St Asaph Flood Risk Management Strategy

Great Crested Newt Survey Report

July 2015

A GALLIFORD TRY, BLACK & VEATCH JOINT VENTURE

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GREAT CRESTED NEWT PRESENCE/ABSENCE SURVEY REPORT

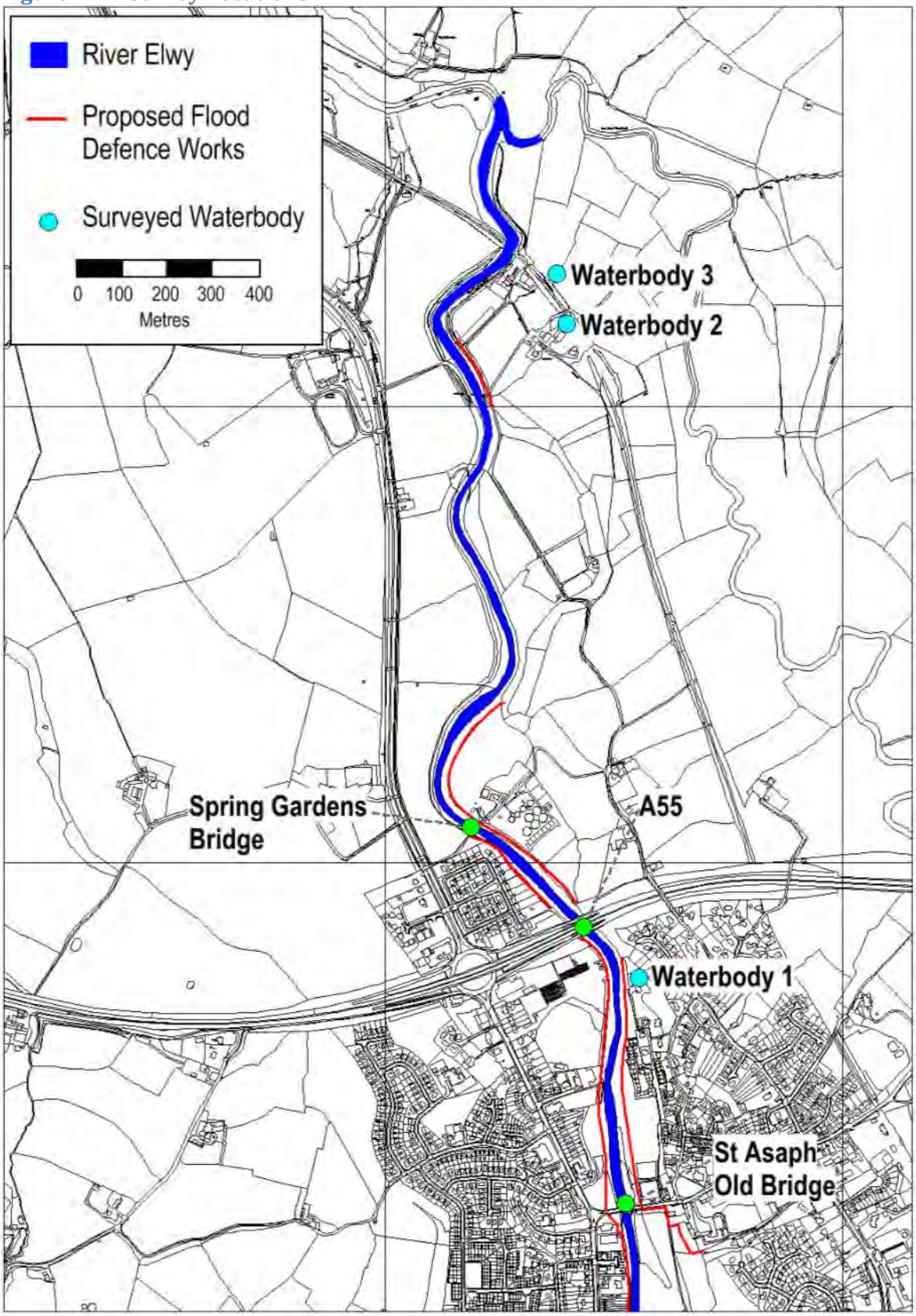
CONTENTS

Details of document preparation and issue:

Version no.	Prepared by	Reviewed by	Authorised for issue	Issue date	Issue status
1	Matt Rung	Emma Stevens	Nick Stokes	06/07/15	Draft for NRW comment
2	Heulwen Baughn	Matt Rung	Nick Stokes	30/07/15	First Issue

B&V project no. 122366 Client's reference no.

