



# River Nene Dragon Finder Habitat Evaluation

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# River Nene Dragon Finder Habitat Evaluation

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# Background

Thanks to funding from Heritage Lottery Fund, the River Nene Dragon Finder Project ran for 4.5 years from January 2015 to May 2019 and extends Froglife's previous work in Scotland and London.

Amphibians and reptiles from around the world are becoming extinct at an alarming rate. When the River Nene Dragon Finder project was developed, 25% of amphibians and 20% of reptiles in Europe were either extinct or threatened with extinction. Accurate information on the distribution and numbers of amphibians and reptiles in the UK are needed in order for us to conserve these important species; however this type of information is unavailable for most areas in England. The aim of the River Nene Dragon Finder project was to increase our knowledge of amphibian and reptile populations along the River Nene and within the counties of Northamptonshire, Huntingdonshire, Cambridgeshire and Lincolnshire through which the river flows. The project also aimed to increase public awareness of the amphibian and reptile extinction crisis. The information gathered was to be submitted to local biodiversity record centres, which could then be used to manage and conserve existing amphibian and reptile populations, and to inform the creation or restoration of additional habitats.

River Nene Dragon Finder sought to reach as many people as possible from as many areas as possible, and to work with a wide range of partners in order to achieve this. Froglife planned to organise multiple activities and events throughout the project area to enable people to find out more about wildlife along the River Nene, and to raise the profile of amphibian and reptile conservation. In addition, Froglife planned to train people in amphibian and reptile identification and surveying, and habitat creation, restoration and management.

The aims of the practical habitat projects were to involve local people in the creation and restoration of amphibian and reptile habitats, and to survey and monitor those sites. Froglife aimed to work with wildlife volunteer groups, friends of groups, council ranger volunteers, local schools and other volunteer groups, and provide them with training in habitat management, species identification and surveying/monitoring. Where community involvement was not already established at sites the project aimed to facilitate the formation of a local volunteer group. This would enable volunteers to carry out the habitat work themselves, giving them a sense of ownership of the site. Froglife aimed to encourage them to continue to manage and monitor their sites in subsequent years.



# Overview of Project Aims and Achievements



## CONSERVATION AIMS TAKEN FROM ACTIVITY PLAN

- Create, restore and enhance habitats for reptiles and amphibians along the River Nene and across Northamptonshire, Cambridgeshire, Huntingdonshire, and Lincolnshire. This will ensure amphibian and reptile populations are maintained, and where possible expanded. This will provide strong, robust populations better able to resist negative factors and more likely to colonise new sites.
- Link up amphibian and reptile habitats to facilitate movement of animals between populations. This will reduce the risk of inbreeding and further local extinctions.
- Increase the dataset for amphibian and reptile populations across the project area. This information will be used to inform land managers/owners/developers and effectively target future conservation efforts in the region.

### 1. CREATE RESTORE AND ENHANCE HABITATS

The River Nene Dragon Finder project has exceeded all its habitat targets for pond creation, restoration and terrestrial works.

*Table 1: Total habitats restored or created (planned taken from activity plan)*

	Planned	Completed	Difference	% of target
Total no. of sites	20	32	12	160%
Ponds created	35	50	15	143%
Ponds restored	50	59	9	118%
Terrestrial sites	78	132	54	169%
PC + PR + TS	163	238	75	146%

In total the project carried out habitat improvements on 32 sites.

- 29 sites with ponds improvements of some kind, 3 sites with terrestrial improvements only.
- 13 sites in Northamptonshire, 18 sites in Cambridgeshire, 1 site in Huntingdonshire

We had originally planned to work on one site in Lincolnshire however this site had to be dropped due to unsafe power lines in the area.





We also installed 4 Interpretation Boards, 4 Dipping Platforms and 4 Memory benches.

We engaged local members of the community with these habitat improvements by hosting volunteer days at 25 of the sites. These sessions provided an opportunity to get local people involved with the project and help improve their knowledge of amphibian and reptiles and skills to create and maintain the habitats that they rely on.

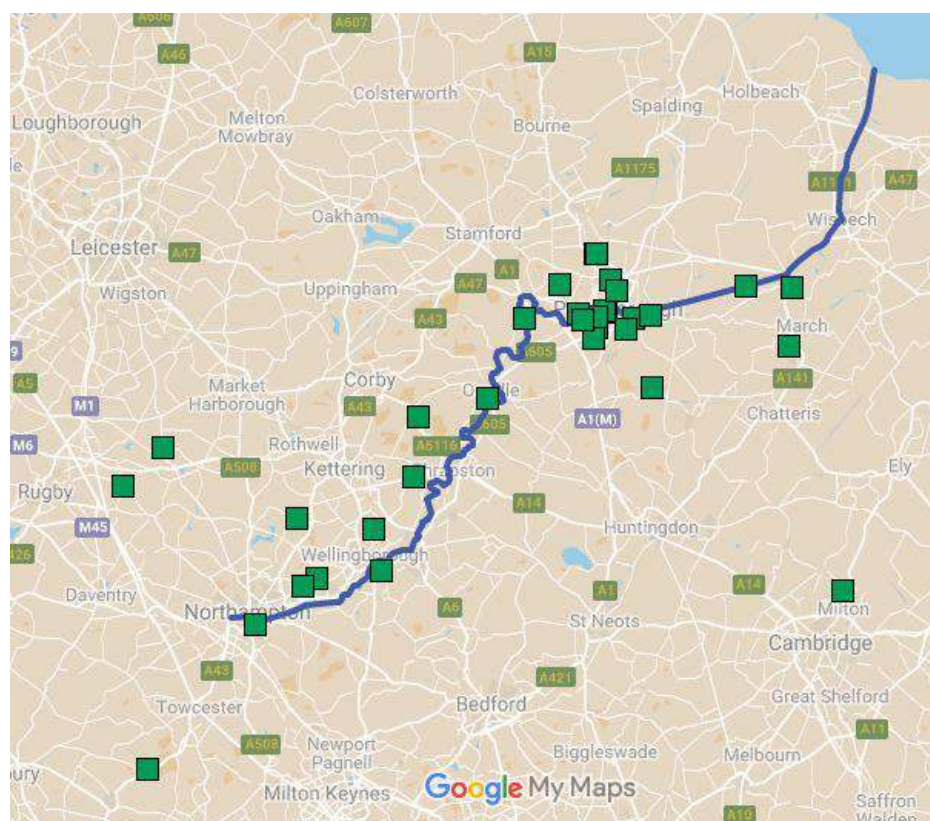
*Table 2: Number of Volunteers sessions hosted during the project.*

	Planned	Completed	Difference	% of target
Volunteer sessions	166	176	10	106%

## 2. LINK UP AMPHIBIAN AND REPTILE HABITATS

The River Nene Dragon Finder has worked at a landscape scale to create a network of habitats along the River Nene providing refuges for amphibians and reptiles to live and breed.

*Map 1: Locations of the 32 habitat sites where work was carried out*



On a local scale, the majority of sites that we worked on also included a network of ponds, close to good terrestrial habitats for overwintering to create linked up habitats on each individual site.

### 3. INCREASE DATASET FOR AMPHIBIANS AND REPTILES ACROSS THE PROJECT AREA

The River Nene Dragon Finder project has collected data on amphibians and reptiles in two ways; professional site surveys carried out by trained members of Froglife staff and volunteer sightings recorded on the Dragon Finder App. This has significantly increased the dataset for amphibians and reptiles across the project area.

