

Nidderdale AONB

SAVING NIDDERDALE'S PRIORITY PONDS

Project Report



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EXECUTIVE SUMMARY

Overview

Freshwater Habitats Trust is a national organisation, delivering practical conservation in partnership with local stakeholders in areas which are strategically important for freshwater biodiversity.

Freshwater ecosystems are in trouble worldwide. In England, about 14% of monitored rivers and lakes achieve the modest 'Good' status of the Water Framework Directive. As a result of decades of pollution, physical modification, water abstraction and unsustainable land use, none of the running water network reaches overall 'High' status, and only one lake is considered undamaged.

Small waters and wetlands (which comprise the vast majority of waterbodies, but are not routinely monitored or systematically protected) are also known to be declining in quality. In the Countryside Survey of ponds across Great Britain, two-thirds (66%) of high quality ponds lost plant species over a 24 year period, and in southern England this figure rose to 71% of sites. Paradoxically small waters include many of the best remaining freshwaters because their small catchments are more likely to be non-intensive, and provide rapid cost-effective nature based solutions to addressing the freshwater biodiversity crisis.

Over the last 25 years, a growing body of evidence has begun to point to the need to protect all kinds of waters for freshwater biodiversity, with a root and branch re-evaluation needed of the traditional emphasis on large rivers and lakes; and to recognise that investment in smaller freshwater habitats, and freshwater landscapes which give equal profile to all types of freshwater, is required to prevent the continued loss of freshwater biodiversity.

The vision of Freshwater Habitats Trust and partners is to reverse the decline of life in freshwater by establishing **a new national Freshwater Network**, comprised of healthy unpolluted interconnected freshwater landscapes.

Saving Nidderdale's Priority Ponds project

Saving Nidderdale's Priority Ponds was a partnership project between Nidderdale AONB, Freshwater Habitats Trust and Yorkshire Water, running for 18 months from October 2021 to March 2023, and is one of the first collaborations to adopt the Freshwater Network approach. It builds on the success of Freshwater Habitat Trusts' Heritage Lottery funded "People, Ponds and Water" project (2015-2018), and Nidderdale's AONB's project "The Wild Watch" (2017-2019), which estimated over 1,400 ponds across the AONB and discovered some previously unknown high status Priority Ponds.

Ponds are a Priority Habitat, included on the list of priority habitats and species in England ('Section 41 habitats and species'). The principle aim of the project was to survey and map the pond network and identify new Priority Ponds in the AONB by carrying out Citizen Science surveys. The results would be used to improve the pond network through habitat management and creation, and integrate the management and protection of ponds into planning.

The project also had a large focus on education and awareness raising, so that members of the public and landowners could better understand of the importance of freshwater habitats, specifically ponds, and be more amenable to conservation action on the ground.

The key aims of the *Saving Nidderdale's Priority Ponds* project were to:

Identify Priority Ponds:

- Recruit, train and support volunteers to carry out species surveys (focused on common toad) and clean water testing to identify Priority Ponds.
- Collate records on the distribution of priority species, clean water results and produce a map and report on the distribution of Priority Ponds within Nidderdale AONB.
- Share data on the distribution of Priority Ponds with Nidderdale AONB planning authority and partners, and submit the results to Natural England's Priority Pond database.

Raise awareness:

- Implement a social media campaign to raise the profile of Priority Ponds and the work of Freshwater Habitats Trust and partners in the North of England.
- Engage the Nidderdale community and schools groups in the project through a postcard campaign and container pond project.
- Create and run professional development courses for volunteers, contractors and professionals.

Protect the best:

- Undertake site assessment visits to community ponds and/or Priority Ponds, identified as part of the project, and undertake practical management where appropriate.

Results

More than 60 Nidderdale AONB volunteers were recruited and trained to carry out surveys to support the project. Surveys carried out identified clean water in 84% of surveyed ponds, and increased our understanding of the distribution of protected amphibian species such as common toad and great crested newt.

Records of protected species confirmed the presence of an additional 42 Priority Ponds, taking the total number for Nidderdale AONB to 80. However, the results from clean water testing indicate that Priority Ponds could constitute around 75% of all standing waterbodies in Nidderdale AONB, making it one of the most important freshwater areas in England & Wales.

Three sessions (78 children) were held for local school and scout groups, focusing on container ponds. Similar educational sessions were rolled out at two large events in summer 2022 and catered for over 500 children from primary schools in Nidderdale AONB and across Yorkshire. Alongside other initiatives, these events helped to raise the profile of Freshwater Habitats Trust in the north of England.

Press releases to an audience of an estimated 298k have supported key stages of the project, which raised the awareness of landowners and communities towards ponds and their wildlife. Social media was also used to disseminate information about the project, with over 250 posts being made on Twitter and Instagram. By understanding the importance of ponds and the species they support, more appropriate actions can take place by owners/managers of ponds.

Investigations carried out by the project will pave the way for new ponds and habitats to be protected and created in the most appropriate areas, strengthening connectivity across the landscape to benefit freshwater diversity. Data will be integrated into Natural England's Priority Pond database, and will be used to support the local nature recovery mapping. This will have a positive impact on the pond network and integrate ponds in landscape planning.

SAVING NIDDERDALE'S PRIORITY PONDS

PROJECT REPORT

1. BACKGROUND

1.1. Nidderdale AONB

Nidderdale Area of Outstanding Natural Beauty (AONB) is an area of 233 square miles located on the eastern flanks of the Yorkshire Pennines stretching from the high moorland of Great Whernside south and east towards the edge of the Vale of York.

Designated as one of the UK's protected landscapes in 1994, the AONB is home to over 16,000 people, as well as important habitats and wildlife, dark night skies, a rich history, and a diverse landscape (Nidderdale AONB, 2021).

A management plan for the AONB 2019-2024 outlines the actions required to protect the special qualities of the area including for its wildlife, highlighting freshwater as a key area which needs attention.

Aims and objectives in the management plan relating to freshwaters include:

Aim (W1): Ensure designated sites are managed to the highest standards in accordance with national guidelines

W1.1. Ensure that at least 25% of designated wildlife sites are in favourable condition by 2024.

W1.2. Ensure that at least 50% of Sites of Importance for Nature Conservation are maintained in accordance with conservation management plan objectives by 2024.

Aim (W2): Improve the condition of the AONB's priority habitats and species

W2.1. Improve management of priority habitats outside designated sites so that 50% are in favourable or recovering condition by 2024.

W2.2. Conserve, enhance and restore aquatic and riparian habitats.

W2.3. Continue to monitor populations of wildlife species targeted by The Wild Watch and continue The Wild Watch's Citizen Science initiatives.

W2.4. Publish a 2019 State of Nature Report and a Nature Recovery Plan and work with the North and East Yorkshire Ecological Data Centre to ensure access to verified data on Nidderdale's wildlife habitats and species is available to everyone who needs it.



Figure 1. Map showing boundary of Nidderdale AONB (Natural England, 2018).

1.2. The Freshwater Network

The Freshwater Network is a new approach to the conservation of freshwater wildlife in England and Wales, developed and being applied by Freshwater Habitats Trust and partners to protect and restore freshwater biodiversity.

The key aims of the Freshwater Network are:

- **Protect the best.** Strengthen within and build out from existing freshwater biodiversity hotspots at both national and local levels. The Freshwater Network takes a 'protect first, repair second' approach to ensure that we don't lose what we have.
- **Use smaller waters and wetlands as ecological engineers.** About 80% of the freshwater environment is made up of smaller waters. They are a critical biodiversity resource that have been traditionally overlooked. The Freshwater Network focuses on small waters and wetlands because of their power to regenerate freshwater landscapes.
- **Treat freshwaters as a network of interconnected and interdependent habitats.** The majority of freshwater species (around two thirds) use multiple waterbody types in networks of habitats, not just rivers or ponds or lakes or wetlands. Managing these waterbodies as a whole, as freshwater landscapes, is essential for effective biodiversity conservation.
- **Bring back clean water.** Clean water is vital for biodiversity. It is now a very scarce habitat, and restoring it to the landscape is a critical step for freshwater protection.

1.2.1. Important Freshwater Landscapes

The first step in the development of the Freshwater Network has been to identify nationally Important Freshwater Landscapes, using robust species and habitat data. We've identified 24 of the most critical landscapes for freshwater biodiversity and are currently in the process of agreeing them with a panel of freshwater specialists.

Partners in the freshwater network will prioritise work in these Important Freshwater Landscapes, because we can't afford to lose these biodiversity hotspots from the Freshwater Network. At the same time, we need to seek opportunities to build connections out from, and between, the Important Freshwater Landscapes, to reverse historic fragmentation and to build resilience against future changes.

Nidderdale AONB sits largely within the Yorkshire Dales and Forest of Bowland Important Freshwater Landscape.

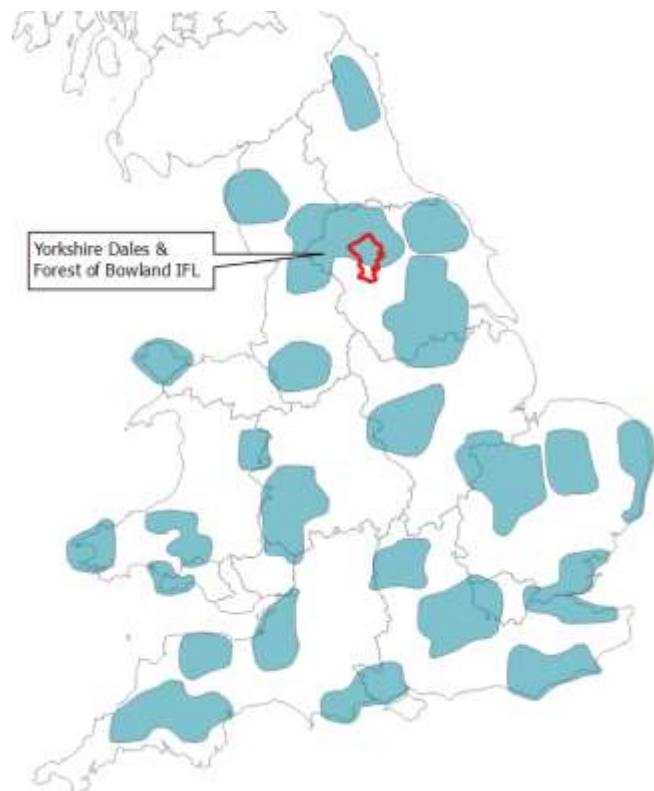


Figure 2. Important Freshwater Landscapes in England and Wales (Biggs & Dunn, 2018).

1.2.2. Important Freshwater Areas

The next step in the development of the Freshwater Network will be local delivery, and the same principles apply – protect the best, focus on small waterbodies, identify and build out from networks of high quality (clean and unpolluted) freshwaters.

Important Freshwater Areas are the sites identified at local level as important freshwater biodiversity hotspots. They can vary from an individual stretch of headwater streams with ‘High’ status Water Framework Directive invertebrate assemblages, to a small SSSI fen, a single pond or cluster of ponds with a Critically Endangered species, a large expanse of blanket bog, or a large floodplain nature reserve.

Identifying Important Freshwater Areas, an “IFA Assessment” requires the collection and collation of data on both species and habitats of importance, including over 1,000 freshwater or water-dependent species of conservation concern, and sites with clean water.

Once compiled, the data are used to identify areas where conservation action should focus, to return maximum benefits for biodiversity. The key principle is to protect the existing hotspots (many of which are still declining in quality) and build out from these areas. The identification of Important Freshwater Areas provide a basis for the development of conservation projects to protect, restore and improve connectivity for freshwater, subject to constraints of land use and land ownership, and informed by the concept of natural ecosystem function.

Nidderdale AONB has a wealth of priority freshwater habitats, 15% of the total landscape area. This is largely comprised of blanket bog, with smaller amounts of lowland fen, floodplain grazing marsh, upland flushes, fens and swamps, and purple moor grass and rush pasture (Figure 3).

Designated Sites of Special Scientific Interest which include reference to freshwater habitats and species as part of the citation also make up a large proportion (29%) of the total area of the AONB (Figure 4), although no Local Wildlife Sites (Sites of Importance for Nature Conservation, SINCs, in North Yorkshire) have yet been designated using freshwater criteria.

In the running water network there is comparable conservation value in Nidderdale AONB. Of the total length of Water Framework Directive monitored rivers, 41% of the river length is classified as biologically high status for invertebrates, and approximately 40% of headwater streams classified as priority headwaters based on the occurrence and extent of low intensity land use (Figure 5).

However, data on the distribution of high quality small waterbodies, namely ponds, prior to this project was less comprehensive. This is not uncommon for ponds, which have historically been overlooked, in spite of their biodiversity value and their critical role in preventing and reversing declines in freshwater biodiversity – the primary aim of the Freshwater Network.

Nidderdale AONB’s Wild Watch project, completed in 2019, revealed for the first time that the AONB has a large number of ponds - estimated at the time as 1,400. This included a small number of previously unknown high status Priority Ponds, mainly qualifying because they supported Great Crested Newts. However, the quality of the pond resource at a landscape scale was largely unknown and there were concerns that the resource was being degraded and lost.

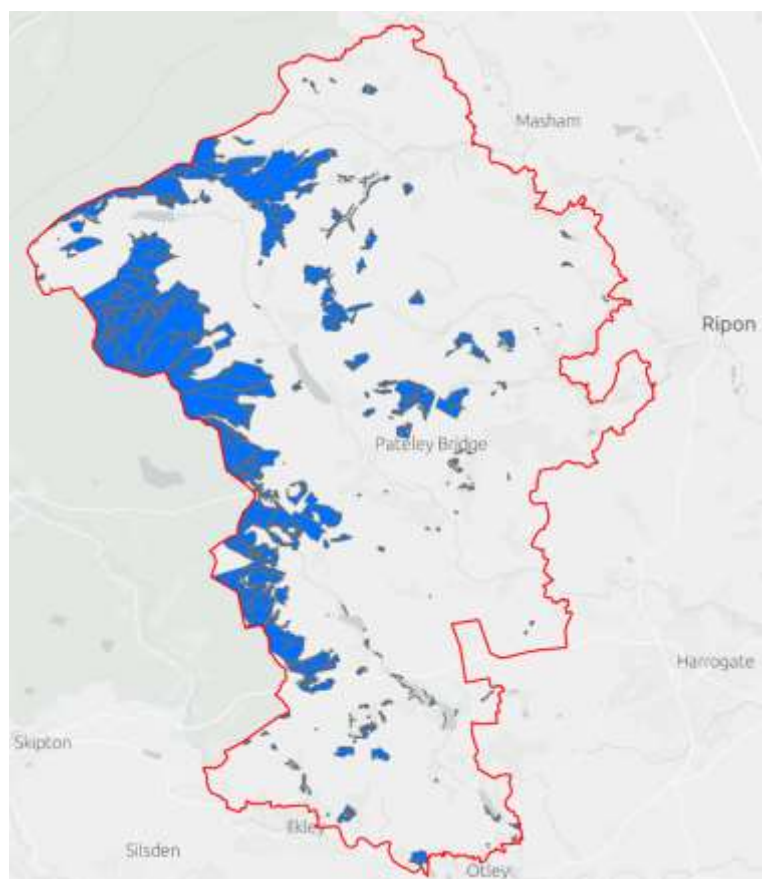


Figure 3.
Priority freshwater habitats in
Nidderdale AONB, including
Blanket bog; Coastal/floodplain
grazing marsh; Lowland fens;
Purple moor grass and rush
pastures; Upland flushes, fens and
swamps.

