at the pond during all survey visits except 20th May, when water levels were found to be too shallow. The traps were set near aquatic vegetation around the perimeter of the pond prior to sunset and left in position overnight. The traps were checked, removed early the following morning and any species found within the traps were recorded. Following each use the traps were cleaned in a diluted solution of bleach and rinsed with clean tap water to reduce the possible spread of harmful fungal diseases between amphibian populations in other ponds.

Results

3.5 The amphibian surveys identified Great Crested Newts within the pond during 2 of the 5 survey visits undertaken (15th & 22nd April). A maximum count of 8 adults were observed during a torchlight survey on 15th April indicating the presence of a small population (based on English Nature Guidance, 2001). Breeding Common Frog were also identified within the pond (for full survey log refer to Appendix III).

Plate 1. Pond drying down on 14th May 2013



Conclusions/ Recommendations

- 3.6 A small population of Great Crested Newt were recorded in the pond during surveys undertaken in 2013. The presence of breeding Great Crested Newt is a key ecological consideration. The Great Crested Newt Mitigation Guidelines (English Nature, 2001) suggest that the destruction of a breeding pond and immediate terrestrial habitat (<50m from a breeding pond) is likely to result in a high level of impact. It is therefore recommended that the breeding pond and immediately surrounding terrestrial habitat, to a radius of 50m, incorporating a connection to the hedgerow boundary to the south, is retained and protected/enhanced to provide continued breeding and terrestrial habitat for Great Crested Newt.
- 3.7 Great Crested Newt are a European Protected Species (EPS) and as such it is considered that a Natural Resources Wales (NRW) EPS development licence would be required in order to undertake any works at the site. A method statement to accompany any future EPS licence application is currently being prepared will be submitted with the planning application. The method statement details the mitigation measures proposed to prevent killing or injury of newts during the construction phase, as well as measures to retain and enhance habitat for Great Crested Newts. Mitigation measures include the exclusion of newts from the development site by the use of newt exclusion fencing, the retention/ enhancement of pond and terrestrial habitats on site for Great Crested Newts and the sensitive clearance of vegetation within the areas to be affected by development.
- 3.8 Mitigation measures include retention and enhancement of pond and terrestrial habitat within 50m of pond edge, along with the retention of the central hedgerow. Retained habitat will be protected from disturbance during the construction phase of the development by Heras fencing or similar, along with newt exclusion fencing to prevent the movement of newts into the construction zone where they could be at risk of killing or injury. The retained habitat will be managed to ensure it remains favourable for Great Crested Newts.

REFERENCES

Bat Conservation Trust (2012) *Bat Surveys – Good Practice Guidelines*. Bat Conservation Trust, London.

English Nature (2001) *Great Crested Newt Mitigation Guidelines*. English Nature, Peterborough.

