



*Working to restore & enhance our rivers*

## THE GREAT WILBRAHAM RIVER

### Brief notes on the feasibility of the Great Wilbraham Restoration

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Compiled for the Wilbraham River Protection Society  
and the Environment Agency

By the:  
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**Present**  
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## **Site Description**

As is the case with much of Cambridge's Fen area the land around Wilbraham has been drained for centuries through a series of ditches for the purpose of agricultural gain. This has resulted in changes in local land levels exacerbated by historical farming methods, soil shrinkage as the land has become drier over the years, and soil erosion. Thus the Wilbraham area now comprises a complex drainage system with varying bed levels whilst the old, now dry, course of the Great Wilbraham River between Fulbourn Fen and Hawk Mill is perched for much of its course. The Fulbourn New Cut to the west of the Great Wilbraham river was constructed sometime in the 18<sup>th</sup> Century and since 1954 has carried all the water from the Fulbourn Fen, eventually reconnecting with the Little Wilbraham via the 3<sup>rd</sup> public drain to the west of Hawk Mill. Under the present rainfall regimes the flow often requires augmentation, especially during summer months, via pumping from the Shardelow Spring. Similarly, the Little Wilbraham New Cut to the east of Hawk Mill also needs flow augmentation at times but, in contrast, this drain is a high-level carrier whilst the old course of the river forms a lower level carrier just to the south.<sup>1</sup>

## **The Objective**

The main objective of the meeting was to evaluate the feasibility of restoring the old course of the Great Wilbraham River.

## **Interests and Issues**

Most groups with an interest in this scheme were represented at the field meeting (i.e Water Resources, Biodiversity, Local Landowners, and the Local Community). The following briefly outlines the observations made in the field and the comments of those present at the meeting.

### *Low Flows and Water Table*

The capacity of the existing Fulbourn New Cut appears, on cursory inspection, to be more than sufficient to evacuate all the water from this land even during high flows. When low flows persist, however, there is a constant need to pump water into the system to sustain flow. Similar mechanisms are in place for the Little Wilbraham New Cut but nevertheless, on the day of the visit, this system appeared completely dry near to Hawk Mill.

### *The Physical Condition of the Great Wilbraham from Fulbourn Fen to Hawk Mill*

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<sup>1</sup> The Little Wilbraham system was not the main purpose of the field meeting so information is mainly based on discussion.

No water has flowed through this section of the Great Wilbraham River since 1954. It is understood that the main reason for removing this section of watercourse from the system was because water was 'leaking' from the river (mainly downstream) where a clay liner had previously been constructed along the bed of the river. Since the condition of the Fulbourn New Cut was, at that time, perceived to be in better condition (i.e. less prone to leaking), a decision was made by the authorities to divert all flow along that course.

The meandering route of the Great Wilbraham is still clearly visible for most of its course, although sections of it have clearly been managed historically and there is now encroachment of trees along the river bed. The course is perched above the surrounding drainage systems.

#### *Landowner Implications*

The main concern of the landowners, who are primarily part of the farming community, is that any restoration of the Great Wilbraham River should not have any adverse impact on present agricultural practices.

#### *Current Management of the Ditches*

At present the vegetation in the ditches is maintained by South Cambride District Council as a part of the annual maintenance programme. On the day of the visit, this was in progress and it was noted that the water levels appeared to have fallen, possibly as a direct result of the removal of the vegetation.

### **Investigations that would need to be completed if Restoration of the Great Wilbraham River were considered**

To implement the restoration of any old river course is complex and this becomes even more so when the surrounding water flow is heavily managed. Thus restoring the Great Wilbraham River would need considerable financial resources. It would require the following, as a minimum, to assess the feasibility of the scheme:

- Topographic survey of the rivers, drains, and the surrounding low lying land
- Flow analysis and an assessment of the hydrology of the whole Fen
- Analysis of the soil type and in particular porosity
- Consideration of any flood defence issues
- Continued landowner consultation

### **Is the Restoration of the Great Wilbraham River sustainable?**

Sustainability is the key to any restoration scheme and, whilst the River Restoration Centre promotes the reinstatement of old river courses where practical, at present, the Great Wilbraham river sits within a highly managed system where water levels often need to be augmented. It is therefore unlikely that under the present flow regime there would be sufficient water to maintain the old river course. This is especially so since the watercourse is now mainly perched above the surrounding ditch system and the soil condition is predicted to be highly porous. This, in itself, would suggest that the reinstatement of a clay liner would be necessary at least along part of the river bed. This would incur additional costs (clay liners are approximately £10 per m<sup>2</sup>)

## **Potential for the Future?**

It may be possible to reinstate the Great Wilbraham River under the current complex managed water system. It is, however, questionable that any environmental gain would be economically viable in this situation. Furthermore, the need for a clay liner would effectively mean introducing another managed system into this area, which would be neither a natural nor a sustainable solution.

An alternative approach, but a longer term solution, might be to consider restoration of the Great Wilbraham Stream within the context of a much wider project of reinstating the links between the surrounding Fens and removing/reducing the existing drainage systems. Clearly such a project would require the consent of the many landowners and farmers and would require the financial commitment and support of the various agencies (e.g. The Environment Agency and English Nature). On financial grounds this is unlikely to be realistic at present.

In terms of improvement to the biodiversity of these Fens as a whole it would be worth assessing current maintenance programmes of the drainage systems. At present all the vegetation is removed. Clearly this could be having a severe impact on the local ecology. To consider a rolling maintenance system that does not necessarily remove all vegetation in one operation could be one option and this might also help to maintain water levels during dry seasons.

It is difficult for the River Restoration Centre to see how the Great Wilbraham River could be restored under the **present** managed flow regime conditions without introducing further management liabilities into the system. This raises questions about the long term sustainability of the scheme. If a wider catchment approach to Fen restoration was implemented with a conscious decision to 're-wet' the landscape, then the case for restoration would be very different.