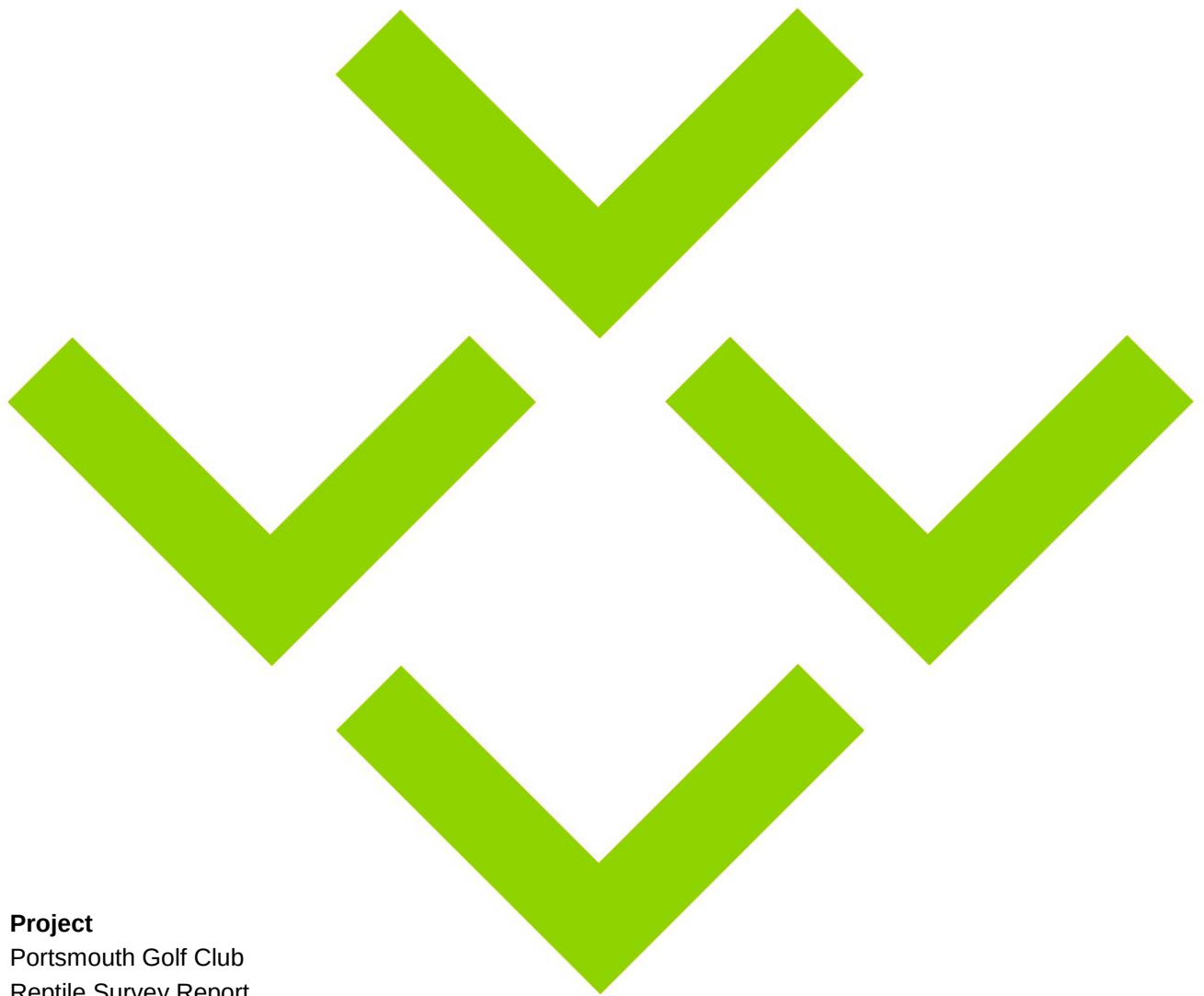




Project

Portsmouth Golf Club
Reptile Survey Report

Project No

E328-02

Client:

