

**Bentinck Tip and Void
Nottinghamshire**

Reptile Survey Report

**October 2007
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DRAWINGS

Drawing 1	Location of reptiles recorded within site.
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1.0 INTRODUCTION

1.1 Background

SLR Consulting Ltd (SLR) has been commissioned to provide ecological services to Waste Recycling Limited (WRL).

In April 2007, SLR was instructed by WRL to undertake detailed reptile surveys of Bentinck Tip and Void near Annesley in Nottinghamshire, in support of a planning application to develop the site as a landfill facility.

1.2 Scope of Study

The purpose of the reptile survey was to add to the existing body of ecological information already available for the site and the surrounding land.

Surveys undertaken comprised of direct observations of suitable areas of habitat, hand searching of existing refugia and the placement of artificial refuge in suitable areas of the site to increase the survey effort. The report draws upon survey results from 2007 surveys and historical surveys to assess the potential ecological impacts of the proposed development and, where necessary, provides an outline of suitable mitigation measures to avoid any adverse effects.

1.3 Proposed Works

WRL is proposing to develop Bentinck Void as a landfill facility. As part of this development, grassland, waterbodies and scrub habitats within the site are proposed to be removed or disturbed during the development and operation of the landfill.

2.0 METHODS

2.1 Desk Study

A review of biological records provided by Nottinghamshire Biological and Geological Records Centre (NBGRC) in 2004 and 2006 was undertaken. These record searches were not updated in 2007.

In addition, all previous reptile survey work undertaken at the site, by SLR Consulting and other ecological consultants, was reviewed

2.2 Field Survey

An ecologist from SLR visited the site on the 18th May 2007. During this survey visit, the site was hand searched extensively for the presence of reptiles. In addition, during this survey a series of artificial refugia, including approximately 100 0.5m² squares of roofing sheets/felt. These refugia were then left for five days in order to allow the refugia to 'bed-in' and become more attractive to reptiles.

The site was then visited, in suitable weather conditions, a further six times. On each occasion the artificial refugia and other natural or man made refugia (such as dumped rubble) were searched in conjunction with direct observation of suitable basking spots, to ascertain if any reptiles were present either on top of the refugia or beneath them.

2.3 Limitations

Within the previous survey reports for the site, no specific methodology for the reptile surveys was defined. It is therefore not possible to determine the exact area that was surveyed or the survey effort undertaken during these surveys.

3.0 BACKGROUND DATA

3.1 Biological Records

Records obtained in 2007 from NBGRC comprise seven records for reptiles within 2km of the site. Of these records, three are for records of grass snake and common lizard recorded within the site during previous reptile survey undertaken by ecological consultants.

Aside from these records, there are two records for grass snake, recorded 300m west of the site and 1km north-east of the site and two records for common lizard, recorded 500m and 2km south-west of the site.

The NBN Gateway holds a numerous records for grass snake, the closest of which is located 2.5km to the north-west of the site. A single record of an adder is held on the NBN Gateway database, although the location of this record is simply defined as within the same 10km grid square as the site.

3.2 Previous Survey Work

Previous survey work undertaken at this site is summarised in the Ecology Chapter of the Environmental Statement¹ for the site. Reptiles recorded during all of the reptile surveys conducted at the site are summarised in Section 4.2.

¹ 'Chapter 13 – Ecology: Planning Application and Environmental Statement for the Reclamation of Bentinck Tip and Void'. SLR Consulting. October 2006, and following references therein: AERC (2001) ES Appendix 13/7; Kilshaw (2003) ES Appendix 13/8; AERC (2004a) – ES Appendix 13/13; AERC (2005) – ES Appendix 13/19; AERC (2005) – ES Appendix 13/20; AERC (2006) – ES Appendix 13/22; SLR (2006) – ES Appendix 13/24

4.0 RESULTS

4.1 General – Habitat suitability for reptiles

Bentinck Tip and Void is located north of the city of Nottingham, adjacent to and east of the M1 at junction 27.

The site currently supports a former colliery, including a flooded void and coal tip. The southern part of the site has colonised largely with semi-improved grassland and small patches of scrub and occasional young to semi mature trees. The northern part of the site contains the coal tip and is largely un-vegetated. This area also supports numerous waterbodies, most of which support little or no aquatic vegetation.

