

Pond management and creation at Darcy Lever Gravel Pits



A 50-YEAR PROJECT TO CREATE A NETWORK OF CLEAN WATER PONDS FOR FRESHWATER WILDLIFE

1. Background

There has been an active conservation volunteer group in Bolton (Bolton Conservation Volunteers) for over 30 years. The group has undertaken a wide range of practical tasks over that time, from tree planting and hedge laying, to scrub clearance and dry stone walling.

In 2006, five of these volunteers decided that they'd like to take on more responsibility for nature conservation in their local area – but what had they got to offer and what could they do? Between them they shared a range of professional skills that could be used for the benefit of nature conservation, so what could they achieve if they used these skills (including marketing, engineering and landscape contracting) to organise and implement innovative conservation projects?

After discussions with Bolton Council Ranger Service, the volunteers decided to become involved in the management of the Darcy Lever Gravel Pits, a 16 hectare site in Bolton, which was in dire need of some conservation action. Working with the rangers, the volunteers came up with a series of exciting ideas and a project proposal called "*Action in the Gravel Pits!*" with a strong focus on both biodiversity and the participation of the local community (Figure 1).

A case study to illustrate how a partnership led by volunteers benefited freshwater wildlife



Figure 1. Volunteers involved in habitat management and creation at Darcy Lever Gravel Pits (left), and one of the many ponds at the site (right).

2. Site history

Darcy Lever Gravel Pits (OS reference: SD742079), part of Moses Gate Country Park in Bolton (Greater Manchester), is owned by Bolton Council (Figure 2). It takes its name from sand and gravel workings which were active in the late 1960s, but there's no obvious sign of this history if you visit the site today.

The gravel deposits were of low quality so the extent of extraction was limited and the depth of excavations relatively shallow. The extraction workings were abandoned as uneven mounds and hollows,

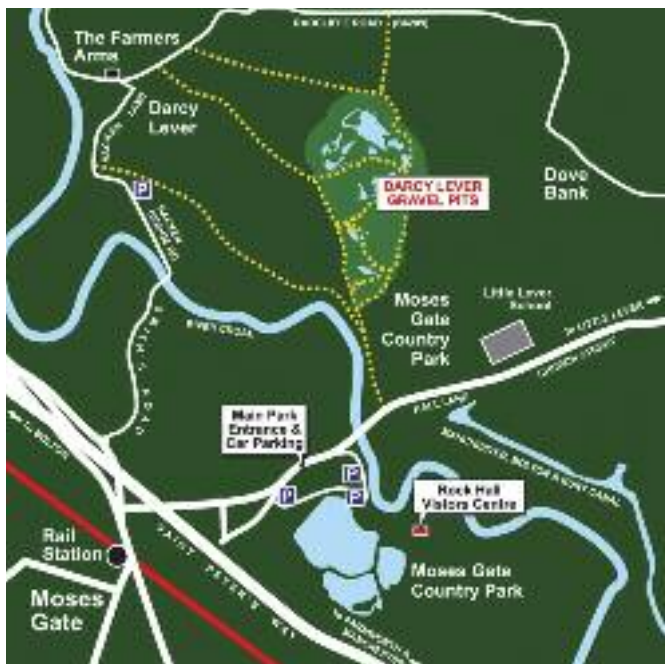


Figure 2. Location of Darcy Lever Gravel Pits and Moses Country Park.

denuded of topsoil. This was good news for wildlife as the hollows were shallow and the site was wet, so many of the depressions quickly filled with water to form ponds.

The different substrates (clay, sand and gravel) present at Darcy Lever Gravel Pits each developed into different types of habitats, collectively supporting a rich variety of wildlife. As a result, Darcy Lever Gravel Pits was designated as a Grade A county wildlife site and managed as public open space with an emphasis on biodiversity (see Box 1 on the wildlife of the site).

The area was left to develop naturally, with little disturbance from animals or people, and after some 40 years birch and willow scrub dominated most of the site. The gravel pits, which had consisted of varied habitats in its early days, had now become homogenous and was in danger of losing its biodiversity interest.