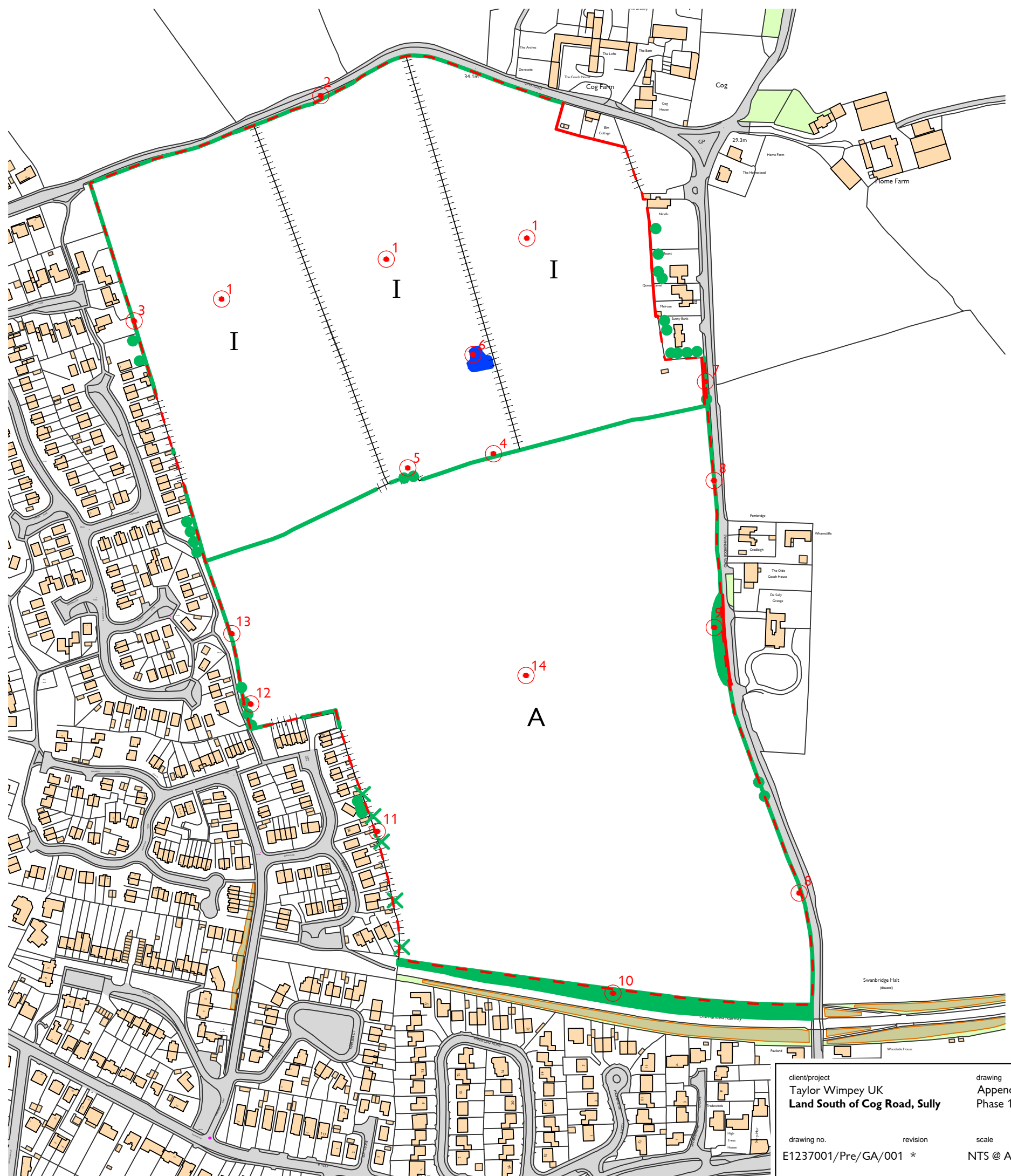
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Mitchell-Jones, A.J. (2004) *Bat mitigation guidelines; January 2004*. English Nature. Peterborough.

Oldham, R.S., Keeble, J., Swan, M.J.S. & Jeffcote, M. (2000). *Evaluating the suitability of habitat for the Great Crested Newt (*Triturus cristatus*)*. *Herpetological Journal* 10 (4), 143-155.

Soltys Brewster Ecology (2013) *Land South of Cog Road, Sully – Extended Phase 1 Habitat Survey*.

APPENDIX I EXTENDED PHASE 1 HABITAT MAP AND TARGET NOTES (SOLTYS BREWSTER, 2012)



- Key:**
- Broadleaved Semi-natural Woodland
 - Scattered Broad-leaved Trees
 - Species-poor Hedgerow
 - I Improved Grassland
 - A Arable Land
 - Standing Water
 - Fence
 - Wall
 - Site Boundary
 - 1 Target Note

client/project Taylor Wimpey UK Land South of Cog Road, Sully		drawing Appendix I Phase 1 Habitat Survey	
drawing no. E1237001/Pre/GA/001 *	revision *	scale NTS @ A3	drawn AP
		date March 2012	

