

NATURE RECOVERY CORRIDOR PROJECT REPORT



September 2021 – May 2023



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IMPACT SUMMARY

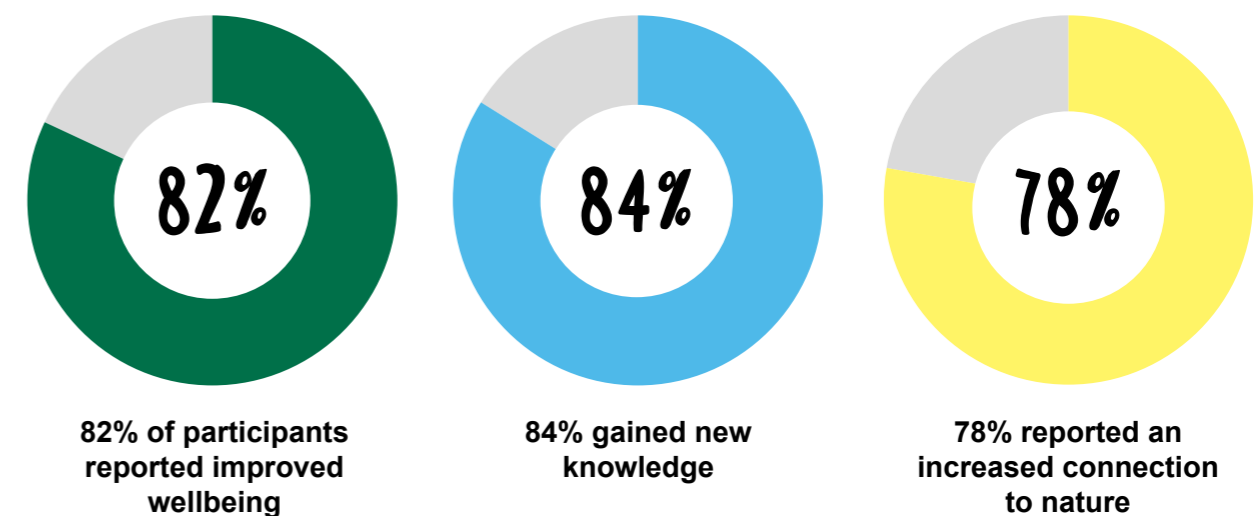
Working to create and restore habitats for wildlife with local communities, support from the Green Recovery Challenge Fund (GRCF) has enabled Chester Zoo to lead the initiation of a significant nature recovery corridor in Chester. The success of the project has been possible due to the development of a strong partnership between key organisations working across the landscape who have all referred to this as one of the most impactful projects they have been involved in.

WITH GRCF FUNDING WE HAVE BEEN ABLE TO

Improve over **62 HECTARES** for wildlife including:



Over 12,000 people have been directly engaged in the project. Many of them were involved for the full duration of the project and were supported to build skills, knowledge and agency to be empowered to continue to protect and improve spaces for wildlife after the end of the project.



The engaged participants, organisations and schools will continue to be supported through the Wildlife Champions Network to ensure that the improvements for wildlife and people are maintained. To sustain the momentum and accelerate further progress, the established partnership of organisations will continue to work together to achieve our long-term vision for the entire landscape.

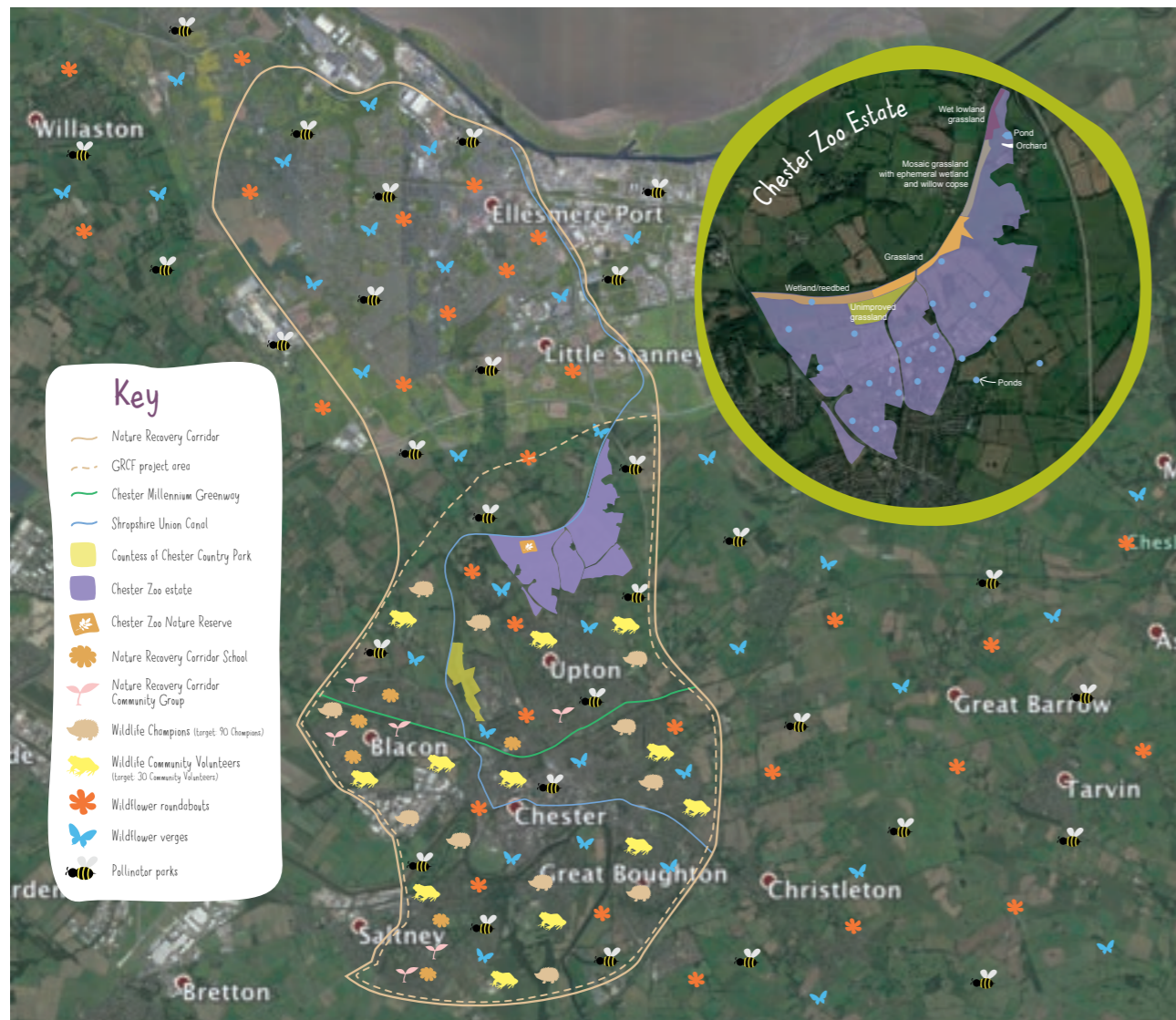
NATURE RECOVERY CORRIDOR

The Chester Zoo Nature Recovery Corridor (NRC) lies in the borough of Cheshire West and Chester and will eventually cover a 10-mile stretch across two localities of the borough; Chester to Ellesmere Port. The NRC aims to connect wildlife with wildlife, people with wildlife, and people with people. It will restore a network of wildlife-rich habitat and create a community empowered with passion, knowledge and skills to make it an iconic corridor that flourishes long into the future. Our NRC is designed to make a significant contribution to the future Local Nature Recovery Strategy for Cheshire and Warrington, focusing on the urgent need for natural connectivity in a semi-urban landscape.

Habitat fragmentation is accelerating species loss by disconnecting natural migration corridors, reducing

genetic mixing and compromising adaptation to climate change. Despite calls for more connected habitats (1), 41% of UK species have declined since 1970 (2). At the community level the NRC will help deliver an important part of the UK Government's 25-year Environment Plan, by encouraging people to improve their health and wellbeing by using green spaces, and by helping to green our towns and cities and by creating more green infrastructure.

Funding from the Green Recovery Challenge Fund and match funding sources enabled us to deliver the first phase of our ambitious 10-mile NRC. This project focused on the southern 6.5 miles of the NRC between Lache to the south, through Chester City Centre to the Chester Zoo estate, bordered by the Shropshire Union Canal to the north.



THE PROJECT AREA - CHESHIRE AND CHESTER



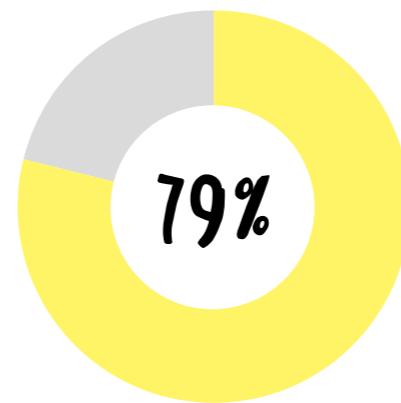
The NRC sits within the borough of **Cheshire West and Chester**, in the Northwest of England, covers an area of approximately **90,000ha** and has a population of approximately **357,147** (3).

Chester with a population of over **81,000** residents is the largest settlement within the borough as well as an important hub for employment and tourism (4).

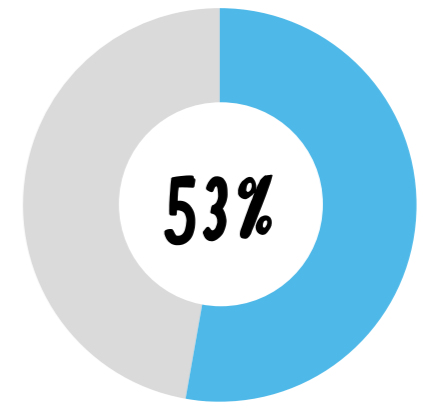
Across the borough there is **2,946.17ha** of land classified as public open space, this includes allotments, amenity green space, play space and accessible natural green space. **211.47h** of this falls in the Chester area (Including wards: Chester City, Boughton, Handbridge Park, Blacon, Lache, Garden Quarter, Newton and Hoole, Upton and Great Boughton) (4).

In addition, there are 342.37ha and 85.59ha of open space such as education sites, church yards, green corridors (river/canals and their banks, road verges, cycle routes, rights of way etc), private open space (paid access) and outdoor sports space across the borough and Chester area respectively (4).

Feedback via Our Place Participate Panel from local residents suggested improvements such as: improve maintenance of hedges and verges, more local social and leisure facilities, better walking and cycling routes, more planting & green spaces, improve maintenance of parks & green space.



79% of Chester residents reported that they felt very or fairly strongly that they belong in their local area (5).



53% of residents definitely or tended to agree that people in the local area pull together to improve the area (5).

CHESTER ZOO

Chester Zoo (CZ) is a conservation and education charity committed to preventing extinction. Within the 65ha of zoological gardens, visited by 2 million visitors every year our horticulturists work to enhance the landscape for local wildlife, we have several specialist gardens and wildlife spaces across the zoo including flower rich areas for pollinators and a bumblebee garden. The team also manage two colonies of black bees in a natural way with minimum intervention, for their role as pollinators.

Our UK field programmes team, botany team and keeping staff have contributed to the conservation of many UK native species. We have propagated endangered species of plants, endemic to the Northwest region for reintroduction. Species such as Common barberry (*Berberis vulgaris*), Cottonaster (*Cotoneaster cambricus*) and Black poplar (*Populus nigra*). We have supported monitoring, breeding, and reintroductions of species such as Sand lizard (*Lacerta agilis*), Harvest mouse (*Micromys minutus*) and Large heath butterfly (*Coenonympha tullia*).

The zoo's total land holding amounts to 236.6ha. Alongside the zoological gardens, the car park and agricultural land, the zoo estate includes a corridor of land 48ha managed for biodiversity. This land comprises a mosaic of habitats including arable land, small woodland and ponds. Amongst this land is our Nature Reserve, established in 2013, supporting over 320 species of plant, animal and fungi, which is accessible by the public. A section of the Nature Reserve is designated as a Local Wildlife Site for the significant plants, birds and invertebrates recorded there. Recording wildlife on the reserve is an important aspect of our UK conservation work at the Zoo.

The NRC project builds on CZ's existing Wildlife Connections programme that has well-established relationships with a wide range of organisations within the NRC project area. Wildlife Connections aims to create safe spaces for our local wildlife and bring people together to create connections between wildlife-friendly spaces. Since 2016 the programme has developed a range of models for engagement that have progressed to be used within the NRC project. These include; repeat engagement outreach work in schools, Family Wildlife Clubs in schools, a course to train community leaders in improving their green space through community participation, an annual UK wildlife festival, and a range of online resources free to download from the Chester Zoo website.

In addition to making habitat improvements on zoo land and with the local community in their green spaces, Chester Zoo works with Government, parliamentarians, sector colleagues and local MPs to raise the issues of UK wildlife and nature in government.

PROJECT OVERVIEW

NRC PROJECT TARGET AND OUTPUT SUMMARY

TARGET	OUTPUT
Creation, restoration and enhancement of priority habitats, including ponds, wet meadow, reedbed, waterways, orchard, hedgerows, woodlands, grassland, wildflower meadows and community nature areas. Target area: 53.07ha.	Targets met for all habitat types. Total area created, restored or enhanced: 62.58ha.
<p>A comprehensive community engagement programme including:</p> <ul style="list-style-type: none"> - Long-term support for 6 schools and 6 community groups. - Wildlife Champions training for 90 community leaders and ongoing support network. - Community volunteer programme, engaging 30 volunteers. - Wider public engagement programme directly engaging 12,000 participants. 	<p>6 schools engaged in full programme. 1 additional school engaged in part-programme. Total school participations: 2,327.</p> <p>6 community groups engaged in full programme. Total community group participations: 583. Wildlife Champions trained: 166.</p> <p>Community Volunteer & School Volunteer: 8 volunteers.</p> <p>Micro-volunteering across various activities: 745 volunteers.</p> <p>Participation numbers across all project activities including wider public engagement: 12,116.</p>
<p>Content to support in-direct engagement of a wider audience including:</p> <ul style="list-style-type: none"> - Digital resources created and available for free on Chester Zoo website. - Physical interpretation across the corridor, target 100 signs. - Walking routes established across the project area. 	<p>70 native UK wildlife resources in production. 394 interpretation signs installed across the project area.</p> <p>12 bespoke art pieces installed in the long-term support schools and community group sites.</p> <p>4 walking routes established and made interactive via the development of a project app, Wild Wander.</p>
In depth evaluation of the project and a legacy plan.	<p>95 surveys and 32 interviews conducted to provide data for comprehensive report.</p> <p>Partners and community audiences engaged in legacy planning.</p>

BUDGET

The total budget for this project was £1,184,534.

