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Leekbrook Reptile Survey Report

Moorland City & Railways

December 2013

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Quality Management

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1. Summary

Capita Ecologists were commissioned by Moorland & City Railways to undertake an initial reptile survey for an area of undeveloped land on the former Leekbrook Railway Junctions site, Staffordshire. The survey was commissioned as part of the submission of a planning application in relation to the potential future development of the site.

No reptile species were recorded within the study area during the course of the 2013 survey. Based upon the results of the survey and the guidance detailed within *Froglife Advice Sheet 10: Reptile Survey*, the site has the potential to support a 'low' (i.e. undetectable) reptile population.

Whilst it is unlikely that the presence of reptiles will constitute a constraint to the proposed development, there remains a low risk that reptiles are present, albeit in such low numbers that they were not detected by 2013 the survey effort.

Reptiles are often difficult to survey due to the fact that they tend to occur in low numbers, are camouflaged, are secretive in their behaviour and are inactive during periods of cold, wet weather. Therefore, a negative survey result that would suggest their absence from a site should be considered as an indicative indication, only. As such, it is recommended that precautionary working methods are adopted during any on site clearance activity in order to avoid the intentional killing or injury of reptiles and prevent potential adverse impacts upon any reptiles.

Recommendations regarding methods of appropriate working and mitigation measures are included within *Section 5.3* of this report.

2. Introduction

2.1 Background

Capita Ecologists, Blackburn were commissioned by Moorland & City Railways in September 2013 to undertake a reptile survey at the former Leekbrook Railway Junction site in Leekbrook, Staffordshire. The survey has been carried out to inform of any potential impacts to reptiles as a result of proposals to develop the disused railway land for residential development.

2.2 Site Location

The Leekbrook Junction site (hereafter referred to as 'the site') is a triangular area of disused land approximately 2.9 km to the south of the Town of Leek, Staffordshire (Grid Ref.: SJ 398179 354102).

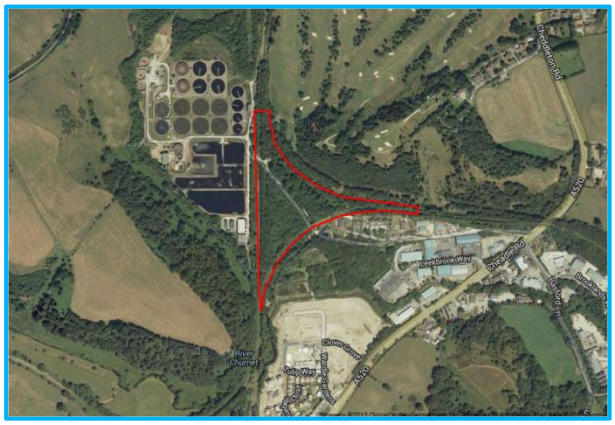

Figure 1: The Site Boundary

2.3 Legislation & Planning Policy

All six native reptile species (i.e. adder *Vipera berus,* common lizard *Zootoca vivipara,* grass snake *Natrix natrix,* sand lizard *Lacerta agilis,* slow worm *Anguis fragilis* and smooth snake *Coronella austriaca*) receive protection in the UK under legislation and planning policies. This section outlines the primary legislation and planning policies relating to the native reptile species, all of which is relevant to this report and the proposed development of the site.

2.3.1 Wildlife & Countryside Act (1981) as amended

All native reptiles are listed in *Schedule 5* of the *Wildlife & Countryside Act (1981) as amended*. Sand lizard and smooth snake are awarded protection under *Section 9*, *Sub-sections 1, 4b*, *4c* and *5*. Adder, common lizard, grass snake and slow work are awarded protection under *Section 9*, *Sub-sections 1 and 5*. These are as follows:

Section 9: Protection of Certain Wild Animals:

1) A person is guilty of an offence if they intentionally kill, injure or take any wild animal included in *Schedule 5*.