Parkwood Consultancy Services

Date

May 2012

Project

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Report consultants

Desk top study: Mark Rose

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Reptile surveys: Kate Bennett, Frank Southee, David Byett
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Final Version completed by:

Frank Southee

Technical check completed by:

David West

Quality check completed by:

Lisa Higgs

Date

May 2012

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Summary

enims Ltd were commissioned to carry out reptile surveys at Portsmouth Golf Course, Hampshire. Following a Phase 1 Habitat Assessment a number of areas of habitat with reptile potential were noted within the vicinity of the site. As the proposed works could potentially cause foreseeable injury or death to species protected under UK nature conservation legislation, it was considered necessary to perform specific reptile surveys such that impacts could be more precisely predicted.

After seven specific reptile surveys using a combination of visual searches and artificial refugia checks, carried out in accordance with the Joint Nature Conservation Committee's Herpetofauna Workers' Manual, it was found that slow worm *Anguis fragilis* and common lizard *Zootoca vivipara* are currently utilising the site.

If landscape works are to proceed as proposed, it will be necessary to adopt an appropriate program of mitigation, as outlined in this report. Vegetation clearance should be executed during the reptile dormancy period of October to February. Development works may then commence from April, to ensure that all reptiles have emerged from hibernation and retreated to suitable alternative habitat off site.

In certain areas where reduced connectivity limits the potential for reptiles to appropriately migrate to alternative habitat, a program of internal translocation is to be applied following the conclusion of winter clearance. This translocation will continue daily until five consecutive days with no reptiles being found has elapsed, for a minimum of 30 days.

Taking account of populations class estimates, the area of habitat to be impacted, and the availability and connectivity to off-site habitat, it is not considered necessary or appropriate to translocate to a separate receptor site.

If it is not feasible to clear habitats during winter dormancy, a destructive search supervised by an appropriately qualified on-site ecologist will be required. This will involve phased vegetation clearance to allow all reptiles present to retreat to alternative habitat.

It is recommended that no net loss of appropriate reptile habitat should result from works, and habitat enhancements, including native species planting and log piles, should be included.

With adherence to the mitigation steps proposed here, it is predicted that no negative impact to a protected reptile species or their conservation status will be sustained as a result of the proposed works.

1 Introduction

1.1 Site Location & Surroundings

Portsmouth Golf Course is located just north of the city of Portsmouth, Hampshire, south of the outlying town of Waterlooville. The course's centre lies at national grid reference SU 68273 06666. The surrounding landscape is urban residential in nature, with a scattering of agricultural fields immediately around the course. There is very little connectivity to semi-natural habitats and rural landscape due to the locally dense road network. Please refer to Appendix A for aerial imagery.

1.2 Site Description

The character of the site is a direct reflection of its function as a golf course. The majority of the course comprises fairways of close-mown grass, interspaced by linear strips of woodland and patches of rough, semi-improved grassland.

The course measures approximately 1.6km east to west and 400m north to south, and is centrally bisected by Crookhorn Lane.

1.3 Project Overview

Planning permission is being sought for the re-landscaping of five defined areas within the golf course, to provide an improved playing surface with better drainage characteristics. This will likely involve the import of inert material to raise levels, as well as the creation of a new driving range.

A Phase 1 Habitat Assessment produced by enims Ltd in December 2011 concluded that habitats within and adjacent to proposed works areas were suitable to support widespread reptile species. Targeted surveys were therefore recommended to establish the presence or likely absence of these species. enims were commissioned by Parkwood Consultancy Services in April 2012 to carry out these surveys, the results of which are presented herein.

1.4 Legislation and Policy Context

All native wild reptiles are protected by UK nature conservation legislation. Protection is afforded by Section 9 of the Wildlife and Countryside Act 1981 (as amended) through species inclusion under Schedule 5. Furthermore, certain reptile species are defined as European Protected Species through inclusion in Schedule 2 of the Conservation of Habitats and Species Regulations 2010 (as amended); the UK implementation of the EU Directive on the Conservation of Natural Habitats and of Wild Fauna and Flora.