GREEN RECOVERY CHALLENGE FUND (GRCF)

In July 2021 we were awarded a grant of £990,500 from the Government's Green Recovery Challenge Fund. The fund was developed by Defra and its Arm's-length Bodies. It was delivered by the National Lottery Heritage Fund in partnership with Natural England, the Environment Agency and Forestry Commission.

Green Recovery Challenge Fund



MATCH FUNDING

The Green Recovery Challenge Fund (GRCF) required match funding of at least 10%, we succeeded in securing match funding of 16% which reduced the overall ask to GRCF.

The sources of match funding were as follows:

Government Kickstart scheme - £36,500 supported the Trainee positions for the first six months alongside a comprehensive training and support programme.

The Chester BlueCoat Charity - £17,094 contributed towards outreach work with schools in Blacon and Lache.

District Level Licensing - £2,700 supported the creation of a new pond and the enhancement of existing ponds on the Chester Zoo estate.

Darwin Escapes - £10,000 sponsored the Wildlife Connections Festival.

Chester Zoo core funds - £127,289.

We would like to extend our thanks to all the funders involved in this project who have been crucial to our success and the acceleration of action for nature in the project area.



PARTNER ORGANISATIONS

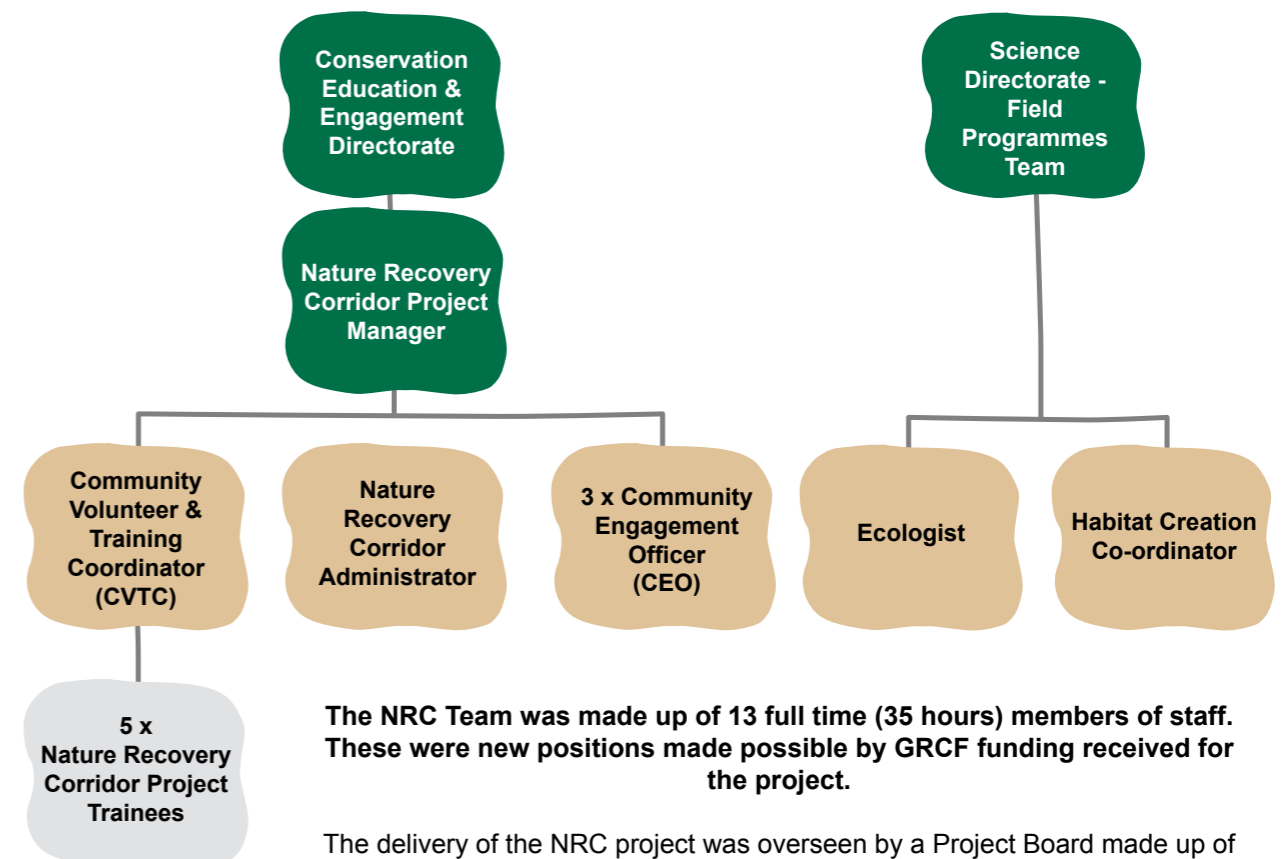
Chester Zoo facilitated a strong partnership of local organisations including:



All land owning and land managing partners committed to making habitat improvement on their own land. CWCT supported as a community engagement partner.

The project partners participated in regular Steering Group meetings to monitor the progress of the project. During the lifetime of the project other organisations that were relevant to our vision for the landscape became interested in the project and so it was decided to extend the Steering Group meetings to be a wider NRC Partnership meeting to support legacy planning. The extended Partnership included; RECORD, Cheshire West Voluntary Action, University of Chester, Healthbox, Cheshire Wildlife Trust and Chester Sustainability Forum.

PROJECT STAFFING AND MANAGEMENT



The delivery of the NRC project was overseen by a Project Board made up of Chester Zoo staff, chaired by Conservation Science and Policy Director. A wide range of Chester Zoo and partner staff provided time to support the project including those roles involved in Project Board and Steering Group, and teams including interpretation, design, digital, finance, marketing and administration.

TRAINEES

Five trainees joined the NRC team for 12 months, 35 hours per week. The trainee positions and their training programme was supported by the Government's Kickstart scheme, set up to create new jobs for 16-24-year-olds on Universal Credit at risk of long-term unemployment.

During the year the trainees were supported to develop skills and experience in the workplace. A key role of the trainees was to support the CEOs in the delivery of community engagement and the development of resources and online content. They were also able to spend time with other zoo teams to broaden their understanding of the zoo as an employer and conservation as an employment field.

Training was an integral part of the experience, they took part in CZ internal training, training provided through the Chamber of Commerce as part of the Kickstart programme, training sessions with Cheshire West Communities Together as well as hedge laying and team building sessions and on the job training and experience.

Four of our 5 trainees had secured further employment by the end of project delivery, all within the conservation field, one of these continued employment at the zoo in a new role.

WHAT OUR TRAINEES HAD TO SAY

"We've had a lot of opportunities from the NRC project that we wouldn't have had otherwise, and it's been a real boost to employability as well."

"I built up my confidence in delivering information to large groups of people."

"It's an amazing thing to have on my CV and the amount of experience I've gained and the people I've got to work with are very inspirational and it's encouraged me to work in this area in the future."

"The vast range of things I've managed to do while I've been here has set me up for a future in employment and I'm looking forward to whatever's next."

"The experience is already helping me; it's giving me lots to talk about on CVs and cover letters... so I can actually be considered for jobs."

COMMUNITY VOLUNTEERS AND SCHOOL VOLUNTEERS

We undertook recruitment of Community Volunteers and School Volunteers to support the NRC project delivery. 14 people expressed their interest in these volunteering opportunities. We advertised the roles on the Cheshire West Voluntary Action website, the University of Chester volunteering portal, on local Facebook groups, through word of mouth at events, volunteer action days and through a social prescriber network. These potential volunteers went on to attend three training sessions which included an overview of Chester Zoo and the Nature Recovery Corridor project, native wildlife sessions, basic safeguarding awareness and appropriate boundaries scenarios.

In total, 8 Community Volunteers and School Volunteers spent **223 hours** supporting the Nature Recovery Corridor. They supported delivery of group sessions, activities and events to encourage participation. They also supported participants to engage with the activity, helped with the group dynamic and enriched the work done by the CEO.

WHAT COMMUNITY VOLUNTEERS AND SCHOOL VOLUNTEERS HAD TO SAY ABOUT BEING INVOLVED IN THE NRC PROJECT

"Had a great time learning about making bog environments, the elements which go into it and a bit about other wildlife such a habitat could attract. The CEO was really engaging as always and this time the group was a little bigger, so it was really nice to see more kids enjoying themselves. I made a particularly nice connection with one child who told me she loved spiders and went on to catch a number of them in some specimen pots the CEO had brought!"

"Community Volunteering is something I'd really love to do more of. It was a great session where I was made to feel really included by everyone, despite being new, and I felt super useful as I was able to help with lots of different things."

CHESTER ZOO ESTATE

CZ ESTATE TARGET AND OUTPUT SUMMARY:

TARGET	OUTPUT
Create one new pond 0.02ha.	0.02ha new pond created.
Enhance 0.7ha pond.	4 ponds enhanced via direct management works, 0.06ha. All ponds across the CZ estate assessed to enable long-term management plans to be developed.
Restore 0.2ha orchard.	0.2ha orchard planted, 63 fruit trees.
Enhance 0.05ha hedgerow.	532m hedgerow laid, 22 standard trees planted. Two hedge laying training courses, 12 participants.
Enhance 5.5ha reedbed.	5.5ha reedbed enhanced by creating varied age structure.
Restore 4.5ha lowland wet grassland.	4.5ha lowland wet grassland restored through creation of wetland scrapes.
Enhance 15ha grassland.	15ha grassland enhanced through cut-and-collect.
Black poplar assessment to determine local tree survival rates, genetic testing and identify new planting sites with the NRC.	Tree survival rates and genetic testing not complete. 28 trees planted into the local landscape, 7 within the NRC.

PONDS

One new pond was created to provide aquatic habitat in an area of the zoo estate that was lacking in ponds. The pond, 20m x 10m was dug to two meters deep totalling an area of 0.02ha. This work took place in mid 2022 and by the end of the year it was holding water well with vegetation establishing without any additional planting. The pond will continue to be left to naturally colonise.



Following estate pond assessment four ponds were identified for enhancement. These ponds were shaded and drying out, offering limited habitat for species such as Great crested newts, toads and dragonflies. Work to enhance these ponds involved the removal or reduction of willow (*salix sp.*) growth that was causing excessive shading, the excavation of margins to remove dense stands of reedmace (*Typha latifolia*) and the reestablishment of gently shelving edges for aquatic plants to thrive. The assessment of ponds across the whole estate will enable a long-term management plan for all the ponds to be developed.



ORCHARD

The site chosen for orchard restoration was a field which on historical maps is identified as an orchard, prior to the NRC project there were no orchard trees on the field. In total 63 native heritage fruit trees, a mix of apple (*Malus sp.*) and pear (*Pyrus sp.*), were planted. The first half of the trees were planted with the support of volunteers at the end of 2021 the rest in early 2023. Going forward the orchard will be managed to maximise the opportunities for wildlife including birds, pollinators and invertebrates and will mature into a valuable resource for wildlife on the zoo estate.



Orchard at the start of planting



Orchard planting



Orchard maintenance

LOWLAND WET GRASSLAND

To restore the area of lowland wet grassland on the zoo estate three shallow scrapes were dug totalling a length of 250m and a perimeter of 500m. The scrapes were dug in low-lying, seasonally wet fields and will provide open water and muddy banks for invertebrates and overwintering birds as well as connectivity through the site for amphibians and other wildlife.



New scrape



Scrape naturally filled Oct 2022

HEDGEROW ENHANCEMENT

Hedges have experienced a rapid decline since the 1950s with a loss of around 190,000kms in this time, they are however a vital habitat with 130 associated Biodiversity Action Plan species (6). They provide shelter, food, connection between fragmented habitat, prevent erosion, capture pollutants, store carbon and of course act as a barrier. Changes in agricultural practices, neglect, damage and removal have all had their impact. Hedges are manmade structures that need maintenance to flourish.



Early in the project an estate hedgerow assessment commenced to establish the existing condition of the zoo's hedges. Assessment used criteria for a local wildlife site within Cheshire produced by Cheshire Wildlife Trust and the Peoples Trust for Endangered Species Hedgerow Survey guidance. 7.53km of 'hedges', 17.2km of 'hedges with mature trees', and 2.62 km of 'lines of trees' were recorded. Assessment suggested that much of the hedgerow needed management to provide the dense, bushy structure preferred by wildlife in the UK. This assessment provided valuable information, identifying stretches of hedge that would benefit from laying.

The traditional craft of hedge laying involves cutting the stems of hedge plants almost completely and laying them at an angle to the ground. This encourages growth by filling gaps. By retaining older growth and encouraging new growth it makes the hedge denser and thicker, better able to provide a vital food source. Laying a hedge typically only needs to be repeated every 8-10 years (7).

During the winter of 2022, 532m of hedge was laid, equating to 2% of the estates hedge. Some of this took place during the training days delivered in partnership with The Canal and River Trust, the rest was undertaken by contractors. Approximately 30% of the estates hedge was in a condition suitable for laying, the stretches laid during the project were chosen:

- for their stem width, suitable for training days
- for having large gaps, laying helps to rejuvenate the bottom of the hedge
- for locations away from roads, for safety
- to minimise impact on breeding birds not too many hedges around one field were laid



Hedge before



Hedge after

Additionally, 22 standard trees were planted to 'gap up' the hedges. Species planted were: English oak (*Quercus robur*), Hazel (*Corylus avellana*), Rowan (*Sorbus subg. Sorbus*), Hornbeam (*Carpinus betulus*) and Beech (*Fagus sylvatica*). Standard trees stand above the hedge, overtime this feature of many hedges has been lost, by reinstating this feature it has increased the variety of habitat present on site and potential opportunities for local wildlife.

REEDBED ENHANCEMENT

Reedbeds are areas of wetland with a water level at or above ground level and the flora is dominated by Common reed (*Phragmites australis*). There are around 5,000ha of reedbed habitat in the UK but most sites are small; less than 20ha. As a habitat, reedbeds are particularly important for birds (8) as well as their role in water filtration.