4) A person is guilty of an offence if they intentionally:

(b) Disturb any animal included in *Schedule 5* while it is occupying a structure or place that it uses for shelter or protection; or

(c) Obstruct access to any structure or place that any animal included in *Schedule 5* uses for shelter or protection.

5) A person is guilty of an offence if they :

(a) Sells, offers or exposes for sale, or has in their possession or transports for the purpose of sale, any live or dead wild animal included in *Schedule 5*, or any part of, or anything derived from, such an animal; or

(b) publishes or causes to be published any advertisement likely to be understood as conveying that he buys or sells, or intends to buy or sell, any of those things.

2.3.2 Conservation of Habitats & Species Regulations 2010 (as amended)

Regulation 41 of the *Conservation of Habitats & Species Regulations 2010 as amended* awards additional protection to sand lizard and smooth snake by classifying them as European Protected Species (EPS). Under *The Habitat Regulations* it is an offence to:

- Deliberately capture, injure or kill these species;
- Deliberately disturb these species; or
- Damage or destroy a breeding site or resting place used by these reptiles (regardless of whether individuals are present or not).

In order to permit a development where the above offences are likely to occur, an EPS License must be applied for from Natural England and in place prior to any affecting works commencing. However it is unlikely these species will occur at the Leekbrook site as they have very restricted distribution in the UK.

2.3.3 Natural Environment and Rural Communities (NERC) Act 2006

Section 40 of *NERC Act* places a statutory duty on public bodies, including local authorities, to 'have regard to the purpose of conserving biodiversity, so far as is consistent with the proper exercise of its functions'.

2.3.4 Planning Policy

In March 2012, the *National Planning Policy Framework (NPPF)* was published and replaced the previous *Planning Policy Statement 9 (PPS9)*, although the guidance document '*Planning for Biodiversity and Geological Conservation: A Guide to Good Practice*' (ODPM 06/2005) was not replaced by the *Framework*. The NPPF promotes plan-making and decision-taking with a presumption in favour of **sustainable development**. Sustainable development is achieved where developments are designed to address the mutually dependent threads of sustainability: **economic, social** and **environmental** needs. In terms of biodiversity, sustainable development should **not only achieve no net loss of biodiversity**, **but incorporate proposals that achieve net gains for nature** alongside the other social and economic needs of society.

Protected sites and species are a material consideration in determining planning applications. Therefore, all information relating to protected sites and species must be submitted with planning submissions for determination of the whole application. The *NPPF* promotes the approval of plans where applications can demonstrate that they are in accordance with up-to-date local plans and have addressed material considerations.

In accordance with the *Staffordshire Moorlands Local Plan (1998)*, *Policy N3: Infilling within the Greenbelt*, *Policy N15: Nature Conservation Sites* and *Policy H14: Meeting Housing Demand* are local policies that are relevant to the site.

2.3.5 Biodiversity Policy

Section 41 (S41) of the *Natural Environment & Rural Communities (NERC) Act 2006* requires the Secretary of State to publish a list of habitats and species that are of principal importance for the conservation of biodiversity in England. This constitutes an up-to-date list of Habitats of Principal Importance and Species of Principal Importance that require action in the UK Biodiversity Action Plan (BAP) and is used as a guide to decision makers, such as pubic bodies and including planning authorities, to implement their duty of having regard to biodiversity when carrying out their functions. Local BAPs have also been written and adopted to develop plans for species of nature conservation importance at regional and local levels.

The Ecosystem Action Plans (EAPs), formerly the Moorlands Biodiversity Action Plan (BAP), covers the area surrounding Leekbrook. The action plans that are considered to be relevant include:

- Adder *Vipera berus*;
- Common Lizard *Zootoca vivipara*;
- Grass Snake *Natrix natrix*;
- Sand Lizard *Lacerta agilis*;
- Slow-worm *Anguis fragilis*; and
- Smooth Snake *Coronella austriaca.*

In addition, grass snake is recognised as a local Priority Species in the Staffordshire BAP.