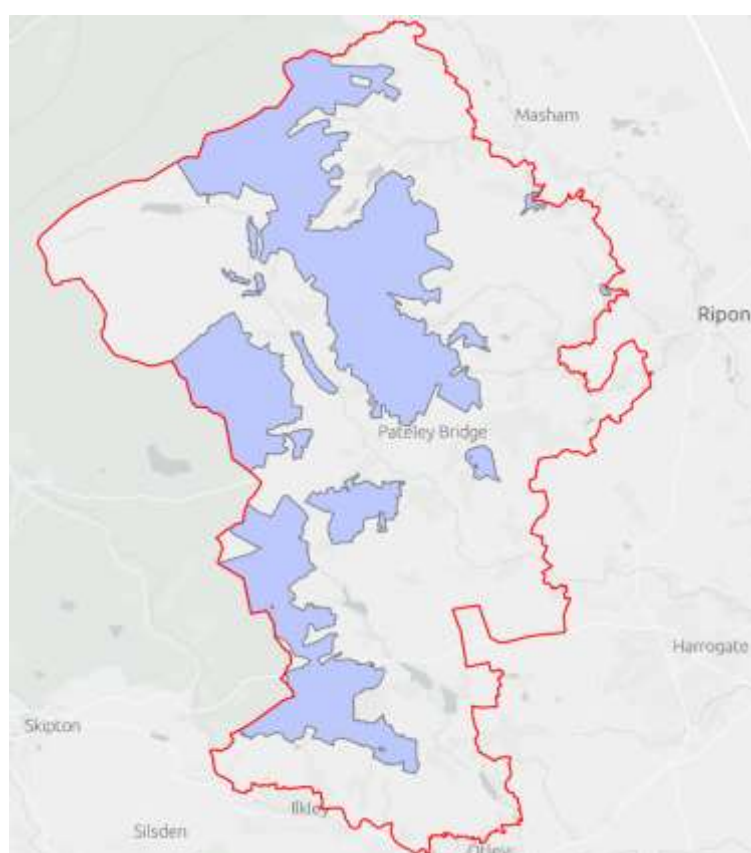


Figure 4.
Sites of Special Scientific Interest
in Nidderdale AONB which specify
freshwater habitats or species in
the citation.

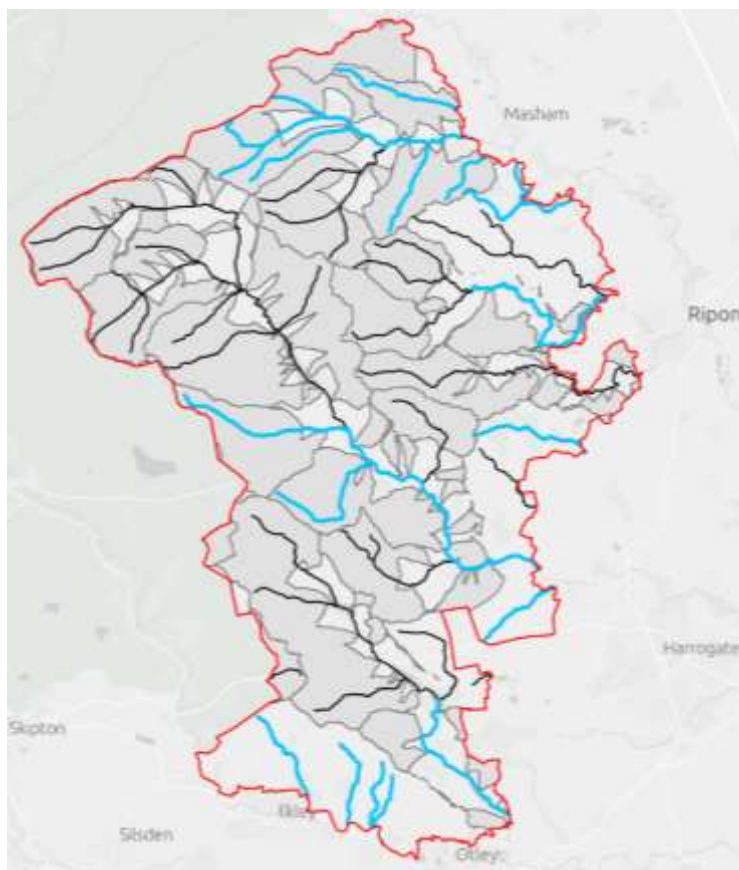


Figure 5.
High Status WFD monitored rivers based on invertebrate classification elements (blue river sections). No rivers met High Status for all WFD classification elements.
Priority headwaters (grey polygons) are small streams which are likely to be in good ecological condition based on the occurrence and extent of low intensity land use.

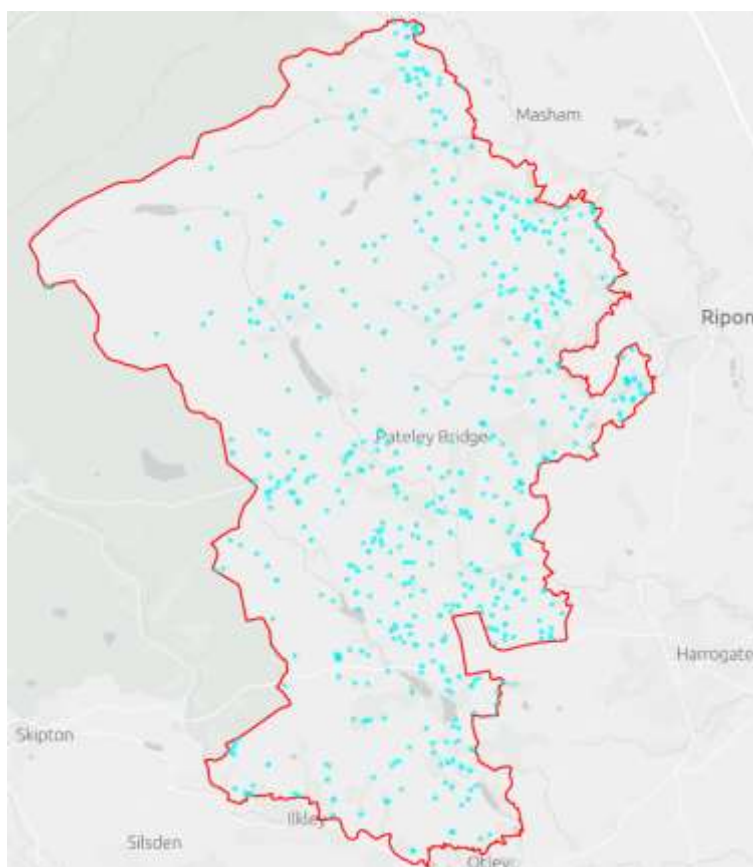


Figure 6.
Pond waterbodies, as identified from the Ordnance Survey 1:25,000 base map – status and condition largely unknown.

1.3. Priority Ponds

The criteria used to identify 'Priority Ponds' under the UK Biodiversity Action Plan are listed below. It is estimated that around 20% of the 500,000 or so ponds in the UK (excluding garden ponds) will meet one or more of the criteria, however only a small proportion of sites have been identified nationally. Nidderdale's Priority Ponds Project is one of the first to undertake this landscape scale review.

1. Habitats of high conservation importance. Ponds with specialist habitats that meet criteria under Annex 1 of the Habitats Directive.

2. Ponds supporting species of high conservation importance. These are Red Data Book species, BAP species, species fully protected under the Wildlife and Countryside Act Schedule 5 and 8, Habitats Directive Annex II species, a Nationally Scarce wetland plant species, or Nationally Scarce aquatic invertebrate species.

3. Ponds with exceptional populations or numbers of key species. This is based on:

- (i) criteria specified in guidelines for the selection of biological Sites of Special Scientific Interest (currently amphibians and dragonflies only).
- (ii) exceptionally rich sites for plants or invertebrates (supporting 30 or more wetland plant species or 50 or more aquatic macroinvertebrate species).

4. Ponds of high ecological quality. These are ponds classified in the top category for ecological quality (a score of 75% or more), as assessed by the standardised method for assessing the biological quality of still waters in England and Wales – the Predictive System for Multimetrics (PSYM).

5. Other important ponds. These are individual ponds or groups of ponds with a limited geographic distribution recognised as important because of their age, rarity of type or landscape context e.g. pingos, duneslack ponds, machair ponds.

6. Clean Water Provisional Priority Ponds.

Clean Water is freshwater that is free from nutrient pollution which can pose a major risk to wildlife. It is defined as having a nutrient status of <0.5 mg/l nitrate as nitrogen and <0.05 mg/l phosphate as phosphorous.

On the national register of Priority Ponds collated by Freshwater Habitats Trust and Natural England (2019), only 13 Priority Ponds had been identified in Nidderdale AONB (Figure 7). Of these: 12 qualified under criteria 2 (supporting species of high conservation importance) - 10 ponds for the presence of great crested newts, 1 pond on the basis of great crested newt and pillwort, 1 pond because of breeding common toad; and 1 site which was part of the National Pond Survey qualifying because it had a PSYM score higher than 75% (criteria 4).

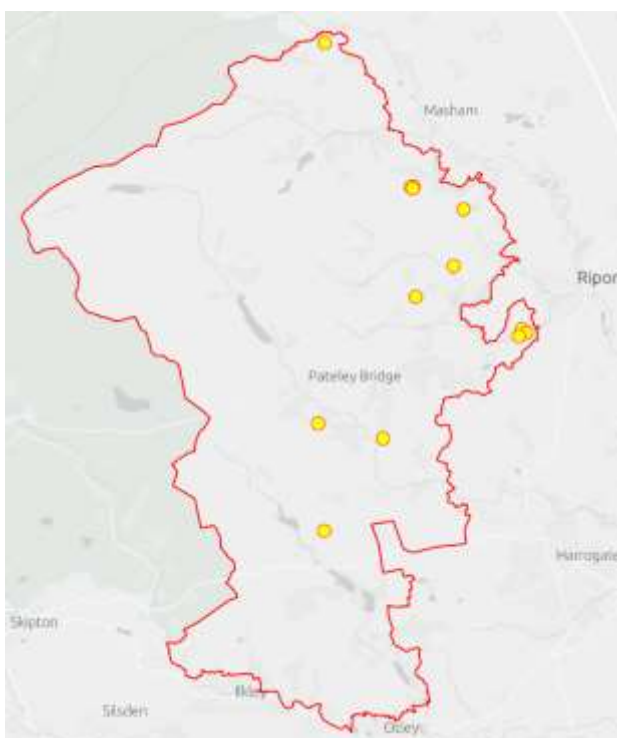


Figure 7. Priority Ponds - Nidderdale AONB 2019

2. PROJECT OVERVIEW

2.1. Project aims

The key aims of the *Saving Nidderdale's Priority Ponds* project were to:

Identify Priority Ponds:

- Recruit, train and support volunteers to carry out species surveys (focused on common toad) and clean water testing to identify Priority Ponds.
- Collate records on the distribution of priority species, clean water results and produce a map and report on the distribution of Priority Ponds within Nidderdale AONB.
- Share data on the distribution of Priority Ponds with Nidderdale AONB planning authority and partners, and submit the results to Natural England's Priority Pond database.

Raise awareness:

- Implement a social media campaign to raise the profile of Priority Ponds and the work of Freshwater Habitats Trust and partners in the North of England.
- Engage the Nidderdale community and schools groups in the project through a postcard campaign and container pond project
- Create and run professional development courses for volunteers, contractors and professionals.

Protect the best:

- Undertake site assessment visits to community ponds and/or Priority Ponds, identified as part of the project, and undertake practical management where appropriate.

2.2. Project targets

- **Target 1. 20 new volunteers** take part in pond surveys, alongside volunteers recruited through existing Nidderdale AONB volunteer networks.
- **Target 2. 50 ponds** surveyed for common toad and other Priority Species.
- **Target 3. 2 training sessions (30 trainees)** delivered, to prepare volunteers for species surveys.
- **Target 4. 100 waterbodies** surveyed using Clean Water for Wildlife test kits to identify Priority Ponds free from nutrient pollution.
- **Target 5. 2 training sessions (30 trainees)** delivered, to prepare volunteers for clean water surveys.
- **Target 6. Social media campaign** with regular updates on project progress and highlights.
- **Target 7. 3000 postcards** distributed as part of the Citizen Science Campaign.
- **Target 8. 20 schools and community groups** engaged in the "Container ponds for wildlife" project.
- **Target 9. 5 schools and 100 students** benefit from face-to-face visit by the Priority Ponds Project Officer.
- **Target 10. 5 professional development courses (30 trainees per session)** delivered to volunteers, contractors and professionals (videos available online).
- **Target 11. 4 sites visits** to community and/or Priority Ponds to provide/or undertake management advice.
- **Target 12. GIS map and Priority Pond Condition Report** of Nidderdale AONB Priority Pond network made freely available via the web and shared with North and East Yorkshire Ecological Data Centre.

2.3. Volunteer recruitment

Target 1: 20 new volunteers take part in pond surveys, alongside volunteers recruited through existing Nidderdale AONB volunteer networks.

Recruitment at the start of the project involved emailing existing AONB volunteers, including those who had helped with previous survey work. Alongside this, a number of methods were used to recruit volunteers with no former relationship to Nidderdale AONB. These included:

- Making contact with local naturalist groups including: Wharfedale Naturalists, Harrogate Naturalists, and Yorkshire Amphibian & Reptile Group.
- Social media (Twitter, Instagram, and the FHT Facebook page)
- Giving a talk to Otley Nature Network
- A press release in the local newspapers, including the Yorkshire Post.

In total, 68 individuals registered as volunteers for Nidderdale's Priority Pond project, and of these 38 (56%) came from sources outside of the AONB. Many volunteers also brought along friends and family to accompany them on surveys.

A large proportion of existing volunteers (25%) had previously taken part in the Wild Watch project (Figure 8).