Over 40% of England's reedbeds have been lost since 1945 and they are still declining (9). Changes in agricultural practices led to large-scale drainage and pollution of reedbeds. The reedbed habitat is one that needs management, as the reeds grow, a layer of leaf litter builds up effectively raising the surface and drying out the area which then has a natural tendency towards scrub development. Historically the reeds were cut for thatch, and this ensured that there was a varied age structure within a stand as well as maintaining areas of open water.

There is 5.5ha of reedbed in one area of the zoo estate. This reedbed had not previously been managed so following a condition assessment a third of the area underwent a 'cut and lift' to remove old growth and thatch creating a more varied age structure and at the same time a section of ditch was excavated to bring more water back into this important habitat. Reedbeds are managed in a cyclical way, this work took place in winter 2022 and management will be continued in 2023 to progress this cycle.



Reedbed before enhancement



Reedbed after enhancement

GRASSLAND

15ha of existing grassland was managed through 'cut and lift'. This area of grassland has had no active management and would have remained uncut and therefore poorer quality for biodiversity without this project. 'Cut and lift' means that grass is cut and collected at the same time to prevent nutrients from further improving the soil. Grasslands require some level of grass removal each year to maintain floristic diversity, this reduces the nutrients in the soil and helps to create the bare ground needed for flowering plants to germinate in. Historically grazing animals would have served this role but where this isn't possible 'cut and lift' is used. Feasibility of a conservation grazing herd for the zoo estate was investigated as part of the NRC project.

HABITAT RESEARCH AND MONITORING

GRAZING FEASIBILITY STUDIES

During 2022, a grazing feasibility study was undertaken by Pori Natur a Threfadaeth (PONT). Grazing as a means of grassland management can have conservation benefits. The focus of the study was on cattle grazing; as non-selective grazers cattle will open up habitats including scrubbed-up areas, as well as tackling invasive non-native species to create a mosaic of scrub and grassland, allowing space for germination and allowing a variety of plant and invertebrate species to thrive. Ponies and sheep, also used for grazing, tend not to produce the same diversity of sward structure as cattle. Additionally of benefit to biodiversity, cattle dung, hair and warm bodies attract insects, birds and mammals (10).

The grazing feasibility study provides advice on species, stocking levels, and schedule for grazing for each field surveyed. The study confirmed that the site is most suitable for hoofstock, with two options either a closed herd owned by CZ and kept on site all year round or grasier, a herd brought onto site annually to graze (the cattle would not be owned by CZ). The potential to link with the Rare Breed Survival Trust and assist with a breeding programme was noted, which would align with CZ expertise in this area. Following the completion of the study the zoo has formed an internal working group to further progress the conservation grazing plan.

HABITAT AND SPECIES SURVEYS

During the NRC project habitat and species surveys were undertaken across the zoo's biodiversity corridor to create a baseline of ecological data. Between 2021 and 2023 the following surveys were conducted:

- Breeding bird survey
- Wintering bird survey
- Bat transect survey
- Static bat detector survey
- Great crested newt survey
- Reptile survey
- Pollinator survey
- Mud snail survey
- Dragonfly survey

In addition to these surveys a desktop survey for historical land use and designation investigation was undertaken, as well as a site walkover habitat survey completed. A report compiling the findings of the surveys was written as part of the NRC project and will be used to support the ongoing management of CZ estate as well as valuable comparison data for future surveys.





ECOLOGY REPORT OVERVIEW

The Chester Zoo estate offers a mix of suitable foraging habitat and opportunities for nesting and roosting for both birds and bats.

57 species of bird were recorded using the CZ estate during the breeding bird surveys with 16 species recorded with breeding territories. Notable breeding species included Lapwing (*Vanellus vanellus*) on the Birds of Conservation Concern (BoCC) red list, and Sparrowhawk (*Accipiter nisus*), Whitethroat (*Sylvia communis*), and Snipe (*Gallinago gallinago*), all on the BoCC amber list (11).

Nine bat species were recorded, including confirmation of the presence of *Nathusius pipistrelle*, (11 species are found in Cheshire).

The dragonfly assemblage on the estate is at a level expected for Cheshire, with 12 species recorded in total. This suggests that the estate ponds are of good quality. The highest number of species recorded on any one pond was 10.

The pollinator assemblage is as expected for the habitats present with 22 species of butterfly and 12 species of bee recorded. These surveys provide excellent baseline information to inform future management for declining species.

Pond mud snail (*Omphiscola glabra*) are a section 41 species under the Natural Environment and Rural Communities (NERC) Act. Pond surveys provided valuable information for the future management of ponds for both this species and Lesser silver water beetle (*Hydrochara caraboides*) a species listed as Endangered in the Red Data Book of Insects (12).

Great crested newts (*Triturus cristatus*) were found in a total of nine ponds. Numbers were low but survey results were largely consistent with those of previous years.

A FEW RECORDING HIGHLIGHTS...



Corn Spurrey

Corn spurrey (*Spergula arvensis*) which is classified as vulnerable on the Red List for England. As an arable weed this species is declining due to the use of herbicides and more intensive and efficient farming practises however along with other such species it is of high value for pollinators.



Wrinkled peach fungus

Wrinkled peach fungus (*Rhodotus palmatus*) which is classified as endangered across much of Europe on the global fungi Red List. This is a species associated with rotting Elm and is rare and declining due to the impact of Dutch elm disease.



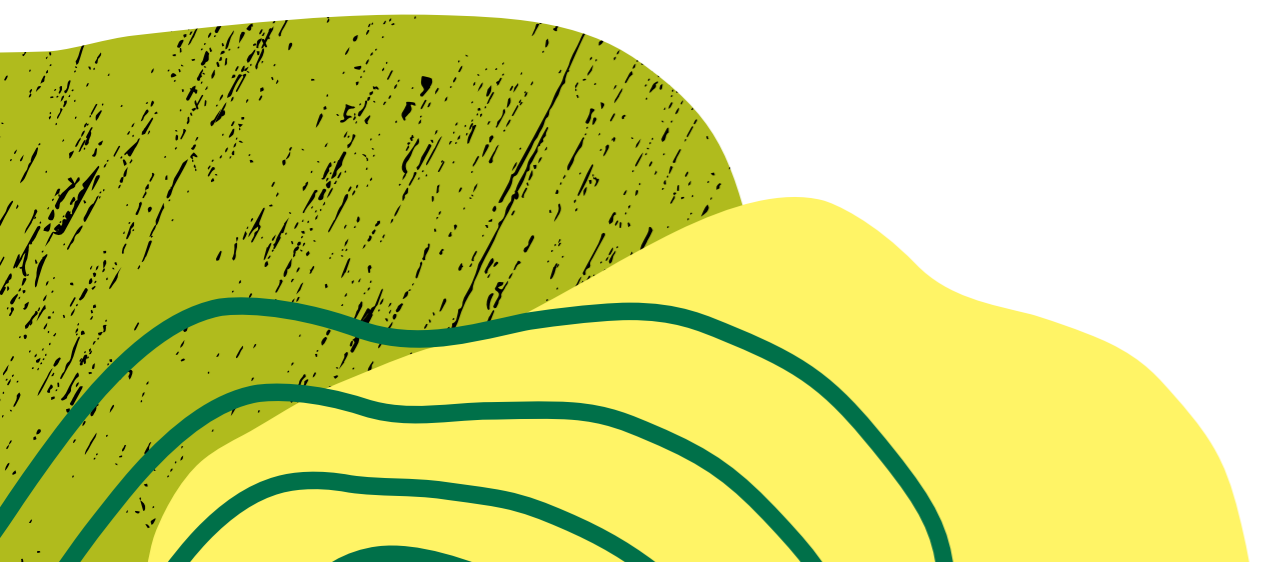
Dusky-horned sawfly

Dusky-horned sawfly (*Abia candens*); this is potentially the first record of this species in Cheshire.



Rhinoceros beetle

Rhinoceros beetle (*Sinodendron cylindricum*) is a species infrequently recorded in Cheshire, it feeds on dead wood and was located on a veteran tree on the CZ estate.





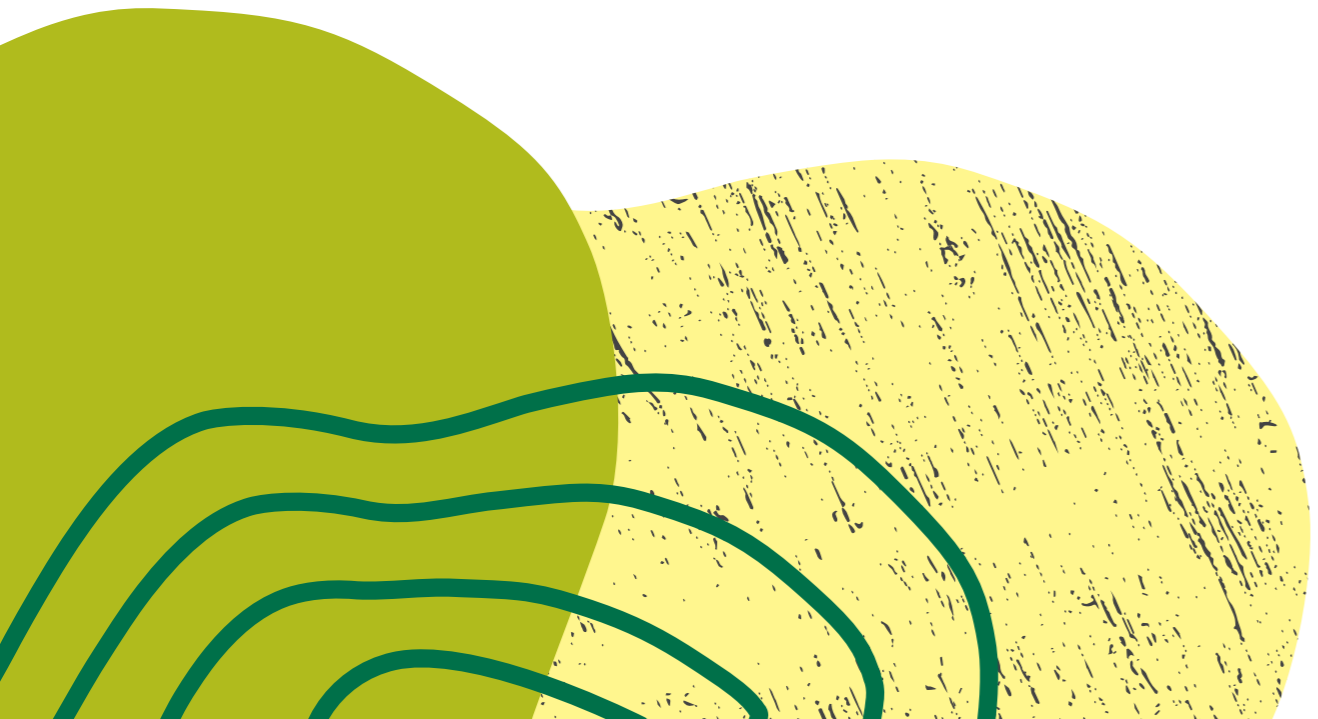
BLACK POPLAR GENETIC SURVEY

Black poplar (*Populus nigra*) is one of Britain's most endangered native trees, within Cheshire there are approximately 300 individuals however the majority of these are old and not regenerating naturally. Black poplars are a dioecious species having male and female individuals and males have tended to be favoured for planting as they don't produce the same fluffy seeds as the females. Since 1995 over 1,000 new trees have been raised from cuttings and planted out across the county. Chester Zoo's Horticultural team has contributed to this propagation.

Some years ago, 105 mature Cheshire Black poplars were genetically tested, the results suggested that

these trees represented just seven different clones (four male and three female). Following on from this study it was proposed that further survival and genetic surveys could be undertaken as part of the NRC project, unfortunately the appropriate skill set amongst potential contractors for the work could not be found during the limited timeframe of the project.

During the project, additional planting of Black poplars took place from stock propagated at the zoo. 28 trees were planted in suitable sites, over half of these sites were in Cheshire and half of these within the NRC. Locations included CZ and project partner land



PEAT RESEARCH

Peat is an organic material that constitutes the substrate of peatland, a wetland habitat, that is typically nutrient poor, acidic and supports a unique assemblage of flora and fauna. Peatlands are significant carbon stores, of importance in relation to climate change. Within Cheshire there are several notable peatlands including Holcroft Moss thought to be the only raised bog in Cheshire that has never been cut for peat, the meres and mosses of Delamere and Lindow Moss known for the discovery of the Lindow Man.

Natural England identified a potential peat deposit in the Countess of Chester Country Park and adjacent CWAC land. The northern section of this potential deposit was in an area designated to become part of the Chester Wetland Centre.



Peat map

To investigate the potential presence of peat, within the identified area, Bangor University students led by the Associate Director of Bangor Wetland Group, took and analysed sample cores from three sites.

The key finding of the report was:

“The substrate tested from across the proposed Chester Wetland Centre, to the depth of 40cm, is not peat; according to the Natural England's guidelines and accepted definitions of soil types”

With confirmation that no peat is present to be potentially damaged, it is now possible for the Chester Wetland Centre project to progress.



Peat samples

CHESHIRE WEST AND CHESTER LOCAL AUTHORITY (CWAC)

In Mid 2021 CWAC launched their Wildflower and Grassland Strategy contributing to the Council's legal duty to conserve and enhance biodiversity under the Natural Environment and Rural Communities Act (NREC) (2006) as well as to meet key priorities and objectives in national and local policy and the Council Plan 2020-2024 (13).

The aim of the strategy is to provide a framework for improving biodiversity, abundance and connectivity of wildflower and grassland habitat within the Borough Council's managed land for the benefit of both people and wildlife, and in particular pollinators, to help tackle the nature and climate emergency and address the declines in biodiversity and pollinators both nationally and locally (13).

The strategy also aims to increase awareness and improve knowledge and understanding of the climate and nature emergency, and the importance of biodiversity, wildflower grasslands and insect pollinators among the local community (13).

With a change to the way that CWAC manage open space three new typologies were introduced:

Typology 1/A – Pollinator verge; A colourful mix of native perennials and some annuals for road verges (14).

Typology 2/B – Native wildflower meadows; Treated in the same way as traditional hay meadows these areas will be cut and collected at the end for the season to reduce soil fertility (14).

Typology 3/C – Managed long grass; These areas are roadside verges that can be left to grow all season following an initial cut in March/April (14).

With wildflowers being lost at a rate of around one species per county per year since the 1950s, and 95% of wildflower meadows lost in 50+ years between 1930-1984, urgent action is needed to protect and increase this vital habitat. Two-thirds of wildflowers in the UK require low levels of nitrogen so have been impacted by nitrogen enrichment (2). Cheshire has lost 99% of its meadows over the last 60 years (15).