2.4 Personnel & Quality Assurance

All ecologists employed by Capita are members of, or are under application for, membership of the Chartered Institute of Ecology and Environmental Management (CIEEM) and follow the institute's code of professional conduct when undertaking ecological work. All fieldwork is carried out in accordance with current best practice guidelines under the supervision of senior staff and appropriately licensed ecologists.

Neil Page is a Full Member of CIEEM and has been an Ecological Consultant for the last five years. Neil has a broad range of professional experience in consulting services, including ecosystem management, design, planning, protected species mitigation and environmental research projects. Neil also has experience of a range of habitats and species, coupled with habitat creation and management, which has enabled him to mitigate both social and environmental issues on a wide variety projects and schemes. Neil is an experienced surveyor of reptiles and amphibians and he holds a *Natural England Science & Education Great Crested Newt Licence*.

Megan O'Brien is an Assistant Ecologist who has one year of professional experience in ecology consultancy. In this time, Megan has gained experience in great crested newt, reptile, bats, water vole and otter surveys, as well as in reptile translocations. Megan also has experience in supervising destructive searches for reptiles.

3. Methods

3.1 Survey and Report Objectives

The objectives of the reptile survey and this report are to:

1. Record any features on site that have the potential to support reptiles;
2. Establish whether reptiles are present (at the time of survey);
3. Identify the reptile species present (if any) on site;
4. Determine the likely importance of the site for local reptiles and reptile conservation;
5. Highlight likely adverse potential impacts on reptiles that may occur as a result of the proposed development; and
6. Provide recommendations (as required) for appropriate precautionary working methods and mitigation measures that will enable the development to proceed in full compliance with the governing legislation, and, where possible, enhancement measures.

3.2 Desk Based Study

A desk-based study was undertaken prior to the field survey. The aim was to identify any records of reptiles present within a 2 km radius of the site. The Staffordshire BAP was reviewed and information also was obtained from the Staffordshire Ecological Record Centre (SERC).

3.3 Field Survey

The reptile surveys were undertaken in accordance with the (*Froglife Advice Sheet 10*, *Froglife* 1999) and the *Herpetofauna Workers' Manual* (Gent and Gibson, 1998). One hundred (butile) artificial refugia mats were placed around the semi-natural habitats on site that were considered to be of most value to reptiles. These included areas of scattered scrub along the edges of dense continuous scrub and along the edges of tracks. This number of mats exceeded the recommended minimum density of artificial refuges (i.e. 10x per hectare (ha)) to increase the chance of recording reptiles (See *Figure A1* within *Appendix A*).

Prior to placing the artificial refugia mats on the ground, the vegetation was first flattened in order to help create a heat trap beneath the mat. This was undertaken in accordance with guidance detailed within *Froglife Advice Sheet 10* with the intention of creating temperature gradients on site that would provide any reptiles present with a more diverse place to seek refuge.

Following the laying of the artificial refugia, the mats were allowed a nine-day 'bed-in' period prior to the survey commencing. This was to allow any reptiles present to become accustomed to their presence, begin using them and, thus, increase the chance of a positive survey result. The artificial refugia mats were each checked seven during September 2013 in order to record any reptiles present.

The surveys were only undertaken when prevailing weather conditions were appropriate. On all seven occasions, the weather conditions were dry and the survey effort commenced when temperatures were between 9°C and 20°C. The surveying of the artificial reptile mats involved lifting each mat to near vertical and recording any reptiles present. Any stones and log piles that were observed on site were lifted in the same way any reptiles present also recorded. In all cases, the refugia was replaced in exactly the same location that it was found in order to limit potential disturbance to any reptiles and other fauna that may utilise them.

In addition, observations of the (entire) site were also made during both the reptile and other 2013 ecological surveys. This process involved treading lightly and walking slowly (towards the sun to prevent shadow disturbance) whilst scanning area 3 to 4 m ahead. Particular focus was given to areas of bare ground that could potentially be used by basking reptiles.

