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Case study: Whittlesey Brick Pits, Peterborough

The Peterborough area has a history of brick making stretching back to the turn of the 20th century. The diverse habitats produced from extraction activities now support nationally important invertebrate assemblages linked to a combination of exposed underlying soils and aquatic habitat features. Some areas continue to be worked, while non-operative land is allowed to naturally regenerate, leading to a rich successional mosaic. Parts of the Whittlesey Brick Pits have been set aside for nature conservation and education, becoming a valuable community resource and wildlife haven.

This complex of pits managed by Hanson, has a long history of disturbance from clay extraction, producing a rich mosaic of both wet and dry habitats. The Kings Dyke Nature Reserve area alone, which occupies 70ha of the brick pits, has recorded over 2,000 invertebrate species alongside strong amphibian and reptile populations, including Great crested newt (*Triturus cristatus*), Common lizard (*Zootoca vivipara*), Grass snake (*Natrix natrix*) and Slow worm (*Anguis fragilis*). The site is also known for its rare stoneworts (Characeae).

Historic clay extraction has produced novel opportunities for specialist wetland invertebrates. The site now supports a nationally important assemblage of water beetles, many of which are outside their normal coastal range, as well as the most inland population of Cepero's groundhopper (*Tetrix ceperoi*). The staggered abandonment of pits has led to a mosaic of successional stages in both wet and dry habitats. A diverse range of wetland habitats are supported across the brick pits, ranging from permanent pools with reedbed, to wet grassland and seasonally wet hollows. These are

complemented by drier areas on slopes, clay mounds and gravel heaps. Disturbed bare ground exposes underlying sands, allowing sparse, herb-rich vegetation to develop. This dynamic mosaic is a useful contrast to adjacent pits

Key species of the site

- Bees & wasps: Large garden bumblebee (*Bombus ruderatus*), Black-headed mason wasp (*Odynerus melanocephalus*), Yellow-faced bees *Hylaeus pectoralis* & *Hylaeus signatus*, Nomad bee *Nomada ferruginata*, solitary wasp *Passaloecus clypealis*.
- Flies: Snail-killing fly *Antichaeta analis*, soldierflies *Odontomyia tigrina* & *Stratiomys singularior*, Crochet-hooked stiletto fly (*Thereva plebeja*).
- Beetles: Scarce four-dot pin-palp (*Bembidion quadripustulatum*), Common bombardier (*Brachinus crepitans*), water beetles *Hydaticus seminiger* & *Cercyon bifeneistratus*.
- Cepero's groundhopper (*Tetrix ceperoi*).



Wildflower resource on slopes provides rich diverse forage © Peter Kirby



Black-headed mason wasp (*Odynerus melanocephalus*) © Gary Thoburn

Key features for invertebrates

- Wetland features including reedbed, wet grassland, ephemeral pools, seasonally flooded areas, seepages and flushes support diverse fly and beetle assemblages
- Seasonally exposed wet clay support specialised beetles, bugs and flies
- Bare ground including clay, sand and gravel with a range of successional stages, benefiting ground-nesting bees and wasps
- Early successional vegetation including Wild carrot (*Daucus carota*), Common ragwort (*Senecio jacobaea*), Teasel (*Dipsacus fullonum*), and Wild mignonette (*Reseda lutea*) provides forage for bees and flies
- Diverse scrub structure with developing dead wood
- Wood small-reed (*Calamagrostis epigeios*) grassland, ranging from short open sward to dense tussocks

which have been abandoned for longer periods of time and have developed continuous grassland with scattered scrub.

Buglife habitat work undertaken

- To encourage a mosaic of bare ground with early successional vegetation, areas of species-poor grassland were stripped of topsoil using excavators to create bare ground scrapes. The removed material was then piled to create bee banks for ground-nesting species.
- Where dry and wet grasslands and open cliff faces were threatened by succession, scrub was cleared to create open, sunny areas rich in wildflowers.



Newly created shallow pond margins © Clare Dinham



Cepero's groundhopper (*Tetrix ceperoi*) © Sarah Lambert

- To increase the resource of small water bodies, particularly seasonally wet scrapes, excavators were used in suitable damp areas. By enlarging and deepening wet grassland areas, water will be held for longer periods.
- Forage was enhanced on south-facing banks by sowing nectar-rich species such as Common Bird's-foot trefoil (*Lotus corniculatus*).
- Wide, shallow drawdown margins were created on ponds using an excavator, to create opportunities for invertebrates and rare stoneworts.
- Choked ponds were cleared of dense Bulrush (*Typha latifolia*) and Common reed (*Phragmites australis*) as well as invading Willows (*Salix* spp.).

Monitoring and management

Hanson are committed to the long-term management of newly created habitat, as part of their existing site management plan, with extensive biodiversity survey.



Sandy bee bank created using material from new adjacent pond © Peter Kirby

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