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TARGET NOTES TO ACCOMPANY PHASE 1 HABITAT SURVEY MAP

Target Note	Description/ Comment
	<i>Birds seen/ heard:</i> Carrion Crow, Robin, House Sparrow, Skylark, Herring Gull, Wood Pigeon, Blackbird, Wren, Magpie, Jackdaw and Blue Tit.
1	Improved grassland dominated by Perennial Rye-Grass and White Clover with other species present including Creeping Thistle, Cocks-foot, Yarrow, Daisy, Common Mouse-ear, Dandelion, Common Couch, Common Sorrel, Ribwort Plantain and Creeping Buttercup.
2	Wide, regularly trimmed hedgerow adjacent to road. Species present include Elder, Hazel, Blackthorn, Hawthorn, Sycamore, Field Maple, Ash and Dog Rose. Ivy, Lords and Ladies, Cow Parsley, Common Nettle, Cleavers, Primrose, Dogs Mercury, Celandine and Herb Robert.
3	Hedgerow adjacent to residential gardens with species such as Blackthorn, Hawthorn, Elder, Honeysuckle, Holly and Bramble. Gaps present along the length of the hedge.
4	Hedgerow with species including Holly, Hazel, Blackthorn, Bramble, Elder and Dog Rose. Ground flora includes Common Nettle, Ivy, Cleavers, Lords and Ladies, Cow Parsley, Broad-leaved Dock and Hedge Mustard with Alexanders growing in the field margin adjacent to the hedge.
5	2 multi-stem Ash trees. Small rot-holes/ cracks present. Larger rotted areas noted in the trunk/ larger branches, but these appeared exposed and open to the light. Low potential to support roosting bats.
6	Shallow pond with poached/ grazed edge. Great Crested Newt eggs found predominately laid on Water Crowfoot (15+ folded leaves noted during brief search). Floating Sweet-grass dominates aquatic flora.
7	Short section of hedgerow and wall adjacent to road. Hedge includes Sycamore, Elder, Bramble and Dog Rose.
8	Hedgerow with species including Elm, Hawthorn, Sycamore, Holly and Ash with ground flora such as Ivy, Lords and Ladies, Cleavers, Cow Parsley and Celandine. Field margin adjacent to hedgerow is dominated by Alexanders and False Brome.
9	Small area of trees dominated by Sycamore with Hawthorn and Elm. Trees of Low/ Negligible potential to support roosting bats. Ground flora includes Ivy, Lords and Ladies, Bluebells and Daffodils. Stone wall borders woodland adjacent to road.
10	Belt of scrubby woodland along bank of dismantled railway line. Species include Sycamore, Hawthorn, Ash, Blackthorn, Elder and Holly with Bramble, Honeysuckle, Dog Rose and Travellers Joy. Ground flora including Alexanders, Cow Parsley, Ivy, Lords and Ladies, Common Nettle, False Brome and Harts Tongue Fern.
11	Fence separate field from residential gardens with occasional scattered scrub.
12	2 Hawthorn trees with dense Ivy cover. Ash tree to north with large areas of dead wood (visible cavities exposed), small rot holes and a moderate Ivy cover. Low potential to support roosting bats.
13	Hedgerow with species including Hawthorn, Hazel, Bramble and Dog Rose with ground flora including Alexanders, Ivy, Lords and Ladies and Cleavers.
14	Arable field planted with a cereal crop.

APPENDIX II ADVICE NOTE ON BATS AND STREET LIGHTING

The following advice in relation to residential lighting where bats may be an on-site or influencing factor is based up on information contained within an article by Emery (2008) and the Bat Conservation Trust (2009).

GENERAL

Illuminating a bat roost creates disturbance and may cause the bats to desert the roost.

Light falling on a roost access point will at least delay bats from emerging and this shortens the amount of time available to them for foraging. As the main peak of nocturnal insect abundance occurs at and soon after dusk, a delay in emergence means this vital time for feeding is missed.

RECOMMENDATIONS

No bat roost (including access points) should therefore be directly illuminated. If it is considered necessary to illuminate a building known to be used by roosting bats, the lights should be positioned to avoid the sensitive areas. Close offset accent lighting causes less light pollution; it is more specific and can be designed to avoid bat sensitive areas, and better highlights the features of the subject of the illumination.

It is rarely necessary to use a lamp of greater than 2000 lumens (150 W) in security lights. The use of a higher power is not as effective for the intended function and will be more disturbing for bats.

Many security lights are fitted with movement sensors that, if well installed and aimed, will reduce the amount of time a light is on each night. This is more easily achieved in a system where the light unit and the movement sensor can be separately aimed.

If the light is fitted with a timer this should be adjusted to the minimum to reduce the amount of 'lit time'.

The light should be aimed to illuminate only the immediate area required by using as sharp a downward angle as possible. This lit area must avoid being directed at, or close to, any bats' roost access points or flight paths from the roost. A shield or hood can be used to control or restrict the area to be lit. Avoid illuminating at a wider angle as this will be more disturbing to foraging and commuting bats as well as people and other wildlife.