*Table 3: Total number of records submitted by professional surveys and Dragon Finder App*

	Number of amphibians recorded	Number of reptiles recorded	Total
Professional surveys	8105	129	8234
Dragon Finder App	1791	159	1950
Total	9896	288	10184

*Map 2: Distribution of App records for the River Nene Dragon Finder Project area.*





A range of training sessions were delivered as part of the River Nene Dragon Finder Project from informal walks and talks through to formal ID and survey skills sessions. These activities provided members of the local community and volunteers on the habitat sites the opportunity to learn about UK amphibians and reptiles, the importance of collecting data on where they are found and how to use our Dragon Finder App to record their sightings.

Table 4: Number of training sessions delivered during the project.

	Planned	Completed	Difference	% of target
Training sessions	40	56	16	140%
Attendees	400	1276	876	319%

## Spotlight on Practical Habitat Improvements

### INDIVIDUAL SITE AIMS AND ACHIEVEMENTS

Table 5: River Nene Dragon Finder habitat sites (32 sites were worked on in total. Sites 1-20 are the original sites from the activity plan, Sites 21-35 are additional sites). Sites revisited as part of the evaluation are marked with an \*.

Site name & no.	Aim	Completed	Start date
<b><u>1 - Barnwell Country Park*</u></b>	3 x POND RESTORATION 2 x TERRESTRIAL HABITAT WORK 1 x INTERPRETATION BOARD 1 X POND DIPPING PLATFORM	<b>Activities:</b> Restoration of 3 ponds. Work completed on 2 terrestrial habitats including removal of large willows. Installation of 1 interpretation board and 1 pond dipping platform.  <b>Volunteer Opportunities:</b> Pond maintenance / Brash Clearance / Amphibian survey training / Amphibian survey	March 2015
<b><u>2 - Castor Hanglands*</u></b>	6 x POND RESTORATION 6 x TERRESTRIAL HABITAT WORK	<b>Activities:</b> Restoration of 6 ponds. Worked on 6 terrestrial habitats including scrub removal.	September 2015



		<b>Volunteer Opportunities:</b> Pond maintenance / Brash clearance / Amphibian surveys	
<u><b>3 - Cross Guns*</b></u>	5 x TERRESTRIAL HABITAT WORK	<b>Activities:</b> 5 Terrestrial habitats created.  <b>Volunteer Opportunities:</b> Reptile Survey Training / Reptile Surveys	March 2016
<u><b>4 - Orton Longueville</b></u>	1 x POND RESTORATION 1 x TERRESTRIAL HABITAT WORK	<b>Activities:</b> Restoration of 1 pond and creation of 1 terrestrial habitat.  <b>Volunteer Opportunities:</b> Pond maintenance / Amphibian surveys / Reptile surveys	November 2015
<u><b>5 - Stanground Woods</b></u>	1 x POND CREATION 1 x INTERPRETATION BOARD	<b>Activities:</b> Creation of a new pond. Decided that the interpretation board would not be suitable at this site because low footfall.  <b>Volunteer Opportunities:</b> Pond maintenance	June 2015
<u><b>6 - Ring's End Nature Reserve*</b></u>	3 x POND CREATION 1 x POND RESTORATION 2 x TERRESTRIAL HABITAT WORK 1 x INTERPRETATION BOARD	<b>Activities:</b> Restoration of 2 ponds and creation of 4 new ponds. Worked on 8 terrestrial habitats. Installation of 1 interpretation board, 1 dipping platform and 1 memory bench. Additional work carried out because additional cofounding was secured from Tesco Bags of Help.  <b>Volunteer Opportunities:</b> Site maintenance / Amphibian surveys / Reptile Surveys	January 2017
<u><b>7 - Twywell Plantation*</b></u>	2 x POND RESTORATION 3 x TERRESTRIAL HABITAT WORK	<b>Activities:</b> 2 ponds restored, worked on 4 terrestrial habitats.  <b>Volunteer Opportunities:</b> N/A	November 2015





<a href="#"><u>8 - Walgrave Pocket Park</u></a>	3 x POND RESTORATION 3 x TERRESTRIAL HABITAT WORK	<b>Activities:</b> Restoration of 3 ponds and worked on 3 terrestrial habitats including the removal of shading trees.  <b>Volunteer Opportunities:</b> Pond maintenance	November 2014
<a href="#"><u>9 - Great Fen Project*</u></a>	3 x POND CREATION 3 x TERRESTRIAL HABITAT WORK	<b>Activities:</b> Creation of 3 new ponds and 3 terrestrial habitats. Three additional ponds were created near the education centre with underspend from other sites.  <b>Volunteer Opportunities:</b> Pond creation / Amphibian surveys / Walk and Talk	April 2015
<a href="#"><u>10 - Irchester Country Park*</u></a>	5 x POND RESTORATION 2 x POND CREATION 4 x TERRESTRIAL HABITAT WORK 1 x INTERPRETATION BOARD	<b>Activities:</b> Restoration of 5 ponds. Creation of 3 new ponds and worked on 5 terrestrial habitats. Installation of 1 interpretation board.  <b>Volunteer Opportunities:</b> Pond maintenance / Brash Clearance / Amphibian surveys / Pond lining	May 2015
<a href="#"><u>11 &amp; 12 - Boardwalks Local Nature Reserve and Thorpe Meadows*</u></a>	5 x POND CREATION 7 x POND RESTORATION 3 x TERRESTRIAL HABITAT WORK 1 x INTERPRETATION BOARD	<b>Activities:</b> Creation of 7 ponds. Restoration of 8 ponds and work carried out on 8 terrestrial habitats including the creation of hibernaculas. Removal of large willow trees around the pond.  Installation of 1 dipping platform and 1 interpretation board.  <b>Volunteer Opportunities:</b> Pond creation and maintenance / Terrestrial works including dead hedging, scrub clearance etc / Amphibian survey training / Walk and Talk	February 2015
<a href="#"><u>13 - Sywell Country Park*</u></a>	2 x POND CREATION	<b>Activities:</b> 4 ponds created, 7 ponds restored and 2 terrestrial	January 2015



	6 x POND RESTORATION 1 x TERRESTRIAL HABITAT WORK 1 x INTERPRETATION BOARD	habitats improved. Installation of 1 interpretation board.  <b>Volunteer Opportunities:</b> Pond maintenance / Amphibian surveys / Reptile surveys	
<a href="#"><u>14 - Fermyn Woods Country Park</u></a>	3 x POND RESTORATION 5 x TERRESTRIAL HABITAT WORK 1 x INTERPRETATION BOARD	<b>Activities:</b> 4 ponds restored, 4 terrestrial habitats improved. It was decided that the site was not suitable for an interpretation board.  <b>Volunteer Opportunities:</b> Pond maintenance / pond planting / scrub clearance / tree works	March 2018
<a href="#"><u>15 - Finedon Pocket Park</u></a>	1 x POND RESTORATION 1 x TERRESTRIAL HABITAT WORK	<b>Activities:</b> Restoration of 1 pond, 1 terrestrial habitat improved. Including the removal of encroaching scrub.  <b>Volunteer Opportunities:</b> Pond maintenance / Amphibian survey / Children's amphibian and reptile ID and pond dipping.	October 2015
<a href="#"><u>16 - The Shrubberies</u></a>	1 x POND RESTORATION 1 x TERRESTRIAL HABITAT WORK	Site dropped - could not get permission for us to do the work.	N/A
<a href="#"><u>17 - Gault Wood</u></a>	1 x POND RESTORATION 2 x TERRESTRIAL HABITAT WORK	<b>Activities:</b> 1 Pond restored and 2 terrestrial habitats worked on.  <b>Volunteer Opportunities:</b> Amphibian survey / Pond reed clearance.	February 2018
<a href="#"><u>18 - Nene Park</u></a>	2 x POND RESTORATION 7 x POND & SCRAPE CREATION 1 x DITCH RESTORATION	<b>Activities:</b> 2 ponds were restored including installation of planted coir pallets along lake margin. 7 pond and scrape creations, 1 ditch restoration and 20 terrestrial habitats improved.	May 2016