Across the site, extensive areas of habitats suitable to support reptiles are present, most notably the grassland and scrub mosaics which have re-colonised on rough terrain, resulting in tussocky grassland and scrub with open spaces for basking. These habitats are most frequently present on the Void side of the site and on the south facing northern slopes of the Void itself.

Small pockets of grassland and scrub mosaic, along with young plantation and woodland are scattered throughout the site, particularly towards the site boundary and the railway line to the north.

The majority of small waterbodies in the Void area and those along the northern edge of the Tip have shallow sloping edges which provide habitat for a wide range of amphibians and invertebrates making them good foraging grounds for grass snake and common lizard, respectively. The large waterbodies in the Tip area are less well vegetated and more exposed and are therefore less suitable to support reptile foraging habitat.

4.2 Reptile Survey Results

A summary of reptiles recorded at the site between 1998 and 2007 is presented in Table 1 below.

Table 1 – Summary of Reptiles recorded At Bentinck Tip and Void 1998 - 2007

Date of Survey	Survey Methods and Effort	Summarised Results
July 1998	Hand searching of refugia and general site observation	Grass snake and common lizard widely distributed across Bentinck Void
1999	Hand searching of refugia and general site observation	Grass snake and common lizard widely distributed across Bentinck Void Adder (unconfirmed) recorded from northern slope of Bentinck Void
2001	Hand searching of refugia and general site observation	2 grass snakes recorded from northern slope of Bentinck Void
2004	Targeted search of refugia (including placement of artificial refugia), basking spots and boundary habitats. General observation of site	2 grass snakes recorded west of pond 8. 1 grass snake recorded on west facing slope, east of Bentinck Void 2 grass snakes recorded dead in remains of a bonfire pit on grass slope north-east of Pond 4.
2005	Targeted search of refugia (including placement of artificial refugia), basking spots and boundary habitats. General observation of site	3 grass snakes recorded under refuges on western margins of pond 8.
18 th May 2007	Targeted search of artificial (roofing felt tins) & natural refugia and general observation of the site	1 grass snake on the northern slope of the Void
24 th May 2007	Targeted search of artificial (roofing felt tins) & natural refugia and general observation of the site	None recorded
30 th May 2007	Targeted search of artificial (roofing felt tins) & natural refugia and general observation of the site	2 grass snakes located east and south east of Void 1 common lizard on northern slope of Void
11 th June 2007	Targeted search of artificial (roofing felt tins) & natural refugia and general observation of the site	None recorded
20 th June 2007	Targeted search of artificial (roofing felt tins) & natural refugia and general observation of the site	1 grass snake located south east of the void
26 th June 2007	Targeted search of artificial (roofing felt tins) & natural refugia and general observation of the site	3 grass snakes located on north-east slope of void, north slope of void and south east of the void
29 th June 2007	Targeted search of artificial (roofing felt tins) & natural refugia and general observation of the site	2 grass snakes located on the north-west slope of the void and southeast of the void.

5.0 EVALUATION

The presence of grass snake and common lizard within the site has been confirmed. Adder has anecdotally been recorded at the site (in 1998), although this record is unconfirmed. Adder has not been recorded at the site since this date and as such it is not considered to be present at the site.

A maximum count of five grass snakes was recorded during any one survey (albeit two of these were recorded dead in the remains of a bonfire pit). Using the guidelines set out by Froglife², the population of grass snakes present at this site is considered to be a good population. Grass snake is relatively widespread within the county of Nottinghamshire and it is considered that this population is of district importance.

A maximum count of one common lizard was recorded during any one survey and using the guidelines set out by Froglife², the population of common lizard present at this site is considered to be a low population. Common lizard is less well distributed throughout Nottinghamshire than grass snake and as such, the presence of a low population of this species is also considered to be of district importance.

Under the Froglife² guidelines, the criteria for designation as a Key Reptile Site which would apply in Nottinghamshire, is to have three species of reptile present, an exceptional population of one or more species, or a species assemblage which totals 4 points (exceptional population = 3, good = 2 and low = 1). The site supports two confirmed species, with only a good population of one species and an assemblage total of 3 points (grass snake = 2, common lizard = 1). Therefore the site does not meet the criteria for a 'Key Reptile Site'.