Figure 1.1 – Survey Locations



1. INTRODUCTION

1.1 Background

Natural Resources Wales (NRW) are undertaking a flood risk management appraisal study for St Asaph, North Wales. The city was subject to severe flooding from the River Elwy during November 2012 with some 300 properties and businesses directly affected. A key objective for the study is to deliver a flood risk management scheme to provide a 1 in 200 annual chance of flood protection to the town. A Preliminary Ecological Appraisal (GBV, 2014) and great crested newt Habitat Suitability Index (HSI) assessment has been carried out to inform the design of a flood risk management scheme for the town. The previous great crested newt HSI assessment was undertaken by Galliford Try, Black & Veatch (GBV) in April 2015 on six ponds recorded within 500m of the site and recommended presence/absence surveys to be carried out on three ponds (Appendix B).

1.2 Site Context and Scope

The site is situated in the city of St Asaph, North Wales, grid reference SJ 03397 76181, along the River Elwy. The site runs through the conurbation of St Asaph with residential properties surrounding the site towards the centre and south. The land at the northern end of the site is located within a pastoral landscape.

There were three water bodies highlighted during the Habitat Suitability Index assessment in 2015; refer to Figure 1.1. Waterbody 1 was a garden pond located close to the centre of St Asaph (grid reference: SJ 03555 74748). Waterbodies 2 and 3 were located on farmland surrounded by improved grassland to the north of St Asaph (Grid references: SJ 03397 76181, SJ 03376 76290 respectively).

The survey methodology is detailed in Section 2. The survey results are presented in Section 3 and site photographs are provided in Appendix A. Discussion and Recommendations are discussed in Section 4.

The objectives of the surveys were to establish the presence or likely absence of GCN and, if present, calculate the population size of GCN present in waterbodies. This would allow an assessment of potential impacts to be made, along with proposals for appropriate mitigation if deemed necessary.

1.3 Legislative Framework

Great crested newts (GCN) *Triturus cristatus* are protected under the Wildlife and Countryside Act (WCA) 1981 (as amended) Schedule 5, and the Conservation of Habitats and Species Regulations 2010 (as amended) Schedule 2. It is illegal to deliberately capture, injure or kill, to intentionally disturb, or to deliberately take or destroy the eggs of GCN. It is also illegal to damage, destroy or intentionally or recklessly obstruct access to a breeding or resting place used by GCN. All life stages of GCN are afforded the same level of protection.

In order to undertake activities that could result in any of the above offences being committed, it is necessary to obtain a licence from the statutory nature conservation body (Natural Resources Wales). A licence permits certain activities that otherwise would be unlawful, and can be obtained for certain activities, such as surveying or for the implementation of mitigation measures in relation to potentially harmful activities.

Palmate newts *Lissotriton helveticus* and smooth newts *Lissotriton vulgaris* are only protected against trade (buying and selling) under the current legislation, and therefore do not require a licence to survey for them, or in relation to potentially harmful activities.

2. METHODOLOGY

2.1 Desk Study

The desk study provides background information on the biodiversity interest of the site. This is an important element of an ecological study and complements data collected in the field by providing additional ecological context for the site and its surroundings. It should be noted that an absence of desk study records for particular species or habitats does not necessarily convey an absence of such species or habitats in that area, but may be indicative of under-recording.

