

# Navigation Committee

06 June 2024

Agenda item number 10

## Construction Maintenance and Ecology work programme progress update

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

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### 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, 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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## Contents

1.	Maintaining water depths for navigation	2
2.	Maintaining safe public mooring facilities	2
3.	Water Plant Management	3
4.	Riverside Tree Management	3
5.	Our resources	4
6.	Herbicide and biocide usage	4
7.	Channel Marking	6
	Appendix 1 – Annual dredging progress 2024/25 (for April 2024)	7
	Appendix 2 – Final annual dredging figures 2023-24 (April 2023 to end March 2024)	9

## 1. Maintaining water depths for navigation

- 1.1. The detailed breakdown in Appendix 1 gives progress and volumes for the dredging programme for 2024/25 (for April 2024 only). A total of 2,800 m<sup>3</sup> of dredged sediment was removed from the prioritised sites. This figure represents 8% of the programmed target of 36,630 m<sup>3</sup> for the year.
- 1.2. Dredging on the Upper Bure between Wroxham and Coltishall continues. The team are currently working upstream from Belaugh to Coltishall.
- 1.3. Looking back over last year (2023/24) Appendix 2 gives the final year-end figures. A total of 34,750 m<sup>3</sup> of dredged sediment was removed from the prioritised sites. This figure represents 87% of the programmed target of 40,050 m<sup>3</sup> for the past year. The lower than planned figure was largely due to issues with the concrete pump at the Upper Bure dredging site. Specific parts for the pump were unable to be sourced by the manufacturer and the supplier needed to rectify the mechanical issues on site.
- 1.4. Upcoming dredging work starting early this summer is going to be in Fleet Dyke approaching Rockland Broad and within the marked channel through the broad. Sediment will be stored at the rear of a floodbank for later use by the Environment Agency.
- 1.5. Through working with the partners in the Broadland Futures Initiative, an investigation of impacts of capital dredging along the Lower Bure, in the region of the Bure Hump is being carried out. Using the model originally developed as part of the BFAP scheme, scenarios of capital dredging 0.5 m and 1.0 m lower than that which the Authority would normally carry out for navigation purposes, are possible. The outputs of this modelling will then show if any significant change in water levels further upstream in the Bure, Ant and Thurne is observable from the deeper dredging scenarios. Results are due by the end of July.

## 2. Maintaining safe public mooring facilities

- 2.1. Planned repiling at Womack Island 24 hour mooring has started and is planned to end by 24 May [Temporary closure of Womack Island 24hr mooring due to refurbishment works \(broads-authority.gov.uk\)](https://www.broads-authority.gov.uk) .
- 2.2. Repiling at Repps Bank 24-hour mooring at Potter Heigham is the next job to be started once work at Womack Island ends. Delays due to high water earlier in the season has meant this work is later and likely to be at a busier time than originally planned, but the work needs to be done and at a water level favourable to working on site. Some disruption to free public mooring in this area is expected.

- 2.3. An arrangement with Wroxham Parish Council and Wroxham Home Farms has been struck to maintain public use of Castle Staithe 24 hour mooring on a temporary basis, prior to a more formal long-term agreement being set up. In partnership with Wroxham Home Farms, the Authority has carried out some urgent repairs in the past month following damage to the quay heading. The ranger team are continuing to maintain the site as a 24-hour mooring.

### 3. Water Plant Management

- 3.1. The routine annual cutting has started this season with the usual first location on the River Thurne between Martham Ferry to Somerton. Training of additional members of staff operating the water plant harvesters is also being carried out on the Upper Bure.
- 3.2. Ecologists have carried out the initial hydroacoustic survey to determine the amount of water plant growth across the whole of Hickling Broad, as part of our checks prior to the start of cutting in any one season. The current assent has cutting of the marked channel through Hickling Broad commencing no earlier than 1 May. Our hydroacoustic survey shows 86% coverage of water plants over the whole of the broad. The threshold for cutting is when growth exceeds 30% of the broad area, so this first cut commenced on 20 May. The data shows that there is currently slightly lower average plant height and area coverage than the same time last year, but rangers will maintain regular checks to guide when repeat cutting is required through the season.

### 4. Riverside Tree Management

- 4.1. The autumn/winter 2023/24 work programme of riverside tree management has been completed. In the end, just over 2.5 km of linear bank was managed rather than the planned 2.1 km. The additional work arose from additional tree management being required in areas planned for dredging, where impacts on available navigation width needed to be mitigated.

- 4.2. Table 1. Riverside tree management length by river valley (2023/24)

River	Metres
Ant	122
Bure	819
Thurne	25
Waveney	590
Yare	957
<b>Total</b>	<b>2,513</b>

- 4.3. The breakdown of linear length of riverbank managed over the 2023/24 autumn/winter is shown in Table 1. Of the 2,513 m of riverbank managed, 1,808 m was completed by

rangers, volunteers and the hydraulic tree shears. The remaining 705 m was carried out by contractors. The maps showing where these priority areas were planned is in the link [Riverside tree and scrub management 2023/24](#)

## 5. Our resources

- 5.1. Appendix 3 shows the final percentage of operational staff time spent on navigation work areas for the previous financial year (April 2023 – March 2024). The proportional split between the different navigation management activities was very close between planned and actual. The one navigation activity that had the actual number of days greater planned however, was the water plant management. The volume and extent of plant growth was high in the summer of 2023, so demanded a greater effort to manage to maintain clear navigational access within the areas where water plants commonly grow.