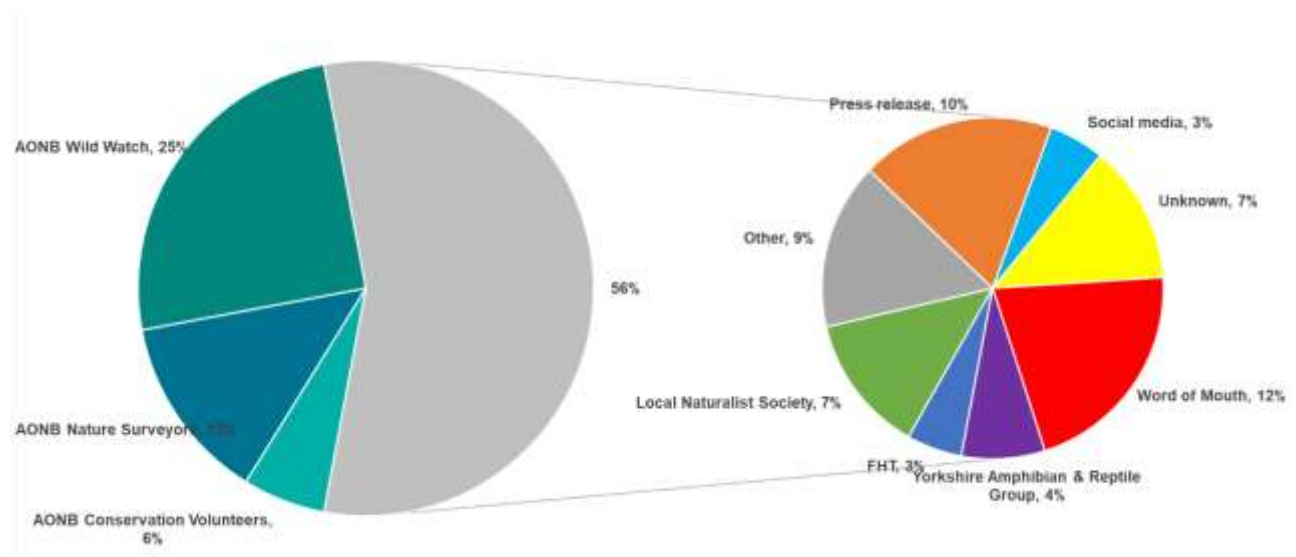


Figure 8. Pie chart showing the entry pathway for volunteers into the Saving Nidderdale's Priority Ponds project.

Including compulsory training (but not including participants attending the professional development presentations), over 1,100 volunteer hours have been logged on the project, which demonstrates there is an appetite for local people to take part in wildlife surveys.

Category	Event	Surveyor Units	Time Per Event (Hours)	Volunteer Hours	Volunteer Days
Training	Amphibian Survey (20/01/2022)	34	1.5	51	7
Training	Amphibian Survey (17/02/2022)	29	1.5	43.5	6
Training	Clean Water Phase 1 (17/03/2022)	26	1.5	39	6
Training	Clean Water Phase 2 (14/09/2022)	19	1	19	3
Survey	Amphibian/Spawn	454	2	908	130
Survey	Clean Water Testing - Spring	117	0.5	58.5	8
Survey	Clean Water Testing - Autumn	79	1.5	118.5	17
Education	Countryside Days	1	14	14	2
Education	Let's Learn Moor	1	7	7	1
Totals		652		1106	158

Figure 9. Volunteer hours on Nidderdale's Priority Ponds project.



Figure 10. Supporting volunteers with amphibian survey techniques.

2.4. Project reach

Due to the low population within Nidderdale AONB, many of the projects volunteers came from the surrounding urban areas, such as Skipton to the west, Otley and Ilkley to the south, and Ripon and Harrogate to the east.

In addition to recruiting volunteers outside the project area, relationships have been built with organisations operating on the periphery of the AONB and across North Yorkshire such as the Otley Nature Network, Harrogate Naturalists, Wharfedale Naturalists, North and East Yorkshire Ecological Data Centre, Yorkshire Naturalists Union, Yorkshire Amphibian & Reptile Group and the Yorkshire Dales Rivers Trust.

The Priority Ponds Project Officer has represented Freshwater Habitats Trust at events in the North of England including the Woodmeadow Trust nature fair in summer 2022, as well as giving regular updates to the Freshwater Habitats Trust team. Running professional development courses online raised the profile of Freshwater Habitats Trust still further, with participants from varied organisations dialling in from across the North of England and beyond.

The Priority Ponds Project Officer has become an integral part of the Nidderdale AONB team, and a key point of contact when members of other teams (Planning, FiPL) have queries around ponds.

These factors have all helped to strengthen the position of Freshwater Habitats Trust as a source of support and impartial advice on the importance, survey, management and creation of Priority Ponds.



Figure 11. Raising the profile of FHT in the North of England at a family event at the Woodmeadow Trust, Escrick.

3. IDENTIFYING PRIORITY PONDS

3.1. Species surveys

3.1.1. Common toad (*Bufo bufo*)

Target 2: 50 ponds surveyed for common toad (a qualifying species for identification of Priority Ponds).

Target 3: 2 training sessions (30 trainees) delivered, to prepare volunteers for species surveys.

Despite its name, the common toad (*Bufo bufo*) is no longer as common as it once was, and toads are now considered an 'at risk' Priority Species on Section 41 (previously the UK BAP). Research has shown that common toad populations declined by 68% over a 30 year period (Beebee, 1973) and have continued to do so.

Unlike the rest of our native amphibians, common toad tadpoles contain toxins in their skin, which makes them unpalatable to fish, allowing them to live where other amphibian larvae particularly those of newts would be eaten. However the size of terrestrial habitat required to support common toad populations, and their strong migratory instinct to return to their ancestral breeding ponds each spring, makes them especially vulnerable to habitat loss and fragmentation.

Identification of Important Freshwater Areas for common toad centred on their breeding ponds will be critical for their survival.

Previous records

At the start of the project there were 34 records of common toad across 24 monads in Nidderdale AONB. Most of the pre-existing records originated from the local records centre, the North & East Yorkshire Ecological Data Centre (NEYEDC), with 7 coming from other sources.

Site permissions

We sought permission to survey 91 sites, where common toad could occur in Nidderdale AONB, based on habitat suitability, historic records and/or accessibility of the site for volunteers. A number of these were not taken forward, either due to a lack of landowner permission, because it became evident the pond was no longer present, or as it was not suitable for survey.

Volunteers were able to carry out surveys at 55 sites, the vast majority of these being visited twice or more to increase the likelihood of a positive result. Many of the sites included a cluster



Figure 12. Excerpt of slides from the amphibian training sessions.

of ponds and consequently 115 ponds were surveyed for amphibians, double the project target.

Methods and training

Amphibian surveys were carried out by project volunteers in spring 2022 and focused on identifying breeding ponds from the presence of toad spawn. Toad spawn is easily identifiable because the eggs are laid in long chains, and the chance of an error in identification is low. However, we also encouraged volunteers to record other life stages and other amphibians observed whilst looking for toad spawn.

Date	Topic	Attendees
20 th Jan 2022	Spawn survey training (incorporating newt survey training)	34
17 th Feb 2022		29
TOTAL		63

Figure 13. Total number of attendees at the amphibian training sessions

Two training sessions were held via Zoom, in January/February 2023. These provided volunteers with all the information they needed to carry out the surveys, including identification of different species of amphibian, biosecurity and health and safety protocols, as well as how to record their results on the data portal.

Delegates were able to play back a recording of the session via the FHT YouTube channel and could access a range of support materials, survey forms and the link to the data portal on the project website <https://freshwaterhabitats.org.uk/projects/saving-nidderdales-priority-ponds>.

A total of 63 people attended over the two sessions, achieving the target for the number of training sessions held, and exceeding the target for the number of volunteers trained.



Figure 14. Amphibian surveys.
Photographs clockwise from top
© Melanie Birdsall, Kate Wright, Kerry Morrison.

Results

Prior to the project, 34 common toad records were held from 25 locations. The distribution of records is focused in the south and east of Nidderdale AONB, generally being found in lowland habitat.

The north and west of Nidderdale AONB is typically occupied by upland heath habitat. Although such areas can support a high number of ponds, these tend to be smaller moorland pools less suited to large aggregations of toads. This type of terrestrial habitat is also sub-optimal for common toad when compared to others such as deciduous woodland, woodland edge and semi-natural grassland (CEH, pending publication).

The project aimed to increase our knowledge of the distribution of common toad. Surveys were strategically planned to re-assess historic sites only where data was not recent, and to work outwards from known sites into adjacent monads that were considered to have suitable ponds and terrestrial habitat. Although some surveys were carried out in the upland areas, due to the difficulties accessing remote areas and the more difficult terrain, survey effort focused more on lowland areas where conditions for common toad were also considered more favourable.

The Priority Pond survey resulted in 56 toad records. As several visits were carried out to each pond, the records translate to 48 individual ponds within Nidderdale AONB. The records included 52 originating from the assigned survey sites, and a further 4 records from other sources such as the postcard campaign.

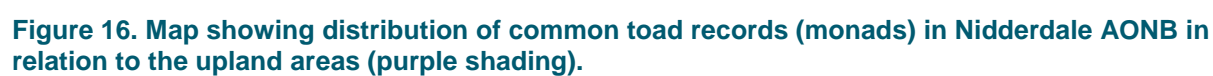
10 out of the 25 sites that held historic toad records were resurveyed. Of these, toads were confirmed to still be present in 9 of the sites. The remaining site was surveyed early in the amphibian survey season and thus may not necessarily indicate absence.

As a result of the project, common toads are now known to be present in 51 monads, more than doubling their previously known distribution in the AONB.

Prior to this project, only one waterbody was identified with the Natural England Priority Pond dataset using the presence of breeding common toad as a criteria for selection. The number of Priority Ponds now recognised due to the presence of common toad has increased to 48.



Figure 15 Common toads.
© Barry Carter.



3.1.2. Great crested newt (*Triturus cristatus*)

Once widespread across Britain, over the last 100 years great crested newts have disappeared from many pond sites, mainly as a result of pond loss and intensive agriculture. Current estimates suggest that great crested newts occur within 13% of ponds within their known distribution in England (Ewald *et al.*, 2023).

Responding to these losses, great crested newts are now strictly protected under British and European law which makes it an offence to: kill, injure, capture or disturb them; damage or destroy their habitat; and to possess, sell or trade. This law refers to all great crested newt life stages, including their eggs.

As with other amphibian species, great crested newts come and go from their breeding ponds, and require large areas of terrestrial habitat to forage and secure undisturbed hibernation sites during the winter months,

Previous records

Prior to the project, 28 records for great crested newt were known, representing 13 monads. The majority of records came from NEYEDC, with five originating from the Wild Watch project. A further five records came from eDNA testing carried out by Freshwater Habitats Trust, two as part of the national PondNet monitoring programme and three as part of Natural England's district level licensing scheme.

Methods and training

Although the main focus for the species surveys was common toad, amphibian training provided by the project allowed volunteers to more confidently look for signs of newts in ponds.

To verify these sightings and provide some additional training opportunities for volunteers, great crested newt surveys were carried out by the Project Officer at three sites in spring 2022 (under licence 2015-17624-CLS-CLS).

The surveys comprised a combination of traditional survey methods and eDNA testing, using kits funded by Freshwater Habitats Trust. These extra sessions provided small groups of volunteers the chance for hands-on experience in different survey methods. Photos from the events were used as an identification aid on social media.

Results

The Priority Pond survey resulted in 18 great crested newt records, 7 of which were new sightings made by volunteers.

The new results confirmed the presence of great crested newts in 11 monads in the AONB in 2022. When combined with existing records, great crested newt are now confirmed as present in 18 monads, a 38% increase in known coverage.

The general distribution of great crested newts in the AONB (Figure 16) is similar, but not directly overlapping, the distribution of common toad (Figure 15).

Surveys of both species have added to the number of Priority Ponds and highlight the opportunity to undertake further eDNA testing, especially around the Grewelthorpe area, to identify other great crested newt ponds.

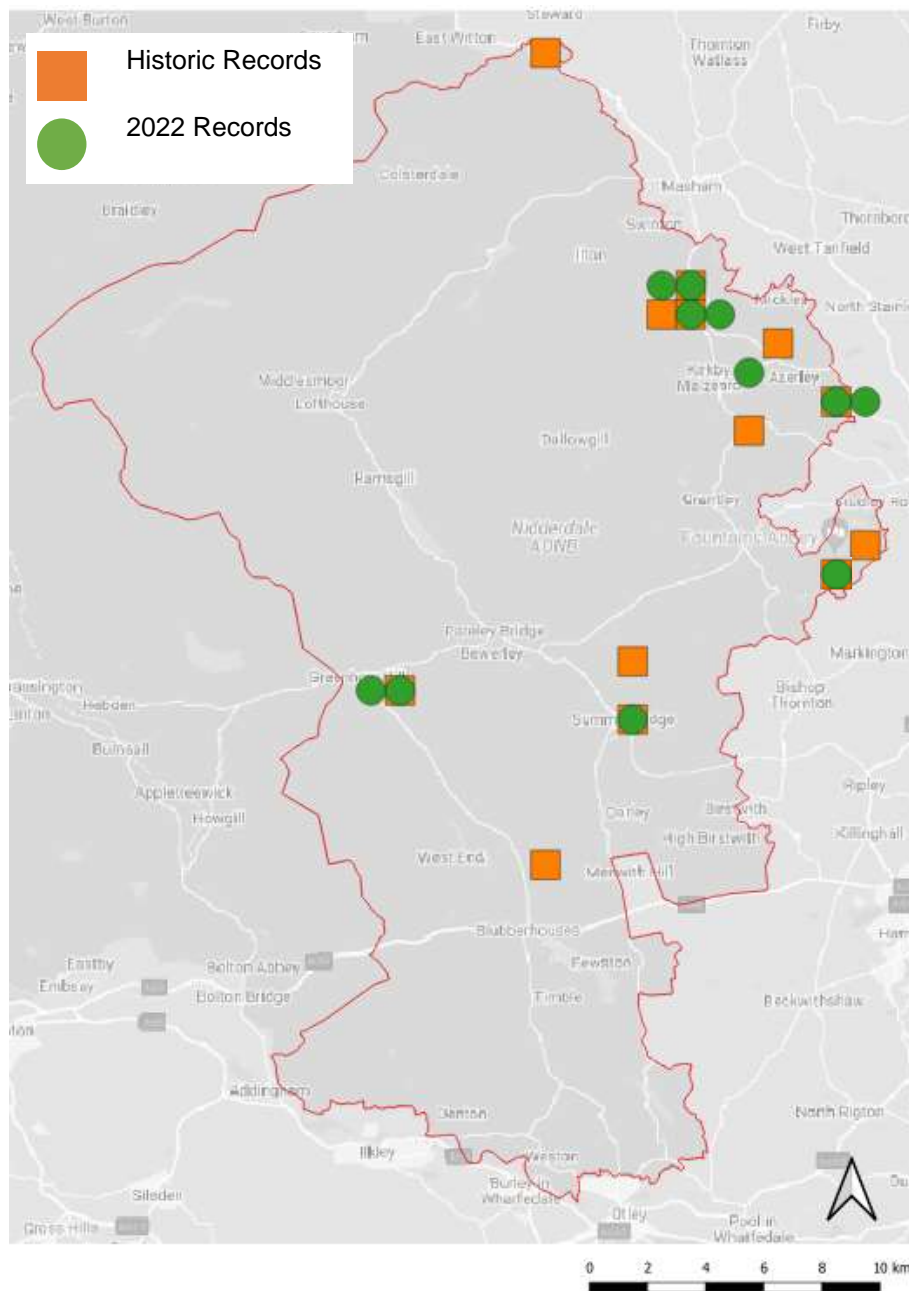


Figure 17. Map showing distribution of great crested newt records in Nidderdale AONB.

