

Navigation Committee

13 April 2023

Agenda item number 13

Construction Maintenance Ecology work programme progress update

Report by Head of Construction, Maintenance & Ecology, and Ecology & Design Supervisor

Purpose

To give an update on the Broads Authority's management activities to maintain public navigation, develop mooring facilities for public use and demonstrate the effective use of available resources in managing the Broads waterways.

Broads Plan context

C1: Maintain navigation water depths to defined specifications, reduce sediment input and dispose of dredged material in sustainable and beneficial ways

C2: Maintain existing navigation water space and develop appropriate opportunities to extend access for various types of craft

C3: Manage water plants and riverside trees and scrub, and seek resources to increase operational targets

C4: Maintain and improve safety and security standards and user behaviour on the waterways

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1. Maintaining water depths for navigation

1.1. The detailed breakdown in Appendix 1 gives progress and volumes for the dredging programme for 2022/23 to the end of February 2023 (April 2022 to end February 2023). A total of 38,030 m³ of dredged sediment was removed from the prioritised sites. This figure represents 136% of the programmed target of 29,750 m³ for the year. The additional sediment volume dredged has largely been due to a significant change in the

work programme which saw a team remain at Oulton Broad instead of starting a new project on the Upper Bure.

- 1.2. Since the previous report to Navigation Committee, dredging in Malthouse Broad has been completed. A team were able to spend a few additional weeks in this area and dredged some shoals on the main River Bure. This team then moved up to the River Ant, to finish off dredging at Sutton Staithe, which has now been completed. The main bulk of the dredging is now on the main River Ant between Wayford Bridge and Barton Turf, as well as sections of Stalham Dyke. This is planned to carry on through into the summer of 2023. Individual shoals and shallow areas have been identified from the hydrographic surveys. Targeted removal of sediment is the approach being taken in this project, which has a fixed capacity for receiving dredgings at the re-use site. [Notice to Mariners](#).
- 1.3. This campaign of dredging at Oulton Broad is progressing well, although some internal damage to the pump which is used to offload the dredgings has paused activity for about two weeks. Some large nails got through the screener and ended up running down the sides of the rams, so the seals and cylinders needed replacement/repair with the supplier. [Notice to Mariners](#).
- 1.4. The forward dredging programme for 2023/24 is shown in Table 1

Table 1. Forward dredge programme for 2023/24

Dredge location	Date range
Upper Ant – upstream of Barton Broad to Wayford Bridge & Stalham Dyke (bankside re-use u/s Hunsett Mill)	April – September (with break during school summer holidays)
Oulton Broad (pumped re-use to Peto’s marsh)	April – July (continuation from 2022/23)
Upper Bure – u/s Wroxham Bridge (pumped re-use to adjacent agricultural land)	October - March
Haddiscoe Cut (sidecast to Yare setback)	November - February

2. Maintaining safe public mooring facilities

- 2.1. The contractor installation of new steel sheet piling to replace part of the quay heading at Neatishead Staithe 24-hour mooring has been successful. 84 m of 158 m total mooring length have been replaced. The completion date was set back due to difficult ground conditions, so the revised re-opening of the site for public mooring had to be delayed by a fortnight until 17 April.

- 2.2. The forward 24 hour mooring repiling and timber refurbishment programme for 2023/24 is shown in Table 2.

Table 2. 24 hour mooring re-piling and refurbishment programme for 2023/24

Mooring location	Date range
River Ant - Horning Marshes (replacement horizontal barge boards and timber refurbishment)	April - June
River Yare - Commissioners cut (timber refurbishment on 30m plus repairs)	July
River Bure – Ranworth (timber refurbishment on 50m)	November
River Yare – Cantley (timber refurbishment on 50m)	December - January
River Ant – Dilham (timber repairs)	February
River Thurne – Womack Dyke (timber repairs)	March

3. Our resources

- 3.1. The capital spending plans for the additional Defra grant to support the management of SSSIs and species recovery in the Broads have been concluded. The final list of new plant, vessels and machinery includes: -

- 18 tonne long reach excavator (JCB JS180)
- water plant harvester (Berky 6520)
- tractor, with lifting forks and low loader trailer (140 H.P New Holland tractor & 24’ trailer)
- amphibious “aqua tractor” with cutting heads, bucket, rake and mud-pump attachments (Truxor T50)
- 14 tonne standard reach excavator (JCB 140X LC)
- 13 m barge / multi-purpose workboat (ABC Boats)
- Road towable and site-use fuel bowsers
- Selection of chainsaws and brushcutters

- 3.2. The availability of this equipment will help deliver the year round operational work programme and add efficiencies into several work areas. Entirely new items such as the tractor with front loader and the Truxor amphibious vehicle open new opportunities for managing sites in different ways and to sensitively manage for biodiversity and achieve all the Authority’s duties.

