



Habitat degradation and geomorphology

Structures

The Stour catchment has a large number of man-made structures which influence the river level and speed of flow. These range from historical structures designed to retain a head of water for a mill, watercress production, or for small lakes to more recent structures for gauging or introduced as a consequence of over dredging in the past.

Weirs and structures can have a large impact on the natural functioning of the river by:

- Acting as a barrier to fish migration (see “Fish Barriers” for more information), leading to the slowing of flows, deeper water and a reduction in available habitats for animals, invertebrates and fish.
- Creating a lack of faster flows that limit the ability of the river to ‘self-cleanse’ which can lead to the build up fine sediment on the bed and reducing the rivers natural ability to move within it’s floodplain.

Although structures have a negative impact on the natural functioning of the river, some of the larger structures on the River Stour provide great amenity value for long-established rowing facilities for the schools at Bryanston and Canford. Some structures also have a significant cultural heritage value such as Sturminster Newton Mill. Others are critical pieces of infrastructure such as the A303 road bridge on the River Cale.



Adjacent land use

Within the Stour Catchment the land adjacent to the rivers are dominated by agriculturally improved fields used for grazing and in some locations arable farming. In some areas, in the absence of fencing, the grazing extends right up to the riverbank and has restricted the establishment of riparian vegetation. Where fencing is in place, it is often along the top of the bank and limits the establishment of a wide buffer of vegetation. Where the fencing is set back from the river bank, a wide and diverse margin of riparian vegetation is often established which will help reduce sediment inputs to the river. However, there are examples on the Stour where cattle grazing have actually been beneficial, creating channel pinching and marginal habitats.

Intensive agriculture can result in high levels of nutrients and diffuse pollution entering the river and encouraging dense beds of nettles and other weed species in the riparian zone. Diffuse pollution is recognised as a problem in the upper catchment and as such it is a priority catchment under DEFRA’s Catchment Sensitive Farming Programme.



Although not a physical modification to the river channel, the management of land use adjacent to the river can impact on the natural functioning of the river by:

- Suppressing the establishment of diverse marginal vegetation through intensive grazing or management and a lack of fencing; leading to additional fine sediment in the river through poaching and subsequent erosion.
- Reducing the connectivity of the river and floodplain habitats.
- Introducing fertilizers and herbicides to the river via run off which can cause algal blooms and reduce aquatic plant diversity.



Historical river management

Many rivers within the Stour Catchment, including large sections of the main river Stour, have been modified by humans for various reasons including to improve conveyance of flow, provision of water to mills, flood protection and land drainage. This has left large sections of the rivers within the catchment over-wide and over-deep compared to their natural form. Thousands of tonnes of gravel have been removed from the river and from the catchment during this operation. Currently, there are a number of Flood Alleviation Schemes (FAS) on the rivers where maintenance still goes ahead with the routine removal of, for example, large woody debris.

On the Moors River System, weed cutting and tree removal took place up until the 1980's to increase drainage and flow conveyance. Since the cessation of the management technique the river has started to recover on its own.



Channel realignment

There is clear evidence that various sections of the main river channels within the Stour Catchment have been realigned in the past indicated by long straight sections with no meanders. Historically, channels have been realigned to either supply water to a mill, lake, or watercress farm, to improve agricultural drainage or for flood defence purposes. Often realignment was undertaken with dredging and channel widening.

Historical channel realignment has left various sections of the rivers as featureless straight and uniform channels causing a range of impacts including:

- A reduction of in-channel diversity.
- Lack of narrow fast flows, limiting the “self-cleaning” processes.
- Increased water depth.