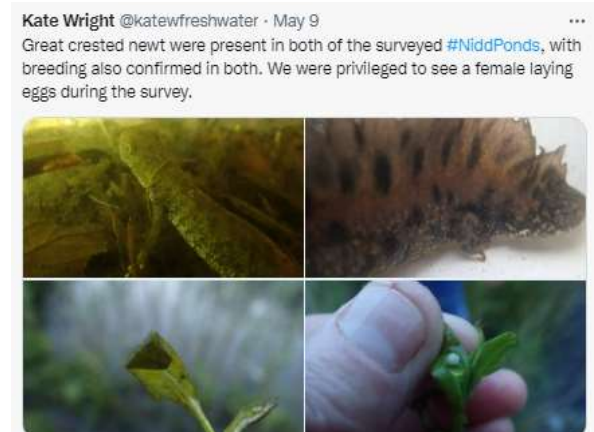


Figure 18. Example tweets regarding amphibian surveys and species identification skills.

Throughout the project, we become aware of additional sites that we would have liked to include in the detailed amphibian surveys, but obviously this type of survey is seasonally constrained. Although the project is ending in spring 2023, we have organised landowner permissions for these sites to be surveyed by volunteers in the 2023 amphibian survey season to further enhance the knowledge gained by the project.

3.1.3. White clawed crayfish (*Austropotamobius pallipes*)

White-clawed crayfish is the only species of crayfish native to the UK. They live in ponds, lakes, rivers and canals, and it is thought that the UK has about a quarter of the world's population. White-clawed crayfish are recognised as 'Endangered' by the IUCN and are currently protected under Annex II and V of the EC Water Habitats Directive. They are a Priority Species on Section 41 (previously the UK BAP).

Native white-clawed crayfish are under threat, partly from the introduced non-native signal crayfish, and partly from habitat loss. Current distribution is scattered with populations declining 50 – 80% across its European range in the last ten years (Buglife, 2023).

Results

During the course of the surveys, a sighting was made of white-clawed crayfish at Lime Tree Farm. This was an unexpected outcome, but a welcome result for the project. This was new monad record for the species in Nidderdale AONB.

As a species of high conservation importance, water bodies that support white clawed crayfish qualify as Priority Ponds. The pond was already known for great crested newt so would have been recognised as a Priority Pond anyway, nevertheless this was a nice find.

Priority Ponds often, although not always, support multiple species of conservation concern, and/or biodiverse plant and animal communities.

An additional evening survey was undertaken in conjunction with the North Yorkshire Crayfish Forum to ensure signal crayfish were not present. None were seen, but a healthy population of native white clawed crayfish was confirmed in the water course adjacent to the pond.

White clawed crayfish were also seen in a stream in the Skell Valley connecting two waterbodies, and may also be present in the waterbodies themselves. Further surveys would help to confirm this.



Figure 19. White clawed crayfish.
© North Yorkshire Crayfish Forum.



3.2. Clean Water Surveys

Target 4: 100 waterbodies surveyed using Clean Water for Wildlife test kits to identify Priority Ponds free from nutrient pollution.

Target 5: 2 training sessions (30 trainees) delivered, to prepare volunteers for clean water surveys.

‘Clean water’ is defined as that which has a chemistry and biology which would be normal for a given area in the absence of human disturbance. This is commonly referred to as the reference condition, minimally impaired water quality or natural background levels.

Most freshwater plants and animals have evolved over millions of years in a world where the natural level of nutrients in ponds, lakes, streams and rivers was very low. When excess nutrients are added to freshwater environments this can cause profound changes and the freshwater wildlife struggle to adapt. Rare and sensitive species are lost first, and if nutrient levels continue to rise, only very nutrient tolerant species will survive.

Nutrient test quick kits

Nutrient pollution is invisible. Quick kits (a method tested during the delivery of Freshwater Habitats Trusts’ People, Ponds and Water project), make it possible for people to easily ‘see’ pollution for the first time and provide the opportunity for volunteers to get data from sites which would not otherwise be monitored.

The kits test for the presence of two widespread polluting nutrients, nitrates and phosphates. Ponds free from nutrient pollution have the potential to be Priority Ponds because we know that there is a direct link between deterioration in pond biodiversity and nutrient pollution.

As with other methods, there is a known error rate with the quick kits (Biggs *et al.*, 2016) and nutrient pollution is not the only factor that can result in a deterioration in pond quality. Without biological data it is difficult to determine whether a ponds meets any of the other criteria for classification as a Priority Pond.

However, the absence of nutrient pollution is a good guide to identifying Priority Ponds. For the reasons above we consider Clean Water Priority Ponds to be ‘Provisional’ until they can be confirmed using biological or other criteria.

Classification

‘Clean water’ is defined as <0.5 mg/l nitrate as nitrogen and <0.05 mg/l phosphate as phosphorous (Figure 21).

Research has shown that above 1 mg/l nitrate as nitrogen and or 0.1 mg/l phosphate as phosphorous, there will be evidence of significant impacts on freshwater biodiversity from nutrient pollution – we call this “Polluted”. The limit for this classification is equivalent to the levels of phosphate pollution which constitutes a Water Framework Directive failure.

The intermediate category ‘some pollution’, described waterbodies where there are elevated nutrient levels, but where the impact on many freshwater species will be harder to detect – a

early warning that things are going wrong. It is equivalent to the minimum standards applied to phosphate pollution under the Water Framework Directive. In other words the waterbody is no longer pristine or high status (less likely to be a Priority Pond) but could still be at 'Good' status under the Water Framework Directive. The impact of nutrient pollution on the environment at this level may still be within acceptable limits, but for sensitive species it is still too high.

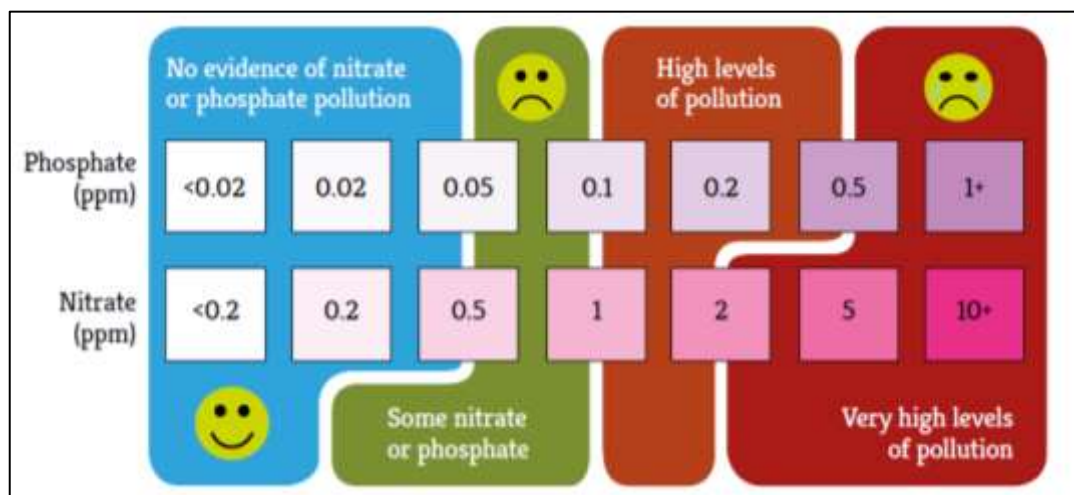


Figure 21. Limits for nitrates and phosphates used to classify samples as either clean, some pollution or polluted.

Training and site allocation

Two sessions were carried out. The first, in spring 2022, provided the background to the project and instructions on how to carry out a clean water test. It also included information on volunteer health and safety and biosecurity measures to prevent the spread of invasive non-native species and diseases.

The second session, in autumn 2022, was a refresher course and included extra tips on the survey protocol for clean water testing, answering queries that had been raised by volunteers during the first batch of surveys. The second session also provided the opportunity to present an update on the results from the first phase of testing to volunteers.

Date	Topic	Attendees
17 March 2022	Clean Water survey training (including surveyor H&S and Biosecurity)	26
14 Sept 2022		19
TOTAL		45

Figure 22. Total number of attendee at the Clean Water training sessions.

Delegates were able to play back a recording of the session via the FHT YouTube channel and could access a range of support materials, survey forms and the link to the data portal on the project website <https://freshwaterhabitats.org.uk/projects/saving-nidderdales-priority-ponds>.

A total of 45 trainees attended over the two sessions, meeting the target for the number of training sessions held, and exceeding the target for the number of volunteers trained.



Figure 23. Extracts from the clean water training sessions.

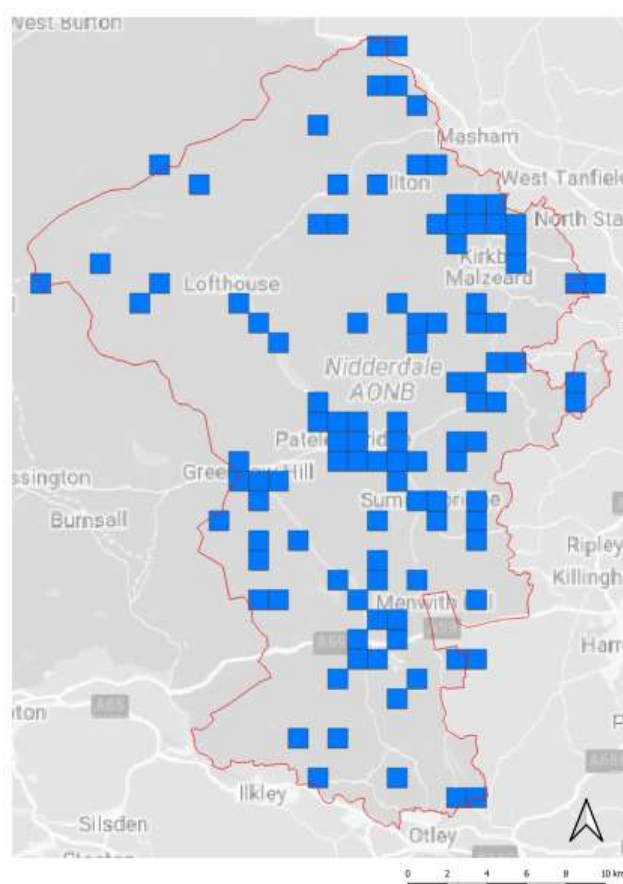
Clean water tests were carried out on 150 unique standing water bodies, exceeding the project target by 50%.

Two phases of testing were organised, in spring and autumn 2022, delivering a rolling survey programme throughout the year and providing activities for volunteers to get involved in to keep them engaged.

Every effort was made to test a range of pond waterbodies, of different sizes and located in varied habitats, from suburban areas to remote moorlands. Testing was however limited by landowner permission and accessibility.

Tests were carried out in 108 monads, equating to approximately 18% of monads within Nidderdale AONB.

Figure 24. Monads showing where clean water testing took place.



Results

150 standing water bodies were tested across Nidderdale AONB, encompassing wider countryside ponds (124 ponds) of varied sizes and habitats, garden ponds (21 ponds) and a small number of lakes (5 lakes), equivalent to 12.5% of the 1,194 known standing water bodies identified in Nidderdale AONB.

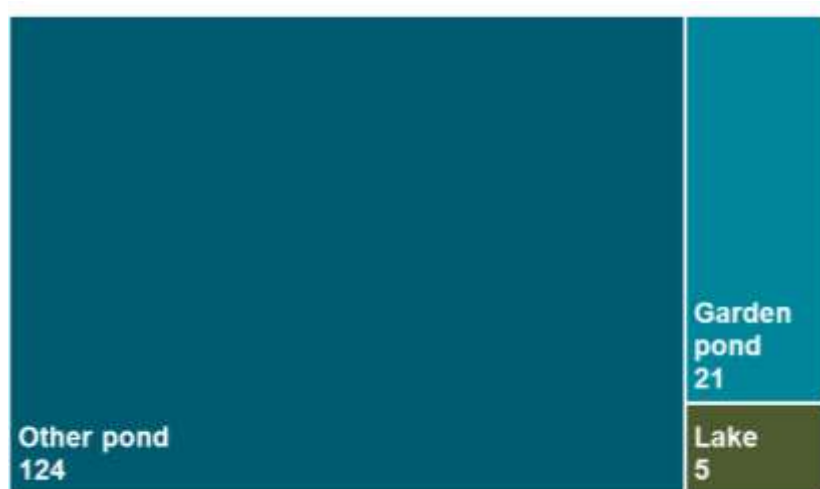


Figure 25. Treemap visualising the proportion of different waterbody types tested.

To allow a direct comparison with other projects carried out by Freshwater Habitats Trust using the same methodology, data for Nidderdale has been filtered to exclude lakes (classed as standing water bodies >2 ha in size) and garden ponds (these are considered separately below).

In total, 104 out of the 124 tested ponds (84%), had negligible levels of both nitrate and phosphate – making them Clean Water ponds and thus affording them Provisional Priority Pond status (Figure 26).

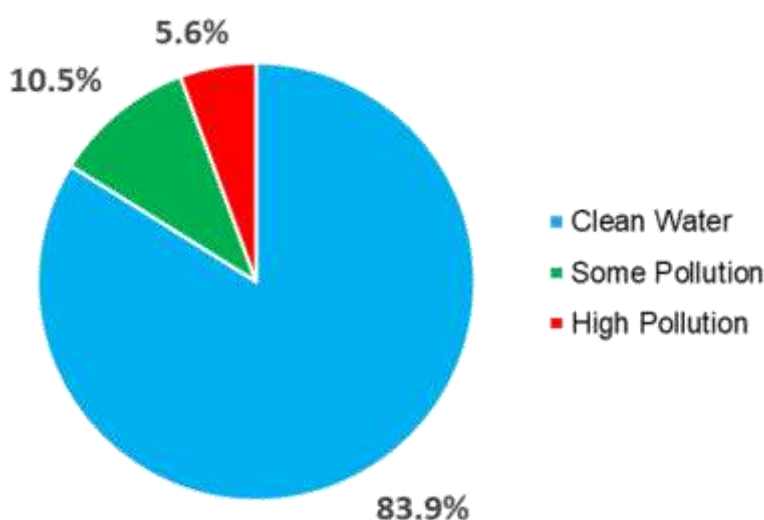


Figure 26. Pie chart summarising clean water test results for ponds (excluding garden ponds) in Nidderdale AONB.

In comparison with the results of other Clean Water surveys of wider countryside ponds (excluding garden ponds), Nidderdale AONB scores highly (Figure 27), second only to the

New Forest National Park which is considered one of the most important areas for freshwater biodiversity in the UK.

In the national Clean Water for Wildlife survey, the proportion of Clean Water ponds was 66%. However, this is likely to be an over estimate as the survey was biased towards easily accessible 'nice' sites. In a stratified random survey of the Greater London area, the proportion of Clean Water ponds was only 36%.

Nidderdale AONB may therefore support c.20-50% more Clean Water/Provisional Priority Ponds than degraded landscapes in England.