Wildflower meadows and species rich grassland is a crucial food source for pollinators and other invertebrates as well as those species that feed on them. These habitats store carbon within both the vegetation and the soil so contribute to climate change mitigation, flood mitigation, and improving water quality. When in public spaces these habitats can positively contribute to physical and mental health of local communities.

CHESHIRE WEST AND CHESTER LOCAL AUTHORITY TARGET AND OUTPUT SUMMARY:

TARGET	OUTPUT
Improve 11.2ha of grassland and wildflower meadow.	24.21ha pollinator verge, native wildflower meadows and managed long grass – project area. 58.2ha pollinator verge, native wildflower meadows and managed long grass – across whole borough.
CWAC Your Streets Team to receive training regarding the importance and maintenance of wildflower and grassland habitat.	17 CWAC staff trained.
Installation of approximately 100 interpretation signs across the NRC (wider project target not just CWAC).	200 signs out in the community to explain habitat changes. Wildflower FAQ handout created. 5 community meetings, 22 participants. 1 community event, 30 participants.

GRASSLAND AND WILDFLOWER MEADOW

Project funds enabled CWAC to purchase cut and collect machinery which allowed for ground preparation to begin in previously identified areas across the NRC project area and Borough. The machinery was chosen to negate the need for herbicide use in removing the competing grasses already existing on sites, by burying the grass instead. CWAC consulted with the National Wildflower Centre at the Eden Project to identify the best mix to suit the Cheshire landscape (13).

During the project 24.21ha of pollinator verge, native wildflower meadow and long grass area has been sown and managed within the NRC. This more than doubled the target of 11.2ha and was a very successful component activity of the project. This level of progress was made possible due to the preparation work of CWAC in communicating with ward councillors to identify sites and the pre-existing delivery team to deliver the requests. CWAC staff also report that their work has been well received in-part due to it being part of a wider initiative that is being delivered by a collaborative partnership including CZ. Across the whole borough a total of 58.2ha of habitat was created and improved during the project.

The Wildflower and Grassland Strategy is a 5-year strategy. The success of year one has ensured that Councillors are keen for more sites to be created in their wards.

Early in 2022, 17 CWAC Your Steets team members attended a wildflower information and training session at CZ. The aim of the session was to provide information that could be shared with local community members the CWAC staff may encounter during strategy delivery. After this session NRC staff created a Wildflower FAQ document for CWAC staff to handout to local residents. To further support information sharing, CWAC printed and installed 200 signs to explain to residents what was happening in their area and ran five community events providing information about their Wildflower Strategy with 22 attendees. A further litter picking, community action event was held with 30 participants.



Preparing for sowing with new machinery



Wildflowers in bloom



Resident reaction



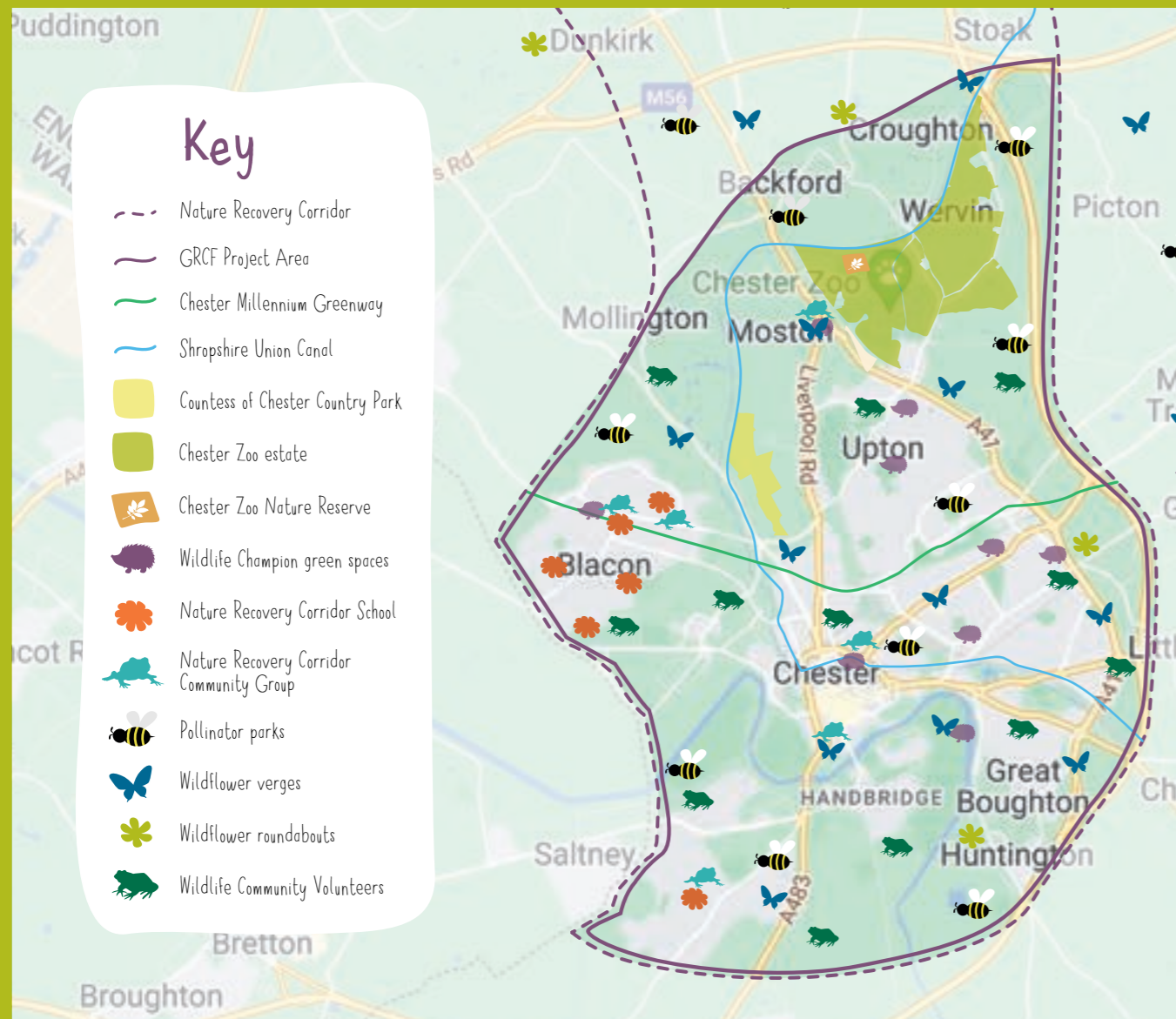
WHAT CWAC STAFF HAD TO SAY ABOUT BEING INVOLVED IN THE NRC PROJECT

“The partnership really works well and it gels well. It’s a wonderful partnership and we hope to be with them for a long time in the future”
 CWAC, Your Streets Officer



CANAL AND RIVER TRUST (CRT)

The Canal and River Trust launched in 2012 and manage over 2,000 miles of canals, rivers, reservoirs and docks. As a waterways and wellbeing charity the Trust create places to enjoy, build stronger communities, develop confidence and new skills, champion the benefits of waterways, protect heritage, protect and enhance waterway habitats and maintain waterway infrastructure.



Approximately 8km of the Shropshire Union Canal, managed by the Trust, runs through the project area connecting the zoo estate with the Countess of Chester Country Park (TLT partner Land), the Millennium Greenway (Sustrans partner land) as well as many Council owned sites (CWAC partner land). This blue and green ribbon represents a vital corridor for wildlife, an important means to access the project area for local communities and visitors to the area, as well as connecting many of the sites involved in the NRC project.

CANAL AND RIVER TRUST TARGET AND OUTPUT SUMMARY:

TARGET	OUTPUT
Enhance 4ha canal through invasive species removal through 3 community engagement events.	16 events across 8 days. 122 participants. 6.43ha waterway managed/enhanced. 16.56ha of waterway benefitting.
Enhance 0.1ha of hedgerow through 6 community engagement events.	Two hedge laying training courses, 12 participants. 5 hedge laying or hedge planting events, 34 participants. 52m hedge laid. 30m hedge improved by planting.
Create 0.03ha community nature area through 8 community engagement events.	0.21ha community nature area created. 7 events, 3 locations, 91 participants.
Create 0.25ha wildflower area through 6 community engagement events.	0.37ha wildflower area created. 6 events, 3 locations, 74 participants.

The Canal and River Trust activity focused on managing invasive species, enhancing hedgerow along the canal and improving towpaths by creating pollinator habitats and community nature spaces. All activity was delivered through community volunteer events.

INVASIVE SPECIES MANAGEMENT

Floating pennywort (*Hydrocotyle ranunculoides*) is a highly invasive species that presents a severe problem for waterways. It grows up to 20cm a day in late summer and can grow from tiny fragments. It forms dense floating mats across the surface of water swamping the waterway, blocking water flow, crowding out native plants and removing oxygen from the water (16). Introduced to the UK in the 1980s, this species is native to the Americas, and rapidly spread from garden ponds to waterways. In financial terms it is estimated that Floating pennywort costs around £25 million a year across Great Britain and Europe via its impact on tourism, commercial fisheries, waterworks and flooding (16). Listed under Schedule 2 of the The Invasive Alien Species (Enforcement and Permitting) Order 2019 it is an offence to plant or otherwise cause to grow this species in the

wild. Currently, the main means of control of this species is mechanical removal.

To address the problem of this species in the Shropshire Union Canal, Canal and River Trust ran 16 paddle events over eight days in two main locations Pretty Bridge (53.233669, -2.880232) to the north of the NRC and Tower Wharf (53.193226, -2.898915) to the East of Chester city centre. After a safety briefing, volunteers took to the water to hand pull the plant under the expert supervision of Trust staff and an instructor. The invasive nature of this species means that eradication by this means is unfeasible, however these events ensured that the species was maintained at a manageable level that did not limit use and benefits of the canal for wildlife and people. In addition, signage was designed and installed near the Pretty Bridge location raising awareness of the species.



Pennywort



Volunteers on canal

This activity on the canal offered a wonderful opportunity to engage with passing towpath users, so where possible additional towpath activities were set up and supported by NRC staff. Volunteers for the paddle activities were recruited by Canal and River Trust and CZ event promotion.



Towpath



Young eel (*Anguilla Anguilla*)

HEDGEROW ENHANCEMENT

During the NRC project, Canal and River Trust undertook both hedge laying and planting.

Between October and December 2022 four, two-day, hedge laying training courses were delivered. Two of these were coordinated by Canal and River Trust. The courses were run by Lantra, qualified contractors for six participants at a time. 12m of hedge was laid at Pretty Bridge along the towpath bordering the zoo estate during these courses.

Following the training, the Trust ran a further four hedge laying events with 29 participants laying a further 40 meters of hedge at Pretty Bridge, and one hedge planting event with five participants along the towpath near Christleton.



Hedge before



Hedge after

COMMUNITY NATURE AND WILDFLOWER AREA CREATION

A total of 0.584ha of community nature and wildflower area was created during activities run by Canal and River Trust. Many of these areas focussed on supporting pollinating invertebrates, providing food and shelter for a variety of wildlife.

In total 12 Conservation Action Days were run, engaging 165 participants.



WHAT CANAL AND RIVER TRUST STAFF HAD TO SAY ABOUT BEING INVOLVED IN THE NRC PROJECT

“It’s been really good to link in with other organisations and communities that live in and around the Chester and Shropshire Union Canal. We’ve been able to engage lots of people with looking after their local waterways, which is really good for their physical health, mental health, and their general wellbeing. This work also shows other people using the towpath or in boats that we are really caring for our spaces. We are really proud to be part of this partnership” Canal and River Trust Ecologist



THE LAND TRUST

The Land Trust is a Charity that is committed to the long-term sustainable management of open spaces for community benefit. Created in 2009/10, The Land Trust now manages over 50 sites across the UK. One of these sites, the Countess of Chester Country Park, is within the NRC.



The 19ha park is located on the edge of Chester city centre next to the Countess of Chester Hospital and is boarded in part by the Shropshire Union Canal. The park is made up of a mosaic of habitats including reedbed, woodland, grassland, wet grassland and a stream (Finchetts gutter) running its full length. Much of the site lies over a former landfill that was closed in the 1970s.

Day-to-day management of the site is delivered by The Conservation Volunteers (TCV) in partnership with a dedicated and active Friends of group. The site is well used by the local community and there is a regular programme of activities offered including a weekly parkrun, regular forest school and management activities supported by volunteers.

THE LAND TRUST TARGET AND OUTPUT SUMMARY:

TARGET	OUTPUT
Enhance 0.45ha of reedbed.	0.45ha reedbed enhanced through clearing and management. 7 events, 33 participants.
Convert 4.29ha old grazing field into wildflower meadow. Create 0.26ha wildflower area through community participation.	Grazing field not converted due to long term maintenance funding not being secured. 0.26ha wildflower area created, 4 events, 70 participants.
Enhance 1.08ha of woodland.	1.08ha woodland enhanced, 2 events, 75 participants. Additional 102m hedge laid and planted, 5 events, 65 participants. Between hedge and woodland 205 trees planted.
Create 0.14ha of wetland.	0.02ha wetland scrape created. 300 wetland plugs planted, 3 events, 24 participants.
Delivery 8 Conservation Action Days.	21 events, 216 participants.

REEDBED ENHANCEMENT

During the NRC project TCV ran seven reedbed improvement sessions with the support of 33 volunteers. This equated to 825 volunteer hours. During this time 110m² of Common reed (*Phragmites australis*) was removed from the 0.45ha reedbed site within the park. This removal reinstated open water and a mosaic of conditions within the area.



Reedbed

WILDFLOWER MEADOW

The target for wildflower creation at the Countess of Chester Country Park was 4.55ha. This total included a full field that ultimately became unachievable within the scope of the project due to ongoing maintenance costs not being available. Project communication largely took place between TLT (the landowners) and CZ. CZ did not have direct communication with TCV, the land managers. In hindsight it might have been helpful to communicate with all parties simultaneously.

The planned 0.26ha community sown wildlife area was completed. During March 2022, after the ground was prepared by surface scraping and spraying, a seed sowing Community Action Day was run attended by 43 participants to create the new wildflower area. A woodland meadow seed mix and a species rich meadow seed mix were used. The following autumn and spring three further Conservation Action Days were run engaging 27 participants supplementing the newly created area with over 300 wildflower plug plants. The time given to the events by participants equated to 202.5 volunteer hours.