A previous desk study was undertaken as part of the Preliminary Ecological Appraisal conducted by GBV in November 2014. All data related to GCN are included within this report. The desk study search area included the site and a surrounding 2km radius and included the following sources:

- Wales Biodiversity Partnership;
- aerial photography;
- NRW Protected Sites Map (http://www.ccgc.gov.uk/interactive-maps/protected-sites-map.aspx);
- NBN Gateway (https://data.nbn.org.uk/); and
- Ordnance Survey website (http://www.getamap.ordnancesurveyleisure.co.uk/)

2.2 Presence/Absence Surveys

Presence/absence surveys were undertaken using standard methodologies in accordance with the best practice guidelines. The surveys were undertaken by Natural Resources Wales Licensed Ecologists Matt Rung and Martin Page and assistant surveyors.

The GCN Mitigation Guidelines standard methodology identifies four potential survey methodologies (English Nature, 2001), and recommends that three out of four different types methods of survey method are employed on each water body, wherever possible.

Biosecurity measures were undertaken during the surveys, including washing all footwear and equipment with disinfectant prior to visiting each pond. A brush was used to scrape off any mud, plant fragments and other debris prior to disinfecting. Bottle traps were soaked with disinfectant for >15 mins and rinsed with water prior to being used in a pond, then placed in separate bin bags for transportation once used in the pond.

The dates of the 2015 presence/absence surveys are listed below:

- 5th/6th May;
- 7th/8th May;
- 12th/13th May; and
- 13th/14th May.

The different survey techniques employed for all the ponds are described in detail below.

Torch Survey

This method involved searching for GCNs at night by shining a torch (>50,000 to <1,000,000 candlepower) in the specific water bodies. The entire accessible length of the margins of each water body was torched. Where appropriate and possible, the torch survey extended to the entire water body. Torching was undertaken during optimal weather conditions, whereby night-time air temperature is >5°C, with little or no wind and minimal or no rain in accordance with best practice guidelines.

Egg Search

Searches for newt eggs were carried out. The eggs of GCN are distinctive from those of smooth and palmate newts, and hence this can be an effective technique for determining GCN presence. Typically, eggs of all three species are laid on, or wrapped in, the leaves of submerged vegetation, although other materials may also be used.

Submerged and marginal vegetation was searched for eggs. It is sometimes necessary to 'unwrap' vegetation to confirm identification of the species eggs, however there is evidence that exposed newt eggs may be more prone to predation and UV radiation impacts. Therefore any vegetation unwrapping was minimised as far as possible.

Bottle Trapping

Two litre plastic bottle traps were placed along the margins of the water bodies. The number of traps used corresponded to standard guidance wherever possible, with approximately one bottle per 2 metres of shoreline.

Traps were installed before dark and then inspected between 06:00 and 09.00 the following morning. This ensured that the maximum time of capture for GCN was no more than the permissible 15 hours identified in the GCN Mitigation Guidelines. Seven bottle traps were used in Waterbody 1, fifteen bottle traps were used in Waterbody 2 and 10 bottle traps were used in Waterbody 3.

2.3 Population Size Class Assessment

In order to comply with the guidance published by Natural England, formerly English Nature, (English Nature, 2001) the population size class assessment of ponds with GCN present (Waterbody 2) comprised an additional two surveys to the four presence/absence surveys. This should be undertaken between mid-March and mid-June, with at least three of these visits taking place during mid-April to mid-May.

In order to establish the approximate population size the maximum adult counts per pond per night are recorded. Counts (on the same visit) are summed across ponds in close proximity to give a total site count.

Populations can then be classed as:

- **'small'** for maximum counts of 10;
- **'medium'** for maximum counts between 11 and 100; and
- **'large'** for maximum counts over 100.

The dates of the 2015 population size class assessments (additional two surveys following presence/absence surveys) were:

- 8th/9th June; and
- 11th/12th June.

2.4 Survey Limitations

Waterbody 3 encompassed a section of drain which in parts was too shallow and heavily vegetated to bottle trap. Bottle trapping was therefore targeted in open water at the two ends of the drain.

