

Why make ponds on aggregate sites?



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

1. Creating ponds is one of the best ways to benefit wetland wildlife



Making new ponds is often better than managing existing ponds because new ponds have a unique advantage: they can be located in places where it is easy to keep the water clean.

Clean, unpolluted ponds support the greatest variety of wildlife and don't suffer from common management problems such as lack of aquatic plants, blooms of algae or duckweed, or a build up of polluted sediments.

New ponds are a really effective way of adding to freshwater biodiversity, because:

- Ponds can be created at low cost in many landscapes, and even ponds a few metres wide will benefit wildlife.
- It is easy to make ponds that will be great wildlife habitats by following a few simple principles, such as making a wide drawdown zone and finding a clean water source.
- Good new ponds quickly become exceptionally rich habitats. They colonise quickly and, even in the early bare sediment stage, provide an important habitat for 'new pond species', some of which are rare.

A recent Oxfordshire study showed that 80% of new ponds created on aggregate sites were Priority Ponds, which contribute to the national Pond Habitat Action Plan targets.

Put clean-water ponds in any landscape type and they will provide a benefit. Woodland ponds, gravel pit ponds, ponds in pasture or heath all have a special value. Create new ponds near existing ponds or other wetlands (lakes, rivers, marshes) and add stepping-stones which help wildlife move across the landscape.

Benefits of pond creation on aggregate sites

- **For developers** – by applying a few simple principles, new clean water ponds can be easily created as part of restoration schemes. Cheap and simple to create, new ponds will provide significant conservation benefits and will contribute to UK Biodiversity Action Plan (BAP) targets (see *Aggregates Toolkit Sheet A2*).
- **For nature conservation managers** – creating clean water ponds is one of the most effective ways to benefit freshwater wildlife (see *Aggregates Toolkit Sheet A3*).
- **For development control planning officers** – ponds are a priority habitat in the UK BAP, and there is a specific Pond Habitat Action Plan (HAP) target for pond creation (see *Aggregates Toolkit Sheet A4*).

What is a pond?

Ponds are permanent or seasonal waterbodies between 1 m² and 2 hectares in surface area (about 2.5 football pitches).

This definition includes temporary ponds that dry up during the year, as well as tiny pools and very shallow ponds like 'wader scrapes'.



▲ A wooded gravel pit pond near Sutton (Oxon) and a pond on Hothfield Common (Kent).

2. The Pond Habitat Action Plan (HAP)

Ponds are a priority habitat in the UK Biodiversity Action Plan (BAP). The Pond Habitat Action Plan (HAP) has four targets which aim to maintain and enhance freshwater wildlife:

- **Target 1:** Maintain the number of high quality (Priority) ponds.
- **Target 2:** Maintain the quality of flagship pond sites.
- **Target 3:** Restore pond sites to high quality status to deliver the Species Action Plan targets.
- **Target 4:** Create new pond sites of high quality potential.

Creating new clean water ponds will contribute towards Target 4 of the Pond HAP. You can find out how to make them using our series of factsheets specifically aimed at the aggregate extraction industry as part of the Million Ponds Project.



The Aggregates Toolkit:

- **Aggregates Toolkit Sheet A1**
Why make ponds on aggregate sites?
- **Aggregates Toolkit Sheet A2**
Pond design principles for biodiversity
- **Aggregates Toolkit Sheet A3**
Pond construction on aggregate sites: good practice guidelines
- **Aggregates Toolkit Sheet A4**
Ponds, a priority habitat: best practice guidelines for planners and developers
- **Aggregates Toolkit Sheet A5**
Integrating ponds with aggregate afteruses
- **Aggregates Toolkit Sheet A6**
Great crested newts and the aggregate extraction industry

Other resources available as part of the Million Ponds Project:

- Biodiversity Action Plan (BAP) species dossiers
- BAP species map
- Aggregate-specific pond creation case studies



Pinkhill Meadow pond creation scheme



▲ An aerial view of Pinkhill Meadow, located in a meander of the River Thames (left). Water rail (right) is one of the secretive inhabitants of freshwater wetlands, like this pond complex.