It is considered that at present, the majority of the application site supports a range of suitable reptile habitat, specifically habitat favoured by grass snakes and common lizards, including scrub patches that border grassland, Bentinck Void which provides south facing slopes as well as numerous waterbodies which have shallow sloping banks and confirmed populations of frogs and toads, a favoured prey of grass snakes. The nature of the terrain, in that it is quite rough and tussocky with lots of bare ground provides suitable areas for basking, as well as suitable crevices and refugia, in and under which to shelter.

² Froglife Advice Sheet 10 'Reptile Survey – An introduction to planning, conducting and interpreting surveys for snake and lizard conservation' Nov 1999.

6.0 IMPACT ASSESSMENT AND MITIGATION

The ES states: *“In the absence of mitigation, the loss of rough grassland, wetland and mosaic habitats would lead to a reduction in the carrying capacity of the site for reptile species that is considered to be a significant negative impact upon a receptor of District value.”*

In addition, the mitigation proposed in the ES states *“Mitigation for the loss of protected reptile habitat would involve:*

- *annually monitoring the population prior to translocation;*
- *preservation of habitat on eastern slopes throughout the development, and the settling ponds (2, 3, 4 & 5) until Year 5;*
- *creation of new ponds on eastern and southern flanks of site in Year 1 and associated terrestrial habitat for reception of translocated individuals;*
- *translocation of individuals to newly established terrestrial habitats and ponds; and*
- *post-translocation monitoring and habitat management.”*

Additional reptile surveys undertaken in 2007 provide additional evidence that confirms the value, distribution and use of the site by grass snake and common lizard as that which was originally assessed as being present for the purpose of the ES. Therefore the predicted impacts detailed in the ES are still considered to be appropriate for the population of grass snake and common lizard present within the site and as such, the mitigation proposed within the ES is considered to fully mitigate for these impacts.

With the provision of compensatory habitats, completion of a translocation exercise and a subsequent monitoring period, there would be no significant impacts upon reptiles as a result of the proposed development.

7.0 SUMMARY AND CONCLUSIONS

This survey report has provided baseline ecological survey data and assessment on the reptile populations at Bentinck Tip and Void, Nottinghamshire.

This report has re-evaluated existing survey data for reptiles and undertaken additional surveys for reptiles within the site.

The site supports two species of reptile; grass snake and common lizard. Previous records of the presence of adder have not been confirmed and adder has not been recorded at the site since the unconfirmed record in 1998.

According to the Froglife guidelines, the site supports a good population of grass snake and a low population of common lizard.

Grass snake is relatively widespread within the county of Nottinghamshire and it is considered that this population is of district importance. Common lizard is less well distributed than grass snake and as such the low population present within the site is also considered to be of district importance.

The site supports significant areas of suitable reptile habitat including basking and foraging habitats, such as south facing slopes, tussocky grassland, scrub and waterbodies with shallow sloping margins.

In the absence of mitigation, the loss of rough grassland, wetland and mosaic habitats would lead to a reduction in the carrying capacity of the site for reptile species that is considered to be a significant negative impact upon a receptor of District value.”

Mitigation for the loss of protected reptile habitat would involve:

- annually monitoring the population prior to translocation;
- preservation of habitat on eastern slopes throughout the development, and the settling ponds (2, 3, 4 & 5) until Year 5;
- creation of new ponds on eastern and southern flanks of site in Year 1 and associated terrestrial habitat for reception of translocated individuals;
- translocation of individuals to newly established terrestrial habitats and ponds; and
- post-translocation monitoring and habitat management.

With the provision of compensatory habitats, completion of a translocation exercise and a subsequent monitoring period, there would be no significant impacts upon reptiles as a result of the proposed development.

8.0 CLOSURE

This report has been prepared by SLR Consulting Limited with all reasonable skill, care and diligence, and taking account of the manpower and resources devoted to it by agreement with the client. Information reported herein is based on the interpretation of data collected and has been accepted in good faith as being accurate and valid.

This report is for the exclusive use of Waste Recycling Limited; no warranties or guarantees are expressed or should be inferred by any third parties. This report may not be relied upon by other parties without written consent from SLR.

SLR disclaims any responsibility to the client and others in respect of any matters outside the agreed scope of the work.