In brief, these legislative instruments make it an offence to intentionally or recklessly kill, injure or capture any wild reptile in the UK. Places of shelter used by reptiles are protected from disturbance while in use, as well as damage, destruction or obstruction. The sand lizard *Lacerta agilis* and smooth snake *Coronella Austriaca* are further protected under European legislation, making deliberate disturbance an offence, whether or not in a place of shelter.

In addition, all native reptiles are identified as Priority Species within the national Biodiversity Action Plan, and are therefore adopted as Species of Principle Importance in England under Section 41 of the Natural Environment and Rural Communities Act 2006. Such species are defined by Planning Policy Statement 9 as 'material considerations' when considering development proposals.

2 Methodology

2.1 Reptile Surveys

A Phase 1 Habitat Assessment of the site (enims 2011) has concluded that habitats within and adjacent to proposed works areas have potential to support widespread reptile species. Furthermore, local records of slow worm *Anguis fragilis* and common lizard *Zootoca vivipara* were discovered. As the proposed works could potentially cause foreseeable injury or death to species protected under UK nature conservation legislation, it was recommended that targeted reptile surveys be performed such that impacts could be more precisely predicted, and an appropriate mitigation strategy designed.

A standardised methodology was used in reptile surveys, which were carried out in accordance with the Joint Nature Conservation Committee's Herpetofauna Workers' Manual. Heavy duty roofing felt was cut into 1.0m x 0.5m sections and distributed on site as "artificial refugia". These refugia were placed in the most appropriate habitat, in order to maximise the likelihood of their use by any reptiles present on site. A total of seven surveys were completed on days with appropriate weather conditions (temperature between 14°C and 20°C, dry and with no more than a light wind) during the survey period of April and May. During each survey, all the tiles were carefully lifted to check for the presence of any reptiles. Where any reptiles were encountered, the species, sex, life-stage, and precise location were recorded.

Visual searches were carried out on transect walks between refugia checks, in order that reptiles foraging in the vegetation or basking away from artificial refugia would also be noted.

2.2 Impact Assessment

A standardised methodology is adopted to undertake impact assessments for reptile species identified within the zone of influence. This process supports the design of sufficient yet proportionate mitigation strategies. Guidance on appropriate levels of mitigation is taken from 'Evaluating Local Mitigation/Translocation: Best Practice and Lawful Standards' published by Herpetofauna Groups of Britain and Ireland (HGBI).

When assessing potential impacts from development operations, the following factors are considered:

- Baseline value of the ecological feature or resource.
- Positive or negative biodiversity outcome.
- Confidence in predictions.
- Magnitude of impact.
- Extent of impact.
- Duration of impact.
- Reversibility of impact.
- Timing and frequency of impact

2.3 Personnel

Surveys were led by Mark Rose BSc MSc MSB. Mark is an ecological consultant with particular experience within the field of herpetology, with three years' experience in survey and impact mitigation for reptiles. He has conducted MSc level research into the effects of habitat management techniques on reptile species, and holds a Natural England Protected Species Licence for smooth snakes and sand lizards. Mark was assisted by members of the enims team, all of whom are experienced in widespread reptile ecology and field survey techniques.

3 Survey Results

3.1 Reptile Surveys

Following targeted reptile surveys at Portsmouth Golf Club, it is concluded that two of the four species of widespread reptile currently utilise the site. These are the common lizard *Zootoca vivipara* and slow worm *Anguis fragilis*.

Both species were found in medium numbers (please refer to Appendix B for raw survey data). Presence was concentrated within the habitats with greatest reptile potential identified by the Phase 1 Habitat Assessment (enims 2011). These habitats were noted to be as follows; a woodland margin abutting the north western fairway of the golf course, an area of scattered scrub towards the northern extent of the site, and an exposed north-facing slope with associated scrub located within a wooded area further east of this. Please refer to Appendix C for aerial images illustrating the locations of these habitats and the reptile refugia within these areas.

