



World Business Council for
Sustainable Development

Quarry rehabilitation: Aggregate Industries UK Wetland restoration at Little Paxton

This case study is part of a series on quarry rehabilitation practices by WBCSD Cement Sustainability Initiative member companies. [Read about what other companies are doing](#)

Location and situation

Little Paxton Quarry is located in Cambridgeshire, Eastern England, approximately one hour north of London. Quarrying takes place on floodplain, originally wet grassland, but more recently arable farmland. The quarry operates under environmental management system ISO14001, and “Little Paxton Pits” was designated as a Site of Special Scientific Interest (SSSI) in 1986 (128 hectares). The SSSI straddles the Local Nature Reserve (LNR) (ca. 40%) and the Quarry (ca. 60%).



Little Paxton Quarry is adjacent to 77ha large Paxton Pits Nature Reserve, (PPNR), formed from old gravel excavations. PPNR was designated as a Local Nature Reserve (LNR) in 1988 (58ha). Following restoration, the reserve will extend to 285 ha.

Known biodiversity

The quarry is adjacent to River Great Ouse which is a corridor for north/south bird migration. As with most ex-gravel workings, ornithological biodiversity has developed very rapidly, and Paxton Pits annually hosts over 60 breeding species of bird.

Scrub is arguably the most important habitat. It hosts an important group of breeding warblers (sedge, blackcap, willow, chiffchaff, lesser whitethroat, whitethroat, grasshopper, garden). It is also crucial to nightingale – 25 to 30 singing males have been noted each year in the past five within the reserve. This is the largest population of nightingales in Cambridgeshire. The IUCN red-listed reed bunting is also increasing in number



Nightingale: photo by kind permission of Ian Johnston

Marginal vegetation occurs around most of the lakes, in ditches, ponds and marshes, and includes pockets of wet woodland and reedbed where reed warblers are common. These habitats also support growing populations of invertebrates and mammals including water shrew and otter.

Open water hosts wintering wildfowl, ‘usual’ range of species such as common shelduck, great crested grebe and little ringed plover. The wintering gadwall was specifically noted in the SSSI designation. One of the lakes has a “finger island”, created to attract breeding waders, and another purpose-built island has been successful in attracting amber-listed lapwing and redshank. Both islands are managed by staff and volunteers.



Targets and aims

- To create a mosaic of habitats, especially in the Ouse Valley floodplain lost through intensive agricultural activity, and flood control measures to accommodate both agricultural and urban development
- To focus on specific target habitats: wet grassland, wet woodland, secure breeding sites for ground-nesting wetland birds, scrub and reedbed
- To create micro-habitats for invertebrates
- Demonstrate increase in floral diversity through natural regeneration is ultimately just as productive as trying to 'force' a flora on newly created areas associated with worked out gravel pits over the long term. (+25 years)

Activities and Partners

What characterizes the ongoing rehabilitation and restoration efforts is the close local work provided by different partners bringing in their own expertise:

Friends of Paxton Pits Nature Reserve – formed in 1995 by the local community to improve the conservation value of the surrounding gravel pits, the FPPNR undertake bird monitoring and give advice on the restoration and extension of PPNR. The Friends is the means by which the local community has become closely involved with development of the Quarry as an important wildlife site

Royal Society for the Protection of Birds – volunteers have assisted with habitat management and monitoring since 1994, and RSPB conservation staff have advised on plans for the restoration for the extension to the Reserve

The Wildlife Trusts – Little Paxton Quarry was the first site within the business to achieve certification to the Biodiversity Benchmark



Results

- Number of species of recorded birds has gradually increased across the Paxton Pits from 157 to 216 between 1995 and 2009.
- The specially-created islands with managed water levels have been spectacularly successful in attracting breeding birds. Special targets are lapwing and redshank which nest most years. Common terns and up to 4 species of gull regularly breed on the islands.
- Nightingale territories are spreading northwards from the reserve into the quarry as the quality of the scrub improves with age.
- Between 2000 and 2007, an average of 175 Sandmartin pairs have been recorded within the quarry boundaries. The site was used in guidance published by the Quarry Products Association (QPA, now part of the Minerals Products Association).

Innovations / highlights

The plan for the spent gravel pit included the creation of two lakes, of which one was for inclusion in the extended nature reserve. The opportunity was taken to design a separating embankment (bund) to maximize its use to wetland birds. The bund is designed to function to provide safe feeding, loafing and breeding habitat for a range of wetland birds and will be fenced at both ends against disturbance (including by fox). The sides of the bund are profiled to provide shallows with a gradient between 1:15 and 1:40. Sub-soil 'fingers' have been laid over these gradients to diversify micro-habitats and to improve gradients.

Lessons learned

- Local, rather than national, expertise and enthusiasm where possible. Involve volunteers at an early stage when planning changes that might affect biodiversity
- Good and timely communications between staff and volunteers monitoring wildlife prevents mistakes in routine operations and can lead to biodiversity being maximised
- Write management plans with specific objectives which are achievable with the resources available – take small steps over a longer period of time if necessary
- Monitoring and measuring is often the hardest part, but is essential to demonstrate improvement. Carry out baseline surveys and choose indicator species to reveal habitat improvement over time

Further information

Delia Shannon:
Delia.Shannon@aggregate.com



Final restoration drawing of Little Paxton Quarry