4. Water plant management

- 4.1. The plan for the new water plant harvester is to have two vessels located in the northern rivers during the cutting season (one in the Upper Thurne and one for the Bure and Ant) and one covering the southern rivers. This will reduce the vessel travel time in the north, as the operator can switch between vessels as plant growth demands, without spending time relocating a slow moving vessel between different locations. As water plant growth has been very vigorous over the past three years, having one harvester in this area will enable a greater frequency of cutting.
- 4.2. The forward water plant management programme for 2023/24 is shown in Table 3.

Table 3. Areas within the routine water plant cutting programme for 2023/24

Water plant management location	Date range
River Thurne (Hickling Broad & Catfield Dyke)	June to September
River Thurne (West Somerton to Martham Ferry; Waxham Cut)	April to October
River Bure (Coltishall Lock to Caen Meadow)	The programme commences in April (depending on plant growth) with re-visits again prioritised according to plant growth.
River Ant (Tyler's Cut)	
River Waveney (Geldeston Lock to Beccles)	
River Yare/Wensum (New Mills to Whitlingham Broad)	

- 4.3. The annual Broads water plant survey report for 2022 has been completed and is available [here](#). The report presents and discusses the findings from the annual water plant surveys carried out during 2022, which covered 25 Broads with a total of 596 survey points, in addition to looking back at the 40 years of the surveys history. The results from monitoring in the areas routinely managed by the water plant harvesters and the hydroacoustic surveys of Hickling Broad are also presented.
- 4.4. The main findings of the 2022 water plant survey report were:
- 64% (16/25) of the Broads surveyed showed an increase in plant abundance. 24% (6/25) Broads showed a decrease and 8% (2/25) showed very little change. This continues the trend of increasing plant growth and overall abundance recorded over the past five years.
 - The Broads directly connected to the Bure River recorded an increase in plant abundance. The general clarity of the water in the river and how far this extended downstream of Wroxham Bridge was also of note.
 - Stonewort's were the dominant water plant group across the Upper Thurne broads were also present in nine other Broads surveyed.

- Hickling Broad had at its peak growth in October 2022. At this time approximately 85% of the bed of the broad was covered with water plants. This is the greatest coverage of water plants recorded in Hickling using hydroacoustic survey methods since this approach was adopted in 2012.

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Background papers: [2022 Broads Annual Water Plant Survey Report](#)

[Broads Plan](#) strategic actions: C1, C2, C3, C4

Appendix 1 – Dredging figures 2022-23 (April 2022 to end February 2023)

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Project title Dredge site and sediment re-use location	Active Broads Authority dredging weeks completed/ planned	Planned volume removed m³	Actual volume removed m³	Planned annual project cost ¹	Actual project cost
River Ant Sutton Broad to u/s Hunsett Mill (May-Jul)	11/20	12,000	7,240	120,090	77,570
<i>Phase 1 COMPLETE – delayed start owing to consenting issues; early completion in order to install marker posts in Barton Broad Phase 2 – early commencement (Feb) whilst river traffic low</i>					
River Waveney Oulton Broad to Peto’s Marsh (May ‘22 – July ‘23)	23/13	10,000	18,650	50,780	182,480
<i>ONGOING – delays owing to pump breakdowns; extended to end March 2023; revised planned volume of 17,500m³</i>					
River Bure Malthouse Broad to Ant mouth setbacks (Oct-Feb)	15/9	6,750	9,830	98,390	61,380
<i>COMPLETE – Replacement project for Upper Bure (Belaugh to Wroxham)</i>					
River Bure Plough dredging Lower Bure (Mar)	Contractor	1,000	2,000	5,000	6,000
<i>COMPLETE</i>					
River Yare	2/0	0	310		

¹ project costs include staff time for all elements (pre-works ecological mitigation, site set-up, active dredging & site restoration); BA plant; & budgetary expenditure (equipment hire, survey costs, contractor costs, mitigation works, materials & consumables etc); within the reporting period.

Project title Dredge site and sediment re-use location	Active Broads Authority dredging weeks completed/ planned	Planned volume removed m³	Actual volume removed m³	Planned annual project cost ¹	Actual project cost
<i>COMPLETE - Opportunistic removal of sediment from the bar at the entrance to Hardley Dyke and Haddiscoe Cut</i>					
Site Restoration Beccles, Raveningham, Hardley Flood	-	-	-	13,020	17,810
Future site preparation Survey, mitigation & set-up	-	-	-	9,960	7,060
Dredging support activities Maintenance of ancillary dredging kit, etc	-	-	-	-	27,300
Total	51/50	29,750	38,030	297,240	379,600