It was noted that the fairway margin habitat and north-facing slope habitat are being utilised exclusively by slow worm *Anguis fragilis*. Numbers appear to be reduced within the habitat towards the east of the site, and this is thought to be a result of the increased levels of shading within that area. The central habitat surveyed is utilised exclusively by common lizard *Zootoca vivipara*, and is more isolated in nature than the other survey areas.

Please refer to Appendix B for meteorological data.

4 Assessment and Recommendations

4.1 Survey Outcome

Two of the four widespread reptile species were recorded in medium numbers within the landscaping footprint. These were the slow worm *Anguis fragilis* and common lizard *Zootoca vivipara*.

4.2 Potential Impacts of Proposed Works

Short term impacts

Reptiles are known to be present in habitats which will be impacted as part of the proposed works. There is therefore potential for the killing or injury of reptile species. These outcomes are foreseeable and would constitute an offence under national legislation and policy.

Long term impacts

An area of reptile habitat will be removed under the proposals. Whilst the area of habitat is of insufficient size for its loss to impact reptile conservation status at the regional level, it would nonetheless represent a permanent loss of reptile habitat.

Given the context of the site, the landscaping proposals would not foreseeably result in the fragmentation of reptile habitats or the isolation of populations.

4.3 Mitigation Requirements

Short and long term adverse impacts to protected reptile species have been identified above, and as such there is a need to provide appropriate mitigation and compensation.

Short term impact mitigation

In order to mitigate the potential impacts of killing and injury it is necessary to ensure that reptiles are not present within the landscaping footprint at the commencement of works. To achieve this in the most effective way possible, the three survey areas are considered individually.

The woodland margin abutting the north western fairway of the golf course (Refugia P1 – P10) and north facing slope towards the east of the site (Refugia P11 – P20) encompass areas of vegetation utilised by slow worm *Anguis fragilis*. If these areas of vegetation are to be removed as part of this development, clearance should take place during the reptile dormancy period of October to February (inclusive).

Development works will then commence from April, to ensure that all reptiles have emerged from hibernation and retreated to suitable alternative habitat.

If it is not feasible to clear habitats during winter dormancy, a destructive search supervised by an appropriately qualified on-site ecologist will be required. This will involve phased vegetation clearance/habitat degradation to allow all reptiles present to retreat to alternative habitat.

The central area of scrub towards the centre of the golf course (Refugia P21 – P34) is utilised by common lizard *Zootoca vivipara* and exhibits a reduced level of connectivity to surrounding habitats. Vegetation clearance at this location should take place during the reptile dormancy period of October to February, and artificial refugia are to be distributed throughout this area of the site.

Upon emerging from hibernation, the habitat will no longer be suitable for reptiles. However, emigration will be more difficult due to the comparatively poor connectivity to surrounding habitats, putting the reptiles at risk of predation. Artificial refugia will therefore be provided, allowing reptiles to take shelter, from where they will be collected daily by an ecologist and released in alternative habitat elsewhere on the golf course. The translocation will continue daily until five consecutive days with no reptiles being found, for a minimum of 30 days. The translocation may begin in mid-March, and should not be delayed as this would leave reptiles stranded in open ground.

Long term impact compensation

The loss of reptile habitats as part of the proposals will be compensated for by the provision of replacement long grass habitat following landscaping works. Designers should ensure that this habitat is 'like for like' in terms of area.

Reptile habitat suitability should be increased through the provision of ecological enhancements, such as the construction of artificial reptile hibernacula, and log piles to increase the overall biodiversity carrying capacity of the site. Hibernacula should be constructed on shallow slopes to avoid flooding, and should consist of a shallow excavation (e.g. 500mm, at least 1000mm in width) backfilled with split logs, dead wood, rocks and bricks, loosely filled with topsoil. Each hibernaculum should have a top soil, turf or moss covering.