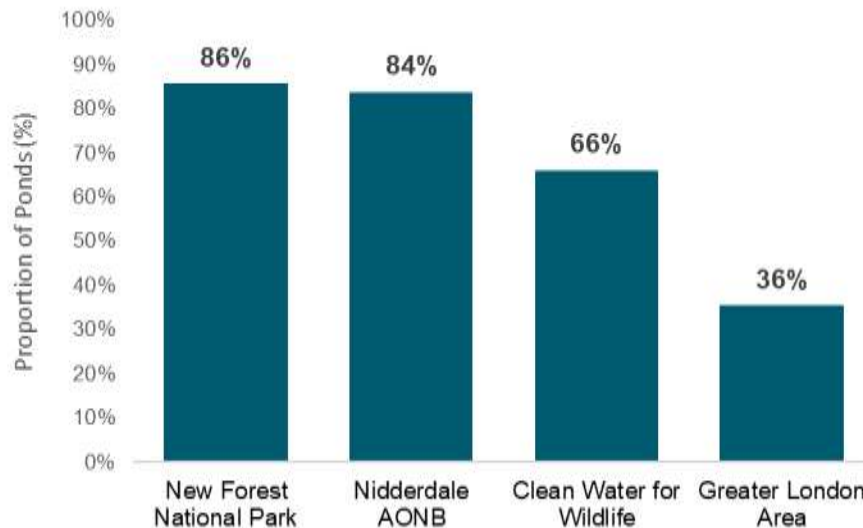


Figure 27. Comparing proportion of clean water ponds from different project areas.

Although garden ponds have been excluded from the above statistics, their importance should not be overlooked. Results from clean water tests carried out on garden ponds in Nidderdale AONB were broadly consistent with those from ponds within the wider landscape, with over 80% achieving Clean Water status. The data helps demonstrate that gardens ponds can be of great value to wildlife and provide stepping stone habitats between ponds in more natural environments. This supports our drive to encourage members of the public to create and manage garden ponds, including mini clean water wildlife container ponds.

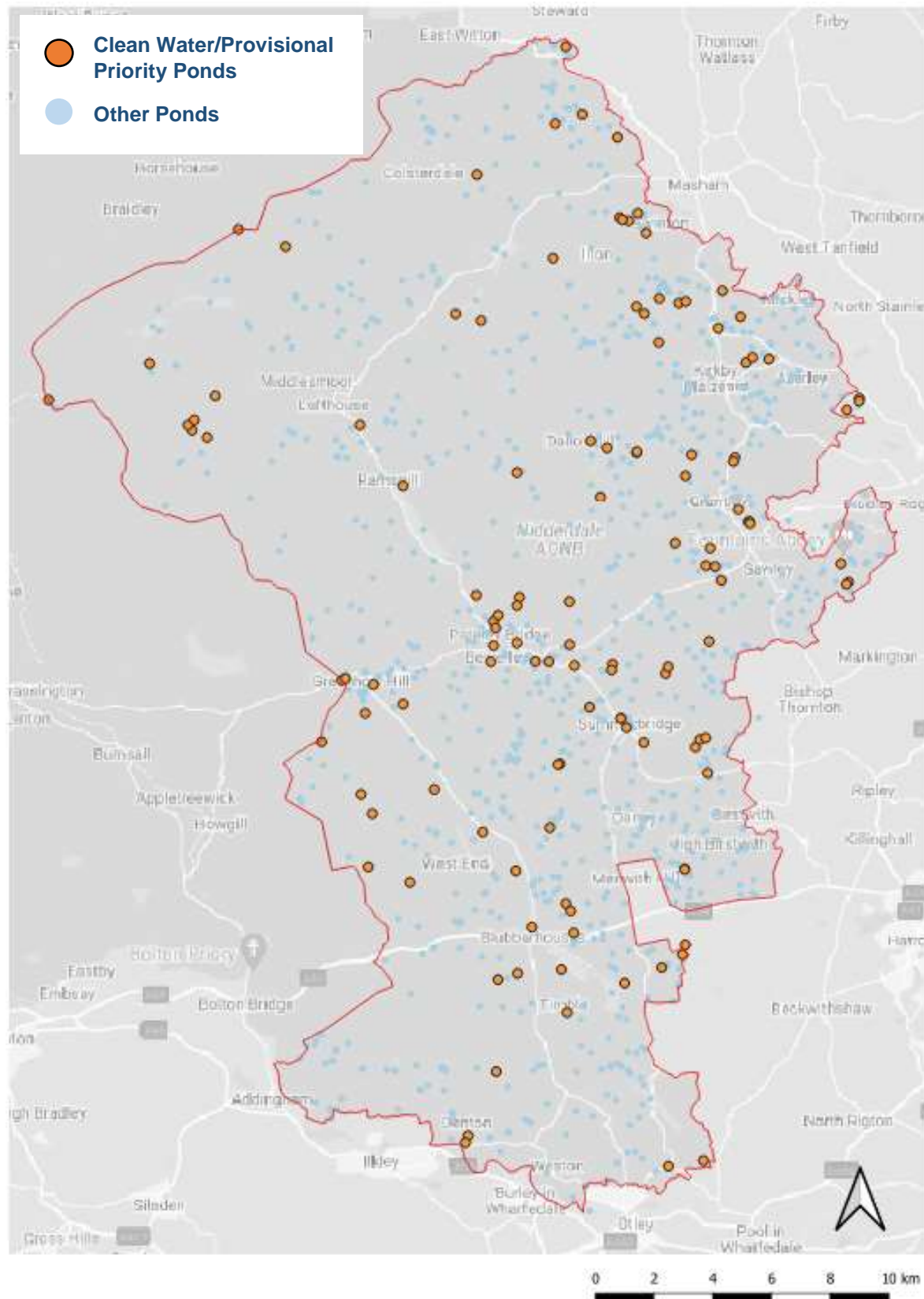


Figure 28. Map showing Clean Water/Potential Priority Ponds identified from the clean water survey.

3.3. Priority Ponds

Prior to the start of the project, 38 Priority Ponds were identified within Nidderdale AONB. These included 14 ponds recorded on the national register of Priority Ponds, collated by Freshwater Habitats Trust and Natural England in 2019. Of these, Guisecliff Tarn was identified as a Priority Pond under criteria 4 (Ponds of High Ecological Quality) achieving a PSYM score of >75% in 1998, and Pillwort was noted at Lumley Moor Reservoir (classed as two separated water bodies). The remaining Priority Ponds at the start of the project were identified mainly following Nidderdale's AONB Wild Watch, and were based on the presence of a protected species (common toad and/or great crested newt).

The *Saving Nidderdale's Priority Pond* project has identified an additional 42 Priority Ponds, more than doubling the number of known sites, taking the total number of priority ponds to 80. These new Priority Ponds in Nidderdale have been identified because they support one or more species of high conservation importance (Priority Pond criteria 2), these being common toad, great crested newt and white-clawed crayfish.

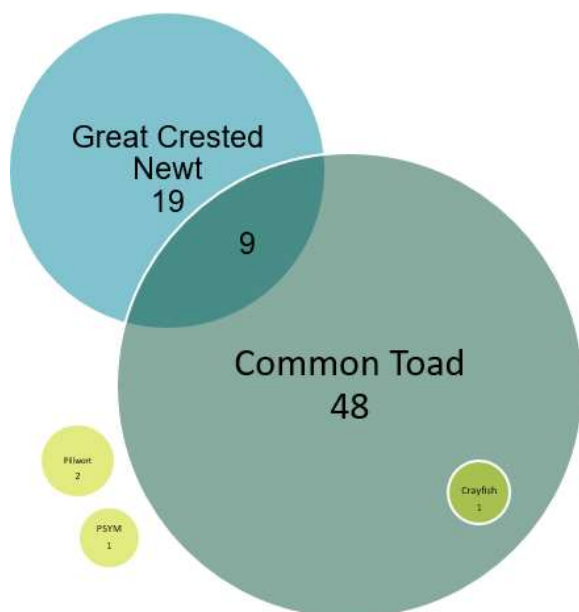


Figure 29. Venn diagram summarising criteria/species for Priority Pond status in Nidderdale AONB.

Priority Ponds identified to date constitute 6.7% of the known ponds within Nidderdale AONB (Figure 30, overleaf).

These results can be extrapolated to get a feel for how many of Nidderdale's ponds that haven't yet been surveyed could be Priority Ponds. Amphibian surveys were carried out at 115 ponds during the project, 10% of Nidderdale's total pond resource, resulting in 80 Priority Ponds. This suggests that around 70% of ponds (c.830) in Nidderdale AONB could be Priority Ponds. However, many of the surveys carried out on this project were focussed on areas known or suspected to support species of high conservation importance. Caution should therefore be taken in scaling this figure up to estimate the number of Priority Ponds across the Nidderdale AONB landscape.

Clean water testing may provide a more realistic estimate of the potential number of Priority Ponds within Nidderdale AONB. Clean water testing covered a wide variety of water bodies in terms of size and habitat, and may be less biased than the amphibian surveys. 84% of ponds tested (104 ponds) had Provisional Priority Pond status, which suggests that the estimates from amphibian surveys for the total number of Priority Ponds in the AONB may be correct – around two-thirds of the ponds in Nidderdale AONB could be Priority Ponds.

The Nidderdale's Priority Pond project has produced a new Priority Ponds map for Nidderdale AONB. A recommendation from the project is to continue surveys of ponds in the AONB to include PSYM assessment and other priority species surveys to confirm the location of other Priority Ponds.

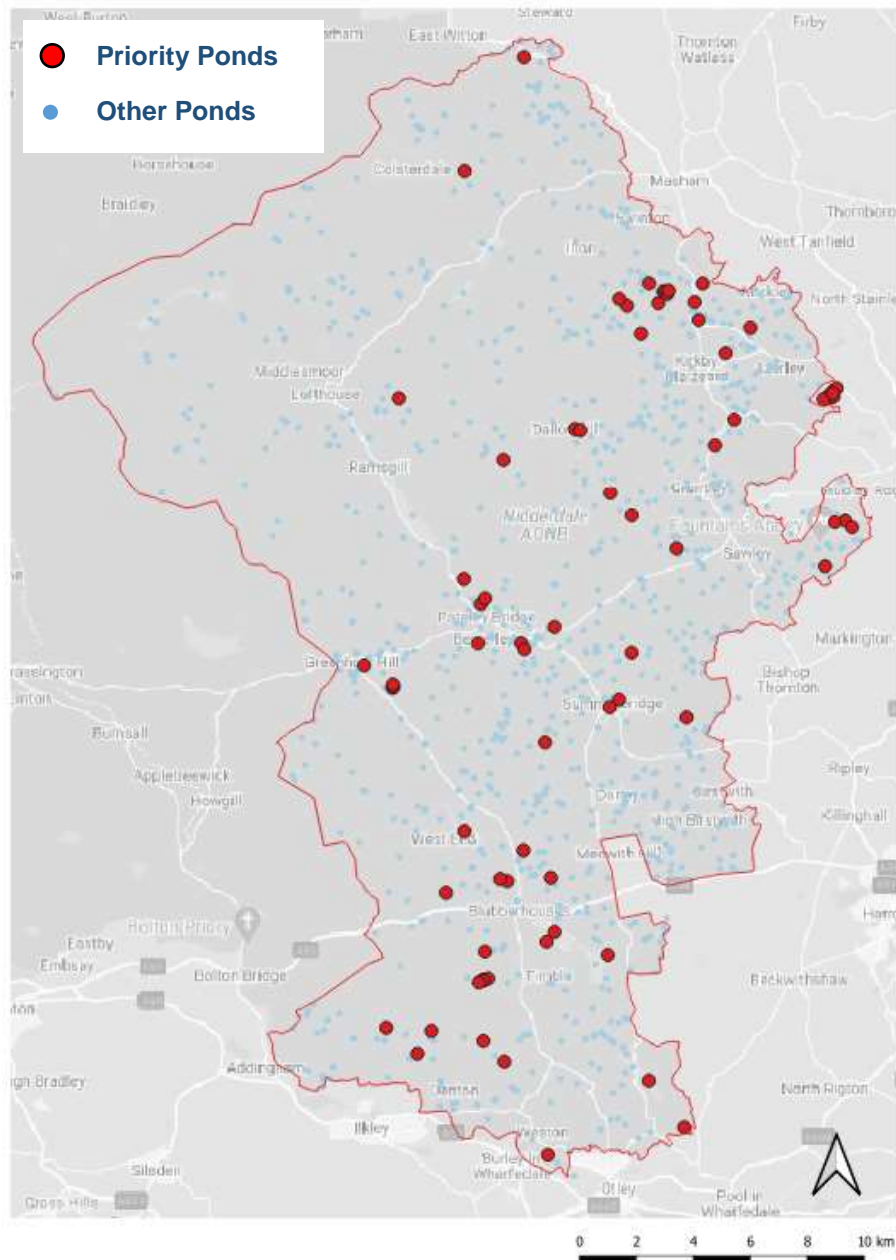


Figure 30. Map of the Nidderdale Priority Pond network.

4. RAISING AWARENESS

4.1. Press and social media

Target 6: Social media campaign with regular updates on project progress and highlights

A key aim of the project was to raise the profile of the work of Freshwater Habitats Trust in the North of England and the value of ponds as a priority habitat. We aimed to do this through press and social media.

Press

We prepared two formal press releases at key stages early in the project, the first at the beginning of the project, and again when we hoped to engage the public in surveys for Priority Ponds. A third press release will be prepared on completion and publication of this report, to present the findings and encourage ongoing engagement with recording schemes such as Freshwater Habitats Trust's spawn survey 2023.