Wildflower prep



Seed sowing

WOODLAND ENHANCEMENT

At the time of the Domesday survey, UK woodland cover was estimated at 15%, having dropped to 5% by the end of World War 1, cover has more recently increased to approximately 13%. Rapid increases in cover occurred with the establishment of the Forestry Commission in 1919, but initial restocking was species poor and consisted largely of conifers. In England 26% of woodland cover is comprised of conifers with many of these being non-native trees in commercial plantations. Ancient woodland accounts for just 2.4% of UK woodland (2).

There are many negative factors impacting our native woodlands, changes in management, disease, clearance and fragmentation by roads and development, increases in deer numbers, recreational use and its associated disturbance, pest species and climate change.

Within Countess of Chester Country Park there is an area of 1.08ha mixed broadleaf woodland. This area has been the focus of habitat and access improvement work from the Friends of group who have cleared the area to create a marked path through it and areas for small groups to stop and take part in activities. Other additions have been made to the area such as bug hotels, hedgehog houses and toad abodes.

During the NRC project this area of woodland was enhanced during two Conservation Action Days, one involving 10 participants planting woodland wildflower plugs in April 2022 and the following year in March 2023 with 65 volunteers supporting with understory tree planting. Species planted were Oak (*Quercus sp.*), Field Maple (*Acer campestre*), Common Hazel (*Corylus avellana*), Beech (*Fagus sylvatica*), Hornbeam (*Carpinus betulus*), Alder (*Alnus sp.*), Silver Birch (*Betula pendula*), Downy Birch (*Betula pubescens*), Bird Cherry (*Prunus pardus*) and Aspen (*Populus tremula*).

In addition to the planned project habitat creation and improvement, 102m of hedge was laid. This took place over the course of five days between December 2022 and February 2023 with support from 65 volunteers equating to 297 volunteer hours. The section of hedge laid was dominated by Hawthorn (*Crataegus monogyna*) with some standard Oak (*Quercus sp.*) and Cherry (*Prunus sp.*). After Laying gaps were filled with additional Hawthorn plants.

Between the hedge and the woodland planting a total of 205 trees were planted.



Woodland

WETLAND CREATION

A total area of 0.02ha of wetland scrape was created within the park. This consisted of two areas known to hold water during wet periods in the grassland areas of the park. Wetland scrapes add diversity to grassland areas providing food, water and shelter for invertebrates, birds and small mammals. To enhance these areas further, over 300 wetland plug plants were planted during three Conservation Action Days engaging 24 participants. Given the popularity of the park the scrapes were fenced to minimise disturbance from dogs. The area of scrape creation was below the initial target, this was due to miscommunication across planning and implementation. This highlights the important need to make sure that all relevant parties are suitably involved in planning, and that the targets are developed and committed to by both landowner and land management when both are present.



Wetland scrape

CONSERVATION ACTION DAYS

The target of eight Conservation Action Days was far exceeded with a total of 21 events taking place engaging a total of 216 participants from young uniform group members to retirees as well as individuals with mental health conditions and learning disabilities. In addition to the benefits to wildlife as detailed above, the benefits to individual mental health and wellbeing of volunteering is well documented (17, 18). A total of 822 volunteer hours were given to the NRC project at the Countess of Chester Country Park.

WHAT THE LAND TRUST STAFF HAD TO SAY ABOUT BEING INVOLVED IN THE NRC PROJECT

“This project has provided the Land Trust with a fantastic opportunity to improve habitats at the Countess of Chester Country Park. By working in partnership with Chester Zoo on this project, the Land Trust has been able to reach a wider audience and engage participants from across the community who haven’t been involved at the park before. We were also able to offer a range of tasks for people to get involved and help to improve the site.” TLT Estates Manager Northwest

WHAT THE CONSERVATION VOLUNTEERS HAD TO SAY ABOUT BEING INVOLVED WITH THE NRC PROJECT

“We’ve engaged with the Child and Adult Mental Health Unit to plant wildflower bulbs and plants. We’ve had a local cub and scout group involved.We’ve had quite a lot of volunteers involved, as well as actually help to grow our volunteer base down here...its definitely given more of a variety of jobs for our volunteers to have taken part in. And we’ve had new volunteers come down through the zoo avenue” TCV Senior Project Officer

SUSTRANS

Sustrans grew out of a campaign launched in 1977 to persuade Bristol Council to put in more facilities for cyclists (Cyclebag), today Sustrans work for and with communities, helping them come to life by walking, wheeling and cycling to create healthier places and happier lives for everyone. They are custodians of 10,000 miles of the National Cycle Network.

Several National cycle routes pass through Chester and the NRC. During the project the focus of Sustrans' work was Cycle Route 5 a 590km route that starts in Reading. The 7km section of this cycle route that passes through the NRC runs along The Chester Millennium Greenway, a disused railway track. The track, part of the Borderlands line was active until 1992 but only for freight from 1986 (19). At a length of 11.9km the Greenway connects Mickle Trafford to the east of Chester to Connah's Quay to the west in North Wales (20). The path is well used by commuting and leisure cyclists, dog walkers and the local community.

SUSTRANS TARGET AND OUTPUT SUMMARY:

TARGET	OUTPUT
Create 1.5ha nature area along the Chester Millennium Greenway.	1.5ha area improved by; vegetation thinned in one section, access improved by path, wildflower bulbs planted.
Enhance 4ha of the Chester Millennium Greenway for wildlife.	Pond restored to address access issues due to flooding, two invertebrate banks created, and 5 benches installed.
Deliver 5 conservation action events.	6 events, 54 participants.

NATURE AREA

At Lime Wood Fields in Newton, Chester the cycle route diverts off the old railway line up onto the the playing field for approximately 350 m. At this point the old railway track bed is still intact and while once passable it had become overgrown with scrub and tree growth.

During the NRC project, a section of this track bed area was enhanced by Sustrans staff and through volunteer Conservation Action Days. This improvement included the thinning of trees, mostly self-seeded Wild cherry (*Prunus avium*) and scrub, particularly escaped garden invasives. Accessibility was improved by the creation of an access path joining it to the existing path. Opening the area is intended to make it a more appealing place to explore and a less appealing location for anti-social behaviour. Not opening or clearing the path along the full length of this section was a deliberate choice to prevent it from becoming an alternate cycle route and to maintain it as an area to be explored on foot.



Jan 22 entrance



Feb 23 entrance

MILLENNIUM GREENWAY ENHANCEMENTS

Two invertebrate banks were created involving the clearance of the greenway verges and seed sowing.

Greenfield Pond, that had declined in condition to a wet area of ground was restored to improve access to the greenway path that tends to flood. This work negated the need to install a boardwalk that had been proposed, improving the space for wildlife in addition to making it more accessible for people.



Jan 22 pond



Feb 23 pond

5 benches were installed along the length of the greenway to further aid access to the path through provision of resting places.

Bat surveys were carried out on the three bridges that cross this section of the greenway by a Sustrans Ecologist; no potentially suitable roosting sites were recorded.

COMMUNITY ACTION EVENTS

A total of six events were held between June 2022 and March 2023 with a total of 54 participants.

Of the six events two were training/information sharing events; one a dawn chorus walk and one a tree identification session. The rest of the events were practical management activities including the creation of a bug hotel within the nature area, bulb planting along the stretch of land between the original track bed section and the cycle path where it deviates from the old railway track, a seed sowing event in the same area and woodland management.

Each event was advertised via signage along the greenway itself, as well as shared through both Sustrans and Chester Zoo volunteer networks. 20 engagements resulting from these signs were recorded. One of these was on behalf of a day nursery, seven resulted in attendance at a future event and two resulted in the individuals signing up as Sustrans volunteers. This was a new way of engaging audiences for Sustrans and they were very pleased with the range of participants.



Event promotion photo

“

WHAT SUSTRANS HAD TO SAY ABOUT BEING INVOLVED IN THE NRC PROJECT

“It’s been brilliant working with Chester Zoo because of their expertise. The expertise from the CZ ecologists and linking with our ecologists and linking with other projects. The project has also opened doors for us, so when we’ve got plans to say, we’d like to do this in this area, Chester Zoo will say we’ve been working with a landowner here and a school. A lot of the volunteers attending the events have found out through Chester Zoo communication as well” Sustrans Land Manager

”

FUTURE MONITORING AND MAINTENANCE

All the project partners that have delivered habitat improvements on their land have committed to the future monitoring and maintenance of these habitats.

COMMUNITY ENGAGEMENT

The project aimed to involve a wide range of audiences and in particular audiences not already engaged with wildlife, nature, and natural heritage and those that would benefit most from the positive outcomes of spending time in nature, making a difference in the community and volunteering. Our NRC CEOs created and delivered an extensive programme of community engagement with the support of NRC Trainees, NRC CVTC, CZ Schools Team and project partners to engage schools, community groups, Wildlife Champions and deliver Conservation Action Days.

To reach the intended audiences we focused on two geographic areas within the NRC, Blacon and Lache, both areas of multiple deprivation. We also reached out to groups that supported audiences who may face barriers to participating, such as a community space that supports people through mental health crisis and a multicultural centre in Chester. The knowledge and expertise of the Cheshire West Communities Together staff has been invaluable.

CHESHIRE WEST COMMUNITIES TOGETHER (CWCT)

The aim of this not-for-profit organisation is to support the communities of the Borough of Cheshire West to create stronger healthier communities. The service, which has been running since 2017, engages and empowers residents to take community action to address and improve health and wellbeing. Within the Borough, CWCT focus on three key areas, Winsford, Ellesmere Port and Chester and has a dedicated Community Development worker in each area. The Community Development worker for Chester works within the communities of Blacon and Lache, the two wards within the administrative area of Chester of greatest inequality and deprivation.



The ward of Blacon covers an area of 4.5km², has a population of 14,000.



41% of the population over 16 are economically inactive with 11% having never worked or long-term unemployed.

BLACON



Over 60% of households are deprived in one or more dimensions (education, employment, health, housing)



The percentage of primary and secondary pupils eligible for free school meals is 34.6% and 38% respectively compared to 18.6% and 18.5% for the Borough.



26% of the population over the age of 16 have no qualifications and 45% have level 1-3 qualifications (GCSE's/A-levels)



Green space per resident in Blacon is 26.2m² compared to 83.1m² for the Borough as a whole and 32 m² for England.

(21)



The ward of Lache covers an area of 1.2km² has a population of 5,900.



36.9% of the population over the age of 16 are economically inactive with 28% not being in employment or having never worked.

LACHE



55% of households are deprived in one or more dimensions (education, employment, health, housing)



The percentage of primary and secondary pupils eligible for free school meals 39.3% and 34.3% respectively compared to 18.6% and 18.5% for the Borough.



20% of the population over 16 years of age have no qualifications and 40% have level 1-3 qualifications (GCSE's/A-levels)



Green space per resident in Lache is just 3.7m² compared to 83.1m² for the Borough as a whole and 32 m² for England.

(21)

CWCT TARGETS AND OUTPUTS SUMMARY:

TARGET	OUTPUT
Mentor NRC team to support with community engagement and delivery.	Wide range of training, mentoring, site visits and supporting links with community groups.

Given the short timeframe of the project, engaging and gaining trust within these communities quickly was key to the success of the engagement aspect of the project. Given the nature of the areas, the communities had experienced similar projects come and go in the past and so were potentially sceptical of another project. Since 2019 a Chester Zoo Community Engagement Officer has been working in Lache to establish and build relationships with the communities. Additionally, the CZ Schools Team has worked with all the schools engaged in the NRC project to varying degrees for many years.

CWCT provided mentoring support to the Community Engagement Officers (CEOs), five NRC Trainees and our NRC Community Volunteer and Trainee Coordinator (CVTC), through training, site visits and reflection sessions.

TRAINING

A total of 11 training sessions were delivered for NRC staff

- Asses based community development
- Two coaching sessions
- Two mentoring sessions
- Co-design and co-production
- Action planning
- Measuring soft outcomes
- Handling conflict
- Becoming constituted
- Succession planning and exit strategy

The majority of these were delivered during the first half of the project to support CEOs with relationship development and project planning. A training manual was compiled by CWCT at the end of the project to enable important learnings from this partnership to stay with Chester Zoo and the NRC Partnership after the project ends.

SITE VISITS

The CWCT Community Development Worker accompanied the NRC CEOs on 44 site visits to their community and school groups to meet the groups, observe interactions and provide advice, guidance and suggestions for moving forward.

REFLECTION SESSIONS

Led by CWCT Community Development Worker, these sessions were an opportunity for NRC CEOs to come together, share their experiences and reflect on progress. Five reflection sessions were held in total.

WHAT CWCT HAD TO SAY ABOUT BEING INVOLVED IN THE NRC PROJECT

“During the length of the project, it has been valuable to see how the Community Engagement Officers, Trainees and volunteers have engaged with residents across Chester. Through the work they have done, it has had a positive impact residents’ health and wellbeing, especially for those who have not had opportunities beforehand to connect with both Chester Zoo but also nature and wildlife.

It’s evident how connecting with nature can lead to improving people’s health and wellbeing and the importance of supporting people to engage in a variety of opportunities to enable this.

The project has provided a wide range of opportunities for people who live in areas where health inequalities exist to engage with. Residents in these areas have learnt new skills, developed an interest in nature and can see their contribution is important and can make a difference. Through improving residents’ knowledge, skills and confidence, it means the projects and local environments will be developed and maintained on a long-term basis.

Through working closely with the team, we have been able to see them use an asset-based approach to engage with these communities, which has led to building trust and positive relationships. It has been great to see how residents now feel empowered so they can bring positive change to the natural environment where they live and to have something they can be proud of.

It has been an absolute joy being a part of the project, especially working with such a fantastic team” CWCT, Community Development Worker



Training session

LONG-TERM ENGAGEMENT

Previous research into the impact of repeat engagement education programmes delivered by the CZ Schools Team has shown positive outcomes (22,23). Using this research and previously trialled models as a base we developed a long-term engagement offer for schools and community groups tailored to the needs of the NRC project.

To facilitate the building of relationships, engagement and consistency, each school and community group was assigned an NRC CEO as their primary contact who delivered all sessions with support from NRC Trainees, School Volunteers and Community Volunteers.

SCHOOLS

Through our work with schools, we supported the school community to create space for wildlife within their school grounds, increased knowledge and skills and supported the development of connection to nature for participants. The family focus of some of the activities enabled connection between families in nature through a shared experience and overcoming potential barriers to spending time in nature in the future.

