THE RIVER COLE AT COLESHILL

About the River Cole

The River Cole runs through The National Trust owned Coleshill estate, NE of Swindon on the Oxon / Wilts border. It has been extensively modified by man for a variety of reasons over the past 900 years, particularly milling. Originally the reach below the mill was simply straightened, but more recently was considerably enlarged to safeguard agricultural production and flood capacity. Above the mill the channel was realigned 200-300 years ago to form the present mill leat. This type of historical management for milling, land drainage and agriculture is typical of many other rivers in the UK.
As a result, the ecology of such rivers has suffered.

The Objectives

- Restoration of the river and floodplain in terms of physical features, flood storage, habitat diversity and visual appearance.
- Application of innovative restoration techniques and best management practice, within a sustainable agricultural system.
- Furthering of knowledge and understanding of river restoration by monitoring to a very high degree, and by practical demonstration of the results.

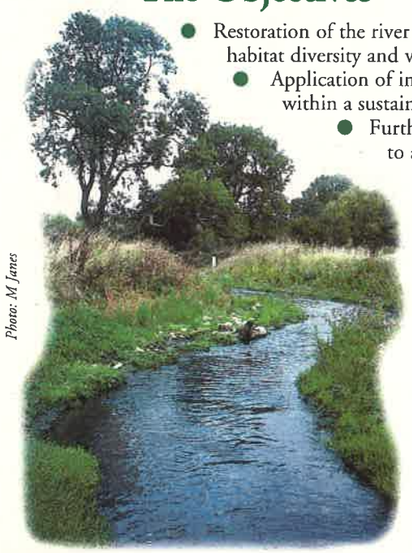


Photo: M Janes

River Cole Restoration

A detailed background study of the channel and flows within the whole catchment gave the size and shape of a typical and sustainable river. From old maps and documents it was possible to establish the upstream pre-mill leat course of the river Cole. The ditch bypassing the mill was identified as a remnant of the old course.

The river was reinstated on the original buried course by excavating a smaller meandering channel and profiling the bed and banks to more natural shapes.

Downstream of the mill, mature trees were perched well above the bed of the old channel, due to a dredging scheme carried about 25 years ago which removed 1m of clay from the river bed. This general bed lowering also served to reduce the water table in the adjacent floodplain fields.

Here the bed level, water level and flood regime of 25 years ago were restored by:

- Cutting a smaller channel 1.2 m above the bed of the old channel.
- Meandering across the old channel keeping mature riverside trees.
- Filling the old course whilst leaving deep backwater pools.

Although the restored channels initially looked barren, natural features are generating different habitats. It will however, always be impossible to accurately define the exact natural state of the river so it is essential to leave some scope for self-adjustment within the restoration project design.

Photo: M Janes

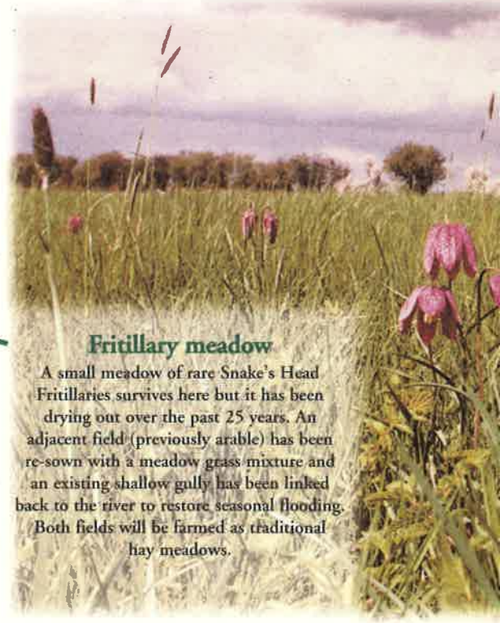
Backwaters and habitats

Whilst much of the old river Cole was infilled, some parts were kept as backwaters to provide a different habitat to the fast flowing, newly restored course.

These areas are over 1m deeper than the new river (the meanders having been cut at a higher level), and are important for fish, plants and invertebrates.

Reedbed

A small linear reedbed has been constructed and planted on a wide berm adjacent to the new course. The reedbed is fed by an agricultural field ditch with a high nutrient content. Although this feature has been designed as a habitat reedbed, it also offers some 'buffering' of the ditch water before it enters the river.