3.4 Survey Constraints

Over the course of the survey effort, some of the artificial refugia mats are believed to have been stolen as they were missing on subsequent visits. In addition, on one particular site visit, a number of the artificial refugia mats had been removed from their original location and placed in to a stacked pile. These mats had to be replaced in their original locations prior to the survey recommencing. Thus, there is a risk that the unanticipated disturbance may have affected survey results.

4. Results

4.1 Site Description

The land within the site boundary (see *Figure 1*) formerly housed an engine shed and coaling plant for locomotives that were demolished in 1946. Since then, the site has been left unmanaged and, as a result, has undergone natural succession. The site consists of a stretch of the former Leekbrook railway cutting and the habitats on both sides consist mainly of compacted surfaces and railway sidings, all of which are subject to heavy scrub encroachment and colonisation. The scrub-covered slopes of along the railway cuttings provide a green corridor within the wider landscape. Young (i.e. immature) woodland belts line the perimeter of the site and form a habitat link between the site and the Soils Wood Site of Biological Importance (SBI). There are hawthorn *Crataegus spp.* hedgerows and mature scattered trees present that provide connectivity to nearby broadleaved woodlands (i.e. Birchill Wood and Hollinhay Wood).

The River Churnet runs north-west to south-east and passes the site at its southern end. Leek Brook runs east to west and merges with the River Churnet at the site's southern end. There is also a foul water channel present next to the site that forms part of the nearby Severn Trent Sewage treatment facility.

4.2 Desk Study

The reptile species records obtained from SERC included eleven records of reptiles within a 2 km radius of the site. The records detailed in Table 1, below, are limited to the last twenty years. Records greater than twenty years are included in *Appendix B*.

Date	Common Name	Record Type	Location (Address/Grid Ref.)	Dist. from Site
13/08/12	Grass snake	1x adult	Leek Country Park, SJ973547	1,029 m
15/06/12	Grass snake	1x dead	Cheddleton Country Park, SJ9752	1,791 m
15/06/07	Grass snake	1x adult	Caldon Canal, SJ9653	1,809 m
2006	Grass snake	1x adult	Cheddleton Country Park, SJ981523	1,803 m
June to July '04	Grass snake	Not specified	Ladderedge Country Park, SJ973551	1,302 m
11/07/00	Grass snake	1x juvenile	Longsdon Country Park, SJ963540	1,839 m
June '00	Grass snake	1 present	Caldon Canal, SJ965536	1,713 m
June '00	Grass snake	1x basking	Longsdon Country Park, SJ968535	1,468 m
24/05/00	Grass snake	4x basking	Leek Country Park, SJ978545	522 m
21/06/93	Grass snake	Not specified	Leek Country Park, SJ978557	1,631 m
Summer '95	Adder	Not specified	Deep Hayes Country Park, SJ964533	1,914 m

Table 1: SERC Species Records (Reptiles).

4.3 Field Survey

No reptiles were recorded during the survey of the artificial refugia or the survey of the two log piles that were observed on site. Similarly, no reptiles were observed during the course of the other 2013 ecology surveys undertaken by Capita Ecologists at this site. Table 2, below, details the survey results recorded during each of the seven visits and the prevailing weather conditions at the time.

Survey	Date	Time	Weather Conditions	Results
1	12/09/13	14:00-16:30	Temperature: 15°C Cloud Cover: 80% Humidity: 55%	No reptiles recorded.
2	13/09/13	10:00-11:30	Temperature: 16°C Cloud Cover: 90% Humidity: 69%	No reptiles recorded.
3	23/09/13	10:20-11:20	Temperature: 15.5°C Cloud Cover: 100% Humidity:71%	No reptiles recorded.
4	23/09/13	14:50-16:00	Temperature: 17°C Cloud Clover: 100% Humidity: 71.5%	No reptiles recorded. 3x smooth newt + 1x frog recorded.
5	26/09/13	10:55-12:00	Temperature: 13°C Cloud Cover: 90% Humidity: 72%	No reptiles recorded. 1 shrew observed.
6	26/09/13	15:15-16:30	Temperature: 16°C Cloud Cover: 95% Humidity: 43%	No reptiles recorded.
7	30/09/13	10:00-14:30	Temperature: 17°C Cloud Cover: 50% Humidity: 53%	No reptiles recorded.

