

Manage water levels appropriately

Project Summary

Title: River Frome Water Level Management Plan

Location: River Frome Site of Special Scientific Interest (SSSI), Dorset

Technique: Develop water level management strategy

Cost of technique: £££

Overall cost of scheme: £££

Benefits: ££££

Dates: 2006-2010

Mitigation Measure(s)

Manage water levels appropriately

Change the way structures are operated to reduce barriers to flow, sediment transport and fish/eel migration

Reduce erosion caused by land drainage

Improve channel geomorphology to create habitat

How it was delivered

Delivered by: Environment Agency

Partners: Natural England, Royal HaskoningDHV (to appraise and design projects); Dyer and Butler and Kingcombe (construction).



Hyford Hatches: restored allowing more effective and safe water level management through operation control.

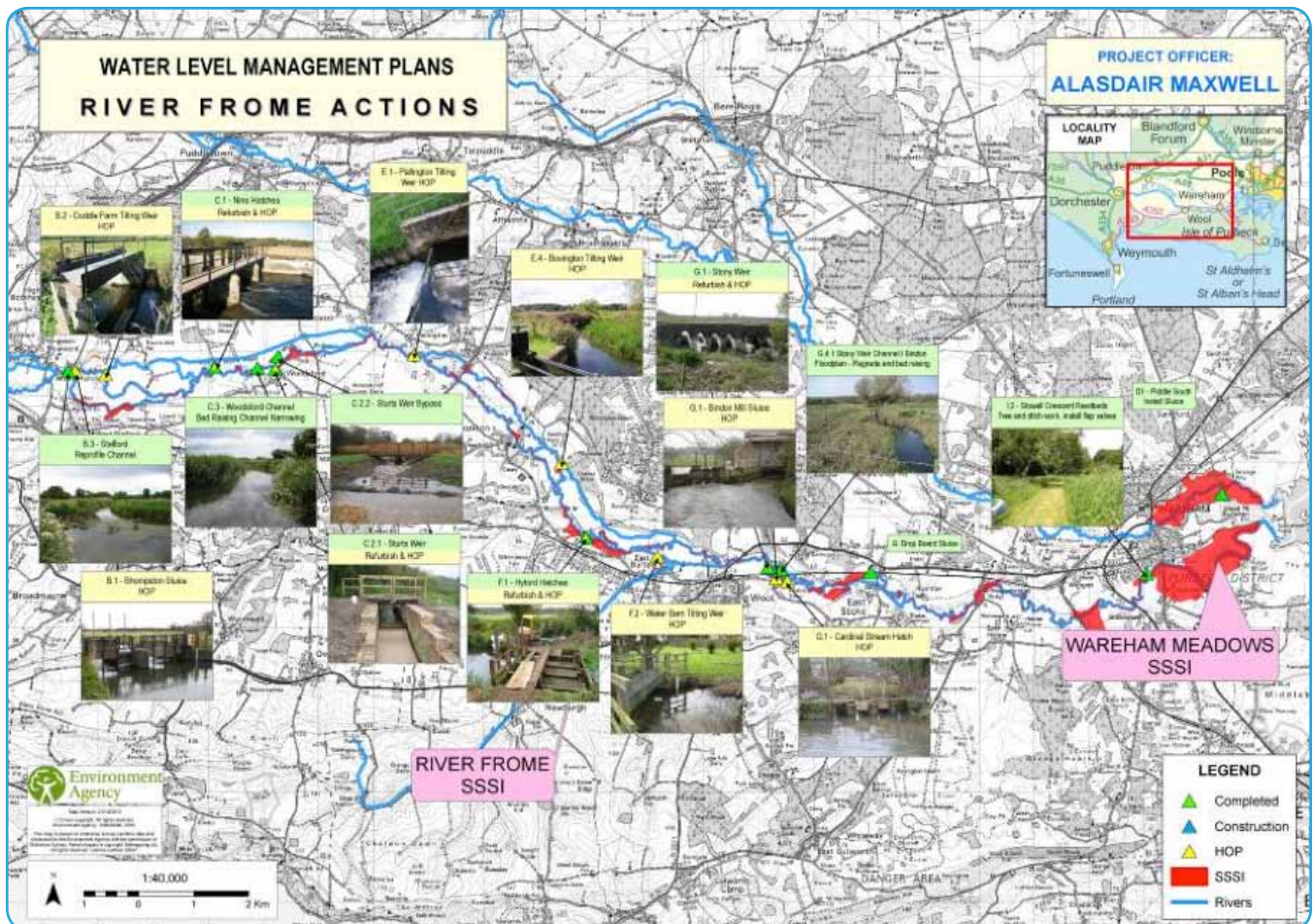
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Background / Issues

