7

CREATING FLOODPLAIN WETLAND FEATURES

7.1 Floodplain scrapes

RIVER SKERNE

LOCATION – Darlington, Co Durham NZ 301160
DATE OF CONSTRUCTION – Autumn 1995 (in meanders), May 1996 (at Rockwell)
NUMBER– 2 excavated; 1 in backfilled chanel
COST– £1k each for excavation

Completed spring-fed scrape

DESCRIPTION

The term 'scrape' is used to describe a shallow pond that forms in a natural lowspot in a floodplain. Scrapes are sometimes dry during the summer unless they are fed by springs. The most common reason for their occurrence is probably the historic migration of a river across a floodplain leaving only partially filled channels behind but there are many other reasons. Scrapes afford off-river habitat for plant and animal species dependent on their unique characteristics, including frogs and newts.

Three new scrapes were formed on the Skerne floodplain. The first two were located within the meanders of the newly re-aligned river *(see 1.4)* and the third within Rockwell Nature Reserve, alongside the main east coast railway line *(see key plan preceding the technique section).*

DESIGN

Scrapes within meanders
The south side of the floodplain is partially overfilled with industrial waste contained within a clay bund. Clean water was observed to be seeping from the toe and to be sustaining a lush growth of grass (mown) all year round. A scrape was excavated within this area of low artesian water pressure so that full advantage could be taken of the opportunity to introduce a significant wetland feature to the floodplain *(fig. 7.1.1).*

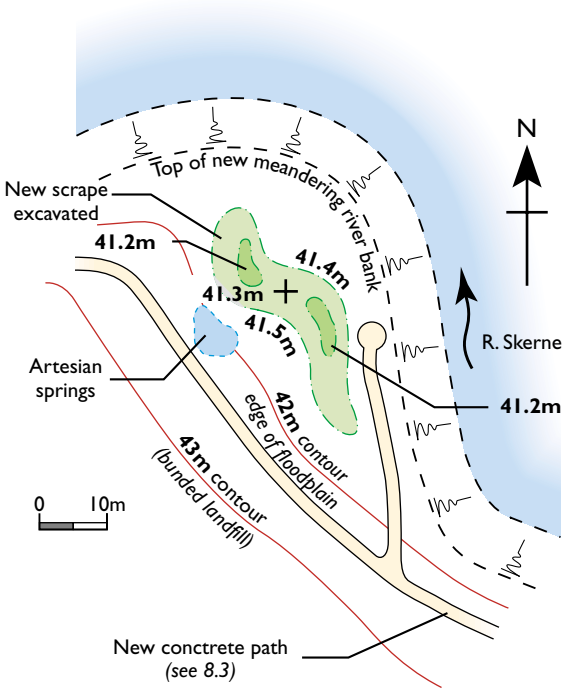
The irregular shape fits comfortably within the limited area available and the depth has been limited to 300mm in the interest of public safety, as well as to suit the emergent and marginal aquatic vegetation sought. The side slopes are very shallow for similar reasons. No overspill was built. In very wet periods excess water seeps towards the river over the grassed area alongside.

On the north side of the new meanders the old, straight, river channel has been infilled in places. Immediately downstream of the first meander (entry bend) infilling was profiled to leave a shallow depression, intended to attract surface water from the adjoining parkland, thereby creating a small wetland feature during the winter.

Both scrapes were subsequently planted by organised parties of local school children. Species included Ragged Robin, Loosestrife, and Meadowsweet that were grown from seed as part of a school project linked to an English Nature series of freshwater guidance publications.

Scrape at Rockwell Nature Reserve
The reserve is a well-established wetland site where several ponds and scrapes have been excavated in an area of low artesian ground water pressure sustained by rising ground alongside. Great crested newts are a protected species found in the reserve. The area of the reserve nearest to the river was, however, marred

Figure 7.1.1
PLAN OF SCRAPE WITHIN MEANDER FED BY GROUNDWATER



View of Rockwell scrape site after removal of rubble piles

Comparitive view of Rockwell scrape after work completed

by piles of dumped soil and rubble that have overgrown with less desirable ruderial plants.

Some piles were cleared from site and the ground taken down to expose historic floodplain soils, although these were found to be interspersed with deposits of dumped foundry sand. These sands were also evident throughout the restored floodplain, marking Darlington's industrial history of iron works.

Working closely with the local Wildlife Trust, a new scrape was then excavated and the spoil removed from site. The scrape is about 50m² in area and slopes gently down from one side to a maximum depth of 1m where it returns steeply to ground level forming a small cliff that is overhung by pre-existent willow carr.

SUBSEQUENT PERFORMANCE 1995/6 – 98

Both scrapes excavated within artesian ground water areas have proved to be very successful, sustaining wetland habitat year round and providing visual interest to previously unremarkable areas.

The scrape formed in the backfilled river course has not been successful, although it does collect water occasionally. This has not been sufficiently frequent, or prolonged, to establish any wetland plants. The scrape has been colonised by the same species of grass and wild flowers sown around it, but they are weakened as a result of occasional waterlogging. It is arguably a nuisance in this public open space since it provides no discernible ecological or amenity benefits.

It is reasonable to conclude that for floodplain scrapes to provide worthwhile ecological value they are dependent upon a reasonably reliable source of groundwater or surface water, albeit most are intrinsically seasonal features that do not have to be wet for more than 6-9 months of the year.

Surprisingly both duck and moorhen spend time on the artesian fed scrape within the meanders where they are highly visible from the new path built alongside *(see 8.4)*.