	17 x TERRESTRIAL HABITAT WORK 1 x INTERPRETATION BOARD	Installation of 1 interpretation board and 2 memory benches. <b>Volunteer Opportunities:</b> Pond lining / Site maintenance / Amphibian surveys / Reptile Surveys	
<u>19 - King's Dyke*</u>	19 x TERRESTRIAL HABITAT WORK 4 x POND RESTORATION 10 x POND CREATION HABITAT MAINTENANCE	<b>Activities:</b> Creation of 13 new ponds, restoration of 1 pond and a ditch. 21 terrestrial habitats improved including creating hibernacula  <b>Volunteer Opportunities:</b> Amphibian surveys / Reptile surveys	October 2016
<u>20 - Twywell Hills and Dales</u>	3 x POND RESTORATION 2 x POND CREATION	Site dropped - further work to install fencing had been carried out in the time in between the development and delivery phases of the RNDF project which made planned works inaccessible and undesirable.	
<u>23 - Itter Park</u>	N/A	<b>Activities:</b> Restoration of two vandalised ponds, upgrading from butyl liner to bentonite clay liner and reshaping the steep sides to make the ponds more wildlife friendly  <b>Volunteer Opportunities:</b> Pond restoration / Pond lining / Pond maintenance / Amphibian surveys	October 2016
<u>24 - Rectory Farm Park</u>	N/A	<b>Activities:</b> 5 Terrestrial habitats created.  <b>Volunteer Opportunities:</b> N/A	September 2015
<u>25 - Syresham</u>	N/A	<b>Activities:</b> 1 pond restored, 2 terrestrial habitats	August 2014





		<b>Volunteer Opportunities:</b> Fencing	
<a href="#"><u>26 - NVR Yarwell Station</u></a>	N/A	<b>Activities:</b> 1 pond created, 1 terrestrial habitat site.  Installation of 1 dipping platform and 1 memory bench.  <b>Volunteer Opportunities:</b> Habitat Management and ID / Pond creation / Dipping platform construction / Scrub clearance / Planting	May 2016
<a href="#"><u>27 - Yelvertoft</u></a>	N/A	<b>Activities:</b> 1 pond restored, 1 terrestrial habitat site.  <b>Volunteer Opportunities:</b> Fencing / Hibernacula creation / Amphibian survey	May 2014
<a href="#"><u>28 - Stanground Peterborough Road Pond</u></a>	N/A	<b>Activities:</b> Restoration of one large pond and improved 4 terrestrial habitats  <b>Volunteer Opportunities:</b> Site maintenance / Amphibian surveys	January 2017
<a href="#"><u>29 - Hampton NR</u></a>	N/A	<b>Activities:</b> Improved 15 terrestrial habitats  <b>Volunteer Opportunities:</b> Reptile and amphibian survey / Dead hedging / scrub clearance / access improvements (creating steps)	January 2017
<a href="#"><u>32 - Froglife Allotment</u></a>	N/A	<b>Activities:</b> 1 pond restored  <b>Volunteer Opportunities:</b> Lining pond	March 2017
<a href="#"><u>33 - Werrington Ponds</u></a>	N/A	<b>Activities:</b> 2 new ponds created, 3 terrestrial sites	November 2017



		<b>Volunteer Opportunities:</b> Pond planting / Talk	
<u><a href="#">34 - Worts Meadow</a></u>	N/A	<b>Activities:</b> 1 new pond created, 2 ponds restored and 3 terrestrial habitats  <b>Volunteer Opportunities:</b> Scrub clearance / Pond planting / Bird and Bat box construction / pond clearance / Amphibian survey	February 2018
<u><a href="#">35 - Welford Pocket Park</a></u>	N/A	<b>Activities:</b> 2 ponds restored (joined by a channel) and 1 terrestrial habitat improved.  <b>Volunteer Opportunities:</b> Pond planting / Pond restoration / Crassula removal	February 2018
<u><a href="#">36 – Ham Lane Pond (PECT)</a></u>	N/A	<b>Activities:</b> 1 pond restored and 1 terrestrial habitat created.  <b>Volunteer Opportunities:</b> Pond restoration / Hibernacula and basking bank creation	January 2019

## EVALUATION OF SITES REVISITED

Habitat improvement work was carried out on 32 sites along the River Nene, many of the sites were large country parks which required access on foot to visit each individual habitat worked on. As a result we visited a sample of sites and individual habitats on each site for the purpose of evaluating the project (sites were also revisited by project staff at various points through the course of the project). 10 sites were visited over two days which was the maximum feasible in this time frame. Sites were chosen on the basis of:

- Work carried out – i.e. an example of pond restoration, creation and terrestrial only sites.
- Variety of locations

It is important to note that at the time of the re-visits there had been a prolonged period of draught in the region and many of the ponds were not holding water. As a result we looked back at photos on our system from previous re-visits and spoke to site managers to ask how well the ponds usually held water for. This makes assessments of the long-term





sustainability of ponds more difficult, and means if anything that we underestimate the overall success of the project.

Please see Appendix 1 for individual write ups.

## FEEDBACK FROM SITE MANAGERS

“Thank you so much for working on the pond at Ham Lane House yesterday. The transformation is incredible and the knowledge that we are much improving a habitat is really important to us all. The team really enjoyed it too!” Carly Leonard, CEO Peterborough Environment City Trust (PECT).

*Image 1: Ham Lane Pond*



“We would like to express out thanks to the Project and the Project Officers involved without the grant and their input much of this important conservation work would not have been achieved”. Philip Clark, Green Spaces Manager, Cambridgeshire County Council (who worked with the Project on Ring’s End, Somersham and Worts Meadow Local Nature Reserves)





Image 2: Nene Park pond creation, March 2017



## COMMUNITY INVOLVEMENT

The River Nene Dragon Finder Project worked with 20 different groups on volunteer days and delivered training to 20 different groups from a wider variety of backgrounds from schools to corporates. Furthermore we helped to establish a new group to help manage Boardwalks Local Nature Reserve that did not have a volunteer work party. In addition to this list of partner groups that we worked with on volunteer and training days we delivered a further 114 volunteer and training days that were advertised publicly and not linked with a partner group. These days engaged more than 900 members of the public and helped to recruit new volunteers to join existing friends of groups. Phil Clarke from Cambridgeshire County Council told us that “The follow up walks have been well attended especially with more children coming along.”

The table below shows how many of the groups we worked with first engaged with the project through a general talk to their members and then went on to get more involved progressing on to site visits and formal training.



Table 6: List of 34 groups involved in volunteer days and training.