Research shows that in households where the adults were frequent visitors to the natural environment, most children (82%) were also frequent visitors. In households where the adults rarely (or never) visited the natural environment, the proportion of children visiting frequently halved to 39% (24).

Learning about nature was reported as a positive outcome for over half of adults spending time outside with children (56% overall), which is much higher than the proportion of adults spending time outside without children (31%) (25).

NRC SCHOOLS

- Lache Primary School
- Highfield Community Primary School
- St Theresa's Catholic Primary School
- Dee Point Primary School
- The Arches Community Primary School
- Blacon High School



SCHOOL TARGET AND OUTPUT SUMMARY:

TARGET	OUTPUT
*Whole school involved in CZ 'Project School' offer - 1,260 participants.	7 projects, 1,347 participants.
*Family Wildlife Club (FWC) - 18 clubs, 540 participants.	24 clubs, 433 participants.
School Conservation Action Days - 18 Action Days, 900 participants.	13 Conservation Action Days, 547 participants.
Wildlife Champion training for school staff.	67 staff trained.

THE NRC OFFER

Everything offered was at no cost to the school as well as being flexible and adaptable to work in each individual setting.

- A yearlong programme of activities for pupils and families, particularly those identified by the school as requiring additional support, including Family Wildlife Clubs/Wildlife Clubs* and trips to our CZ Nature Reserve.
- A whole school native species/sustainability 'Project School'* delivered by CZ Schools Team.
- A long-term programme of training and development, including co-delivery and capacity building for school staff, Wildlife Champion training for school staff and access to support from the wider Wildlife Champions Network.
- A budget to cover resources to create wildlife areas in the school grounds, teaching resources, resources to support accessibility, and interpretation signage.
- A support plan co-developed with NRC staff to enable maintenance of the wildlife areas created and continuation of the engagement activities.

***Family Wildlife Club (FWC)** – Delivered once per term for up to 15 families, the FWC consisted of four sessions delivered in school, one visit to CZ nature reserve, and a Conservation Action Day for the wider school community. The aim of the club is to provide a space for families to spend time in nature, learning and sharing skills and taking action for wildlife. Timing and participation were adaptable to work for the setting e.g., families did not attend all clubs.

***Project School (PS)** – Delivered once per school and available for every class in the school, the PS consisted of three curriculum linked classroom sessions in school, a school trip to Chester Zoo and admission tickets for families involved.



LESSONS LEARNT

- School management support had a big impact on the amount of time and support that the teachers received to be involved in the project during the year so is essential to establish from the beginning.
- Conservation Action Days were challenging to organise in some schools as there was not time allocated during the FWC session for the group to plan together what they would like to do. To overcome this in the future an additional FWC session will be added to the package, which will have a focus on developing the group's ideas for how to engage the wider school community in their activities.
- FWC participation varied considerably both between schools and between clubs in the same school. In part this was due to the lingering impact of the coronavirus pandemic, but the differences may also have been influenced by the preexisting engagement of families with their school, school communication, and promotion of the club by both CZ and school. To improve this in the future CEOs will provide more support for promoting FWC to parents and carers, perhaps with information sharing sessions.
- A flexible approach to FWC delivery supported schools to take part in a way that worked for their individual setting, this was particularly important in engaging with secondary schools.

IMPACT

Children and adults have both benefitted from taking part in the NRC project.

“That’s the first time I’ve heard that parent talk.” School staff comment. The parent had not interacted with school staff previously but was highly engaged with other families and staff during the four sessions they attended

“...I didn’t realise how much Child X knew about animals!” Parent/carer

“I’m over the moon with Child Y – I didn’t think they’d interact all.” A teachers comment about a shy child who ‘got stuck in’ with all activities and interacted with peers which was rare for this child.

“She (Teacher) has done and continues to do a fab job, the children love wildlife club and it is making a positive difference in so many ways.” School Deputy Head.

“When we were making the bird boxes, we had tools and we were a bit sceptical about using the tools with the children, but their involvement and engagement was excellent.” Willows Teacher

“My highlights include removing barriers to engagement and helping individuals get involved in a way that works best for them and their needs, watching the children’s confidence grow and seeing them so proud of what they have created and achieved, seeing children and teacher’s connection to nature grow so much that they are suggesting more to do for wildlife and setting up a gardening club and making a positive difference for nature in their own community” NRC CEO

The schools have been able to purchase resources with their budget, such as outdoor clothing, gloves, tools, sheds for storage and poor weather delivery space. To further support the continuation of FWC the NRC CEOs provided activity resource boxes and lesson plans.

The activities during FWC has also seen many improvements for wildlife and people on school grounds including pond creation, bug hotels, wildflower planters, bog gardens, fencing and seating.

COMMUNITY GROUPS

Through our work with community groups within the NRC we were looking to improve community spaces for wildlife and people, through community participation. A key focus for our community work was positively impacting wellbeing and connection to nature. The benefits of volunteering are well documented as are those of spending time in nature (26 27). There is a growing body of evidence on mental health benefits from contact with nature. Stress and symptoms of depression are reduced (28); concentration and self-discipline are enhanced (29) and levels of admissions for mental illness decrease (30). Attention levels in children with attention deficit disorder increase when they have access to natural spaces (31). Children also often prefer to play in natural or wild places, helping them develop cognitive, physical and social skills (32).

Both physical and mental health were considered and addressed through, for instance, physical activity, group connection combating loneliness, the creation of a network and links with other groups and like-minded individuals, time in nature, sharing and gaining knowledge, skills and confidence.

NRC COMMUNITY GROUPS

- Vintage Blacon Hope Garden
- Café 71
- Dale Barracks

According to a 2012 Natural England report people from low socio-economic groups, particularly those living in urban deprived areas, together with BAME are significantly less engaged in the natural environment than the rest of the adult population in England. People from BAME communities visit the natural environment 60% less than the rest of the adult English population, people living in urban deprived 40% less and people from socio-economic groups D and E more than 20% less (33). Disadvantaged groups appear to gain a larger health benefit and have reduced socioeconomic-related inequalities in health when living in greener communities, so greenspace and a greener urban environment can be used as an important tool in the drive to build a fairer society (34).

We engaged six community groups within three key areas of the NRC, Blacon, Lache and Chester City Centre.

- St. Theresa’s Roman Catholic Church
- Lache Gardening Group
- The Unity Centre

COMMUNITY GROUP TARGET AND OUTPUT SUMMARY:

TARGET	OUTPUT
Wildlife and Wellbeing Club (WWC) - 120 participants.	7 clubs, 97 participants.
Conservation Action Days led by WWC once per term – 900 participants.	23 Conservation Action Days, 486 participants.
Wildlife Champion training for community group staff and members.	43 staff and group members trained.

THE NRC OFFER

Everything offered was at no cost to the community group as well as being flexible and adaptable to work in each individual setting.

The offer was set out in three parts delivered over the course of approximately 12 months. A budget was available for each community group to cover green space improvements, delivery resources and interpretation.

Part 1 – Delivered by NRC CEO

- Wildlife and Wellbeing workshops to design an improved green space that benefits both people and wildlife
- Support to put the plan into action
- A CZ Nature Reserve visit
- Wildlife Champion training for four members of staff or community group members

Part 2 – Co-delivered by NRC CEO and community group leader

- Monthly visits with a programme of training and development
- Co-development of a support plan to enable maintenance of the wildlife area and continuation of engagement activities
- Collaboration on events to engage the wider community with the groups work and green space
- Co-creation of interpretation

Part 3 – Delivered by community group lead members with support from NRC CEO

- Monthly follow-on activities led by community group lead members
- Supported events to engage the wider community
- A package of resources and equipment to enable the activities to continue beyond the project
- Free Chester Zoo admission tickets for individuals involved in the project

LESSONS LEARNT

- Due to the unique nature of each group and their site, a flexible approach to the community offer is essential. The offer was adapted to work for the individual group and as a result in most cases the three parts did not pan out as laid out. The key to the success of the NRC CEOs work with each community group was co-production and co-creation.
- Not all group leaders were able to see the benefit of involvement or how the offer could fit their work. To support relationship building with new groups in the future having positive case studies and advocates for the offer will be beneficial.
- The opportunity for networking seemed popular with community groups, they demonstrated the extent of the project beyond their site and facilitated supportive connections to the benefit of project legacy.
- Community group engagement was smoothest when working directly with the group using a space rather than the custodians or managers of a space. It's important to involve these managers if changes are going to be made to a space, so developing a means of engaging this audience moving forward could be a useful development.

IMPACT

Community groups have benefitted from the skills, knowledge and passion shared with them by the NRC team and this has supported them to progress their plans for their spaces with fantastic results.

“We have absolutely nothing but praise for how he (NRC CEO X) helped our project and will always be so grateful for his contribution. When he left we got to meet NRC CEO Y. Wow. She hit the ground running and has proved to be a worthy replacement. She couldn't be more helpful and has so many wonderful ideas and is so knowledgeable, regarding what we can do to remain totally wildlife friendly. We consider ourselves so lucky that they were assigned to our project.” Community group member

“The space is now a calm space which can be easily accessed. We are currently looking at extending our wildlife area accessing more space where we can plant flowers and shrubs to attract butterflies and bees. Our garden is a joy to work in, the bird song which for so long has been missing is now something of beauty.” Community group member

“We are a very new garden, we have only been doing this for 18 months, which is no time at all, and I think the help we've had from the zoo has been invaluable... that support means so much to us.” Community group member

“There are three key highlights, seeing a huge transformation of a completely abandoned site into a vibrant, multi-purpose space for the whole community, seeing the club grow in numbers in a community that was initially difficult to engage and knowing that there are trained, confident and enthusiastic individuals to carry on the club.” CEO

During the project ponds have been dug, sheds erected, accessibility improved with raised beds and patios, hundreds of plants planted and thousands of seeds sown and these improvements have helped to inspire groups to continue their progress.



WILDLIFE CHAMPIONS

Our Wildlife Champions training was a pre-existing offer that was updated to be incorporated into the NRC project, having been successfully delivered in previous years as part of the zoo's Wildlife Connections programme. As well as being offered to our long-term engagement schools and community group members, the training was offered for free to anyone within the NRC who had a green space and a group to engage. The training consists of eight workshops run over four days.

We ran six blocks of the Wildlife Champions training in the zoo and 10 bespoke training blocks out in the community.

Delivered by the NRC CEOs and Community Volunteer Training Coordinator (CVTC), wider zoo experts and with contributions from RECORD, the training supported participants to develop skills and knowledge including planting for wildlife, helping birds, toads and hedgehogs, wildlife recording and activities for groups to support wildlife and wellbeing.

Following the training, participants were assigned an NRC CEO contact who followed up with a site visit, further site-specific advice, connections to wider NRC and zoo expertise, support with engagement events and project funding to progress plans for their site. We also hosted progression training events including a foraging course and a fundraising workshop.



OUR WILDLIFE CHAMPIONS

The six in-zoo training blocks were attended by 55 individuals representing 36 groups or sites from day nurseries to wildlife groups. We had staff and volunteer representatives from partners and their sites as well as our long-term engagement groups. A total of 166 Wildlife Champions were trained. A key element of our Wildlife Champions training was creating a sustainable self-supporting network beyond the life of the NRC project, this task was the responsibility of our NRC CVCT supported by CEOs.

WILDLIFE CHAMPION SITES AND REPRESENTATION:

Canal & River Trust
Chester Sustainability Forum
Chester Zoo Youth Board
CZ micro-volunteer
Dale Barracks
Dig the Quarter
ForFutures
Friends of Caldy Park
Friends of Countess of Chester Country Park
Friends of Hoole Parks
Friends of the Earth Chester & District
Friends of the Hollows
Friends of the Meadows
Friends of Westminster Park
George Street Pocket Park
Holy Trinity Church, Northwich
Hoole Bank Day Nursery

Hope Garden
Incredible Edibles
Maple Grove School
Mersey Forest
Mickle Trafford Green Spaces
Myerscough College
Neston Earth Group
Newton Primary School
Norley Wildlife Group
Northeast Wales Rangers
Northgate Ponds
Pipers Court Neighbourhood Group
Sanctuary Housing Services Limited
Sustrans Wildlife Volunteer
The Narrows
Transition Northwich
Upton United Reform Church
Weatherhead Secondary School
Whitby Park Community Garden

“

“I was thinking over the weekend about how safe, comfortable and supported you and your team made me feel! Having a disability, I was very nervous about whether I could keep up, be fully involved in the course. You now have given me the confidence to go forward and not feel hindered by my disability! So, THANKYOU! My confidence has grown in my ability to take part in a variety of things again!” Wildlife Champion

”

“

“I just wanted to say a HUGE THANKYOU! to you and the team for a fabulous few days, your dedication passion and enthusiasm shine through you all which is then passed on to us! I now feel more empowered, more knowledgeable and more aware! It was great to make new friends and share all of our skills and knowledge! I am soooo looking forward to the rest of our wildlife journey together! Many thanks again!” Wildlife Champion

”

WHAT OUR WILDLIFE CHAMPIONS ACHIEVED

During Wildlife Champion training, participants were encouraged to sign up to our volunteer portal so that they could easily report on their activity post training. Those Wildlife Champions that did reported:

1,216 volunteer hours for training, activity in their own space and networking with other Wildlife Champions.

965 people engaged by Wildlife Champions running events and wildlife activities on their own sites.



THE PORTAL ALSO ALLOWS ACTIVITY COMMENTS TO BE RECORDED E.G.

“Two of us met with the Zoo and a teacher at Lache Primary School to discuss how we might together facilitate activities with children in the SEN class. Agreed on wildflower seed planting in school later this month, hedge whips planting activity in the park at a later date.”

“We planted some spare cuckoo flower plantlets, that we’d grown ourselves from leaf cuttings, in Caldly Nature Park’s meadow. Also, as Caldly is mainly a wooded and watery habitat, we sowed some black horehound, wood-sage and gypsywort seeds there.”



THE WILDLIFE CHAMPIONS NETWORK

Participant connection to the Network began with each training block delivered, as representatives from a variety of spaces within the NRC came together to learn more. Getting to know fellow attendees with a common interest, sharing their experiences, knowledge and skills, provided a positive experience for all involved.

A Facebook group was set up and is monitored by CZ staff, slow to get started the majority of Wildlife Champions have now joined this group. A regular e-newsletter was curated by the NRC CVTC with support from Trainees.