3. Action in the Gravel Pits! (2006-2007)

The first decision for the volunteers was to agree on what the proposed work should achieve and who should do it. Bolton Council is responsible for the site and so had ultimate control over the work that was planned. However the council was happy for volunteers to lead the project. The main aim of the management work was to restore the value of Darcy Lever Gravel Pits as an important county wildlife site. Volunteers took responsibility for defining and managing the proposed work and for finding the necessary funding.

The work started with two years of research and preparation which included consultation exercises, wildlife surveys and a series of meetings with the Heritage Lottery Fund. During this period, a volunteer group was formed, The Gravel Pits Action Group (GPAG), with the aim of being involved in the long term practical management of the site. After lots of hard work, a Heritage Lottery Fund (HLF) application was submitted and in 2006 £48,600 was awarded to the *Action in the Gravel Pits!* Project. In kind contributions to the project, including volunteer and ranger time, brought the total value of the project to £81,000.



Box 1. The habitats and wildlife of Darcy Lever Gravel Pits

The gravel pits include a patchwork of habitats for wildlife which were all retained by management activities.

The main habitat types found at Darcy Lever Gravel Pits are:

- **Heathland:** a locally rare habitat, which is found on sandy soils.
- **Woodland and scrub:** willow carr is established in wetter areas with birch and oak in drier places. Willow scrub had been allowed to 'take over' and much of the management work was aimed at keeping it in check.
- **Grassland:** only small areas of acid grassland remain because of the increase in trees and scrub cover.
- **Wetland:** a complex of ponds which is of particular interest for its amphibian and dragonfly communities.

The site also support a rich variety of wildlife. Of particular note are:

- **Five amphibian species:** common frog, common toad, smooth newt, palmate newt and great crested newt.
- **Twelve dragonfly and damselfly species:** including the ruddy darter, black darter and the emerald damselfly.
- **Terrestrial invertebrates:** including the nationally notable hoverfly (*Chrysops relictus*), the sand burrowing wasp (*Psen equestris*) and the water spider (*Argyroneta aquatica*).
- **Wetland Plants:** including the locally important lesser reedmace and unbranched bur-reed.



Figure 3. (left to right) emerald damselfly, great crested newt and common toad (here seen mating) are just a few examples of the wildlife at Darcy Lever Gravel Pits.

The programme of work included:

- **Habitat creation and management** works with a particular focus on amphibians and dragonflies (see next section).
- **Access improvements** including new gates, paths and signage.
- **Environmental education** to raise awareness of the site among the local community. Activities included the involvement of three local schools and the production of a schools pack.
- **A management plan** to help maintain the wildlife of the site in the next 10 years.

At the end of this eighteen month project, all its objectives had been met and the HLF considered the project so successful that it was used in regional publicity to encourage new applications for environmental projects.

Box 1. Lessons learned from *Action in the Gravel Pits!*

The experience of volunteers involved in the work at the Darcy Lever Gravel Pits may be useful to other groups thinking of taking on more responsibility for nature conservation in their area. Some of their "lessons learned" include:

- 1. Have clear objectives when fundraising.** It's often easier to obtain funding for access improvements and educational activities than for biodiversity, so it's important to stay focussed on the aims of the project and avoid being unduly influenced by the availability of funding.
- 2. Large grant applications are a lot of effort.** Less than £5,000 of the total £48,600 Heritage Lottery Grant was spent on habitat management and creation work, the remainder was spent on access improvements and educational activities. This demonstrates that work to benefit wildlife doesn't always cost vast amounts of money and obtaining a large grant may not always be required if wildlife conservation is the main focus of the project.
- 3. Take professional advice.** This help to have clear conservation objectives and plan habitat creation and management work carefully. At the Darcy Lever Gravel Pits, professional plant, invertebrate, bird and amphibian surveys were carried out prior to any work being done and these were invaluable in developing the project.
- 4. Volunteers come in all shapes and sizes** and have a broad range of experiences, attributes, strengths and weaknesses – and commitment levels! If you are a volunteer who is thinking of taking on responsibilities for a project, you must be prepared to work hard with little recognition.
- 5. Stay positive!** Without the hard work and persistence of volunteers, a lot of important conservation work would simply not take place.