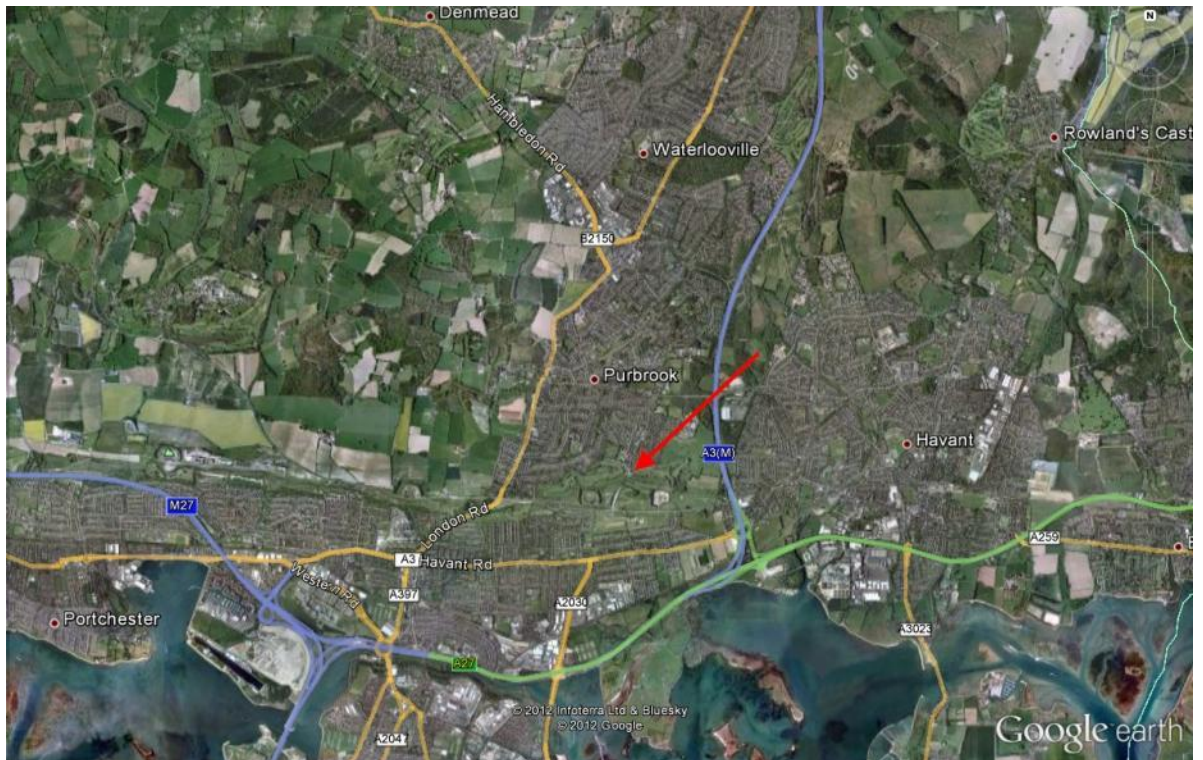
The following general principles should also be considered by designers, in order to maximise the scheme's benefit to reptiles:

- Ensure compensatory reptile habitat is not excessively shaded by tree and shrub planting.
- Incorporate as much small-scale variation in topography as possible, to create a structurally diverse habitat.
- Connectivity between potential reptile areas should be maximised.

4.4 Data Constraints

There were no factors such as weather or access which in any way detract from the reliability of data gathered during surveys, and by extension the conclusions of this report.