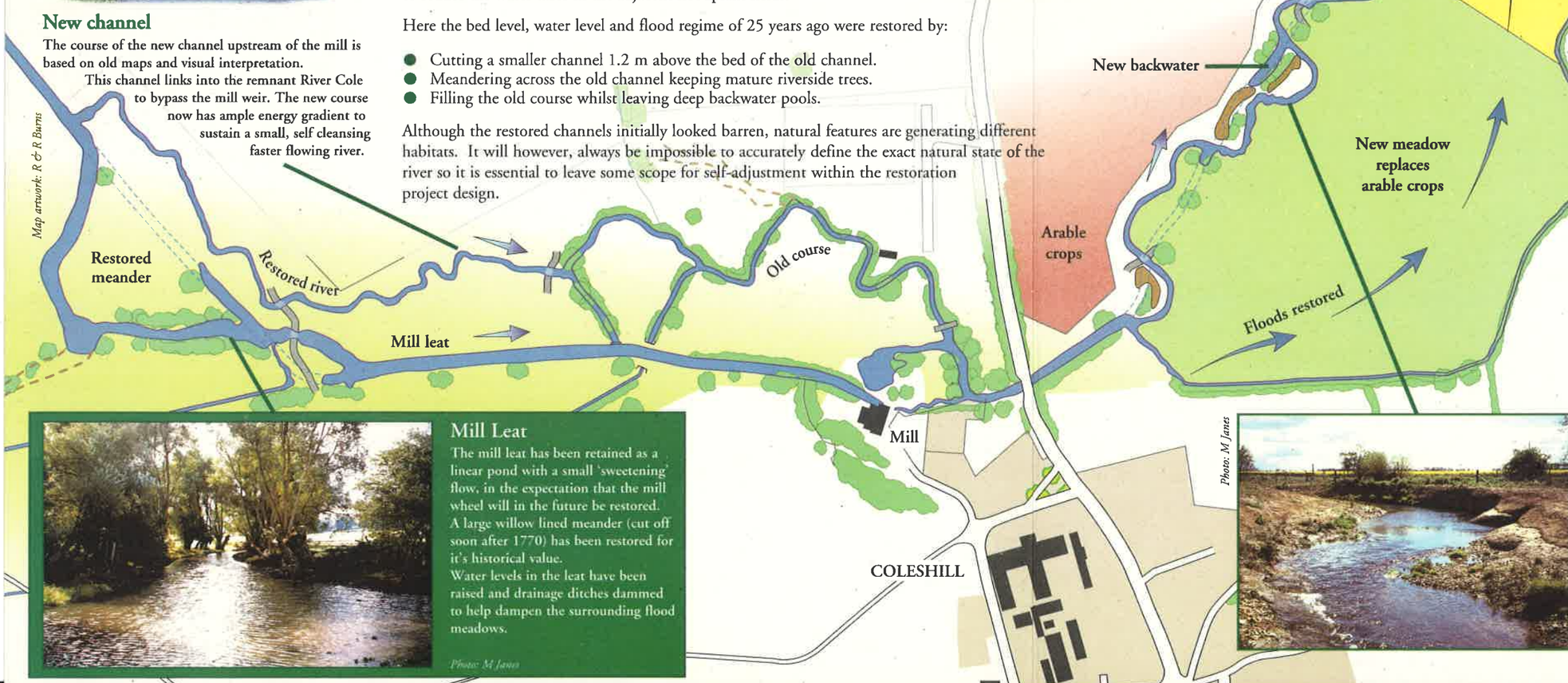
Fritillary meadow

A small meadow of rare Snake's Head Fritillaries survives here but it has been drying out over the past 25 years. An adjacent field (previously arable) has been re-sown with a meadow grass mixture and an existing shallow gully has been linked back to the river to restore seasonal flooding. Both fields will be farmed as traditional hay meadows.

New channel

The course of the new channel upstream of the mill is based on old maps and visual interpretation.
This channel links into the remnant River Cole to bypass the mill weir. The new course now has ample energy gradient to sustain a small, self cleansing faster flowing river.

Map artwork: R & R Burns



Mill Leat

The mill leat has been retained as a linear pond with a small 'sweetening' flow, in the expectation that the mill wheel will in the future be restored.
A large willow lined meander (cut off soon after 1770) has been restored for it's historical value.
Water levels in the leat have been raised and drainage ditches dammed to help dampen the surrounding flood meadows.

Photo: M Janes

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Riverbank Cliffs

Channel adjustment

In creating a different course for the River Cole some natural adjustment was allowed for.
This gives the river the chance to form the small irregularities present in all rivers, as well as the more regular pool and riffles, vertical riverbank cliffs and gravel beaches.