The most successful approach to developing the Network were the six networking events that were run over the year. These started small with visits to previous Wildlife Champion sites and the CZ Nature Reserve. Once all the training had been run larger networking events were hosted including an end of project celebration event followed not long after by a final networking event.

WILDLIFE CHAMPIONS CELEBRATION EVENT

This event was held in the inspirational setting of Chester Cathedral under the Gaia Globe at the beginning of February 2023. Just short of 100 Wildlife Champions, long-term engagement groups and project partners attended the event, showcasing their work, sharing stories and experiences and making connections over coffee and cake. There were talks from a CZ Director, NRC staff, and a local councillor and member of a long-term engagement group. Wildlife Champions and long-term engagement groups brought photos, maps and leaflets to share their work.



“On behalf of St. Theresa’s Garden Project, we would all like to extend our thanks to you and your team for hosting the “get together” at the Cathedral. It was amazing to see how many people were involved and to hear how everyone was getting on with their individual projects. The talks from the Community Engagement Officers regarding their individual experiences across the city was inspiring as they all showed so much passion for what was being achieved, even in the tiniest of spaces.”

“I just wanted to say a HUGE THANKYOU, for today!!! It was fabulous! Lovely to meet new people and network!!!! I’ve got two people coming to Hope Garden, a micro photographer and someone who is an absolute whizz about flowers, she is going to help us with our wildflower garden!

THANKYOU for a great day”



WILDLIFE CHAMPIONS NETWORKING EVENT

Held at the end of March 2023 in Blacon, Wildlife Champions, long-term engagement groups, partners, conservation organisations and local businesses came together for an evening of discussion and connection.

Attendees were offered the opportunity of a stand to showcase their work, they were provided with ‘conversation starter’ stickers, and NRC staff actively made connections between groups that were close in proximity or would benefit from sharing ideas. With just short of 100 attendees there was a buzz in the room from the start and many very positive conversations were had.



“Just wanted to say thank you for organising such a great evening last night, the room was buzzing with connections being made. It was wonderful to hear the impact the NRC project has had on so many people from the conversations” - Simon Dowell, Conservation Science and Policy Director



LESSONS LEARNT

Our target for in-zoo trained Wildlife Champions was 90 individuals representing 90 sites within the NRC. Through the in-zoo and bespoke training combined we exceeded the number of individuals trained but not the number of sites represented within the NRC. There were several contributing factors:

- Initial uptake of training places was low, potentially due to COVID restrictions, a very specific audience, and the time frame in relation to recruitment of the NRC team and the first training in November/ December 2021. Uptake of places grew with time as word spread and connections were made.
- Several sites requested two or more spaces on the training for representatives, and as there were spaces due to initial low uptake this was possible. In hindsight having multiple representatives from a site was a positive as this provided support for participants on return to their sites and groups to progress plans. We also had groups from outside the NRC join training rather than have empty spaces.

- Four days of training is a big commitment. We did vary the delivery time frame to achieve maximum accessibility around attendees’ other commitments with some training being run on four consecutive days, some over weekends and some weekly. The number of bespoke training courses was greater than anticipated for this reason.

There was initial confusion from attendees regarding the CZ volunteer status that was part of the role. As most individuals were already volunteering for their sites and groups, they were reluctant to take on another volunteering hat. This was really an issue of terminology, which was addressed during project and came about as we were asking for participants to sign up to Better Impact, the system we use in the zoo to monitor volunteer hours so that we could capture the work that they were doing as part of the project.

WIDER ENGAGEMENT

In addition to the Conservation Action Days delivered on partner, school and community land, the NRC team ran, attended and contributed to many more activities. These included:

- The Countess of Chester Hospital Travel Demand Bike Building
- COP26 exhibition at Chester Cathedral
- Chester Green Expo
- Forest School festival at the Countess of Chester Country Park
- Chester Big Green Week
- Friends of the Earth Sustainability Fair
- Additional in zoo activities for increased visitation on school strike days

These wider events were a wonderful opportunity to share the progress of the NRC in the local community, to gain support, find out what the community and residents were doing, to share our Wildlife Champions training and to increase participants' knowledge of native species and the work of the zoo.

We commissioned two gazebos to use at these events, the design of which included activities and learning opportunities on the walls.

The largest of these events was the annual Wildlife Connections Festival.



WILDLIFE CONNECTIONS FESTIVAL

The Wildlife Connections Festival is a free annual zoo event that focuses on UK wildlife. It has been running since 2016 and is a very popular event, in the past seeing over 2,000 visitors.

In 2022 the focus of the event was promoting community collaboration and the activities of the NRC. We invited project partners to run stands and activities and supported long-term engagement groups to collaborate on a stand to share their work, attract more volunteers and gain confidence. The event included special guests; Blue Peter's Mwaka Mudenda and CBeebies' Chantelle Lindsay, a full music programme on the stage coordinated by AmaSing, CZ led connection to nature activities, willow weaving, mindful walks and much more.

The weekend was a huge success with more visitors than ever before at over 3,500, despite falling during the period of national mourning for Her Majesty Queen Elizabeth II. Visitors were able to benefit from being outside and with families and communities for reflection.



Facepainting and Wings Free
Drop-In all day
Transform yourself into a beautiful butterfly and flutter around our festival field

Den Building
Drop-In all day
Work together to create an incredible den! Learn about different animal homes and how YOU can help

Wellbeing and Wildlife
Try out our wellbeing activities...
Animal Yoga
Nature Meditation
Creative Corner
Fun & Games

What's on in the NATURE RESERVE
Drop-In all day
We have lots of fun, creative and inspiring activities in our beautiful nature reserve!

Mammal Detectives **Brilliant Birds** **Pond Life**
Wonderful Wildflowers **Big Basecamp**

Amphitheatre

SATURDAY	
12.00pm-12.30pm	Storytime with Chester Zoo Rangers
12.30pm-1.15pm	Zoo Ranger Show: What's this thing?
1.30pm-2.00pm	Mwaka Mudenda
2.00pm-3.00pm	Mwaka Mudenda Meet & Greet
3.30pm-4.00pm	Storytime with Chester Zoo Rangers
SUNDAY	
12.00pm-12.30pm	Storytime with Chester Zoo Rangers
12.30pm-1.15pm	Zoo Ranger Show: What's this thing?
1.30pm-2.00pm	Chantelle Lindsay
2.00pm-3.00pm	Chantelle Lindsay Meet & Greet
3.30pm-4.00pm	Storytime with Chester Zoo Rangers



INTERPRETATION, DESIGN AND DIGITAL CONTENT

The Association for Heritage Interpretation believes that interpretation enriches our lives through engaging emotions, enhancing experiences and deepening understanding of places, people, events and objects from the past and present.

PHYSICAL INTERPRETATION

Installing physical interpretation was an important element of the project particularly in areas where changes were being made so that residents, communities and visitors could understand the actions that were being taken.

394 physical interpretation signs were created and distributed across the corridor

INTERPRETATION LOCATION	NUMBER OF PANELS
CZ land	10*
Partner land	206
Long-term engagement community group land	37
Long-term engagement school group land	28
Wildlife Champions land	113

* This includes pop-up banners and gazebos used on zoo land and in the community

194 of the interpretation signs were created by CZ Learning Designer and CZ Interpretation Officer in collaboration with NRC CEOs, partners and community members. With all audiences we worked to co-produce content ensuring that their voices were evident on their signage. The remaining 200 signs were created by CWAC to promote the wildflower areas that were created.

HIGHFIELD POND

Providing a water source is one of the best things you can do to help local wildlife. With the help of Chester Zoo, we have created this wildlife pond in our eco garden.

TAKE A LOOK AT WHAT WILDLIFE MIGHT BE MAKING ITS HOME HERE...

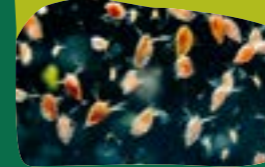
INSECT LARVAE

The larvae of lots of insects live in water, such as dragonflies, mayflies and caddisflies. They are easy to find with a pond net.



WATER FLEAS

get their name because their swimming action resembles a flea jumping. They are crustaceans, the same as crabs and shrimp.



FROGS AND TOADS

Frogs have smooth, slimy skin and love to hop around, whilst toads have dry, bumpy skin and tend to walk.



FROGSPAWN AND TOAD SPAWN

are always laid in water. Frogs spawn in big clumps near the surface, whereas toads lay strings of eggs in deeper water.



POND SKATERS

are bugs that are able to walk on the surface of water. They eat invertebrates that fall into the water.



NEWTS

Adults can be found in ponds in spring and summer, and hide nearby the rest of the year. There are three species of newt in the UK: smooth, palmate and great crested.



DRAGONFLIES

lay their eggs in water. Once hatched, the larvae swim around looking for small insects to eat. You might find an adult perched on a plant around the pond.



POND SNAILS

live among the pond plants, which they love to munch.



Interpretation sign at an NRC school



Artwork created by graphic facilitator at final NRC networking event

PHYSICAL RESOURCES

For delivery of Family Wildlife Clubs, Wildlife and Wellbeing sessions and Wildlife Champions training a variety of physical resources were designed and created to make interactive activities. Each school received a box of Family Wildlife Club resources to facilitate the continuation of activities in school after the project.



SPEEDY SPRINT RACE

A hare is the fastest land mammal in the UK and can run up to 45 miles per hour!

How fast can you move?



SUPER SLOW RACE

A garden snail can move as slowly as 0.029 miles per hour!

How slowly can you move?

ONLINE RESOURCES

An additional 70 resources were created during the project to add to the 34 existing Wildlife Connections resources already online. These new resources will be shared for free via the Chester Zoo website as part of the Chester Zoo Champions in Conservation Awards. The resources range from activity sheets to animations and are aimed at individual young people, families and schools.

WILD WANDER APP

The objective of the app is to connect people with nature, including those who do not currently engage, to increase understanding of green spaces in urban areas, promote health and wellbeing and empower people to create havens for wildlife themselves.

The target audience included families, young people, adults, local residents, visitors to Cheshire and people with learning difficulties and disabilities, sensory impairments and physical disabilities, with a particular focus on sparking the curiosity and appeal of being out in nature for those who do not currently engage with nature or have little or no knowledge about wildlife and the benefit of green spaces.

After a competitive tender process, the app development company Jam Creative Studios were commissioned to develop the Wild Wander App.

Four new walking trails were mapped in collaboration with partners and relevant landowners to ensure appropriate permission for access.

THE TRAILS

Three of the trails loop from Chester City Forest Garden, an accessible garden site in Chester city centre and can be joined at any point in any direction. The fourth trail is not circular but runs from Chester City Forest Garden to CZ Nature Reserve. All four trails pass through and by many sites that have been improved through the NRC project.

Each trail has its own unique theme

- **Ponds and Pollinators** - 4 miles - 1 hr 40 - Journey through the middle of Chester, Hoole and part of Chester's Millennium Greenway in search of watery wildlife. Find fun ways to help UK wildlife in urban environments. And encounter some unexpected creatures... Look out for newts, bats, and falcons!
- **Meadows and Mammals** - 6.8 miles - 2hr 50 - Explore Handbridge, Duke's Drive and wander through the meadows south of the River Dee in search of notable native wildlife. Find out which secretive species come out at night. Look out for owls, foxes, and mysterious mushrooms!
- **Birds and Butterflies** - 6.5 miles - 2hr 45 - Walk part of Chester's Millennium Greenway to the edge of Chester (near Blacon & Sealand Rd) to uncover super special species. Travel beside the River Dee and experience wonderful woodland. Look out for minibeasts, hedgehogs, and even kingfishers!

- **Wildlife Connections** - 5.3 miles - 2hr 15 - Connecting Chester Zoo's Nature Reserve to the City Forest Garden, passing through some unique and diverse wildlife-friendly spaces. This trail doesn't include any digital interactivity but there are still plenty of species and habitats to look out for along the way!

As participants follow or dip into each trail, they will come across; Hidden Gems, AI animals and plants that can be used to create virtual environments; Wonderzones, allowing deeper virtual exploration of green spaces and species; and Mindful Activities. All progress is monitored in the progress section of the app where users can create their own virtual wildlife haven and monitor their score. The Wildlife Connections trail does not have interactive elements on the app but does have physical way markers along the route which the others do not. Through app and partner feedback we will assess over time the most impactful way to engage people on the routes.

The App was launched on Android and Apple 27th March 2023 with the promotional campaign launched at the beginning of May 2023 across Chester. The app was downloaded over 100 times by the end of May 2023.



PUBLICITY AND PROMOTION OF THE NRC

Publicity and promotion started early with the announcement of the launch of the NRC project and the successful application for GRCF funding. Press coverage included local news and radio channels, Sky News, partner publications and the zoo website. Aggregate readership for this promotion was 665million, 661million coming from online news, 3.1million from blogs and 1.2 million from television.



This was quickly followed by promotion to engage local communities and individuals with long-term engagement offers and Wildlife Champions trainings. The promotion took the form of promotional flyers sent via email to potential school and community group contacts and shared with CZ networks and partner networks.



Once delivery of habitat enhancement and community engagement commenced, we were able to start sharing these stories to further engage the local communities and raise awareness of the NRC. This was achieved through social media, blogs, press releases and the creation of an NRC section of the CZ website. Since the launch there have been 7,149 visits to the NRC section of the CZ website.



The NRC received a mention in Parliament.

“The success of a nature recovery corridor in my constituency, led by community groups and guided by conservation experts, is an excellent example of how this (creating a greener city) can work in reality” Sam Dixon Labour MP

“I congratulate my hon. Friend the Member of City of Chester, who praised her local organisations for seeking to green their city. I strongly commend them on their nature recovery corridor” Daniel Zeichner, Shadow Environment Minister in response to Sam Dixon’s speech

WILD WANDER APP PROMO

A bespoke marketing campaign was created for the Wild Wander App. This included:

- Digital billboard rotating a series of images of different audiences, family, older couple, young people in six locations across the NRC
- Static printed billboard in 12 locations across the NRC
- Packages with four local newspapers
- Half page advert for four weeks
- 17,000 digital adverts per week for four weeks across news title websites
- 23,000 Facebook posts per week

Marketing Cheshire have added the app to the Chester Zoo page within visitcheshire.com and the successful launch of the app was independently picked up and promoted by Deeside.com.



EVALUATION

HABITAT

The habitat and species surveys along with the grazing feasibility study undertaken during the project have provided valuable baseline information for the management of the wider CZ estate. Details of these reports are listed above.