Name of Partner Group	Site affiliated with	Activity
THB Group (Corporate)	Castor Hanglands	Volunteer Day - Brash clearance
Carillion (Corporate)	Castor Hanglands	Volunteer Day – Pond clearance
	NVR Yarwell Station	Volunteer Day - Pond Creation
Work Experience Students from Hampton College and Arthur Mellows.	Castor Hanglands	Volunteer Day - Brash clearance
	Froglife Allotment	Volunteer Day - Lining Pond X 2
Langdyke Trust	Castor Hanglands	Volunteer Day – Removing scrub from around the ponds
North Level Inland Drainage Board	Cross Guns	Volunteer Day - Maintaining and putting out reptile mats
		Training - Reptile Survey Training X 2
Woodland Trust	Orton Longueville	Volunteer Day - Pond Reed Clearance
	Stanground Woods	Volunteer Day - Willow clearance
	Gault Wood	Volunteer Day - Pond Reed Clearance
		Training - Amphibian Survey Training
Walgrave Primary School	Walgrave Pocket Park	Volunteer Day - School planting day



Northants Parks	Irchester Country Park  Sywell	Volunteer Day - Pond management for survey training  Training - Amphibian Survey Training  Volunteer Day - Building a leaky damn, willow coppicing
Longthorpe Primary	Boardwalks	Volunteer Day - School planting day
West Town Primary	Boardwalks	Volunteer Day - School planting day
Finedon Primary School	Finedon Pocket Park	Volunteer Day – School Planting Day  Volunteer Day – Bug hotel building X 2
Nene Park Trust	Nene Park	Volunteer Day - Pond planting  Volunteer Day – Removing willow saplings from ponds X 2
Werrington Environment Group	Sobrite Spring	Volunteer Day - Pond clearance & habitat management  Volunteer Day - Vegetation management, creating habitat pile
Friends of Itter Park	Itter Park	Volunteer Day - Pond surveys
Network Rail	NVR Yarwell Station	Volunteer Day – Pond Creation





	Yelvertoft  Hampton Nature Reserve	Volunteer Day – Dipping platform creation, brash clearance, bench painting  Training - Habitat management & ID  Volunteer Day – Scrub clearance, planting, maintenance  Volunteer Day - Step creation on reserve  Training - Reptile Survey Training
Volvo	Hampton Nature Reserve	Volunteer Day - Brash clearance  Volunteer Day - Step creation on reserve  Training - Reptile Survey Training
Co-op	Hampton Nature Reserve	Volunteer Day - Dead hedging & willow cutting
CAPITA	Hampton Nature Reserve	Volunteer Day – Access improvements (creating steps) / willow clearance / scrub clearance.
Friends of Worts Meadow	Worts Meadow	Volunteer Day - Scrub Clearance X 10  Volunteer Day - Pond planting, bird boxes, bat boxes, scrub clearance  Volunteer Day - Pond Reed Clearance
Friends of Welford Pocket Park	Welford Pocket Park	Volunteer Day - Helping with pond restoration X 2



PECT (Peterborough Environment City Trust)	PECT Pond, Ham Lane  N/A (Green Backyard)	Volunteer Day - Pond restoration & hibernacula/basking bank creation  Training - Pond dipping & ID
Finedon Beavers	Finedon Pocket Park	Training - Children's A&R ID Training - Pond dipping & ID
Exotic Pets Club (Peterborough and District Herpetological & Exotics Society)	N/A (Market Deeping)	Training - Talk
Thorpe Gate Residents	N/A Boardwalks Nature Reserve	Training – Talk Training – Walk and Talk
Nene Valley Bird Club	Great Fen	Training – Walk and Talk
Natural England	Boardwalks	Training – Wak and Talk
Peterborough Bird Club	N/A - Post Office Sports & Social Club Hampton Nature Reserve	Training – Talk Training - Reptile Survey Training
Cambridgeshire County Council (Phil Clarke)	Rings End  Worts Meadow  March Summer Fayre Somersham	Training – Amphibian Survey Training X 4 Training - Amphibian Survey Training X 3 Training - Pond dipping & ID Training - Amphibian Survey Training X 2
Friends of Ring's End	Hampton Nature Reserve (for use at Ring's End)	Training - Reptile Survey Training



Wildlife Trust	N/A (St Andrew's URC Church Hall) Peterborough Local Group  The Shrubberies	Training – Talk  Amphibian Survey Training
Friends of Yelvertoft Pocket Park	Yelvertoft Pocket Park	Training - Amphibian Survey Training
Werrington Neighbourhood Council	N/A (Werrington Village Hall)	Training - Talk
RSPB Mid-Nene Group	N/A (Saxon Hall, Raunds)	Training - Talk
Rutland Natural History	N/A (Voluntary Action Rutland (VAR), Oakham)	Training - Talk

## Conclusions and Discussion

By comparing the aims of the project with the outcomes achieved, analysing the data collected for the sites and re-visiting the sites, on average 3 years after works were completed, the following conclusions can be drawn:

***The River Nene Dragon Finder has successfully achieved its 3 key aims and exceeded all the targets set for practical improvements, training and volunteer days.***

The long term success of a habitat site is based on a number of interrelated factors which make it impossible to carry out simple cause and effect analyses to evaluate the impact of certain interventions i.e. volunteer days. The following sections provide some insight into the impact of different areas of the work and use feedback from site managers and volunteer to provide greater context.

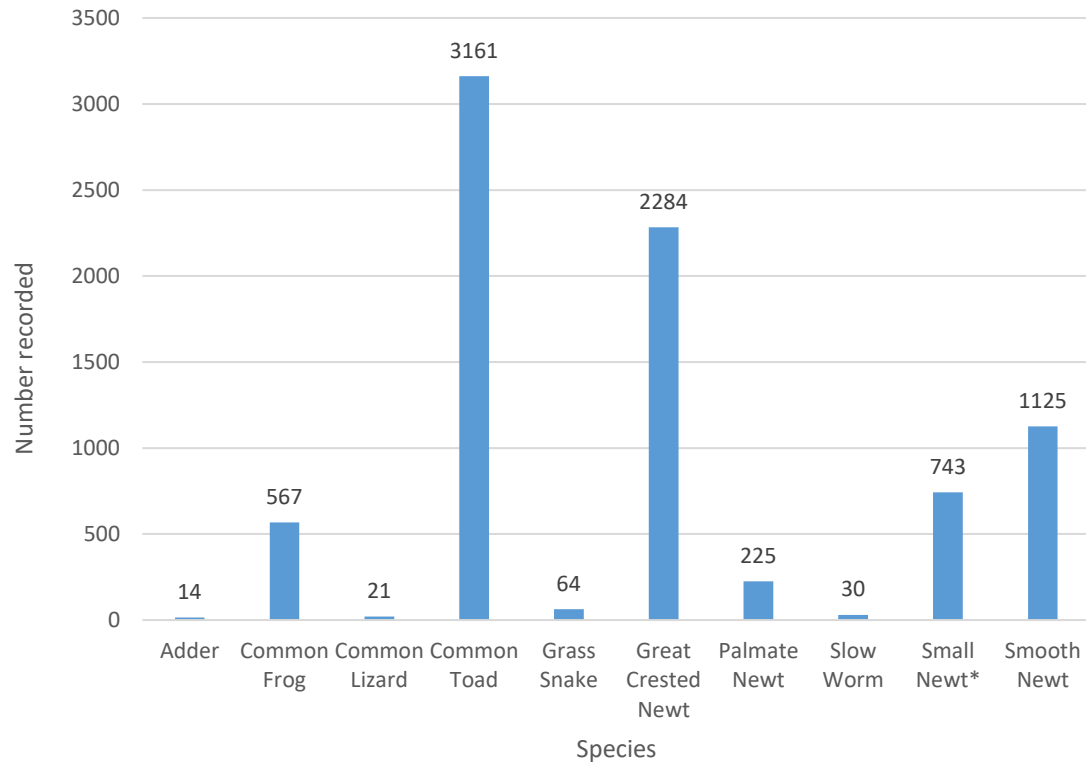
### IMPACT OF HABITAT WORKS ON AMPHIBIANS AND REPTILES

As a result of this project our knowledge of amphibians and reptiles in the River Nene area has been improved through the collection of 10,184 species records. 1,950 came from records submitted to our Dragon Finder App, 8,234 from professional surveys conducted by Froglife staff. We know that this is an underestimate of the total amount of data collected as a direct result of this project as many volunteer surveyors have submitted their data directly to local record centres.



