

Slowing the Flow at Pickering Project

Programme Board Meeting 2nd September 2010

Paper 10/03

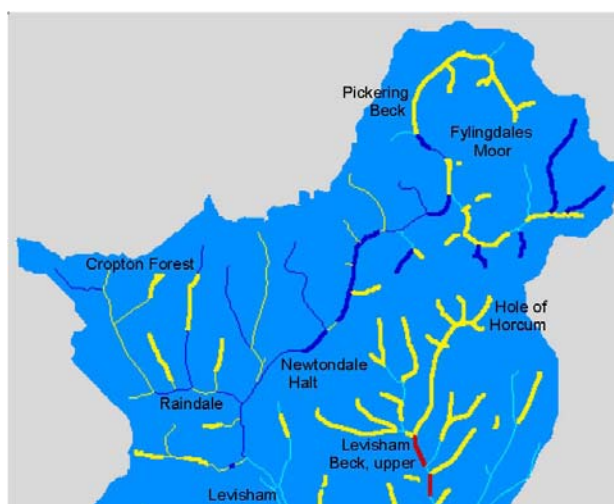
Land Management Update

Purpose

1. To summarise progress on the land management measures.

Background

2. The Core and Wider Programme Delivery Group have met at regular intervals throughout the last fourteen months to identify and evaluate options for land management change (the agreed land management measures are listed in Paper 10/01). Site selection was guided by opportunity mapping, site survey and hydrological modelling. A key contribution was the report on catchment riparian intervention measures produced by Durham University. This innovative work helped to identify where the measures would have a positive, neutral or negative impact on downstream flood risk (see Figure 1). The best locations were in the upper half of the catchment and the combined effect of the 50 ha of new riparian woodland planting and the construction of 100 large woody debris dams was estimated to range between a 19,000 and 99,000 m³ reduction in flood volume for a 2007 type flood. The magnitude of the impact appeared to decline for a smaller, 2000 type event. Locating measures on the main Beck was found to be most effective, although potential constraints were often greatest here, especially in relation to the railway.
3. Individual sites were selected for further consideration where the measures were predicted to have a positive impact during both the 2007 and 2000 events, followed (in order of priority) by those positive in 2007 and neutral in 2000 and those positive in 2000 and neutral in 2007. Their suitability for planting or dam building was then assessed through site survey and discussions with partners. Constraints included existing woodland, landscape, biodiversity, railway and overly steep or incised watercourses.



2007 flood event

2000 flood event

Figure 1: Shows initial assessments of the individual influence of each CRIM (Catchment Riparian Intervention Measure; in this case riparian woodland planting) and additional large woody debris (LWD) dam sections proposed by Forest Research in the Pickering Beck catchment. These are based on results obtained from simulating the 2000 and 2007 flood events. Dark blue (both thin and thick lines) - positive effect of reducing flood volume; yellow - neutral; red - negative effect of increasing flood volume.

4. A PhD student at Durham University is extending the 'Overflow' modelling to the River Seven catchment to determine the optimum locations for building large woody debris dams within that section of Cropton Forest. The results are due by the end of September 2010.
5. Modelling work to assist the selection of sites for new floodplain woodland planting within the River Seven catchment has been delayed by the lack of LiDAR data. A cross-sectional survey of the River Seven channel north of Sinnington was commissioned and the results used to set up and run a hydraulic model. A further complication has been the relative steepness of the river channel. These problems have now been overcome and the work is due to be completed by the end of August 2010.
6. The regional capital programme of FC Yorkshire and the Humber provides additional funding to the standard EWGS Woodland Creation Grant of £2k/ha for all schemes which contribute to the forestry and flooding agenda. Further top-up funding from Yorkshire Forward has now been agreed until March 2013 (final year subject to confirmation). This comprises £2k/ha for planting floodplain woodland and £1k/ha for new riparian woodland. Yorkshire Forward have also funded 5 temporary posts with sub-regional partners to promote the funding available and generate planting schemes on the ground.

Progress to date on the specific measures is as follows:

Riparian and Floodplain Woodland Planting

7. Site visits and discussions have provisionally secured five areas of riparian woodland planting within preferred reaches, totalling approximately 8.3 ha. These fall within the Levisham Estate and are subject to ongoing consultation with primary partners. Subject to final approval and funding, work could commence during

the forthcoming 2010/11 planting season. This is a good start to achieving the 50 ha target for new riparian woodland within the Pickering Beck catchment. Progress on meeting the 30 ha target for new floodplain woodland within the River Seven catchment awaits the results of the modelling work, which will help guide site selection. The views of the six main landowners within the floodplain have been canvassed and most have responded positively. One scheme is currently on the public register which partially contributes to project objectives.

Large Woody Debris Dams

8. A number of positive stream reaches draining Cropton Forest within the Pickering Beck catchment have been selected for building large woody debris dams. A team of NYMNPA Modern Apprentices on work placement with FC England have been trained in dam construction and a total of 22 dams were installed in July 2010. A second period of construction work by the Apprentices is scheduled for October and it is expected that the target of 100 dams within the Pickering Beck and 50 in the River Seven catchment will be achieved by March 2011, aided by direct FC labour squad resource as required. As the report from Durham confirmed that 'main Beck sites have a greater effect on downstream flood risk reduction than non-main Beck sites' further sites for dam building under FC ownership in the Newtondale SSSI section of the Pickering Beck are proposed, subject to funding and consultation.

Farm woodland

9. Staff resources are in place and work is about to commence on targeting key landowners within the project area to secure at least 5 ha of new farm woodland, including assisting them with drawing up applications for EWGS.

Moorland drain blocking and no-burn buffers

10. Survey work has identified a number of drains across the Levisham Estate for blocking using large woody debris dams, heather bales or alternative methods to slow run-off and reduce erosion. Consultation on these proposals is ongoing and pending agreement work should start during autumn/winter 2010. No-burn buffer zones are now in place.

Restoring buffer areas within Cropton Forest

11. The revised Cropton Forest Design Plan was approved in July 2010. This is the first document of its type nationally to include flood alleviation as a stated aim. It will enable FC North York Moors to identify and realise opportunities to slow down peak flows, such as through drain blocking and restoring streamside buffers.

Farm scale measures

12. Two demonstration days have been organised in conjunction with Catchment Sensitive Farming staff to promote soil improvements on farm land to reduce rapid run-off and erosion.

Action

13. Members are asked to note the content of this report and raise any issues for clarification before endorsing the Programme Delivery Group's actions to date.

Simon Marrington
Forest Research