3. RESULTS

3.1 Desk Study

There are three designated sites within 2km of the site. These are:

- Afon Clwyd and floodplain Local Wildlife Site; designated for its importance as a habitat corridor and for its lowland dry acid grassland and lowland calcareous grassland habitats. Located ~400m east of the northern end of the survey area.
- Mount Road Churchyard, St Asaph LWS; located ~200m east of the riparian corridor in the centre of St Asaph.
- Coed Fron and Eryl Hall Wood LWS; located ~500m west of the riparian corridor at the southern end of the survey area.

None of these sites are designated for GCN.

Natural Resources Wales provided records for GCN within 1km of the site. Specific locations and dates are unknown. However, there are GCN records within St Asaph and GCN are known to be widespread in Denbighshire. NBN recorded GCN within 10km of the site within the last 10 years but specific locations are unknown.

3.2 Presence/Absence Surveys and Population Size Class Assessment

The detailed surveys were completed in optimal weather conditions in May and June 2015. A summary of each survey including dates, weather conditions and results are provided in Table 3.1 below (SN = smooth newt (*Lissotriton vulgaris*) and GCN = great crested newt (*Triturus cristatus*).

A single GCN was recorded during one survey only (female adult). There was no evidence of egg laying. The maximum count of one GCN indicates the classification of the population size is **'small'**.

It should be noted that survey techniques are considered to reveal between 2% and 30% of the total population and therefore results should be regarded only as an estimate.

No GCN were recorded during the presence/absence surveys of waterbodies 1 or 3 (Plates 1 and 3 respectively). Smooth newts were recorded from all ponds in small numbers.

Table 3.1: GCN presence/absence survey results

Date	Weather conditions	Survey method	Waterbody 1	Waterbody 2	Waterbody 3
5th May 2015	1/8 Oktas[1], 9°C, 2-3 Beaufort[2], No rain	Torching	1 SN juvenile	No amphibians	No amphibians
		Bottle trapping	No amphibians	1 male SN; 1 female SN	1 SN male
		Egg search	No amphibians	No amphibians	No amphibians
7th May 2015	4/8 Oktas, 7°C, 1 Beaufort, No rain	Torching	2 SN (1 female; 1 male)	No amphibians	No amphibians
		Bottle trapping	No amphibians	**1 adult female GCN**, 1 SN male	No amphibians
		Egg search	No amphibians	No amphibians	No amphibians
12th May 2015	4/8 Oktas, 13°C, 0 Beaufort, No rain	Torching	No amphibians	No amphibians	No amphibians
		Bottle trapping	No amphibians	2 SN female; 1 SN male	2 SN male; 2 SN female
		Egg search	No amphibians	No amphibians	No amphibians
13th May 2015	7/8 Oktas, 11°C, 0 Beaufort, Intermittent rain	Torching	1 SN female	No amphibians	No amphibians
		Bottle trapping	No amphibians	4 male SN; 1 female SN	2 SN male
		Egg search	No amphibians	No amphibians	No amphibians
8th June 2015	13°C, 0-1 Beaufort, No rain	Torching	N/A	No amphibians	N/A
		Bottle trapping	N/A	2 SN male; 5 SN female	N/A
		Egg search	N/A	No amphibians	N/A
11th June 2015	19°C, 0-1 Beaufort, No rain	Torching	N/A	No amphibians	N/A
		Bottle trapping	N/A	4 SN male; 2 SN female	N/A
		Egg search	N/A	No amphibians	N/A

[1] Oktas: A unit of measure used to specify the amount of cloud cover
[2] Beaufort: The Beaufort scale is an empirical measure that relates wind speed to observed conditions at sea or on land.

4. DISCUSSION AND RECOMMENDATIONS

4.1 Discussion

GCN are fully protected under Schedule 5 of the Wildlife and Countryside Act (1981, as amended) and the Conservation of Habitats and Species Regulations 2010 (as amended) Schedule 2.

GCN records were highlighted during the desk study assessment within 1km of the site and the wider area.