The environment Public Service Agreement (PSA) aimed to achieve a target of 95 % of Sites of Special Scientific Interest (SSSI) in favourable or recovering condition by the end of 2010. Under the PSA target, 'water level management' is where water levels are directly controlled to meet the ecological requirements of specific interest features (the species for which the SSSI has been designated). Water level management involves setting specific target water levels related to these requirements. These targets are delivered through Water Level Management Plans (WLMPs).

WLMPs aim to remedy adverse conditions of inappropriate ditch management or inappropriate drainage. A WLMP comprises a written statement that outlines the water level management objectives for a SSSI and provides details of how they might be achieved, considering other activities such as agriculture or flood defence. The Environment Agency, as the operating authority, has the primary responsibility for formulating these plans in agreement with Natural England.

The WLMP for the River Frome was completed in 2006, and contained a number of measures including changing the operation protocol of water level structures, refurbishment of structures, river restoration, channel modification and vegetation management.



Summary of all actions comprising WLMP.

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Step-by-step

Once the WLMP for the River Frome was completed in 2006, all the actions within the strategic WLMP were appraised to identify the most appropriate solution and a programme of works was developed. This ran over four years from 2007.

Design and construction of a variety of schemes progressed until 2009. Outline and detailed design were progressed where appropriate involving extensive consultation with land owners, farmers and fishing clubs.

Construction was completed at Woodsford Channel (restoration pilot), Stinsford Channel, Nine Hatches, Sturts Weir (mill leat and bypass), Hyford Hatches, East Stoke drop board, Bindon Abbey and Stowell Crescent Reedbeds.

The works at Woodsford Channel were considered a pilot project for the River Frome Rehabilitation Plan. Techniques and features such as installing large woody debris, bed and bank reprofiling were undertaken to see how effective they were leading into delivery in future restoration projects.

The Moreton Channel project aimed to reprofile morphologically uniform sections of the river bed (using a long reach excavator). Through moving existing gravels a variety features were created including; deep pools, gullies, riffles and exposed gravel berms.



River restoration pilot



Engagement



Water level control structures



Side channel off take



Monitoring (gauge board)



Side channel management

Structure Operation Protocols (SOPs) were developed and agreed for all existing and installed structures, and were delivered in 2010/2011. These aim to gain agreement as to their future operation to maintain or improve SSSI condition. The River Frome Flow and Structure Project was initiated in 2010/11 to help formulate the SOPs, and also inform river restoration action appraisal.

Benefits

Improvements implemented through the WLMP:

- 9 Structure Operation Protocols.
- 6 structures refurbished or installed.
- Pilot river restoration project completed (Woodsford Channel and the Moreton Channel).
- Gauge boards installed at structures to allow water levels to be monitored and adjusted as necessary

Outcomes:

- Improved water level management at numerous structures throughout the SSSI leading to an improvement in the SSSI condition.
- New partners and relationships formed with landowner owners, farmers and fishing clubs.
- Improved and agreed future flow apportionment between multiple channels.
- Established Project Groups on the Frome, with farming and fishery interests and statutory partners. Six newsletters produced, articles for external and internal publications, presentations at conferences, poster exhibition, workshops (national and local), radio interview and public briefings given and a number of commendations for this programme (including the Avon WLMP).



Sturts Weir bypass channel



Stowell Crescent reedbed

Lessons Learnt

The River Frome WLMP was a large multi-year programme of works. The approach taken to employ a single consultant to appraise the original WLMP, developing projects to detailed design and undertake site supervision during construction had many benefits. It allowed relationships to develop between the Environment Agency team and the consultant staff and allowed for more innovation during design and construction.

Consultation played a large role in the success of the River Frome WLMP. It is important for other similar projects to involve the key stakeholders early and use their input to help inform the designs. This allows a greater degree of buy-in, understanding and general acceptance of the projects.

Some aspects of the Frome WLMP were more complex and harder to achieve in a defined period. The SOPs for example are dynamic, live documents that will need to be revised year on year depending on how effective the originally agreed levels and operations are in achieving the stated objectives.

The SOPs were considered draft documents and consultation has continued as part of the River Frome Rehabilitation Plan, which aims to improve the physical condition of the River Frome SSSI.

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