Appendix A: Aerial Photograph of the Site



Appendix B: Reptile Survey Data

Location:	Portsmouth Golf Course	Project No:	E328-02
Weather:	Overcast with occasional showers		
Temperature	10°C	Survey No./Date	No.1 / 19 th April 2012
Start time:		End time:	
Refuge Number	Species Found	Notes (sex, life stage, other information)	
P29	Common Lizard	Adult Female	

Location:	Portsmouth Golf Course	Project No:	E328-02
Weather:	Sunny, 50% cloud cover, light breeze		
Temperature	13°C	Survey No./Date	No.2 / 24 th April 2012
Start time:		End time:	
Refuge Number	Species Found	Notes (sex, life stage, other information)	
P6	Slow Worm	Adult Male	
P21	Common Lizard	Adult Male	
P34	Common Lizard	Adult Male	

Location:	Portsmouth Golf Course	Project No:	E328-02
Weather:	Moderate to high winds, recent rain, 60% cloud cover.		
Temperature	12°C	Survey No./Date	No.3 / 26 th April 2012
Start time:	1430	End time:	1530

Refuge Number	Species Found	Notes (sex, life stage, other information)
P6	Slow Worm	Adult Male
P6	Slow Worm	Adult Female
P9	Slow Worm	Sub-Adult Male
P9	Slow Worm	Sub-Adult Female
P9	Slow Worm	Juvenile
P21	Common Lizard	Sub-Adult
P21	Common Lizard	Sub-Adult
P21	Common Lizard	Sub-Adult
P27	Common Lizard	Adult Male
P28	Common Lizard	Adult
P28	Common Lizard	Adult
P29	Common Lizard	Adult
P29	Common Lizard	Adult

Location:	Portsmouth Golf Course	Project No:	E328-02
Weather:	No wind, some light gusts, ground moist underfoot, 0% cloud cover.		
Temperature	16°C	Survey No./Date	No.4 / 1 st May 2012
Start time:	1445	End time:	1545
Refuge Number	Species Found	Notes (sex, life stage, other information)	
P6	Slow Worm	Adult Male	
P9	Slow Worm	Adult Female	
P29	Common Lizard	Adult Female	

Location:	Portsmouth Golf Course	Project No:	E328-02
Weather:	No wind, slight moisture on the ground, 100% cloud cover, no rain.		
Temperature	9°C	Survey No./Date	No.5 / 4 th May 2012
Start time:	1050	End time:	1150

Refuge Number	Species Found	Notes (sex, life stage, other information)
P5	Slow Worm	Juvenile
P6	Slow Worm	Adult Female
P6	Slow Worm	Sub-Adult
P6	Slow Worm	Sub-Adult
P9	Slow Worm	Adult Male
P10	Slow Worm	Adult Male
P13	Slow Worm	Adult Male
P21	Common Lizard	Adult
P28	Common Lizard	Adult

Location:	Portsmouth Golf Course	Project No:	E328-02
Weather:	Very light breeze, no rain, 100% cloud cover.		
Temperature	12°C	Survey No./Date	No.6 / 8 th May 2012
Start time:	1115	End time:	1215

Refuge Number	Species Found	Notes (sex, life stage, other information)
P5	Slow Worm	Juvenile
P6	Slow Worm	Adult Male
P6	Slow Worm	Sub-Adult
P6	Slow Worm	Sub-Adult
P6	Slow Worm	Juvenile
P6	Slow Worm	Juvenile
P10	Slow Worm	Adult Male
P10	Slow Worm	Adult Male
P13	Slow Worm	Adult Male
P21	Common Lizard	Sub-Adult
P27	Common Lizard	Adult
P27	Common Lizard	Adult
P28	Common Lizard	Sub-Adult
P28	Common Lizard	Sub-Adult
P32	Common Lizard	Undetermined