It may be a better solution for security lighting on domestic properties to use a porch light.

The impact on bats can also be minimised by the use of low-pressure sodium lamps or high-pressure sodium instead of mercury or metal halide lamps where glass glazing is preferred due to its UV filtration characteristics.

Lighting should be directed to where it is needed and light spillage avoided. This can be achieved by the design of the luminaire and by using accessories such as hoods, cowls, louvres and shields to direct the light to the intended area only. Planting can also be used as a barrier or manmade features that are required within the build can be positioned so as to form a barrier.

The height of lighting columns in general should be as short as is possible as light at a low level reduces the ecological impact. However, there are cases where a taller column will enable light to be directed downwards at a more acute angle and thereby reduce horizontal spill. For pedestrian lighting this can take the form of low-level lighting that is as directional as possible and below 3 lux at ground level. The acceptable level of lighting may vary dependent upon the surroundings and on the species of bat affected.

There are lighting design computer programs that are widely in use which produce an image of the site in question, showing how the area will be affected by light spill when all the factors of the lighting components listed above are taken into consideration. This should be a useful tool to inform the mitigation process.

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Land South of Cog Road, Sully

Bat and Great Crested Newt Survey Report

E1237002/Doc 01

The light should be as low as guidelines permit. If lighting is not needed, don't light.

The times during which the lighting is on should be limited to provide some dark periods. Roads or trackways in areas important for foraging bats should contain stretches left unlit to avoid isolation of bat colonies. These unlit stretches should be 10 metres in length either side of commuting route.

TYPES OF LIGHTING CURRENTLY IN USE

Low-pressure sodium lamps (SOX) (typical orange lamps seen along roadsides).

Light is emitted predominantly at one wavelength, contains minimal ultraviolet (UV) light and has a low attraction to insects. The lamps tend to be large which makes it more difficult to focus the light from these lamps. These are in the gradual process of being removed or replaced.

High-pressure sodium lamps (SON) (brighter pinkish-yellow lamps).

Commonly used as road lighting. Light is emitted over a moderate band of long wavelengths including a small UV component. Insects are attracted to the brighter light. The lamp is of medium size and the light can be more easily directed than low-pressure sodium. This is the predominant lamp now in use.

Mercury lamps (MBF) (bluish-white lamps).

These emit light over a moderate spectrum including a larger component of UV light to which insects are particularly sensitive. Insects are attracted in large numbers along with high densities of bat species. They are rare now and are not used in new developments.

White SON.

This is whiter than High Pressure Sodium and has a larger component of UV light.

Metal Halide.

A small lamp and therefore more easy to focus light and make directional. Emits less UV light than mercury but more than high-pressure sodium. It comes in three forms a) Quartz arc tube (HQI); b) Ceramic arc tube (CDM-T) and c) Cosmo which is a new ceramic form.

Light Emitting Diodes (LEDs).

Predicted to compete with metal halide and high-pressure sodium as a widely used light source within the next few years. The light emitted is more directional. The light is produced in a narrow beam. It is instant light.

Tungsten Halogen (more directional).

It is not used in new lighting schemes but may be encountered as security light on a private household.

Compact Fluorescent

Mostly in use in residential street lighting. It produces a white light; variants are available with minimal UV output. It can be used at a low wattage and therefore on a low output to achieve low lux.

REFERENCES

Bat Conservation Trust. (2009). *Bats and Lighting in the UK; Version 3, May 2009*. <http://www.bats.org.uk/>

Emery, M. (2008). *Effect of Street Lighting on Bats*. Urbis Lighting Ltd., 2 January 2008.