Table 2: Survey Results.

5. Advice, Interpretation & Recommendations

5.1 Advice

All six native reptile species are protected against intentional killing, injury or taking under the *Wildlife & Countryside Act 1981 (as amended)*.

5.2 Interpretation of Results

No reptile species were recorded within the study area during the course of the 2013 survey. Based upon the results of the survey and the guidance detailed within *Froglife Advice Sheet 10: Reptile Survey*, the site has the potential to support a 'low' (i.e. undetectable) reptile population.

Whilst it is unlikely that the presence of reptiles will constitute a constraint to the proposed development, there remains a low risk that reptiles are present, albeit in such low numbers that they were not detected by 2013 the survey effort.

Reptiles are often difficult to survey due to the fact that they tend to occur in low numbers, are camouflaged, are secretive in their behaviour and are inactive during periods of cold, wet weather. Therefore, a negative survey result that would suggest their absence from a site should be considered as an indicative indication, only. Also, reptiles are mobile species and there is a low risk that individuals may move on to the site in the interim between the survey taking place and development commencing. According to the species records obtained from SERC, slow worm has been recorded within 460 m of the site. As such, it is recommended that precautionary working methods are adopted during any onsite clearance activity in order to avoid the intentional killing or injury of reptiles should they be present and prevent potential adverse impacts upon any reptiles.

If reptiles are present, the proposed vegetation clearance may result in harm and/or mortality. This would adversely impact directly upon those individuals present and would contravene the governing legislation.

5.3 Recommendations

It is recommended that precautionary working methods are adopted to reduce the risk of harm to any reptiles that may be present on site and to demonstrate an appropriate sustainable working method for the project. Such precautionary working methods/safeguards include:

- Scheduling vegetation clearance activity to occur within the active season of March to October, inclusive, so that any reptiles present are able to relocate once construction commences;
- Scheduling clearance of the site to occur during the day, when air temperate exceed 15°C, as this is when reptiles are most active/mobile and more able to withstand disturbance;
- Plan the clearance of the scattered and dense scrub to start at the centre of the site and work outwards to reduce the risk of reptiles becoming trapped on site;

- Ensure that all work ceases if reptiles are subsequently found on site and seek advice from a suitably qualified ecologist is sought. Ensure that the precautionary working methods are amended appropriately to reflect the fact that reptiles are present;

- Edge habitat surrounding the site will be retain to screen the site and provide continued conservation value on the site. This amounts to an estimated 16,416m2 of land, This habitat should be protected from construction by erecting a construction (i.e. palisade) fence around these areas to reduce the risk of accidental damage. These areas may also serve as refuge areas for any reptiles present and displaced by site clearance in other areas; and

- Limit vehicle/plant movement and keep to construction pathways so as to avoid unnecessary loss of on site habitat.

5.4 Biodiversity Enhancement

The use of swales and other linear features within the landscape design, would promote and provide open basking areas, in addition the inclusion of refugia piles within retained vegetation, wherever possible would, if adopted provide biodiversity enhancement and would contribute to the sustainability of the development in line with the NPPF.

6. References

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- Communities and Local Government (2005). *Circular 06/05: Biodiversity and Geological Conservation - Statutory Obligations and their Impact within the Planning System*.
- Froglife (1999). *Advice Sheet 10: Reptile Survey - An Introduction to Planning, Conducting and Interpreting Surveys for Snake and Lizard Conservation.*
- Gent, T. & Gibson, S. (1998)*. *Herpetofauna Workers' Manual*.
- Natural England (2012). *Reptiles & Development*.
- Staffordshire Biodiversity Action Plan (BAP).
  Available: www.sbap.org.uk
- UK Biodiversity Action Plan (BAP).
  Available: www.ukbap-reporting.org.uk/plans/national.asp

* On behalf of the Joint Nature Conservation Committee (JNCC), Peterborough, UK.