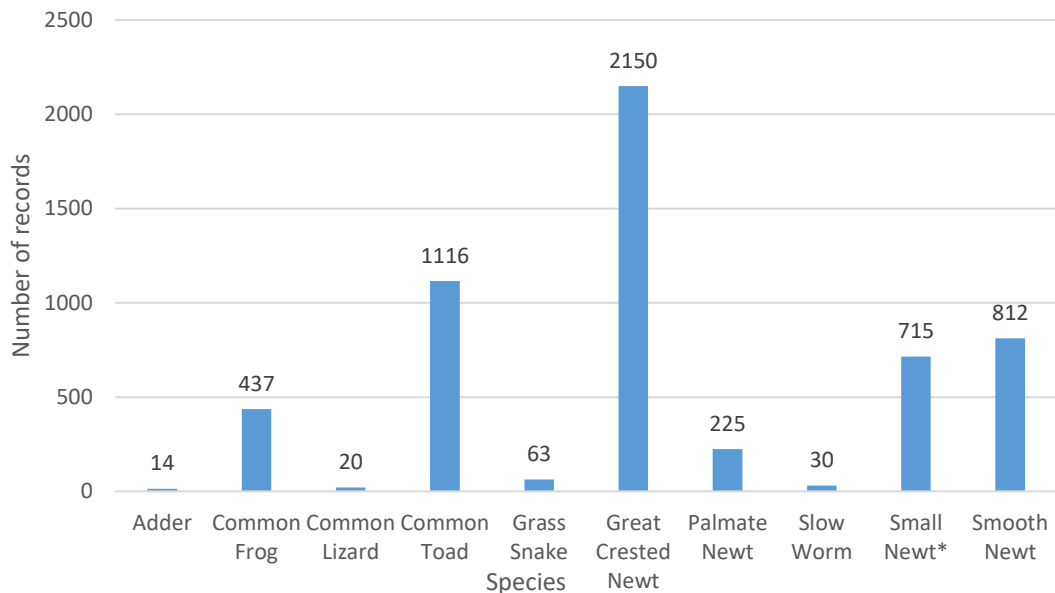


Figure 1: Graph to show the number of each species recorded across the River Nene area.



In the River Nene area we surveyed 41 sites for amphibians and reptiles including 21 sites where habitat work was carried out. From the 21 sites where habitat work was carried out we collected 5,582 records in total. Kings Dyke generated the most records, all 1,236 of which were of great crested newts.

Figure 2. Number of records of each species recorded at habitat sites.



At this early stage it is difficult to draw any conclusions about long-term population trends however we have some encouraging anecdotal feedback from site managers.

Site managers at Castor Hanglands Nature Reserve have told us that Common Toads which have declined on average by 68% in the UK in the last 30 years (Petrovan, 2016) and had equally been absent from Castor Hanglands have now returned following the restoration of six ponds on the site.

Phil Clarke, the site manager of Ring's End told us that although it's early days "there certainly appears to be more smooth newts at Rings End".

Chris Park from Nene Park Trust told us that "The shallow marginal pools between the hard lake edge and the coir pallets became a perfect nursery area for toad tadpoles. In 2016, there was a phenomenal emergence of countless numbers of toadlets from the lake, probably involving 10's if not 100's of thousands of tiny toads. As advised by Froglife, there were major change to the mowing regime on the grassland margins around Lynch lake. The change, from large areas of regularly mown amenity grass to large areas being left as long "meadow" grass with one annual mowing. This, along with the establishment of hibernacula sites around the lake are factors which will hopefully continue to contribute to the recruitment and long term sustainability of the toad population in Nene Park".

He went on to say that "Without doubt the Froglife Dragon Finder project has had, and will continue to have long term benefits for the sustainability of amphibian and reptile populations in the Nene valley".

We also know from feedback that many of the project partners have gone on to carry out further habitat work at the sites as a direct result of being involved in the project which will further benefit amphibian and reptile population in the River Nene area. Chris Park told us that "Since working with the Froglife Dragon Finder project the Nene Park Trust has restored a further 850m of permanently wet ditch, created 5100m of shallow foot drains and created a new 399 sq m pond".

## IMPACT OF VOLUNTEER TRAINING

A major focus of the River Nene Dragon Finder project was to collect data on amphibians and reptiles in the River Nene Valley area. To help collect records for the habitat sites that we have worked on Froglife ran 40 volunteer survey training sessions to 500 people.

It has proved difficult to evaluate the impact of these sessions by looking at the data submitted to the Dragon Finder App alone. Based on this data there is no significant difference between the amount of data submitted through the Dragon Finder App for the 13 habitat sites which received training and the 17 that did not. However we know that the picture is more complex than this.

We know from feedback from site managers that volunteers are collecting data and submitting it directly to local record centres. Phil Clarke the Green Spaces Manager from



Cambridgeshire County Council who is responsible for Rings End Local Nature Reserve (LNR), Somersham LNR and Worts Meadow LNR told us that they have “been collecting data and sending it to Cambridgeshire & Peterborough Record Centre”. He went on to say that “There is certainly greater awareness among the volunteer groups of amphibians and reptiles and the follow up walks we have led have been very popular. Some the Friends Groups have also been investing in their own torches [for surveying].”

We also know that people that have attended the training sessions have gone on to submit data through the app for other sites close to where they live. One attendee has gone on to submit at least 13 records around his local area (close to Finedon Pocket Park). The overall increase in the amount of data recorded throughout the project area using the Dragon Finder App shows that the training and other promotional activities have successfully engaged local people to record their sightings of amphibians and reptiles.

## IMPACT OF VOLUNTEER WORK DAYS ON SITES

From the activity plan – “A central function within Dragon Finder is to work with the public to carry out practical conservation work including habitat creation, restoration and enhancement. This will provide individuals with something positive that they can do to improve the natural environment for wildlife and for people. We are all constantly bombarded with the negative images of biodiversity loss and climate change, but it is pointless if individuals are not given the opportunity to do something to improve the situation”. River Nene Dragon Finder did exactly this.

The River Nene Dragon Finder project delivered 175 volunteer days at 26 sites involving 1063 people (exceeding the target of 886). The number of people is calculated per session so there may be duplicate individuals where multiple sessions were delivered at one site. The number of volunteers is underestimated as 34 of these sessions do not have data for the number of volunteers who attended. In this circumstance 0 volunteers have been recorded. These sessions were mainly ones delivered at the start of the project by a member of staff who no longer works on the project so cannot be consulted.

Feedback from Chris Park, Project Development Officer (Environment), Nene Park Trust shows the impact of the involvement with the Dragon Finder project “Habitat management and restoration work has been guided by training provided by Froglife. Some management has been undertaken by NPT volunteers to remove masses of self-seeded Willow that had established around margins of the new ponds. Some of the ruderal vegetation has also been mown to maintain access to the pond edges”.

“During the term of the Dragon Finder project there has been a marked increase in volunteering in Nene Park. This increase has been seen in both the numbers of individual volunteers and corporate group involvement. Although it is difficult to quantify exactly how much has been as a direct result of the Dragon Finder project, there is however a direct correlation with timing of the volunteer increase which coincides with the of period that the Dragon Finder project has been in operation.”





“Undoubtedly the profile of amphibians and reptiles has been raised amongst Park staff and volunteer teams. As a direct result of training and involvement in the Dragon Finder projects the Trust teams now take deliberate actions for managed areas to incorporate features that will benefit these animals e.g. log and brash piles to serves as hibernacula. Leaving long grass areas etc”.

Phil Clark the Green Spaces Manager from Cambridgeshire County Council

“The training was very influential in influencing site management and the Friends Groups approach”.

## VALUE FOR MONEY

In the original activity plan we budgeted £159,498 for repair and conservation work to cover Habitat creation / restoration: equipment hire / contractors costs and including £5,000 contingency. This works out as an average of £7974.90 per site (for 20 sites).

By the end of the project we spent this budget on 32 sites (12 more than originally planned) this means that the average site cost was reduced to £4984.31 per site. We were able to achieve this by delivering some of the site work under budget.