Date	Topic	Publications
November 2021	Project launch & volunteer recruitment	Nidderdale Herald Stray Ferret (Harrogate) Harrogate Advertiser
February 2022	Postcard campaign / Pond survey mapping	Advertiser series Stray Ferret Yorkshire Times Yorkshire Post

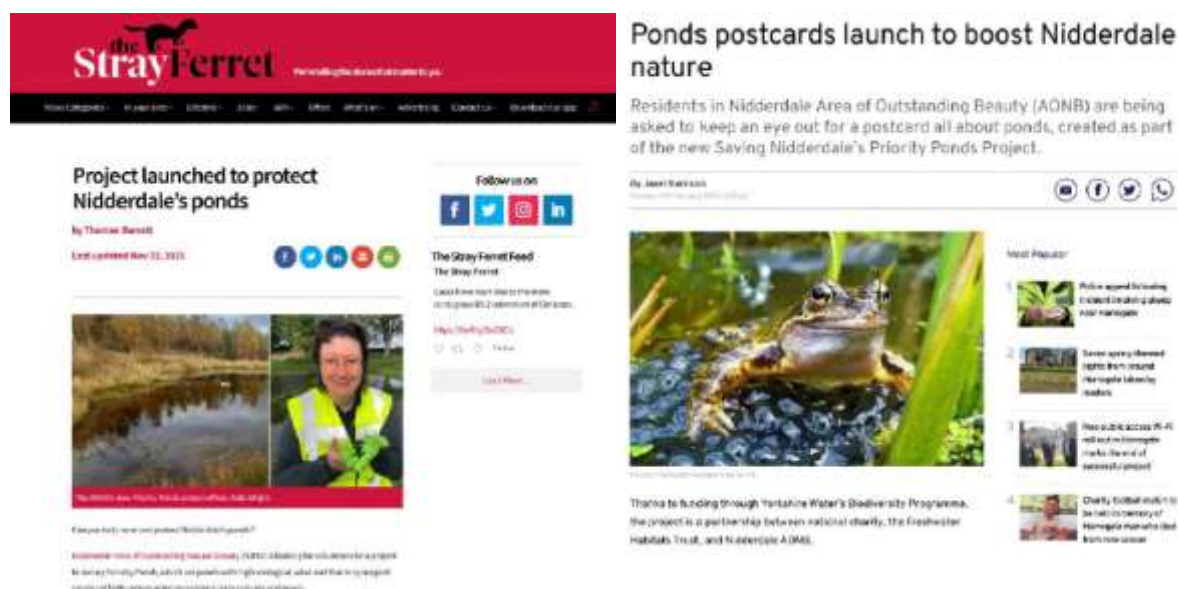
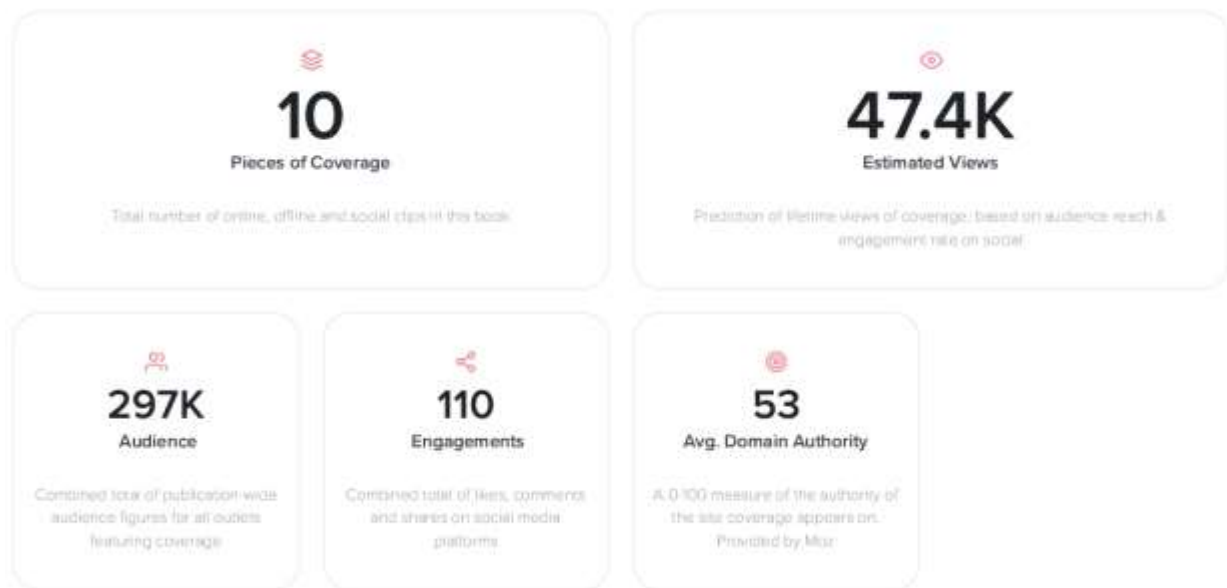


Figure 31. Press release totals and samples of the press releases during the project.

Analysis by Cause UK indicates the following reach by press releases covering of the project:



Alongside formal press releases, frequent updates have been made online and through in-person presentations:

- Freshwater Habitats Trust news page:
<https://freshwaterhabitats.org.uk/news/nidderdale-volunteers-common-toad/>
<https://nidderdaleaonb.org.uk/2022/09/07/nidderdale-volunteers-discover-record-number-of-sites-for-common-toad/>
- The Dales to Vales River Network newsletter produced by Fern Wilkinson (Yorkshire Dales Rivers Trust): <https://www.dvrn.org.uk/>
- Upper Nidderdale Farmers Group
- Wharfedale Naturalists Society
- NEYEDC Local Records Centre “Top 100 species blog (common toad)”
<https://www.neyedc.org.uk/100-species/2022/8/3/17-common-toad-by-kate-wright>

A presentation has been planned for the Yorkshire Naturalists Union in March 2023 to disseminate the results of the project, and the final report will be published on the Freshwater Habitats Trust and Nidderdale AONB websites.

Social Media

Freshwater Habitats Trust created two new accounts for the Nidderdale Priority Ponds Project, as well as promoting the project through our national channels:

Twitter: <https://twitter.com/katewfreshwater>

Instagram: <https://www.instagram.com/nidderdaleponds/>

Regular posts have been made on Twitter and Instagram, providing updates about the project as well as re-tweeting items of wider interest relating to the value of ponds, the development of the Freshwater Network and work of Freshwater Habitats Trust and partners.

#SpawnSurvey

Project volunteers and members of the public were encouraged to submit *ad hoc* sightings of both frogs and toads through the #SpawnSurvey. This was primarily to increase our understanding of amphibian distribution across Nidderdale AONB, though the #SpawnSurvey has also been shown to be an excellent gateway activity for the general public, without the need for extensive training – people (adults and children) love recording frog spawn.

Freshwater Habitats Trust's spawn survey data portal was deliberately chosen as a means of recording survey results for the project, as the #SpawnSurvey runs annually and can continue to be used independently following the end of the project.

In total, 254 records were submitted to the #SpawnSurvey in 2022, due to the efforts of survey volunteers and members of the public who embraced the project (Figure 32).

In 2022, 35% of the national records originated from Nidderdale. In previous years the proportion of records from Nidderdale had been less than 1%.

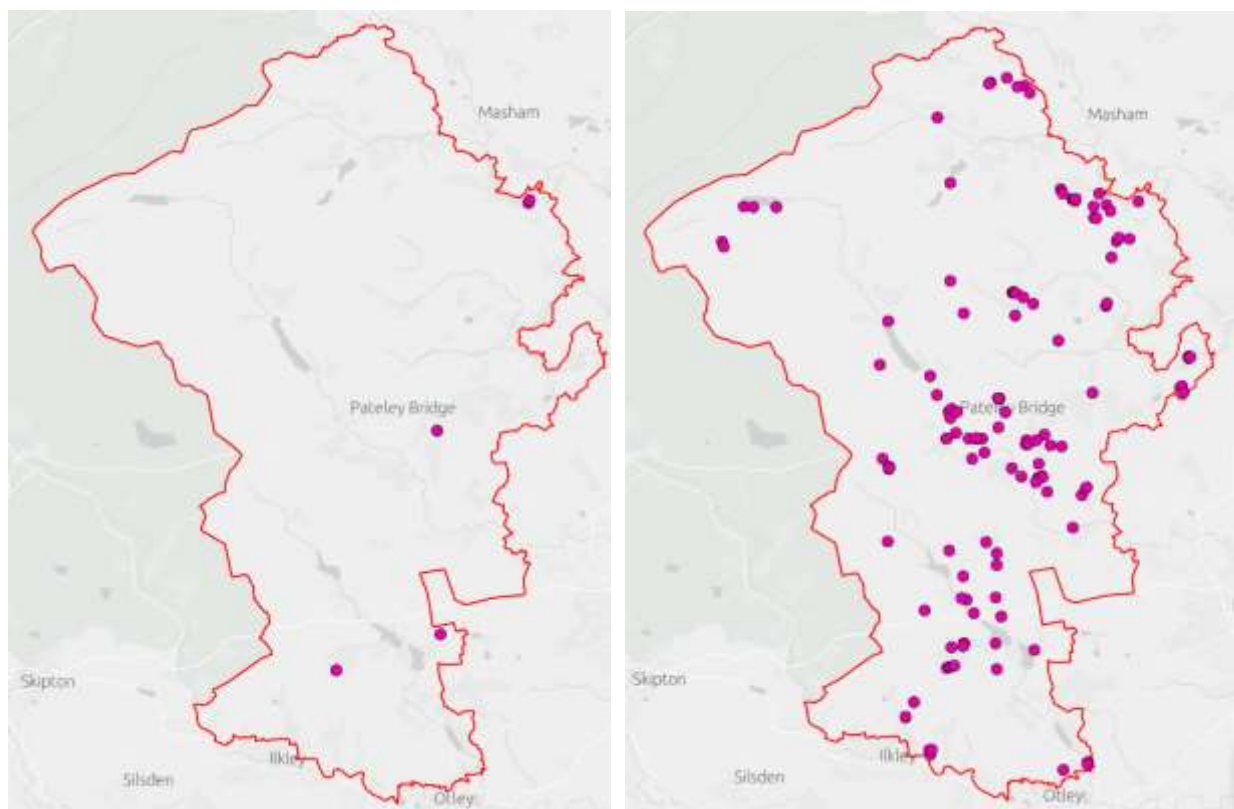


Figure 32. #SpawnSurvey results from 2013-2021 (left) and results following social media push in Nidderdale 2022 (right).

The social media campaign is being continued to support the Freshwater Habitat Trust's national #SpawnSurvey campaign in 2023, including a push for records from Nidderdale AONB.

Records sent into the scheme will continue to be shared with the North and East Yorkshire Ecological Data Centre beyond the end of the project.



Figure 33. Social media content planned to support the 2023 #spawnsurvey campaign.

4.2. Community engagement

4.2.1. Postcard campaign

Target 7: 3000 postcards distributed as part of the citizen science campaign

Postcards have been used successfully in previous Citizen Science surveys by Nidderdale AONB to engage volunteers and raise awareness. Informative postcards about the project and pond wildlife were designed in-house and professionally printed by a local supplier. Postcards encouraged volunteers to submit information about ponds in the local area (Figure 34).

The postcards were distributed through a variety of methods: drop off at local shops and community hubs such as Nidderdale Plus in Pateley Bridge, given out as handouts on education events and at the Nidderdale Show, as well as being mailed out to local schools. Postcards were also available at the Nidderdale AONB office and distributed to family and friends of staff and volunteers.

Some groups that were approached wanted to support the project, but did not have a physical venue from which to dispense leaflets. A poster was produced that was more suited to groups such as parish councils, who were then able to circulate the information electronically to a wide audience.

Response rate

The response rate was low with just 10 physical cards returned via the post, and 7 more submitting information via email. Despite the low number of returns, relationships were built with those that did respond, resulting in records being submitted to the spawn survey data portal and/or members of the public offering up their ponds for clean water testing.

Obviously the impact the cards had on those that did not respond cannot be assessed, but it is likely that some of the recipients gained knowledge about the importance of ponds, and the number of volunteers and participants in the #SpawnSurvey was high.

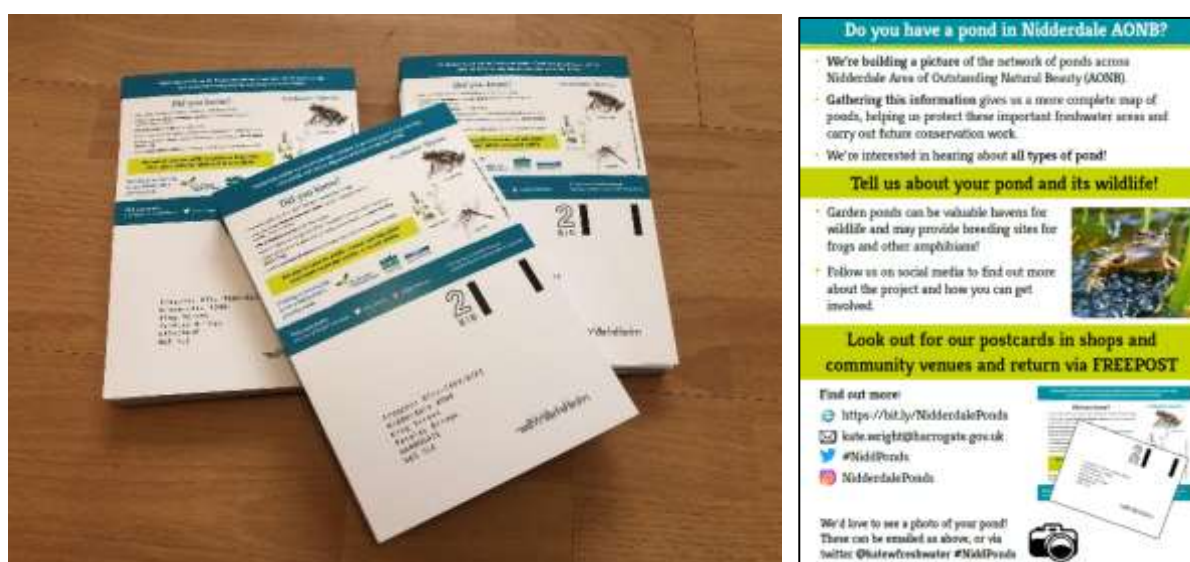


Figure 34. Printed postcards ready for distribution (left) and electronic poster version (right).

4.2.2. Schools engagement

Target 8: 20 schools and community groups engaged in the “Container ponds for wildlife” project

Target 9: 5 schools and 100 students benefit from face-to-face visit by the Priority Ponds Project Officer

Garden ponds created for wildlife provide a home for freshwater species and give us pleasure and enjoyment. They can be a tool for education, stepping stones for freshwater species in urban areas, and may be Priority Ponds in their own right.

A space for freshwater wildlife doesn't have to be large – even a small space for freshwater wildlife can provide benefits. Through the Priority Ponds project we promoted the concept of Container Ponds to engage community groups and schools to get involved.

A family friendly “Build a container pond” leaflet was designed by the project team, with artwork by Buffalo Zoo (Figure 34). A copy of the leaflet is available here: <https://freshwaterhabitats.org.uk/wp-content/uploads/2022/07/FWHT-Container-Pond-A5-leaflet.pdf>

An infographic was also created using the same artwork and design style as the leaflets. This was used as an email footer in summer/autumn 2022 and also on social media. Tweets promoted the campaign, container pond building sessions with local groups, and also shared images from members of the public to show what could be achieved.