Appendix A - Artificial Refugia Locations

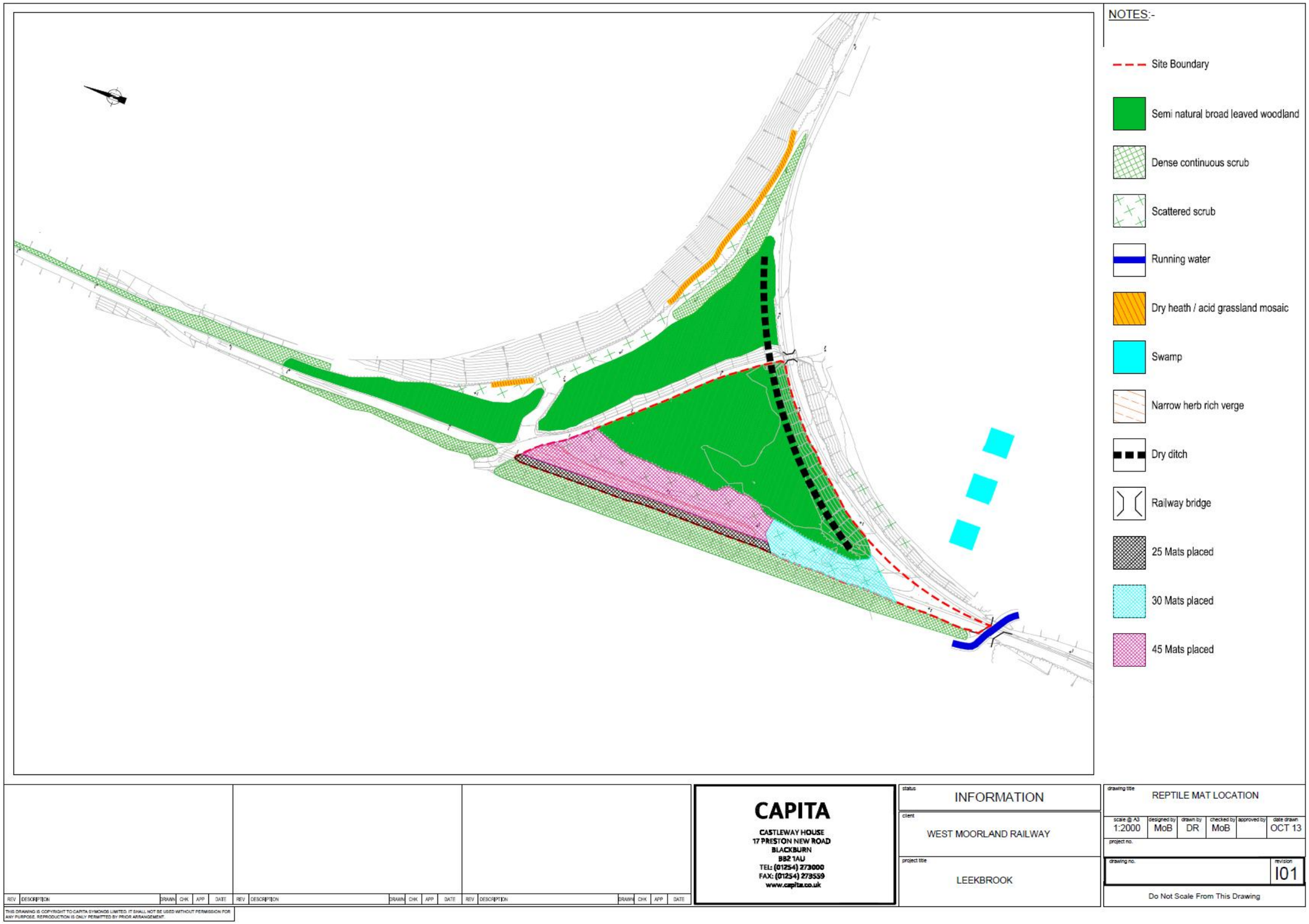

Figure A1. Artificial Refugia Locations

Appendix B - Consultation Data

Date	Common Name	Record Type	Location (Address/Grid Ref.)	Dist. from Site
1975-1977	Slow worm	Field observation	Leekbrook to Bardnop railway, SJ9854	0.46 km
1934	Grass snake	Field observation	Wall Grange, SJ9653	1.81 km
1968-1982	Grass snake	Field observation	Wall Grange, SJ9653	1.81 km
1973-1974	Grass snake	Field observation	Brittain's Paper Mill, SJ9752	1.79 km
1973-1977	Grass snake	Field observation	Wall Grange, canal area, SJ9653	1.89 km
1973-1977	Grass snake	Field observation	Leekbrook railway line, SJ9854	0.46 km
1973-1977	Grass snake	Field observation	Tunnel pool, SJ9754	0.77 km
1974	Grass snake	Count of colony	Wood Road, SJ9653	1.81 km
10/06/75	Grass snake	Field observation	Wall Grange, canal area, SJ9653	1.81 km
10/06/75	Grass snake	Field observation	Wall Grange Brickworks, SJ9653	1.81 km
20/08/75	Grass snake	Field observation	Horse Bridge, SJ963537	1.88 km
20/08/75	Grass snake	Field observation	Between St Edwards Hospital and Wall Grange, SJ964539	1.75 km
1976	Grass snake	Field observation	Brittain's Paper Mill, SJ9752	1.79 km
1977	Grass snake	Field observation	Garden, SJ9653	1.81 km
1979	Grass snake	Field observation	Leekbrook, SJ9853	0.72 km
July '87	Grass snake	Field observation	Wall Grange Pumping Station, SJ9653	1.81 km
17/07/87	Grass snake	Field observation	Caldon Canal, SJ9752	1.79 km
