

Issues on the River Chet

Report by Senior Waterways and Recreation Officer, Head of Planning and Head of Construction, Maintenance and Environment

Summary: This report gives a summary of the latest position regarding Norfolk County Council's proposals for the extinguishment of the Wherryman's Way on the true left bank of the River Chet and the results of water level monitoring that the Broads Authority has been carrying out since May 2016.

Following complaints, officers have looked into the feasibility and cost of removing the navigation channel markers on the River Chet and this report invites comments from the Committee on the options

1 Introduction

- 1.1 There are currently a number of ongoing issues on and around the River Chet. These include the condition and future management of part of the Wherryman's Way at Hardley Flood and the presence in the navigation channel of 37 channel marker posts
- 1.2 The purpose of this report is to update the Navigation Committee on the current position in respect of each of these and seeks views on possible future options.

2 The Wherryman's Way Footpath on the True Left Bank of River Chet at Hardley Flood

Background

- 2.1 At the meeting of the Navigation Committee on 21 April 2016 members considered a report on Norfolk County Council's proposal to extinguish the section of the Wherryman's Way trail which runs on the true left bank of the River Chet at Hardley Flood. The extinguishment was considered necessary as the bank was deteriorating in condition and a bridge structure had failed at one of the breaches in the bank where water flows into and out of Hardley Flood. Aside from the effect of the County Council's proposal to extinguish the path on countryside access, the report also considered the implications of the potential extinguishment on the management of the river bank, the hydrology of the River Chet and the future maintenance of the navigation.
- 2.2 The report explained that Norfolk County Council did not consider that it had any responsibility for maintaining the structure of the bank and neither did the Environment Agency as the bank was not part of the flood defences.

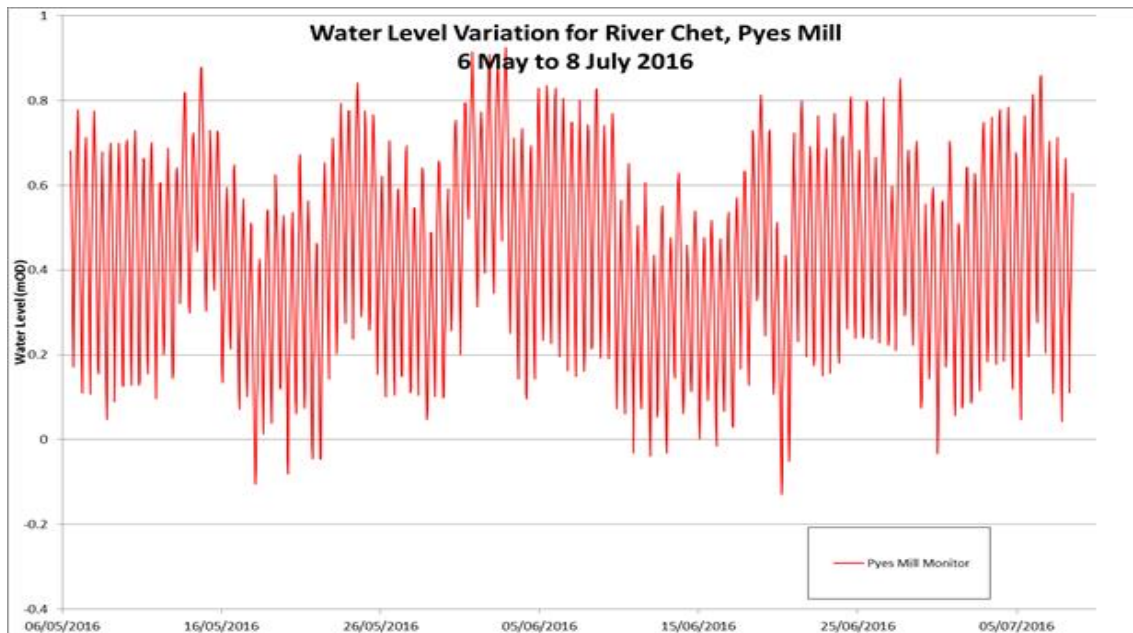
- 2.3 Members will recall that the report also highlighted the fact that officers had been presented with anecdotal evidence from local businesses that the deterioration of the bank was having an adverse impact on tidal flow and water levels upstream of Hardley Flood. As there was no scientific evidence to substantiate this claim the report notified members that the Authority would be installing a tidal monitor at Pye's Mill to gather data on tidal fluctuations in the River Chet.
- 2.4 Members accepted that the Authority was not responsible for maintaining banks in private ownership or public rights of way and that its main responsibility with regard to the River Chet was the maintenance of the navigation. However, in general members felt that the Authority should object to the proposed extinguishment and work with the other public authorities with an interest in the matter to see if a project to deal with the underlying issue of the integrity of the bank could be developed and funded. In reaching this conclusion members were mindful of the Authority's second purpose (*promoting the enjoyment of the Broads by the public*) and recognised the importance of walking as highlighted in the stakeholder surveys carried out for the Authority in 2014.
- 2.5 Since the meeting on 21 April 2016 the Broads Local Access Forum (BLAF) also considered the issue at its meeting on 7 June 2016. The BLAF resolved to advise the County Council under Section 94 (4) of the Countryside and Rights of Way Act 2000 to place a traffic regulation order (TRO) on the route rather than extinguishing it. The BLAF felt that the loss of the path would potentially have an adverse impact on the quality of the route of the Wherryman's Way, tourism and navigation and also advised the County Council to work with the other relevant public authorities (South Norfolk District Council, Environment Agency, Natural England and the Broads Authority) to explore the possibility of developing a partnership project to protect the route.
- 2.6 The County Council has responded to this advice by agreeing to the BLAF's suggested approach and it is now placing a TRO on the route which will allow discussions to continue with the other authorities involved.
- 2.7 The Broads Authority has also suggested that a jointly funded tree and scrub clearance project should be carried out on the path to remove trees in danger of collapse and encourage reed growth on the front face of the bank to give it some erosion protection.
- 2.8 The County Council has indicated that it will be convening a meeting involving officers and members from the relevant authorities to explore options which is likely to take place in early October.