Co-funding for the practical projects was secured upfront which meant we had to front load the delivery of this work. This benefitted the project by reducing contractor costs as they could go from one site to another and deliver the work more efficiently. It also meant that the work was completed early on in the project giving us time to revisit sites and carry out additional work where required to give the sites the best chance of succeeding. The challenge this presented was that the project staff had a heavy workload to deliver and resulted in us changing the planned delivery timetable for some of the public engagement activities.

## Recommendations

On the basis of these conclusions the following recommendations can be made for future habitat works:

### DATA COLLECTION

- Data for the main project activities were recorded well in a central spreadsheet. Data from site surveys however were recorded in an ad hoc fashion in individual spreadsheets. At the start of any project we need to include site surveys in the newly created central Froglife spreadsheet to make analysis more efficient.
- We need to start the evaluation process at the start of the project to make sure we collect the data required to answer certain questions. For example the current project has delivered a mixture of formal and informal training. The former focusing



on survey skills and the latter giving ad hoc practical skills training by carrying out site work with volunteers. Whilst both these training opportunities are valuable in their own right they do not equip site managers and/or volunteers with a comprehensive knowledge and skills set to be able to effectively maintain the habitat works on a long term basis. It also means that a thorough evaluation of the impact of training on the habitats sustainability has not been possible.

- Comprehensive site write-ups should be completed following all habitat works to explain what work has been carried out, what changes have been made, the reasons for these changes and names of people that authorized these changes. This would be valuable not only for evaluating the project at the end when staff may have changed but also in case we are contacted about the site after the completion of a project so that anyone can go back and look at what was done.

## SUSTAINABILITY

Sustainability is an important factor for habitat works. We have focused on this a lot through the evaluation of this project and tried to come out with some clear conclusions and guidelines around the issue. We have discovered through this process how challenging this it is to do this however due to the variability of conditions for example some ponds revisited appeared to not be holding water, however after follow up work we found these ponds usually held water but due to low rainfall had dried out. Other ponds that we visited were thought previously to have failed but then appeared to be holding water well. The overall outcome of this is that ponds should not be assessed on the basis of a one-off site visit. The fact that many of these ponds are ephemeral (and dry up at certain times of the year) is a positive for amphibians as this means that fish cannot colonise the ponds and therefore amphibian breeding success is improved. Provided there is water in the ponds in the Spring to allow amphibians to breed the pond provides a valuable habitat for these species.

- Practical improvement works should be carried out on a large scale using diggers rather than man power, especially in sites susceptible to succession i.e. those in reed beds.
- The commitment of site managers and volunteers plays a crucial role in the long-term success of an aquatic or terrestrial site and the amount of data that is collected. Once work is carried out on a site we should keep in semi-regular contact with the site managers to make sure that the ponds are being maintained and to proactively prompt them to ask for any advice required to ensure it is maintained.
- A formal training course on Habitat Maintenance both for terrestrial and pond habitats would be beneficial for all sites in future projects to ensure a consistent standard of training is delivered covering all key points.
- We should aim where possible to do works on sites or areas of sites that have lower footfall and near public car parks so that they are less likely to be at risk of vandalism/disturbance.
- Sites should not be evaluated on the basis of a single site visit as the water level and condition of a pond can vary so considerable over a period of time and depending on the weather conditions leading up to the site visit. Froglife has made a commitment as part of its Conservation Strategy to revisit sites 1,3,5 & 10 years post works. This



will enable us to make a much better judgement on the viability of ponds in different seasons and assess their benefit to wildlife over a much longer period. It will also provide the opportunity for us to advise site managers on further work that is required to keep the habitats in good condition.



## REFERENCES

Silviu O. Petrovan and Benedikt R. Schmidt. (2016) Volunteer Conservation Action Data Reveals Large-Scale and Long-Term Negative Population Trends of a Widespread Amphibian, the Common Toad (*Bufo bufo*). [PlosOne](#)





# Appendix 1. Individual Site Evaluations

## SITE 1: BARNWELL COUNTRY PARK

Barnwell Country Park was one of the first sites that the River Nene Dragon Finder worked on. Restoration works were extensive and included large scale digger works to excavate the pond.

*Image 3: March 2015 during habitat works. Can see new bank created to allow future digger work to be carried out more easily.*



The works varied slightly from the original plans as the education pond had been restored by the park rangers before the River Nene Dragon Finder project started. The main works were carried out on a pond that was joined by a channel to the main lake. This area was heavily overgrown and in need of restoration. Trees were cleared around the large pond which was also excavated. A bank was created along the edge of the pond to allow easier access for future digger work and the pond was blocked off from the main lake to stop fish getting into it. On our revisit to the site in March 2019 we found that the dam between the pond and the main lake had held but 4 years after the initial works had been carried out the pond would benefit from another clearance as typha has recolonised.





*Image 4: Area where pond works have been carried out now recolonised by Typha 4 years later.*



*Image 5. Dipping platform installed as part of the River Nene Dragon Finder Project*





## SITE 2: CASTOR HANGLANDS NATIONAL NATURE RESERVE



Castor Hanglands is a site of Special Scientific Interest managed by Natural England. It was chosen as a case study for this evaluation as it has all of the native amphibians on site and has proved to be one of the most successful sites of the River Nene Dragon Finder Project.

*Image 6. Restored pond at Castor Hanglands*



A total of six pond restorations were carried out on site and these have stayed in very condition maintaining open water areas. Restoration works were careful to avoid a rare plantain that was present in some of the ponds. In some area vegetation is starting to encroach so we would recommend that some clearance work is carried out to maintain the favourable condition. As can be seen in the image below the water is beautifully clear and toads were present on site on the day of the revisit. This is significant because despite having a historical population of around 3,000 common toads in the last decade or two these have decreased dramatically.





*Image 7: Exceptional water quality in the ponds at Castor Hanglands. Water soldier plants were left (classed as native but not native to this area) and toad found in the bottom of the pond.*



Water testing with Freshwater Habitat Trust showed that the main pond had exceptionally good quality but Heath Pond had pollution in it from the ditch that fed it. This ditch collects pollution from nearby farming fields. As a result of these findings Natural England asked our contractor to come back onto the site to reroute the ditch so that it no longer feeds the pond.

## **SITE 3: CROSS GUNS**

This site was chosen as a case study for the River Nene Dragon Finder Habitat Evaluation as it was one of only sites where only terrestrial work was carried out. The site is owned by the North London Drainage Board and is situated down a remote fenland track. It constitutes one large rectangular waterbody surrounded by reed bed and we built 3 hibernacula on the eastern, southern and western sides. In addition we created 2 grass piles on the southern two corners of the site to act as egg laying sites for grass snakes. On the date of the revisit additional piles were apparent which the landowner had created following advice from the River Nene Dragon Finder Project team. Finally numerous reptile survey mats and tins were





present around the site which had been laid out by River Nene Dragon Finder staff to enable reptile surveys to be carried out.

*Image 8. Logs visible from one of the hibernacula created at Cross Guns.*



*Image 9. Male grass snake slough found on reptile survey at Cross Guns.*



*Image 10. Juvenile toad found under survey mat in September 2016 during reptile survey*





## SITE 6: RINGS END

*Image 11. Scalloped basking areas and grass piles on main path onto site.*



This site has proved to be one of the most successful habitat sites of the River Nene Dragon Finder Project. Along the main path leading down to the site there was evidence of recent habitat maintenance work having been carried out to create scalloped edges for common lizards to bask and piles of brash left behind to provide further refugia for these animals. The major pond restorations that were carried out in an area of reed bed have maintained large open areas of water which provide fantastic habitat for amphibians and foraging areas for grass snakes. The restoration works consist of a network of water bodies with wider water patches created throughout. The interconnecting channel has been deepened and widened and is now being used by water voles. The site has been really well maintained by volunteers and the land owners.