17/07/87	Grass snake	Field observation	Caldon Canal, SJ9852	1.68 km
21/06/93	Grass snake	Field observation	Near Leek Tunnel, SJ978557	1.63 km
24/05/00	Grass snake	4 basking	Leek CP, SJ978545	0.52 km
June '00	Grass snake	Field observation	Caldon Canal, SJ965536	1.71 km
June '00	Grass snake	1 basking	Longsdon CP, SJ968535	1.47 km
11th July2000	Grass snake	1 juvenile	Garden, SJ963540	1.84 km
June-July '04	Grass snake	Field observation	Ladderedge CP, SJ974551	1.30 km
2006	Grass snake	1 adult	Caravan Park, SJ981523	1.80 km
15/06/07	Grass snake	1 adult	Caldon Canal, SJ9653	1.81 km
15/06/12	Grass snake	1 dead	Cheddleton Park Avenue, SJ9752	1.79 km
13/08/12	Grass snake	1 adult	Leek CP, SJ973547	1.03 km
16/10/73	Adder	1 Adult	Wall Grange, SJ9653	1.81 km
June-July '86	Adder	Field observation	Cheddleton Flint Mill, SJ972526	1.77 km
1995	Adder	Field observation	Deep Hayes CP, SJ964533	1.91 km
1960-1977	Common lizard	Field observation	Cheddleton Heath, SJ9853	0.72 km
1968-1982	Common lizard	Field observation	Wall Grange, SJ9653	1.81 km
1972	Common lizard	1 adult	Wood Road, SJ9653	1.81 km
1974	Common lizard	1 juvenile	Wood Road, SJ9653	1.81 km
1974	Common lizard	Aggregation	Woo Road, SJ9653	1.81 km
20th -25th July 1975	Common lizard	2 adults, 2 juveniles	Wood Road, SJ9653	1.81 km
1977	Common lizard	1 juvenile	Wood Road, SJ9653	1.81 km

Table B1 All Stafford Ecological Records Centre Reptile Records (2 km radius).

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