During the presence/absence surveys carried out in May 2015 waterbodies 1 and 3 did not record the presence of GCN. Waterbody 2 did record the presence of GCN and had a maximum count of one adult GCN over the six visits which indicates a **'small'** population size class. In addition, as no evidence of breeding was recorded on egg laying material during the six visits this indicates that while the pond has the potential to be a breeding pond it currently shows no evidence of being one.

The nearest works associated with the flood risk management scheme will be located 190m to the south of the GCN pond (waterbody 2) along the northern bank of the River Elwy and this will involve earth removal works to raise the embankment levels. This area is connected to the pond by a linear line of broadleaved scattered trees (which forms part a disused railway line) and improved grassland; with improved grassland being the dominant habitat type between the pond and the works. Suitable terrestrial habitat for GCN was located within 100m in the form of scrub and broadleaved scattered trees. The earthworks will be located in potentially suitable GCN refugia habitat along the northern banks of the River Elwy and cover approximately 1ha and therefore GCN have potential to be impacted.

Waterbody 3 is situated 200m north west of the GCN pond but the presence/absence surveys indicated the likely absence of GCN here. It is therefore considered that the GCN population size class in the wider area is also **'small'**.

4.2 Recommendations

As the population size class is considered to be **'small,'** with no other waterbodies recorded within 500m of the GCN pond that contained GCN, and given the distance of 190m between the proposed works and the GCN pond it is considered unlikely that GCN would be impacted by the proposed works. Based on current information at outline design it is suggested that a GCN mitigation license is therefore not required for these works but this should be confirmed with Natural Resources Wales Protected Species Officer at detailed design stage..

However as earthworks are located 190m from a GCN pond and this is connected by broadleaved scattered Reasonable Avoidance Measures (RAMS) are recommended. This should include:

- Fingertip search for GCN of earth to be removed immediately prior to the commencement of earthworks. This should be carried out be a suitably qualified ecologist between February and October; and
- Best practice construction methods should be followed. For example, any trenches dug should be covered overnight to prevent GCN from entering.

These RAMS should be developed during detailed design.

4.3 Enhancement Opportunities

Opportunities exist close to the pond where GCN were recorded. The pond is surrounded by grazed pastoral land (intensively managed) which is sub-optimal for GCN but is connected to the wider landscape via series of hedgerows which do offer some potential for GCN movement and refuge. A potential opportunity exists to create new water bodies linking with this pond. New water bodies should be dug close to hedgerows which are directly linked to the pond. Potential opportunity also exists for turning some grazed pasture into scrub habitat close to the GCN pond. These opportunities are subject to landowner discussions.

5. REFERENCES

English Nature (2001). Great Crested Newt Mitigation Guidelines.

GBV (2014). St Asaph Flood Risk Management Strategy. Preliminary Ecological Appraisal.

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APPENDICES

APPENDIX A: PLATES

Plate 1: Waterbody 1; a pond located within a residential garden looking north.

Plate 2: Waterbody 2; a pond located within farm land looking west.

Plate 3: Waterbody 3: A drain running west to east with improved grassland to the north and south.

APPENDIX B: HABITAT SUITABILITY INDEX ASSESSMENT

Habitat Suitability Index Assessment of Ponds within 500m of the Site

Water body	Location	Area	Pond Drying	Shade	Water Quality	Waterfowl	Fish	Ponds within 1km	Terrestrial Habitat	Macrophytes	HSI score	Potential to support GCN
1	.5	.1	1	.67	1	1	.67	.1	1	.7	0.52	**Below average**
2	.5	.1	.9	.67	1	.67	1	.4	.67	.3	0.53	**Below average**
3	.5	.2	.3	.67	1	1	1	.4	.67	1	.59	**Below average**
4	.5	.05	.1	.33	.2	1	1	.3	1	.4	0.34	**Poor**
5	.5	.1	.1	.33	1	1	1	.3	.67	.4	0.41	**Poor**
6	DRY	DRY	DRY	DRY	DRY	DRY	DRY	DRY	DRY	DRY	DRY	**Poor**