This wetland mosaic was created on a 5 ha riverside site at Pinkhill Meadow in Oxfordshire which includes some 40 ponds of varying sizes (from 1 m²) and depths. Within 4 years of its creation, over 20% of all Britain's wetland plants and invertebrates, such as dragonflies and water snails, had colonised the site. Now 20 years on, the site is still as rich as ever for wetland plants and animals. Birds such as little ringed plover, lapwing, redshank and water rail have also bred on the site.

3. The value of ponds on aggregate extraction sites

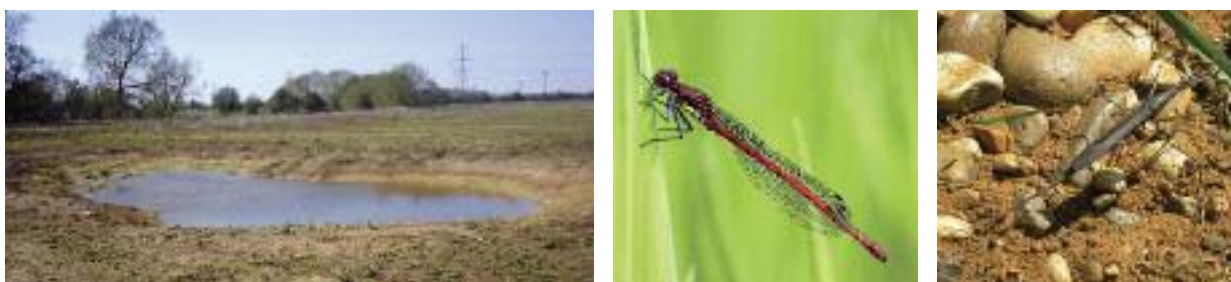
Aggregate extraction sites have been shown to be excellent places to create high quality wildlife ponds. A recent survey of new ponds created on sand and gravel aggregate sites in the Lower Windrush Valley (Oxfordshire) showed that 80% are Priority Ponds: clear evidence that aggregate site ponds can make an important contribution to national biodiversity targets.

The reason these aggregate site ponds are so good is because (i) the ponds are fed by clean water, either groundwater or surface water from low intensity land use, and (ii) the ponds are located close to other wetland features such as lakes and rivers, which together creates a rich mosaic of wetland habitats.

Not only are ponds on aggregate sites often rich in their own right, but they also add diversity to the landscape, as they support species not found in the larger gravel pit lakes. So adding ponds can increase the regional freshwater biodiversity of gravel pit lake complexes. For example, at one restored aggregate site within the Lower Windrush Valley (Rushy Common Nature Reserve), the two very small ponds present at the edge of a 60 ha lake increased the wetland plant species richness at the site by a quarter and macroinvertebrate species richness by a third.



New Ponds at Standlake Common Nature Reserve



▲ A new pond at Standlake Common Nature Reserve, one of three small waterbodies very rich in aquatic wildlife (left). Large red damselfly (middle) and water stick insects (right) are common invertebrates in ponds on aggregate extraction sites.

At the Standlake Common Nature Reserve, hundreds of damselfly and dragonfly larvae were seen in three new small ponds (each less than 10 x 10 metres). In total, nine dragonfly species were recorded. Rare water beetles also live in the ponds, including a nationally scarce great diving beetle.

The ponds at Standlake Common Nature Reserve also add to the overall wetland biodiversity of the site by supporting species not found in the large gravel pit lake.

4. A wealth of opportunities

There are many opportunities to create ponds on aggregate sites – during both the restoration phase and when managing sites in the afteruse phase.

Ponds are very cost-effective to create, especially when earth-moving equipment is available on site. They are quick, easy and cheap habitats to make, and if created according to clean water principles, they need little or no long-term management effort.

With care, clean water and/or BAP species ponds can be included in any afteruse scheme, including nature conservation, housing, farming, fishing or amenity uses (see *Aggregates Toolkit Sheet A5*).

A wide range of pond designs can be adapted to site characteristics, restoration objectives, and aftercare. Even if the available space is tiny, small or linear-shaped ponds can be made. In other words, ponds can be created almost anywhere!

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