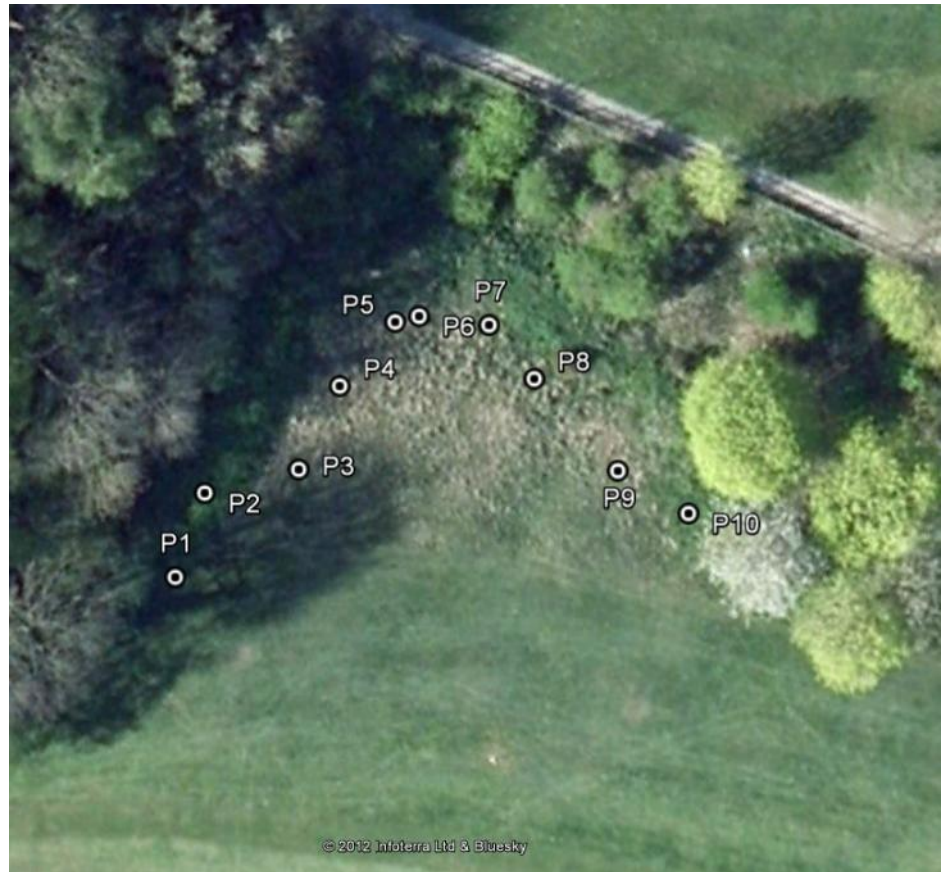
Location:	Portsmouth Golf Course	Project No:	E328-02
Weather:	Light winds, ground wet underfoot, misting precipitation 100% cloud cover.		
Temperature	14°C	Survey No./Date	No.7 / 10 th May 2012
Start time:	0900	End time:	1015

Refuge Number	Species Found	Notes (sex, life stage, other information)
P6	Slow Worm	Adult Male
P9	Slow Worm	Adult Male
P9	Slow Worm	Adult Female
P10	Slow Worm	Adult Male
P13	Slow Worm	Adult Male

Appendix C: Artificial Refugia Maps



Reptile Refugia P1 – P10



Reptile Refugia P11 – P20



Reptile Refugia P21 – P34



Appendix D: Current Development Plans



Appendix E: Site Photographs



Plate 1.
Woodland margins at north western fairway edge (Refugia P1 – P10).



Plate 2.
Woodland margins at north western fairway edge (Refugia P1 – P10).



Plate 3.
Scrub at base of north-facing slope towards east of site (Refugia P11 – P21).



Plate 4.
Scrub at base of north-facing slope towards east of site (Refugia P11 – P21).



Plate 5.
Scrub habitat towards north of site
(Refugia P21 - P34).



Plate 6.
Scrub habitat towards north of site
(Refugia P21 - P34).



Plate 7.
Male and Female slow worm *Anguis fragilis*
(Refugia P9, recorded 10th May 2012).



Plate 8.
Female Common Lizard *Zootoca vivipara*.
(Refugia P29, recorded 19th April 2012)