Water level monitoring data

- 2.9 As indicated at paragraph 2.3 to this report the Broads Authority has been monitoring water levels at Pye's Mill since early May in order to be able to

assess water levels accurately and compare tidal range in the Chet with that in the River Yare. Figure 1 shows the data for the period 6 May to 8 July.

Figure 1

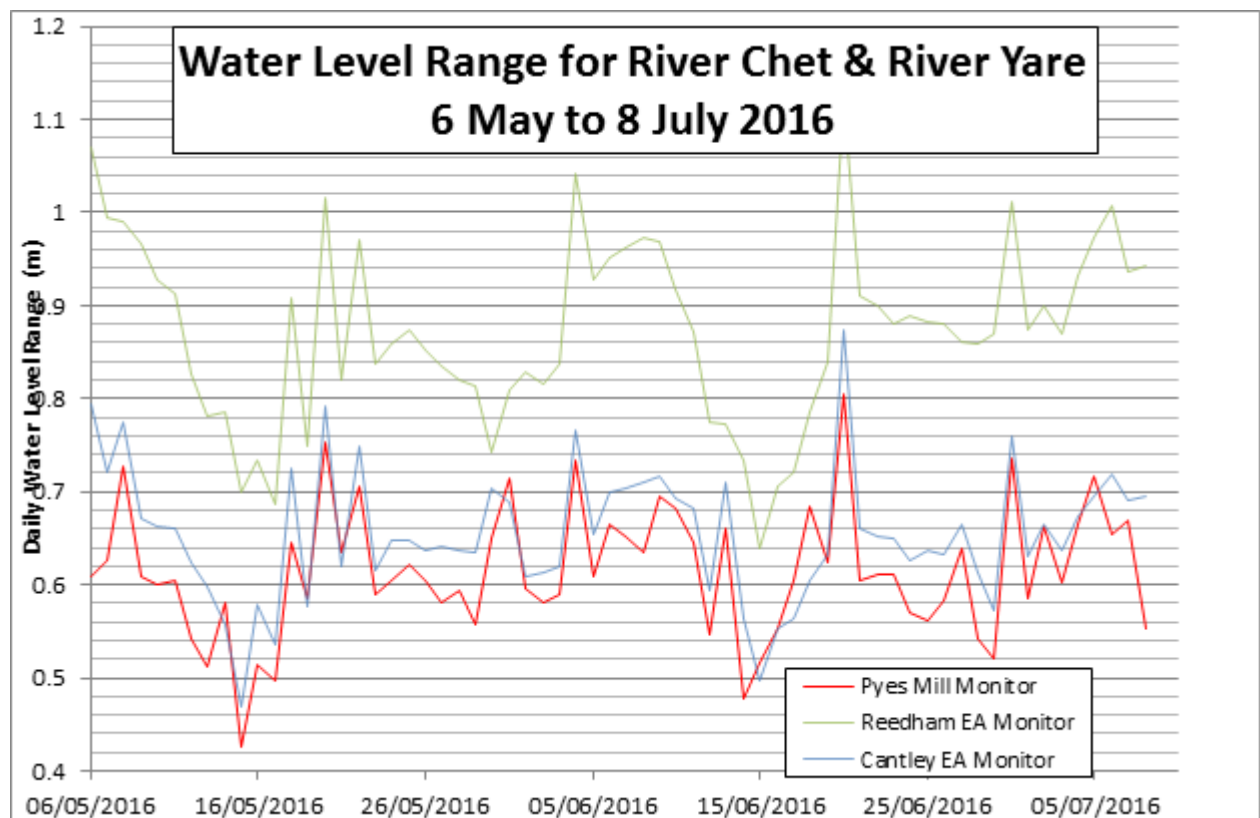


2.10 It is clear from the data that water levels at Loddon are following a typical tidal cycle of highs and lows. The plot shows that the tidal range (difference between high and low levels) varies between 0.5m and 0.8m. The actual high and low levels fit well with the tide levels given for Loddon in the 1993 Binnie & Partners Broadland Model Study, which are:

MHWS	MHWN	MLWN	MLWS
0.68mOD	0.38mOD	-0.05mOD	-0.10mOD

2.11 These data have been compared with data from the Environment Agency's tidal monitors at Reedham and Cantley. Initial comparisons indicate that the tidal range on the Chet at Loddon is almost exactly the same as the range on the Yare at Cantley. Further, the timing of the tidal cycle at Loddon is also almost exactly the same as at Cantley. The tidal range at Loddon is approx. 200mm less than that at Reedham which is to be expected as the effect of the tide lessens as it progresses upstream. These data also indicate a 15 to 30 minute difference between tides at Reedham and Loddon (and the same for Cantley). Figure 2 shows a comparison of the data from the three monitors used.

Figure 2



2.12 The data gathered so far suggests that the inlets in the true left bank of the Chet which connect Hardley Flood with the river do not have a significant effect on tide levels. Further, there are no significant differences between current levels and those recorded in the Binnie and Partners Broadland Model Survey which was carried out in 1993. Neither is there a major time lag for high tide at Loddon which also indicates that the Hardley Flood inlets are having a negligible effect.

2.13 However, these data do not indicate what affect the connections between Hardley Flood and the Chet are likely to have on channel velocity or siltation which can only be assessed through hydraulic modelling. Modelling will also give some information on the effects of carrying out works to change the connections between the flood and the river on levels and the resulting flows through the connections. Officers feel that it is essential for modelling to be carried out in order to inform future project development and Norfolk County Council has indicated that this will be discussed at the joint meeting of the public authorities to be held in October.

2.14 In order to assess the level of boat traffic proceeding upstream on the River Chet the Authority's rangers have also been monitoring the number of boats mooring at Loddon. This has shown that Loddon mooring is usually full to capacity and indicates that boats are not having difficulties with channel depth. The Authority will continue to work with Norfolk County Council and other public authorities to obtain hydraulic modelling data on the functioning of

the Chet/Hardley flood system, carry out tree works in partnership with the other relevant authorities and the landowner and explore options for the future management of the bank.

3 The Navigation Channel Marker Posts on the River Chet

Background

- 3.1 Planning permission was granted in November 2008 for piling removal works on the River Chet, between Chet Mouth and Hardley Hall including the installation of marker posts to indicate the edge of the channel in this narrow river. It should be noted that there is no planning condition which requires their removal.