<http://www.urbislighting.com/>

APPENDIX III AMPHIBIAN SURVEY LOG

Visit No	Date	Conditions/Findings
1	08/04/2013	<p>Cool evening with 75% cloud cover, moderate winds (Force 3-4) and no rain. Air temp at 20.15 hrs: 5°C, water temp 20.20hrs: 7°C.</p> <p>Trap recovery on 09/04: Overcast with occasional light drizzle. Moderate winds (Force 3-4). Air temperature 2°C @ 08.45hrs, water temp 5°C. No frost overnight.</p> <p>Evidence of nutrient enrichment (algal bloom). Floating Sweet-grass present over 60-70% of pond, limiting area for effective torch surveying. Brief egg search revealed no eggs. Small clump of Frog spawn noted on eastern edge of pond. Mallard noted on pond, with feathers and droppings around pond egg indicating regular use by water fowl. Edges of pond poached by livestock, with water slightly turbid in places.</p> <p>22 bottle traps set at approximately 2m intervals around the pond edge, with some set in areas less choked with Floating Sweet-grass in the centre of the pond. Traps set from 20:35-20:50hrs.</p> <p>Torch survey from 20:20: No amphibians or other aquatic fauna noted, with the exception of a single Water Boatman.</p> <p><i>Bottle trap recovery on 09/04 from 08.45h – No amphibians or other fauna found within traps.</i></p>
2	15/04/2013	<p>Warm evening with 90% cloud cover, light winds (Force 1-2) and no rain. Air temp at 20.00 hrs: 12°C.</p> <p>Trap recovery on 16/04: Bright morning, 30% cloud cover. Light-moderate winds (Force 2-3). Air temperature 10°C @ 08.30hrs. No frost overnight.</p> <p>Floating Sweet-grass and algal bloom limiting area for effective torch survey to c.40% of pond. Water slightly turbid further limiting visibility.</p> <p>22 bottle traps set at approximately 2m intervals around the pond edge, with some set in areas less choked with Floating Sweet-grass in the centre of the pond. Traps set from 20:40-01:50hrs.</p> <p>Torch survey from 20:20: 7 male GCN, 1 female GCN and 1 Common Frog noted. Most GCN observed in areas of open water along the western side of the pond. Numerous water boatmen and other aquatic beetles noted.</p> <p><i>Bottle trap recovery on 06/04 from 08.30h – 1 Male GCN and 1 Common Frog within bottle traps.</i></p>
3	22/04/2013	<p>Cool evening with 100% cloud cover, moderate winds (Force 2-3) and very light, misty rain (not heavy enough to limit visibility during torching) Air temp at 20.45 hrs: 10°C, water temp 11°C.</p>

		<p>Trap recovery on 23/04: Bright morning, 20% cloud cover. Light winds (Force 1-2). Air temperature 11°C @ 08.30hrs, water temp 9°C. No frost overnight.</p> <p>Floating Sweet-grass and algal bloom limiting area for effective torch survey to c.40% of pond. Pond had dried since previous survey by reducing pond area by c.50cm around pond edge.</p> <p>22 bottle traps set at approximately 2m intervals around the pond edge, with some set in areas less choked with Floating Sweet-grass in the centre of the pond. Traps set from 20:55-21:05hrs.</p> <p>Torch survey from 20:40: No amphibians seen, water beetles and water boatmen noted.</p> <p><i>Bottle trap recovery on 23/04 from 08.30h – 1 Male GCN.</i></p>
4	13/05/2013	<p>Cool evening with 100% cloud cover, moderate winds (Force 3-4) and no rain. Air temp at 21.15 hrs: 7.5°C, water temp 21.20hrs: 9°C.</p> <p>Trap recovery on 14/05: Overcast with occasional shower. Moderate winds (Force 3-4). Air temperature 8°C @ 08.45hrs, water temp 9°C. No frost overnight.</p> <p>Pond severely dried to approximately 1/3 original size. Water depth reduced to <100mm over much of remaining area.</p> <p>Water barely deep enough to bottle trap, with only 7 bottle traps set in remaining water from 21:45hrs.</p> <p>Torch survey from 21:30: No amphibians noted. Water beetle, beetle larvae and Water Boatman observed.</p> <p><i>Bottle trap recovery on 14/05 from 08.45h – No amphibians found within traps. 1 Beetle larvae recovered.</i></p>
5	20/05/13	<p>Mild evening with 100% cloud cover, Light Air – Force 1 winds and no rain. Air temp at 20.30 hrs: 19°C, 15°C @ 23.00.</p> <p>Pond has dried down further and only 2 small, shallow ‘puddles’ remain on the western side. Depth typically 5 – 10cm – too shallow for trapping. Torch survey from 22-45 following bat survey did not identify any amphibians.</p>
6	N/A	No survey- Pond too dry.