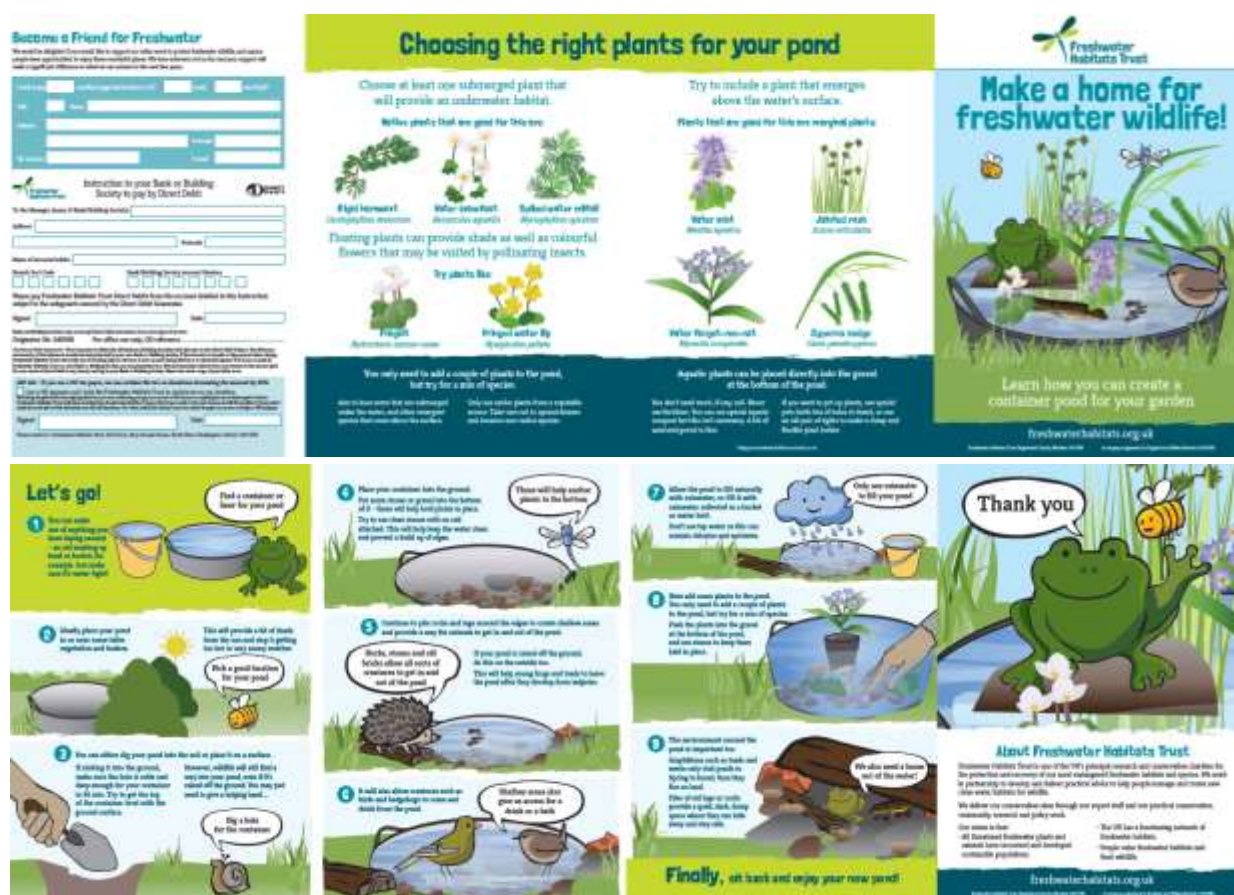


Figure 35. Container pond leaflet produced for the project.

Schools and community engagement

We had originally planned to engage schools remotely, by providing them with the schools pack and container pond leaflet. Instead, the “Build a container pond” was the focal point of sessions delivered at two, two-day educational events in summer 2022. The events catered for schools from Nidderdale AONB, and wider across Yorkshire, with six 30-minute sessions per day, each with a class of up to 30 children.

The school events engaged children in discovering pond wildlife and the value of clean water for wildlife. Each child went away with a leaflet to inspire them to make their own mini pond.



Figure 36. Mini pond creation kit (left) and children learning about pond creatures (right) at Let's Learn Moor.

The two events were attended by 21 schools and 539 children (Figure 37), exceeding both the schools engagement target and the number of children engaged. This has been a useful evaluation lesson for Freshwater Habitats Trust, as this is the first project where we have had the opportunity to attend events that are organised in this way. It was an excellent way of maximising engagement with local young people.

Event	Date	No. Schools	No. Children
Let's Learn Moor - Dallowgill	4-5 th July 2022	9	298
Countryside Days - Harrogate	14-15 th June 2022	12	241
		TOTAL	539

Figure 37. Attendees to school event days held in partnership with other organisations working in Nidderdale AONB.

Schools and community engagement (face to face)

In addition to the schools engaged during the event days, three sessions have been delivered to KS1/2 children within Nidderdale AONB to date, leaving a newly created mini pond in place for them to observe and enjoy in future years (Figure 39). Additional sessions are planned for spring 2023. In addition, 38 children were engaged at the Nidderdale Show, where we had a stand promoting the project and demonstrating a mini pond.

Face-to-face engagement directly with schools proved less effective than engagement at the event days for schools. Despite this, together the project engaged 22 school groups, 2 after school groups, and additional children at the Nidderdale Show – a total of 655 young people.

Group	Date	Number of Children
Christchurch Darley Cubs	3 rd October 2022	24
Grewelthorpe Primary School Years 1 & 2	19 th October 2022	30
Pateley Bridge Beavers	9 th November 2022	24
Nidderdale Show	18 th September 2022	38
	TOTAL	116

Figure 38. School aged groups and the number of children attending each session.



Figure 39. Pupils from Grewelthorpe Primary School (top left) and Pateley Bridge beaver scouts (top right) constructing their new mini ponds, and demonstrating mini ponds at the Nidderdale Show in September 2022 (bottom right).

Wider engagement through social media about the “Container pond project” and the Project Officers attendance at events was well received and generated more than 324 impressions (Figure 40).

Kate Wright @katowfreshwater

Lots of enthusiastic cubs at last night's session at Christ Church Darley learning about pond wildlife, clean water and how to create a container pond. Many seemed keen to make their own #minipond so I'm hoping to get some new #NiddPonds on the map soon!
pic.twitter.com/SZ9lhzyXPR

Impressions

234

Total engagements

9

Likes

3

Profile clicks

3

Retweets

2

Media engagements

1

Kate Wright @katowfreshwater

Great day at #NidderdaleShow on Sunday meeting local landowners and members of the public, talking ponds and demonstrating how to create a #containerpond. Instructions and plant suggestions can be found in our new leaflet <https://bit.ly/3aulyqp> #NiddPonds
pic.twitter.com/Ulo01EAjPq

Impressions

549

Total engagements

12

Media engagements

5

Likes

5

Retweets

1

Profile clicks

1

Kate Wright @katowfreshwater

New pond on the map! Brilliant afternoon with @Grewelthorpesch Years 1/2 pupils who learned about pond creatures and built a mini pond in their allotment garden. Hope it flourishes and attracts lots of wildlife! 🌱🌸
🐸 #NiddPonds pic.twitter.com/KqqXIDWjdg

Impressions

541

Total engagements

34

Media engagements

21

Likes

8

Retweets

3

Detail expands

2

Figure 40. Social media engagements relating to schools events and container ponds.

4.3. Professional development courses

Target 10: 5 professional development courses (30 trainees per session) delivered to volunteers, contractors and professionals.

A suite of professional development sessions were developed and ran throughout the year. As well as being open to project volunteers, these were available to members of the public and contractors/professionals both from within Nidderdale AONB and further afield.

All sessions were held on Zoom. Delegates were able to play back a recording of the session and were sent links to useful websites/resources/further reading after each session.

Date	Topic	Attendees
28 th April 2022	Dragonflies survey training	43
29 th June 2022	Assessing freshwater diversity	29
20 th July 2022	Pond management for biodiversity	38
20 th Oct 2022	Garden pond management	56
24 th Nov 2022	Pond creation - creating sustainable freshwater networks	39
	TOTAL	205

Figure 41. Attendees at professional development courses.

A further session on garden pond creation aimed at homeowners is planned for Spring 2023.

Figure 41 shows that the number of trainees exceeded the target of 150 that was set at the beginning of the project.

Training events were not held face to face but were held online using Zoom. Rather than detract from the experience, this actually brought some benefits. First, as sessions were recorded, they could be reviewed by participants at their leisure allowing them more time to digest the information being disseminated.

Second, it opened up the professional development courses to a wider range of people. Participants for these events included not only local landowners and practitioners but those beyond the Nidderdale AONB boundary.

5. PROTECT THE BEST

5.1. Priority Pond management

Target 11: Four sites visits/events to community and/or Priority Ponds to provide/or undertake management advice.

1. Ellington Banks

Nidderdale AONB conservation volunteers have undertaken scrub clearance at Ellington Banks to help retain open habitat around the ponds, and created brush piles to provide cover for amphibians.

A private Defence Estates site, this management will have long-term benefits for the pond areas.

You can read more about it here:

<https://nidderdaleaonb.blogspot.com/2022/04/ellington-banks-05-04-2022.html>



*Note the bull rush seed heads behind the saplings.
Keep looking at them....*



*By home time this patch, too, was cleared.
(Bull rush seed heads clearly visible now)*

Figure 42. Before and after scrub management around ponds at Ellington Banks.

2. Grewelthorpe

A family fun day was held at Grewelthorpe in October 2022 to coincide with a school session being held there. This included pond dipping and was attended by 36 family members.

Grewelthorpe Family Pond Day
Saturday 22nd October 2022 10:30am–12:30pm
Fountain Pond, Hack Fall Wood



For more details contact:
 Kate Wright, Project Officer
kwright@freshwaterhabitats.org.uk
 01206 327291

- **Pond Dipping!** All ages welcome!
Come learn more about pond wildlife
- **Clean Water Testing**
Bring a sample from your own pond for us to test
- **Learn about the Nidderdale Ponds Project**
- **Advice about your own ponds**






DROP IN SESSION
NO BOOKING REQUIRED
 Under 16s to be accompanied
 by a responsible adult



Instagram: [NidderdalePonds](#)
 Twitter: [@NidderdalePonds](#)
[/NidderdalePonds](#)



Figure 43. Advertisement for family pond dipping session (left) and children enjoying pond dipping at the session (right).

3. Pateley Bridge

A similar event is being explored for members of the Pateley Bridge scouts association. This is planned for spring 2023, when warmer conditions should yield more invertebrates and the session can be used to encourage participation in the #spawnsurvey.

4. Additional sites

In the original project outline we only planned to include four sites in management/events. Once the Project Officer was in post, it was apparent that there were many sites where practical management advice would be beneficial, and that delivery of management could be achieved through other schemes, increasing the number of sites that could be managed.

To facilitate and record the advice given, a site visit report template was devised (Appendix). Site visit reports, including management recommendations, have been passed onto the relevant teams within Nidderdale AONB.

Contact with new and existing pond owners was made via various methods, including Nidderdale AONB's Farming in Protected Landscapes (FiPL) and Planning teams. Examples of advice given to date include:

- Millenium Pond Pateley Bridge – advising town council on the repair of their community pond and installation of pond dipping platform.
- Lime Tree Farm – invasive species control (*Crassula helmsii*) and creation of new ponds to support great crested newt population.
- Grewelthorpe village pond – working with parish council to manage the pond for wildlife.
- Hack Falls Wood Mill Pond - potential future restoration of pond by the Woodland Trust.
- Farm at Missies Lane Laverton – supporting planning application for new pond creation and advice on maintaining existing pond in good condition.
- Bush House Farm Grewelthorpe – advice on maintenance of new pond and how to best protect it from damage from nearby footpath.
- Plane Trees Farm Blubberhouses – supporting FiPL team in new pond creation enquiry, assessing the condition of existing water bodies on-site and providing advice on gully pot ladders to prevent amphibian entrapment in cattle grids.
- North Close Farm Grewelthorpe – assisting local farmer reporting newts in their cellar and water tank, leading to identification of a great crested newt breeding pond.



Figure 44. Juvenile newts found at North Close Farm (left). Tweets highlighting work assisting FIPL team with new pond creation enquiry at Plane Trees Farm (right).

5.2. Toad modelling project

Nidderdale AONB has been reviewing a Toad Model produced by Emma Gardner at CEH (publication pending), with the support of the University of Leeds who helped to validate and digitize pond data.

The model highlights the most valuable breeding and foraging habitat for common toads, based on a range of parameters, and predicts where they might be found. The model was used to help plan some of the survey locations for toad surveys in 2022. In return, the results of the surveys are being used to ground truth the model and increase its accuracy.

Once operational, the model will be used to identify gaps in pond distribution, and assist in planning new ponds within terrestrial habitat that is of higher value to toads, and amphibians in general.

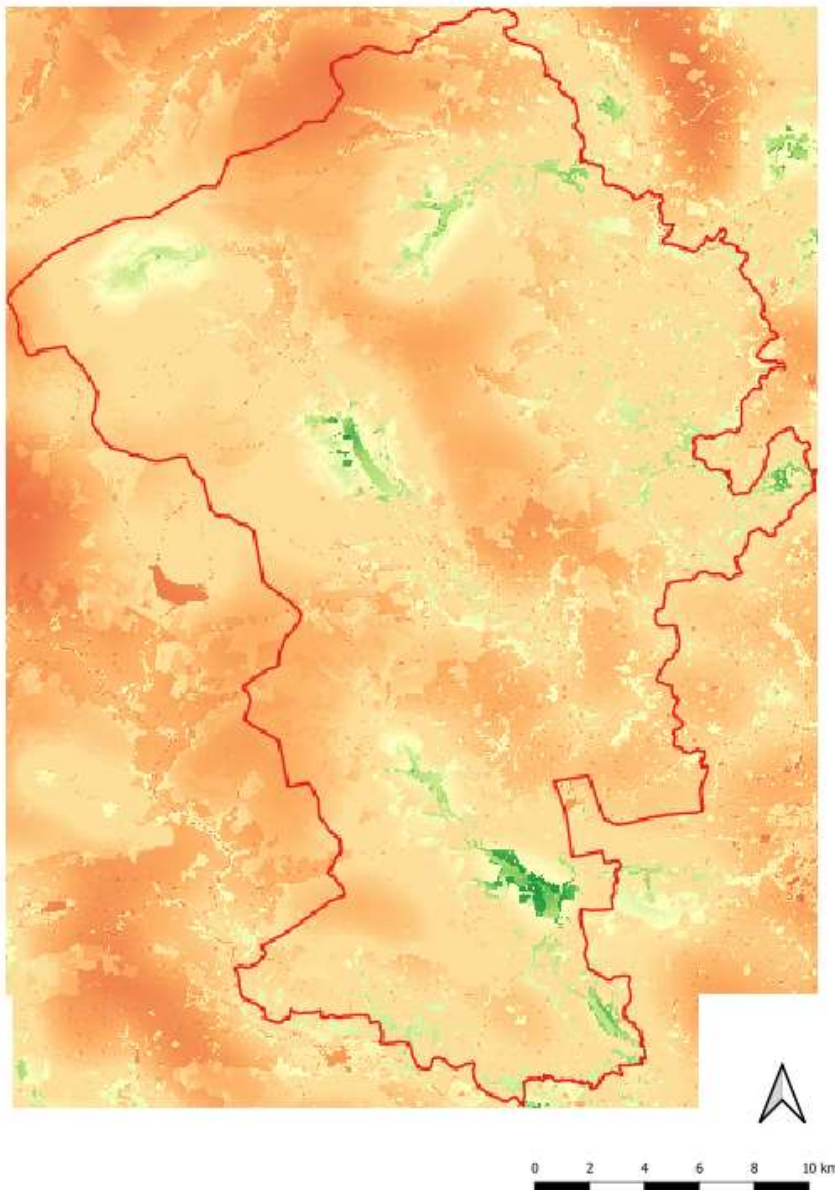


Figure 45. Predictive toad model for Nidderdale AONB based on CEH Model.