The current position

- 3.2 Broadland Environmental Services Ltd (BESL) subsequently undertook the flood defence work, including the installation of 37 steel channel marker posts, 15 on the north side and 22 on the south side. The flood defence works have now been completed and the reprofiled bank has established well, which is welcomed. The Broads Authority is now, however, receiving requests for the channel markers to be removed, on various grounds including the view that they represent an obstacle to navigation and concerns that boats are colliding with them in the narrow channel. These concerns have been raised by various bodies including the Broads Hire Boat Federation (BHBF), the Broads Society, the Norfolk and Suffolk Boating Association (NSBA) and the Boat Safety Management Group (BSMG).
- 3.3 There is no legal requirement for BESL to remove the navigation channel marker posts. They have also indicated that they do not fully concur with the justification being presented for their removal and consider instead that they continue to provide a useful channel marking function. This notwithstanding, the Environment Agency (as the project leader) has indicated that it is prepared in principle to agree to their removal, subject to certain caveats including:
- (a) If the posts are removed and there is subsequently found to be a problem with channel marking then the responsibility for their reinstatement will not fall to either the Environment Agency or BESL; and
 - (b) If the posts are removed and there is subsequently found to be a problem with vessels colliding with the bank, then the responsibility for the repair to the bank will not fall to either the Environment Agency or BESL; and
 - (c) If the posts are removed by a third party, no responsibility for any issues arising during or after the works will fall to either the Environment Agency or BESL.

Options for the removal of the posts

- 3.4 In terms of the practicalities of the removal of posts, BESL advise that they are approximately 9m long so specialist equipment in the form of a vibrating hammer attachment would be likely to be needed to carry out the work. The poor ground conditions are likely to mitigate against carrying out the work from the land, so it is likely to be necessary to work off a platform in the river, which might require closure (part or full) of the navigation channel for the duration of the works. Clearly this would have an adverse impact on navigation, so if this is the case the timing of the works will be critical.
- 3.5 BESL have advised that they do not have the equipment to carry out the works, so would need to hire in all the plant and equipment, with the associated cost. They also note that there is no legal requirement for them to carry out this work.
- 3.6 The Broads Authority has most of the necessary plant and equipment and could hire in the specialist vibrating hammer needed to do the works. There is, however, no provision in the 2016/17 works programme for the cost, the time or the labour for doing this work. A provisional estimate of costs is around £60,000 for the work to be done in-house and the works are estimated to take up to 8 weeks. Due to the restricted width of the River Chet, post removal would need to take place between November and March. If the Committee viewed this project as a high priority and wanted the Broads Authority to progress the removal during this winter it would affect programmed works at Hickling Broad, Lime Kiln Dyke, Rockland Dyke and Lower Bure.
- 3.7 On 10 June 2016 a site visit by boat was undertaken with the Chairman of the Navigation Committee and a representative each of the NSBA and BHBF so that the posts could be viewed in situ. A simple visual assessment and scoring was made of each post to get some agreement on which had the greatest impact. Of the 37 it was agreed that there are 19 posts which should be a priority for removal (the majority of which are on the south side and comprise most of the posts on this side) and there are nine that have a neutral impact and a handful that are actively useful.
- 3.8 A preliminary calculation has been regarding the cost savings which could be made were only the 19 priority posts to be removed, rather than all 37. It is estimated that this would reduce the cost by around £6,195 and reduce the duration of the work by around a week.

Suggested way forward

- 3.9 Given the above, and the strong pressure to remove these posts, the officer view is that the Broads Authority should:
- (i) undertake this work in the 2017/18 work programme;
 - (ii) remove all posts, given the limited savings which would be achieved through removal of only half of them; and

- (iii) provide the commitment sought by the Environment Agency (outlined at 3.4 (a) – (c)) in order to allow the removal of the posts.

3.10 It should be noted that the Environment Agency has indicated that in principle it may be prepared to contribute to the costs of the works, but no sum has been either suggested or agreed.

Background paper:	None
Report author:	Cally Smith/Adrian Clarke/Rob Rogers
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Broads Plan Objectives:	TR1/ TR3/ NA4
Appendices:	None