The peat research undertaken at the Countess of Chester Country Park was essential for the progress of plans for a wetland centre at the site. Details of these reports are listed in the habitats section above.

COMMUNITY ENGAGEMENT

LONG-TERM ENGAGEMENT

To evaluate the impact of the NRC activities, long-term engagement participants undertook post-activity qualitative interviews; participant responses to six open-ended interview questions were audio-recorded. 22 adults and 10 children were interviewed. Broad Interpretive Phenomenological Analysis was used to analyse the data.

The results suggested broadly positive participant outcomes across all the outcome areas of interest; skills and knowledge, health and well-being, connection to nature, and self-reported conservation behaviour. There was also some evidence for wider benefits of long-term engagement activities such as;

- teacher respondents reporting personal benefits and the potential of using similar interventions as part of their teaching going forward,

- adult respondents reporting improvements in family bonds and new relationships with like-minded adults.

Skills and knowledge:

Responses largely focused on knowledge gained, including species identification knowledge and understanding of habitat requirements. Skills reported included pro-conservation behaviours such as building bug hotels, wildlife ponds and seed bombs.

Child 4: "I have learned how to make seed bombs. And I've learned how to trap insects without hurting them."

Adult 17: "I honestly didn't know that birds had different songs and when we went outside and actually listened to them it's like, oh, wow. Like, you can actually hear

the difference. I couldn't pinpoint which one was which bird, but I could definitely hear the ones that we've heard."

Health and wellbeing:

Adults were best able to articulate the impact of participation in the project on their wellbeing and while adult responses were all positive, child responses were mixed.

Child 1: "I'm not really sure."

Child 8: "Well, if I'm by a lot of flowers, or, like, just out somewhere where it's not really much buildings, or man-made things, I, for some reason I feel like I can breathe a bit better, have more space, more freedom."

Adult 2: "I have to say again, yes, it's all been positive because of my ongoing issues that I have with my mental health. It's been great to get outside, appreciate nature, and basically just get back to basics, as to what's all around us every day."

Connection to nature:

Adults were much better able to articulate the impact of their participation on their connection to nature than children who found the concept difficult and needed additional prompt questions.

Child 3: "I would think that I'm more connected to nature than I was before I started the club. [What makes you feel more connected?] It makes me feel more connected because I know how to identify the animals."

Adult 2: "It's been enormous because it's opened my eyes more to nature and I appreciate it a lot more now.

I integrate it into my everyday life, going for walks, walking through the local woods, and I'm noticing more now, more plants, more trees, what's growing in the ground and more aware of what's around me."

Self-reported conservation action:

Responses were mixed ranging from very clear actions that stemmed from project participation to more anecdotal responses about specific or memorable wildlife encounters.

Child 1: "We made the birdhouse. We feed the birds with bread. We made ... [birdfeeders]."

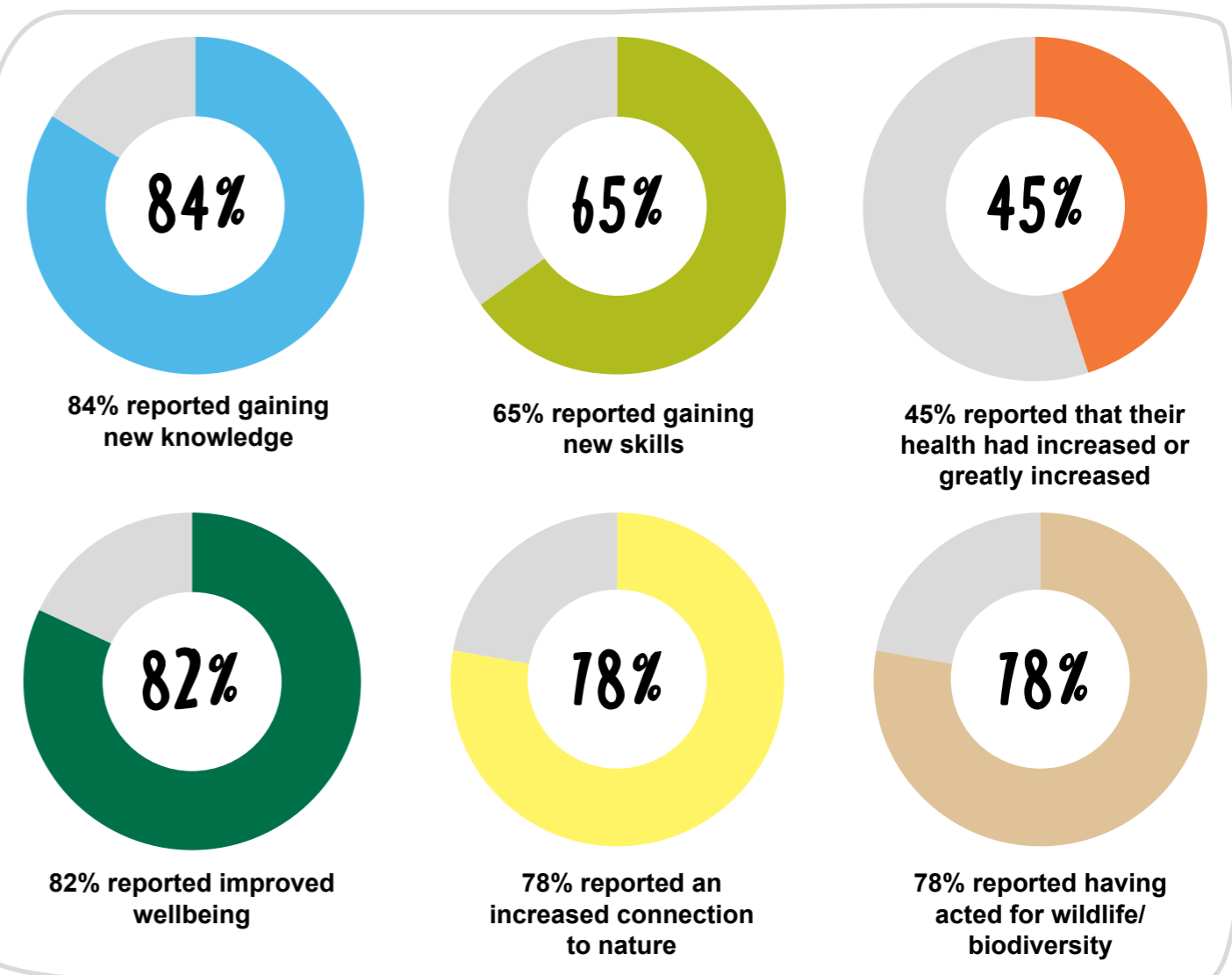
Adult 2: "Yeah, I think from a personal point of view, we've been making wildlife corridors where I live for hedgehogs, so we've been opening gaps in the fence, so hedgehogs can pass through. Also, we've been laying wildflowers, so we're encouraging more insects, bees, wasps, butterflies to pollinate."

These findings support that developing and delivering these kinds of longer-term interventions can have substantial outcomes for participants, which going forward provides the confidence to continue investing the staff time and financial resources into these interventions.

BRIEF OR LIGHT-TOUCH ENGAGEMENT

For participants of other engagement activities such as the Wildlife Connections Festival or Conservation Action Days a post-engagement, largely quantitative, questionnaire survey was used. Data was collected digitally with participants using a QR code link or tablets provided to access the survey. 95 survey responses were collected. Largely descriptive statistics were used to analyse the data with some limited inferential statistical tests.

KEY FINDINGS



No significant difference in respondent outcomes was found across the different types of activities which is valuable information for planning future activities.

WILD WANDER APP

Bespoke analytics have been incorporated into the app to collect:

Download numbers, trails completed, Wonderzones triggered, Hidden Gems collected and photos taken and shared.

A short feedback survey had also been included to cover:

Demographics, increased connection to nature, enjoyment, empowerment, ease of use and app discovery.

PARTNERSHIP WORKING

We are delighted to report that all proposed habitat improvement and creation targets, and overall engagement targets were met or exceeded, and this is largely as a result of the strong partnership we led on to ensure this project benefited from collaborative working across a large area. Two major benefits of working in this partnership structure were the support offered across activities from multiple organisations that held different expertise enabling flexibility in achieving targets and overall goals for the project, and a wider range of additional, complementary activities.

For example, Canal and River Trust were able to lead additional paddle day activities removing invasive pennywort in part due to the support of CZ volunteers. They were also able to deliver regular hedgerow laying and improvement activities following representatives

taking part in the hedge laying training workshops. CZ NRC staff delivered an additional wildflower workshop for CWAC staff to support them in conversations with communities. CWAC also delivered additional consultations and wildflower information sharing session with local communities and regularly shared information about habitat and improvement work taking place within the corridor.

Through the Partnership we also became aware of other initiatives being delivered within the NRC that were not part of this project, but that supported the overall vision, for example CWAC supported community groups with orchard planting and pruning workshops. Thanks to the wider awareness of activities taking place within the project area we were able to promote opportunities to our engaged audiences.

INTERESTED IN TALKING TO CHESTER ZOO ABOUT THIS PROJECT OR HOW YOU CAN GET INVOLVED? EMAIL [WILDLIFECONNECTIONS@CHESTERZOO.ORG](mailto:wildlifeconnections@chesterzoo.org)

LOOKING TO THE FUTURE

The activities delivered within the NRC project were designed to be sustainable in that they built the capacity of the participants to continue with limited ongoing support, and the project partners committed to maintain the habitats they improved. That said, these activities alone are not enough to achieve the long-term vision for the landscape and so throughout the NRC project the Partnership have been busy planning the next project that will maintain momentum and progress.

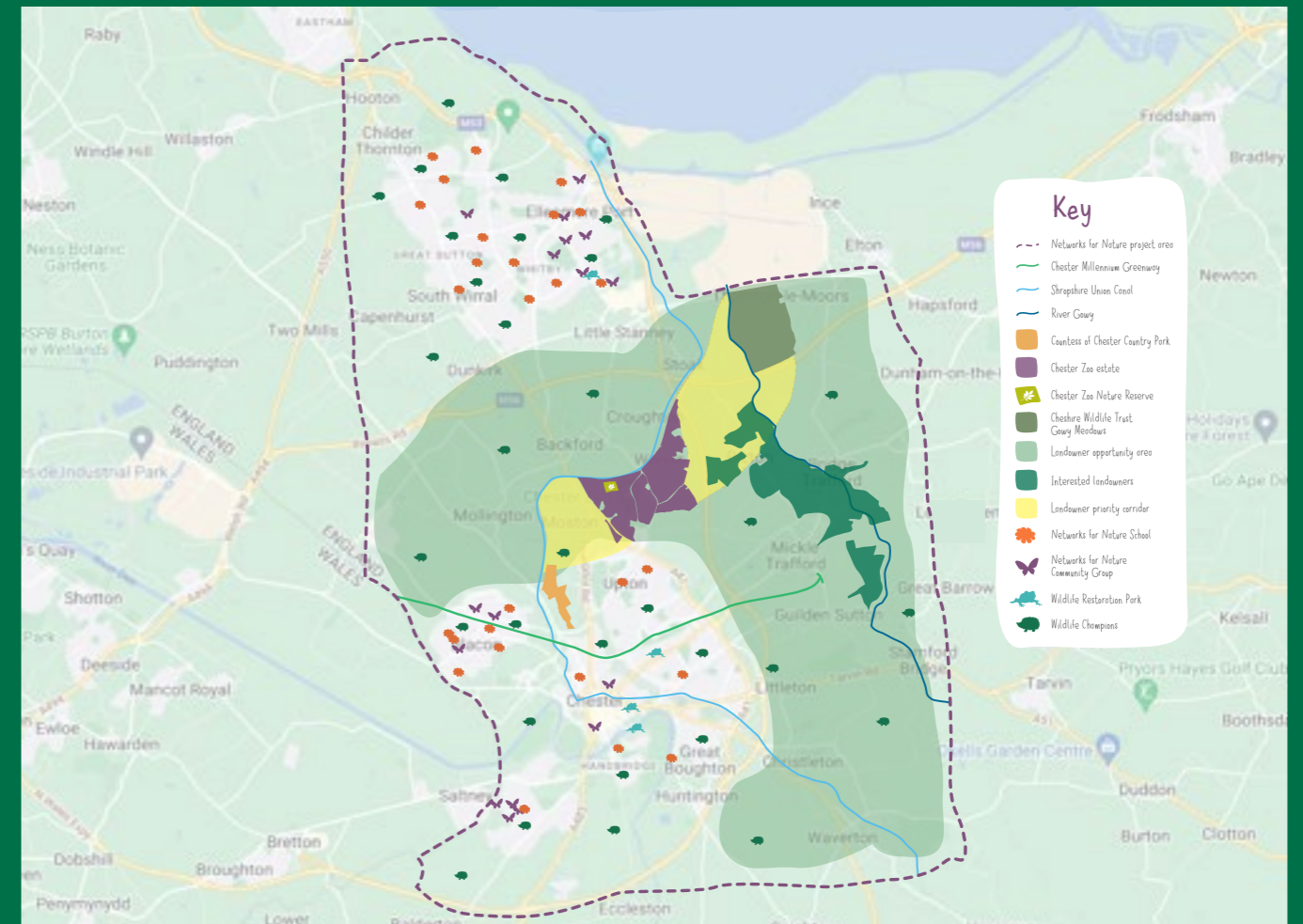
The NRC project has enabled us to identify the greatest need in our local area for us to create the biggest impact for both nature and communities. Building on this legacy, we have been able to learn lessons about the best ways of working and we have developed a strong partnership of organisations working collaboratively towards a shared vision.

In May 2023, we launched Networks for Nature, the next step along our journey. Networks for Nature has a much broader scope than any work done by Chester Zoo to date, and has a different range of targets and

focal points that we have been unable to explore previously, including; habitat improvements with private landowners, a dedicated youth engagement strand, increased focus on wellbeing, development of a broader events programme and targets to reach new audiences not yet engaged within the community.

We are excited to be partnering with more organisations that work across the project area, joining together to reach our common goal of connecting nature with nature, people with nature, and communities with each other. To achieve this landscape-scale vision we will be working over a much larger area stretching up to Ellesmere Port and east to Gowy Meadows Nature Reserve managed by Cheshire Wildlife Trust.

We are delighted to announce that we have secured a Development Phase grant from the National Lottery Heritage Fund to support Networks for Nature and are looking forward to working with our partners and supporters into the future to achieve our ambition.



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