5.3. Nature Recovery Network

Nidderdale AONB is currently developing landscape scale Nature Recovery maps, which detail existing priority habitats and preferred locations for new habitat creation for freshwater, grassland, heathland and woodland habitats. The maps will become an integrated part of the next Management Plan and will be a key input into North Yorkshire's Nature Recovery Strategy.

The emphasis in the freshwater maps will be on new pond creation. Data on Priority Ponds collected by the Saving Nidderdale's Priority Ponds project has provided a reliable evidence base and has helped develop a mapping strategy, as follows:

- Priority Ponds and pond clusters mapped.
- The value of foraging habitat adjacent to Priority Ponds across the landscape mapped, aided by CEH's toad model.
- Pond clusters which coincide with good foraging habitat identified as priority areas for protection and expansion – Important Freshwater Areas.
- Pond clusters with limited semi-natural habitat to be suggested as priorities for terrestrial habitat creation.
- Suitable areas for pond creation identified – linking Priority Ponds and pond clusters (Important Freshwater Areas), whilst being mindful of barriers and maximising areas of good foraging habitat.
- Species records from the pond project will help inform the design of new ponds in priority areas.

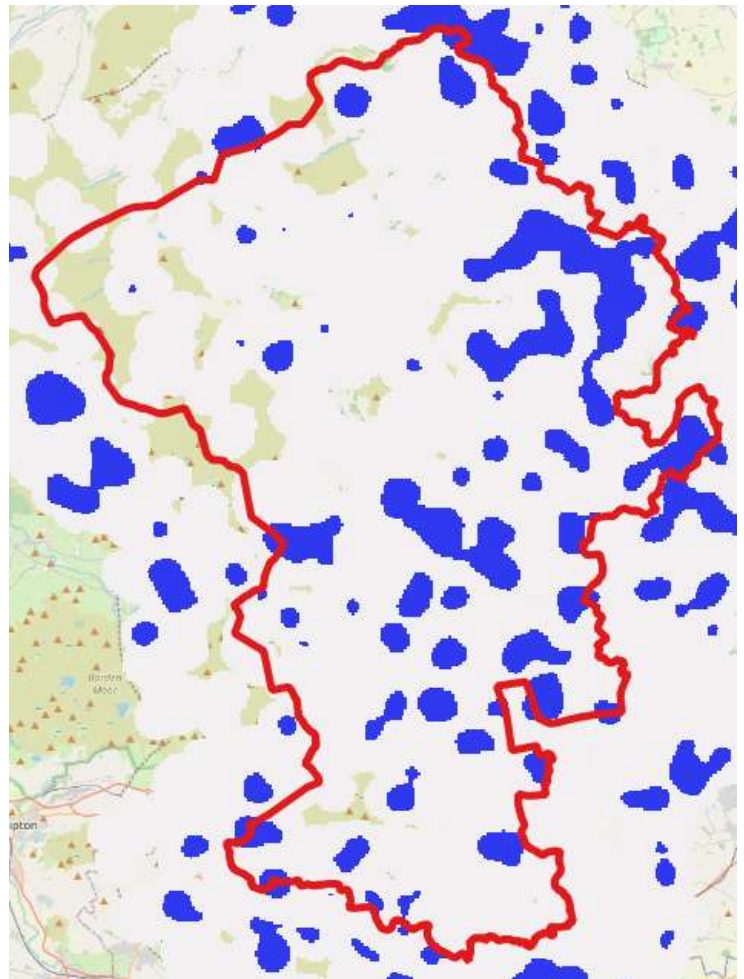


Figure 46. Draft heat map showing areas where 4 or more ponds occur within 1km of any given 100 sq m. location.

Whilst this work is in the early phases of development, it has already started to highlight potential areas for future work and aid decision making.

5.4. Support for other projects

Although not directly within the remit of this project, we have already started liaising with other groups and organisations with regard to new pond creation.

For example, clean water data, species information and habitat data has been fed back to the Yorkshire Water Beyond Nature Farming team and Nidderdale AONB's Farming in Protected Landscapes Team, with a view to locating new ponds in the most appropriate locations.

The project has confirmed the presence of great crested newt at some historically recorded sites, as well as identifying them in new locations, which should afford newly identified Priority Ponds some protection in the future and enable them to be managed appropriately.

Moving forwards, increased understanding of great crested newt distribution may facilitate access to funding via Natural England's district level licensing scheme. Creation of new ponds will increase connectivity across the landscape and improve pond and terrestrial habitat great crested newts, other amphibians and other freshwater species.

6. RECOMMENDATIONS / NEXT STEPS

This report and data gathered through the project will be shared with all project partners. This will provide a solid foundation for future work to improve the status of Nidderdale's ponds in coming years. Other recommendations include:

6.1 Extension to Important Freshwater Landscape

The existing 24 Important Freshwater Landscapes were devised based on data available at the time. An outcome of the *Saving Nidderdale's Priority Ponds* project is that we now have an increased amount of data available for Nidderdale AONB, confirming the presence of a number of new Priority Ponds. These are distributed across the project area, and suggest that the Yorkshire Dales & Forest of Bowland IFL boundary should be redrawn to include the southern part of Nidderdale AONB, which is currently excluded.

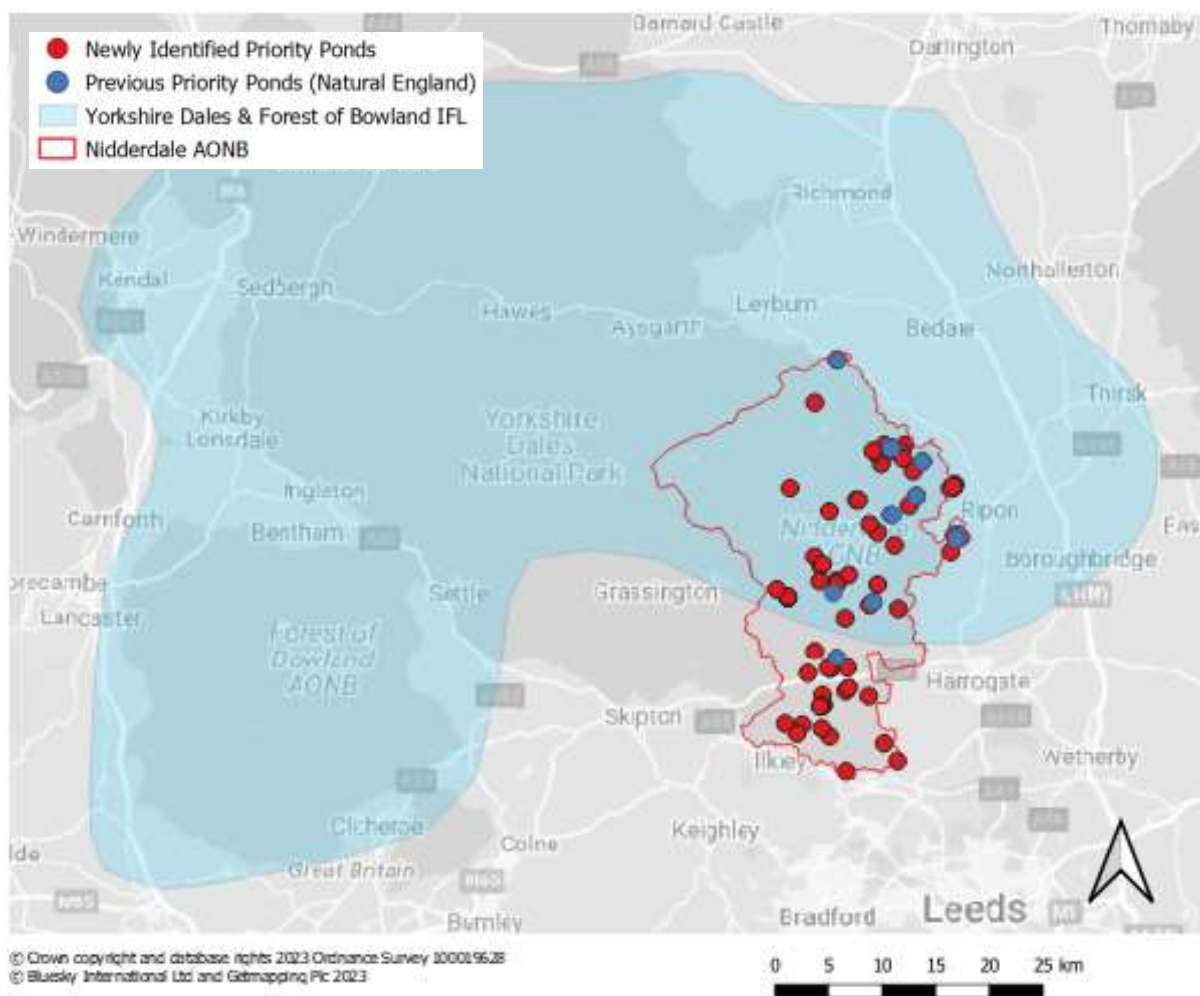


Figure 47. Showing previous and newly identified Priority Ponds in relation to the existing Yorkshire Dales & Forest of Bowland IFL boundary.

6.2 Recognising important pond sites

The project has gathered sufficient data to progress at least one site as a Site of Importance for Nature Conservation (SINC) with North Yorkshire County Council. The site designation for Lime Tree Farm, on the basis of its amphibian assemblage, has been submitted to the Panel for consideration and granted Candidate SINC status pending the collation of further information to demonstrate the value of terrestrial habitat.

There are several other sites that are likely to meet the criteria, however further evidence would need to be gathered to progress formal recognition.

Data will be passed to the SINC co-ordinator at the end of the project so this can be progressed.

6.3 Valuing volunteers

An in-person end of project event is being planned that will celebrate the project's achievements with volunteers. This will include a presentation of the key findings of the project, alongside social activities and food.

Volunteers will be contacted to see if they wish to remain involved in future Nidderdale AONB projects, and their details passed to the Volunteer Co-ordinator as appropriate.

6.4 Follow up projects

The #SpawnSurvey for 2023 is now underway. Freshwater Habitats Trust will continue to employ the Project Officer beyond the end of the project, to coordinate volunteers for this year's surveys and conduct amphibian and other species surveys which were highlighted in the report.

Nidderdale AONB has submitted an application to Natural England's latest round of Species Recovery Programme funding. This would be focused on improving habitat for common toad, linking in to the results of this project, toad modelling, and nature recovery work to strategically create new breeding ponds and foraging habitat to improve connectivity for amphibians across the landscape.

Freshwater Habitats Trust is also developing a project with a view to establishing a GroWet project in Nidderdale AONB. This would be based on an existing FHT project currently running in Oxford. GroWet is a community engagement programme that works with local horticulturalists to introduce propagated plants into high quality freshwater and wetland habitats.

6.5 Additional recommendations

Through the course of the project, concerns were raised regarding toad mortality on roads. Nidderdale AONB will investigate the installation of toad crossing road signs at key pinch points with the local council.

7.0 References

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8.0 Appendices

Appendix 8.1 – Summary table showing achievement of project outputs, as detailed in Appendix 1 of the Partnership Agreement between Yorkshire Water & Harrogate Borough Council (Nidderdale AONB).

Ref	Item	Status
2.1.1	Collate and map biological data on priority species in the AONB	Complete - see report
	Recruit 20 new volunteers	28 new volunteers recruited.
	Utilise existing volunteer network	Existing AONB volunteers involved.
2.1.2	100 waterbodies surveyed for clean water	150 clean water surveys.
2.1.3	Amphibian surveys on 50 target ponds (common toad)	112 ponds.
2.1.4	Distribute 3,000 postcards as part of citizen science campaign	Complete (low response rate)
2.1.5	Develop a GIS map of AONB priority pond network	Complete - see report
2.1.6	Produce AONB pond condition report and inventory	Complete - see report
2.1.7	Establish a rolling programme of surveys	Complete - see report
	Establish a monitoring system to check pond condition	Complete - see report
2.1.8	Produce an educational pond pack on container pond set-up and management	Container pond leaflet and supporting session.
	Distribute pond pack to 20 AONB primary schools/community groups	22 schools engaged.
2.1.9	Complete 5 schools visits / 100 children reach re container ponds	4 completed with 1 scheduled for Spring 2023
2.1.10	Conservation volunteers to work on 4 community ponds and hold family events	3 events + multiple sites visited and advice given
2.1.11	Create monthly joint press release	Fewer official press releases, but supported by other local events/articles/posts
	Weekly social media posts	150+ posts
2.1.12	Social media campaign focused on mini ponds in your garden	Complete
2.1.13	Clean water survey training for volunteers (2 sessions, 20 people per session)	2 events; 45 attendees
2.1.14	Spawn survey training for volunteers (2 sessions, 25 people per session)	2 events; 63 attendees
2.1.15	Provide 5x professional development courses (online, 30 people per session)	5 events; 205 attendees

	Target exceeded
	Target met
	Target partially met

Appendix 8.2 – Site visit report template.



SITE VISIT REPORT

Site Name		Grid Reference	
Date of Survey		Owner	
Surveyed By		Address	
Others Present		Contact	
Purpose of Visit	State if specific purpose – FIPL pond creation, planning, survey etc		

SITE DETAILS

Underlying geology	If relevant eg. new pond creation		
Underlying soil	If relevant eg. new pond creation		
Site Description	Brief overview of whole site		
Pond Description	Brief overview of pond – size, type		
Surrounding Habitat			
Nutrient Results	Nitrate:	xx ppm Negligible	Phosphate: xx ppm Moderate

SITE MANAGEMENT

Unmanaged(at least 2 years)		Recent planting	
Management unknown		Coppicing	
Grazed by farm animals (specify)		Tree felling	
Grazed by other (specify)		Scrub removal	
Frequent short mowing		Invasive species management	
Re-seeding		Managed for game (specify)	
Comments: Tick above those applicable and brief comments here.			

AMENITY USE

Public access		Boating	
Dog walking		Fishing	
Vehicular traffic		Other Amenity use (specify below)	
Comments: Tick above those applicable and brief comments here.			

OBSERVATIONS

Plant Species:	List those seen and limitations, eg. margins only
Aquatic Invertebrates:	List those seen and limitations, eg. stone turning, netting, visual only
Other Species:	Related to pond, eg ducks, fish

THREATS

Scrub encroachment		Fire damage	
Overgrazed		Pollution (specify)	
Poaching		Tipping	
Agrochemicals (incl spray drift)		Recent/long term drainage	
Invasive/undesirable species		Off-road vehicle damage	
Flooding/inundation		Other (state)	
Comments: Tick above those applicable and brief comments here.			

FRESHWATER MANAGEMENT RISK ASSESSMENT

Landscape	Not / Unique	Rationale/brief reason for assessment
Rare Species	Yes / No	Rationale/brief reason for assessment – eg. GCN risk zone, crayfish, rare plants seen
Waterbody	Low//Med/High	Rationale/brief reason for assessment

EVALUATION

Recommendations:
Constraints/Need For Further Ecological Survey: Precautionary approach needed?

FURTHER INFORMATION

Access, limitations etc. eg. Health & Safety considerations, where to park, etc.

PHOTOGRAPHS

Attach overleaf.