*Image 11. Open water created as part of pond restoration works at Ring's End. Water Voles have been recorded using this water body.*





Philip Clark, Green Spaces Manager, Cambridgeshire County Council (who also worked with the Project on the Somersham and Worts Meadow Local Nature Reserve sites) told us that one of the best things about the project was “Having a member of Froglife on site at the time of the habitat restoration/creation work.”

## SITE 7: TYWELL PLANTATION

Tywell Plantation was chosen as a case study for the evaluation as it was one of the sites that we had the most difficulties with. Work was carried out in November 2015 to create one unlined pond and carry out some terrestrial works. On the day of the re-visit in March 2019 the ponds were dry with logs piled up in the bottom. Having subsequently looked back through records the pond was filled with logs in July 2016 and water levels were already decreasing. We offered the site owners the opportunity to put a new pond in a better location i.e. in one of the open rides but they did not want this. The terrestrial work carried out on site was more successful with an open ride created through the woodland. The scrub is now growing up to create a denser understory which provides good basking and shelter for reptiles.

*Image 12. Open ride created through woodland, photo taken in March 2019 on day of re-visit.*





## SITE 9: GREAT FEN

The River Nene Dragon Finder project created 3 large ponds on Engine Farm within the Great Fen site. They were due to be lined with Bentomat but due to access restrictions this was not possible and the ponds were left unlined. When the site visit was carried out in March 2019 none of the ponds were holding water however from previous visits we know that two have been holding water and one has been more of an ephemeral pond. Drainage ditches have been created since our work, which on the day of the site visit were also dry. It is likely that the prolonged period of dry weather has caused the ponds to dry out. It is worth noting that cattle have had access to the ponds which can poach the ponds so we would advise this is limited.

*Image 13: October 2015 newly created pond with bog oak from the site used to create a hibernacula adjacent to the pond.*





## SITE 10: IRCHESTER COUNTRY PARK

A site visit was carried out on 6th March 2019. The education pond and two side ponds were all dry. These ponds were lined using bentomat liner and this is thought to have failed. The education pond was also dry on two previous site visits in 2019 and Spring 2018 (on the latter newts were found under logs). Fencing still in place and looking sound. We have offered to carry out further work on this site to improve these ponds.

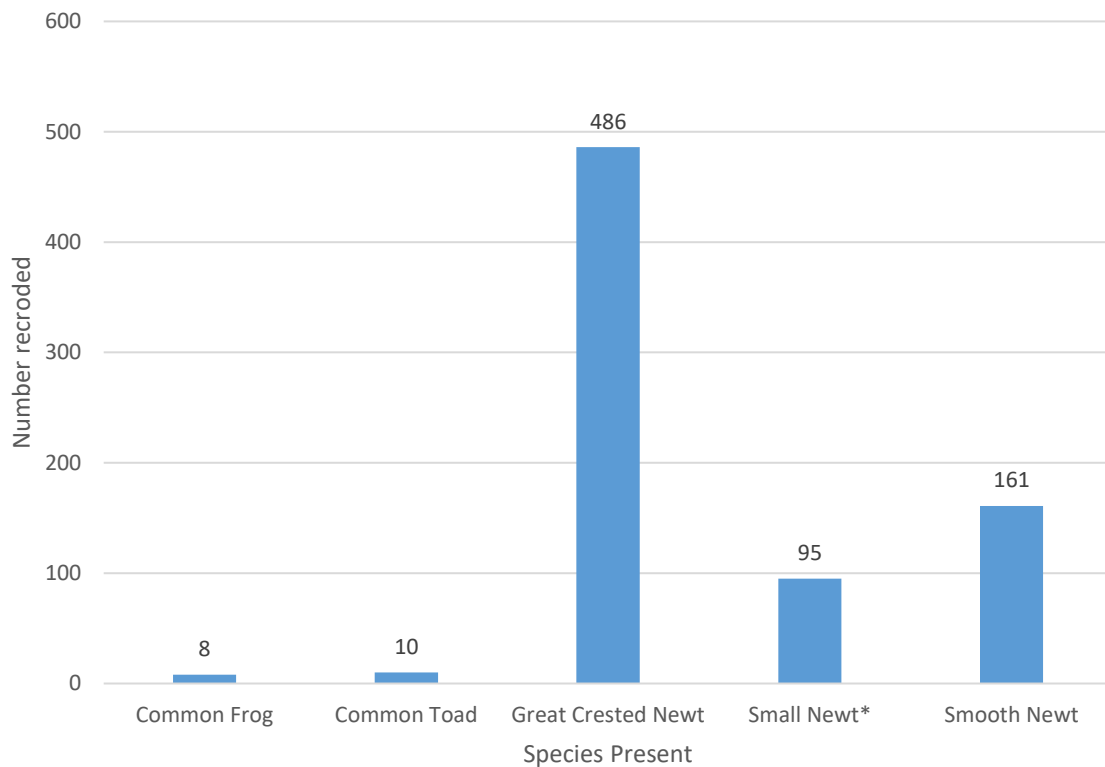
The ponds in the woods are holding water well but have been vandalised with logs being thrown in which has caused the water to look murky due to the high levels of disturbance. Despite this amphibians were still found to be using this pond during surveys. The River Nene Dragon Finder team have been back and helped volunteers and rangers to clear these out but the logs have been thrown back in. This is likely to be an ongoing issue as these ponds are close to the car park which attracts antisocial behavior. Fencing is holding up well here too but on the first pond it has been opened at one corner. We would recommend that this is sealed up properly again so that it's harder to gain access.

*Image 14. Pond creation showing good water levels as well as evidence of anti-social behavior. Despite the disturbance to the water, amphibians were found to be using this pond during surveys.*





Figure 3. Survey data collected through professional surveys. All sightings were of adults.



## SITE 13: SYWELL COUNTRY PARK

On 6th March a site visit was carried out at Sywell Country Park. This site was chosen to be part of the evaluation due to the high number of ponds that were created and restored on site. It also provides an example of a site which has presented challenges.

*Image 15. Education pond at Sywell Country Park.*



The pond at the visitor centre was overgrown with Typha with no visible open water. This pond is right next to the café and visitor centre and has a Froglife interpretation board next to it so ideally needs further work to get it back to a favourable condition that can be used for pond dipping.

The area of small ponds created in the reed bed at the north-western tip of the reservoir still had patches of open water visible but were small so were getting overgrown by Thypha. These ponds were originally planned to be dug by hand with volunteers however this would have been a difficult task so a digger was used instead. The contractor had a lot of trouble using the digger to put the ponds in as the area was so boggy. It would be advisable that in future fewer larger ponds should be created in a reed bed area like this as they would take longer to undergo succession. A new ditch has also been created by the rangers since our work which is holding water well and has obviously been more recently created/managed, this might have also affected the water levels in the original ponds.

The ponds created at the north-eastern tip of the reservoir have now formed a large wetland area that looks fantastic and provides high quality habitat for amphibians and reptiles. This area is fenced off from the general public and so disturbance will be kept to a minimum while it is still possible for visitor to enjoy the view across the area. The network of ponds in this area have been a real success and provide a great example of what can be achieved on this large scale.

*Image 16. One of the ponds in the wetland area created in the North Western top of the reserve in good condition and holding water well.*





The pond on the eastern side of the reservoir that was created at bottom of a hill to collect run-off, had an issue with the bentomat liner – a “plug hole” was visible where water was being sucked out of the pond. The RNDf team returned to fix this with clay powder and this appears to have worked because the pond is now holding water well. Interestingly the small feeder pond above the main pond that always used to hold water was dry on this visit. It is thought that the water that flows off the hill higher up has been re-routed as part of much larger works taking place around the site to protect the new track. This is further evidence of the need to conduct multiple site visit to be able to provide an assessment of the long term sustainability of a pond.

