

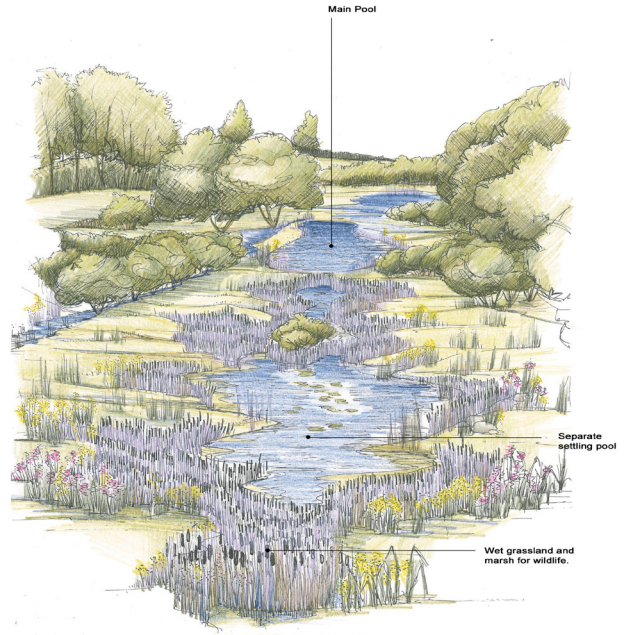
# Wetlands



Wetlands are important ecosystems which provide habitat for a diverse range of flora and fauna, as well as serving a valuable role in flood control and adapting to climate change. Moore Environment have extensive experience of wetland creation undertaken as habitat creation, or as part of sustainable drainage systems.

## Sustainable Drainage Systems

Drainage ponds are designed to contain storm run-off and release it slowly at a greenfield rate to avoid flooding. They also remove pollutants, a first pond trapping coarse sediments and floating oils, a larger second pond enabling finer particles to settle out. The ponds are designed to a natural profile and reeds planted in the shallow margins provide a further filter and an attractive habitat for wildlife.



## Habitat Creation

Wetlands are also created specifically for wildlife. For example at Wollerton in Shropshire four hectares of wetland were created in the Tern Valley by the Hodnet Bypass as illustrated below.

Ponds are carefully profiled to provide a diverse range of micro-habitats, using low nutrient soils. Natural regeneration of vegetation is encouraged and managed. Any new planting is carried out using local provenance sources.

Detailed design is aimed at site specific conservation objectives, which may include suitability for great crested newts or particular aquatic invertebrates as part of the project's mitigation strategy.

'Wollerton is one of our newest sites, created as part of the Hodnet bypass in 2003. Seven years on, the flora and fauna there is stunning'

Lynn Dean Countryside Ranger with Shropshire Council



# Project Specific Features

## A5117 Deeside



- Eleven drainage ponds were incorporated within the scheme to collect, treat and slowly release road run-off.
- Fourteen ponds, divided by shallow levees, were constructed to form a large wetland area in mitigation for protected species and wet woodland areas lost due to the scheme. The ponds were specifically designed with profiles to provide the necessary shallows and depths to attract the lesser silver water beetle and great crested newts.

## Selby Bypass



- Eight attenuation and pollution control ponds were included in the drainage system for this scheme. The ponds were profiled to provide a variety of habitat types with different water depths and inundation at different times of year, with some periodically dry.
- Swales along the length of the road further aid the management of water runoff by serving to slow the passage of water.
- Aquatic vegetation from the Selby Canal, which would otherwise have been lost to the scheme, was translocated into the new wetlands and provided instant habitat for invertebrates and amphibians.

## Hodnet Bypass



- Four hectares of wetland habitat, utilising the natural ground water of the River Tern Valley, were created at Wollerton to enhance biodiversity. Natural regeneration of the margins was encouraged, supplemented where necessary by new planting from local provenance sources.
- Public access was provided and the area is now managed by Shropshire Council.
- Improvements to the River Tern itself were also undertaken and included creating new meanders, ox bow pools, shallow margins and cliffs for sand martins.
- In addition, four drainage ponds were provided to attenuate and treat road run-off. These were designed to natural profiles with shallow margins to achieve the best value for wildlife.

## M1 Junction 19 Improvement



- Five drainage ponds are proposed as part of this project to deal with drainage run-off from the road surface and potential pollution and flooding impacts. They are designed to resemble natural water bodies with irregular outlines and gentle side slopes, incorporating reeds and aquatic plants. Separate nearby ponds are proposed as wildlife refuges in case of a serious pollution incident.
- Swales rather than drainage channels are proposed to filter pollutants and further benefit wildlife.
- There are also proposals to improve the habitat of the River Avon including the regrading of river banks to encourage marginal vegetation, wet woodland planting as an other refuge and the realignment of a tributary stream to natural profiles.

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