4. Habitat creation and management work at the gravel pits

The aim of the *Action in the Gravel Pits!* project was to restore the patchiness of habitats at Darcy Lever Gravel Pits to benefit amphibians and dragonflies. Habitat management and creation activities included:

1. Removing trees from the edges of six out of the 10 existing ponds (Figure 4). This provided a better breeding habitat for dragonflies and amphibians. The remaining ponds were left in their late successional state. Maintaining the diversity of pond types at a site is good for wildlife: some species prefer open, sunny conditions, but others thrive in dark and dank places!
2. Thinning birch and willow in some areas to form woodland glades and rides – these are beneficial to butterflies and birds and are used for foraging by adult dragonflies.
3. Creating log piles and dead hedges from felled timber to provide hibernation and feeding habitat for amphibians (see Figure 5).
4. Creating twelve new ponds, increasing the total to 22 for the site as a whole.



Figure 4. Selected removal of scrub and overhanging trees made some ponds a better habitats for amphibians and dragonflies.



Figure 5. Log piles were created for amphibians using felled timber.

Nearly all of the habitat management work was implemented by dedicated volunteers – mainly from The Gravel Pits Action Group, but other groups also helped out including Bolton Conservation Volunteers and the Youth Offending Team. The local ARG (The Amphibian and Reptile Group of South Lancashire, or ARGSL) also helped with surveying and monitoring the site's amphibian population.

5. More pond creation

Two years after the completion of the *Action in the Gravel Pits!* project, six new ponds were created at the gravel pits and funded by ARGSL. A year later, in 2010, a further eight ponds were created on land adjacent to the Gravel Pits within Moses Gate Country Park. These were funded jointly by Amphibian and Reptile Conservation and the ARGSL. In total, 26 new ponds have been creating at the Darcy Lever Gravel Pits and Moses Gate Country Park between 2006 and 2010, and so there are now a total of 36 ponds in the area.

Collectively, the old ponds and the new ponds provide an outstanding freshwater resource with many of the features which help support a rich wildlife:

- The most important is clean water: the ponds are fed by either groundwater, or surface water from semi-natural landuse, either woodland, scrub or unimproved grassland.
- A pond complex with 36 ponds on approximately 25 ha which have (Figures 6 & 7):
 - A range of substrates – sand, gravel or clay.
 - A range of sizes, from only 5 x 5m (25m²) to 30 x 15m (450m²), and various depths.
 - A range of ages, from 1 to 50 years.

The ponds are surveyed on a regular basis by volunteers and in 2009 the results of these surveys showed that great crested newts were breeding in 9 ponds, compared with one pond in 2003.



Figure 6. Pond creation in August 2010: 10 new ponds were created.



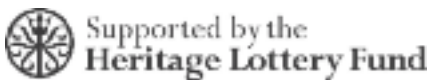
Figure 7. A new clean water pond on sandy soil – this waterbody is fed by groundwater.



6. Conclusions

The *Action in the Gravel Pits!* Project has been a great success: the conservation work made a big difference to the wildlife value of site, and the management plan is now set to help maintain this in the long-term. Volunteers from the Gravel Pits Action Group (GPAG) continue to take an active role in the management of the site. The project demonstrates what can be achieved when site managers, in this case staff from the Bolton Council Ranger Service, and local volunteers make a commitment to work together.

The pond creation and management work at the Darcy Lever Gravel Pits was supported by the following organisations:



For further information about the Million Ponds Project and to consult other Case Studies and Factsheets from the Aggregates Toolkit, please visit www.freshwaterhabitats.org.uk/projects/million-ponds or email info@freshwaterhabitats.org.uk

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