*Image 17. Successful repair to lower pond following issue with Bentomat liner.*



All professional survey records collected for this site were of adults using torching survey method on 6 separate nights. Species present included: smooth newts, small newts, common toad and common frog. By far the most numerous were common toads which were recorded 210 times.





## SITE 18: NENE PARK

*Image 18: Pond on the flood plain next to the boating lake. Holding water, very clear with good diversity of submergent and emergent plant vegetation. Evidence of management by volunteers or site managers to control the spread of emergent plants.*



*Image 19: Hibernacula next to the ponds on the flood plain.*



The Nene Park site was chosen as one of the sites to be included as a case study in the project evaluation because of the range of habitat works carried out on site and the novelty of some of the techniques used.





The site has also proved to be one of the most successful habitat sites of the River Nene Dragon Finder Project.

On 6th March a site visit was carried out to see the 4 unlined pond creations, ditch restoration and new scrape on the flood plain alongside the boating lake. The ponds were created with bunds surrounding them to stop flood water entering the ponds and thus reducing the risk of fish entering them. The ponds were holding water to a reasonable depth although they were still only about half full as it had been a very dry period with the first rain for a while coming the night before the visit. The flood plain itself is usually under water at this time of year but it too was dry at the time of the visit. The ponds have been well maintained by Nene Park Trust with evidence of vegetation clearance around the edges of the ponds. The scrape which consists of an area of fingers going off in different directions was dry at the time of the visit but as water levels were generally low this was to be expected.

Chris Park, Project Development Officer (Environment), Nene Park Trust confirmed this observation in an email providing feedback on the site works "Most of the ponds and ditches south of the rowing course hold variable amounts of permanent water. Since the Dragon Finder ponds were created Thorpe Meadows hasn't experienced a flood episode that would normally top up the ponds. Generally the region has experienced a prolonged dry period which has affected ground water levels and the ability of these ponds to hold water. The two ponds on the north of the rowing course are currently dry, however the nearby wet ditch which is normally flowing is also dry. These ponds will only be temporary or ephemeral waterbodies but will still support some wildlife."

*Image 20: Novel techniques used at Nene Park include the installation of a coir planters surrounded by a metal mesh to protect new growth from wildfowl grazing and disturbance from dogs and people.*





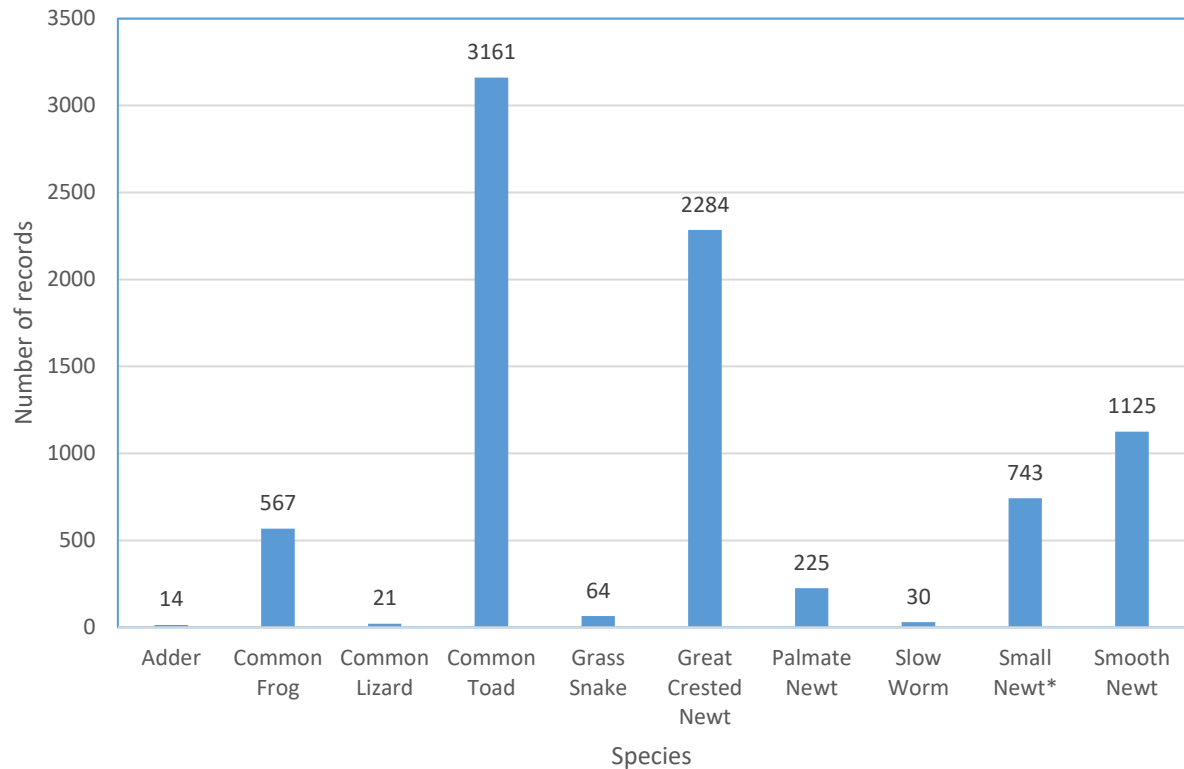
Chris Park went on to talk about the use of novel method to protect the lake margins, “The use of pre-planted coir pallets to naturalise the previously bare and open margin on lynch lake was a new approach. There were some initial issues with dog walkers reacting to the installation of the pallets by trampling the protective wire mesh to allow dogs access to the lake to swim, despite having left open areas of shoreline specifically for that purpose. However the majority of the pallets have established themselves well and the lake side now has a very natural appearance due to the lush growth of native emergent vegetation. Coir pallets installed in slightly deeper water were more successful at establishing themselves than others placed in shallower areas. The deeper water probably benefitted from less trampling and being constantly wet, so less susceptible to fluctuation in the water level in the lake. The shallow marginal pools between the hard lake edge and the coir pallets became a perfect nursery area for toad tadpoles. In 2016 (approximately) there was a phenomenal emergence of countless numbers of toadlets from the lake, probably involving 10’s if not 100’s of thousands of tiny toads. As advised by Froglife, there were major change to the mowing regime on the grassland margins around Lynch lake. The change, from large areas of regularly mown amenity grass to large areas being left as long “meadow” grass with one annual mowing. This, along with the establishment of hibernacula sites around the lake are factors which will hopefully continue to contribute to the recruitment and long term sustainability of the toad population in Nene Park.”

*Image 21: Established vegetation growing out of the coir pallets providing shelter for toads and other amphibians around the lake edge.*



Finally, Chris told us that “The partnership working between Froglife the Nene Park Trust and other organisations has been really successful and one of the best and most rewarding aspects of the project. Working closely with the Froglife team on surveys and habitat creation had directly benefitted the Park and staff. It is difficult to pin down any negatives as the project management and delivery has been on the whole exemplary”.

Figure 4. Professional survey data for Nene Park





## SITE 19: KINGS DYKE



*Image 22. Large pond holding water well and very clear.*



The plans for this site had to change substantially from the development phase as when we got on site we found that the ditches we had planned to work on had electricity cables running through them so it would be unsafe to proceed. In addition, some locations originally identified for pond creations were under water when we returned to do the delivery so new locations were identified. The resulting network of ponds were found to be generally holding water well with one (in a set of three) dry on the visit in March 2019. The far ponds that have historically not been holding water, were holding water on this visit further demonstrating the importance of visiting the site on multiple occasions at different times or year to assess properly. The site is continuing to provide valuable habitat with very limited disturbance for great crested newts. 1236 great crested newts were record through professional survey carried out on site.