Calendar years	Countryside Total	Moorings Total	Yearly Total
2021	10,348	12,258	22,606
2022	4,083	13,488	17,571
2023	4,631	12,888	17,519
Total volume (ml)	19,182	38,634	57,816

- 5.2. The most significant variation between planned and actual was in the total number of operations technician days worked on all practical activities. The planned split in total operations technician’s time is 70% for navigation management and 30% National Park activities, in line with currently agreed budget and staff time allocations. The difference in actual total operations technician’s time was due to some small gaps in recruitment for two members of staff, where there was temporarily no one in post, and then one significant gap where an operations technician post was frozen from re-recruitment for just over three months.
- 5.3. In 2023/24, the lower than planned operations technician time on navigation activities was also partly due to a concrete pump breakdown and unplanned pauses in dredging work whilst preparing for the Breydon marker post replacement project. During these pauses in planned work, the operations technicians were redeployed on other tasks, including mooring maintenance and repair, fen management, premises maintenance and countryside site maintenance. Deployment to navigation tasks was not always possible due to timing of tasks in the year, amount of time available and the individual skills and training of the members of staff involved.

## 6. Herbicide and biocide usage

- 6.1. Goal 4 (of 10) of Defra’s Environmental Improvement Plan is given as the “need to continue managing exposure to chemicals and pesticides. These are an important part

of a productive economy and sustainable food production, but they can place significant pressures on our environment across land and sea. Both were areas of EU regulation, so Brexit has provided an opportunity to review our approach”. Biocidal products of relevance to the Authority’s waterways management activities are glyphosate application for vegetation control (on mooring paths and stump treatment of felled riverside trees) and biocidal antifoul paint application on vessel hulls.

6.2. Whilst we have been awarded assent for spraying to control vegetation growth on a reduced number of mooring sites this year, Natural England have indicated that this requirement will be reviewed each year, at time of application. This comes with an expectation for the Authority to further reduce use of herbicides, especially in or adjacent to Protected Sites (SAC/SPA/SSSI). Seeking alternative management options are therefore becoming increasingly important. Table 2 summarises the volumes of glyphosate used for different purposes across the different purposes. Countryside activities includes treatment of invasive species, like Japanese knotweed and Australian swamp stonecrop; and treatment of tree stumps in fen sites to prevent regrowth. At Broads Authority managed 24-hour moorings, spraying is aimed at preventing vegetation growth around the quay heading and on the paths behind the moorings.

6.3. Table 3. Biocidal antifoul paint used on Authority vessels in 2023/24

<b>Product</b>	<b>Vessel</b>	<b>Volume procured</b>	<b>Active biocide/s</b>
International Trilux 33 Biolux	Various outboard fittings	500 ml	copper thiocyanate zinc oxide pyrithione zinc
Hempel Hard Racing Red 56460	Spirit of Breydon	2500 ml	dicopper oxide zinc oxide copper oxide
International Interspeed	Shoveler	2500 ml	copper dioxide Zineb (zinc based fungicide)

6.4. The Authority uses non-biocidal antifoul paint on vessel hulls as a standard practice. The product used is Epiphanes Foul Away, a copper and biocide-free self-polishing underwater paint. This genuinely environmentally friendly coating relies on very short-lived hydrogen peroxide release to deter fouling, rather than toxic metals, herbicides or fungicides. Some very limited applications of biocidal products to fixed underwater fittings, like outboard engines does take place, but this is being reviewed. Spirit of Breydon and Shoveler are currently the only two vessels that have biocidal antifoul coatings currently present on their hulls. Again, the specification of products to be used on Authority vessels requires review and close scrutiny of contractors quotes for the exact product and biocidal properties of paints to be used at vessel refit is essential. Biocide information can only be found on the Safety Datasheets, not the Technical

Datasheets, which most users refer to for the product application and surface preparation details.

- 6.5. This set of baseline figures for biocide usage, particularly for 2022 and 2023 can now be tracked and reported annually to demonstrate best practice and to ensure regulatory compliance.

## 7. Channel Marking

- 7.1. The final campaign to upgrade all channel marker posts through Breydon Water is underway. The various wooden posts are being removed and round steel posts are being installed. Some gaps in the lines of posts and where temporary marker buoys have been deployed are also being filled with the appropriate marker. See the safety details on the boating webpages [Navigation restriction - Breydon Water marker posts \(broads-authority.gov.uk\)](https://www.broads-authority.gov.uk/navigation-restriction-breydon-water-marker-posts)

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

Background papers: [Environmental Improvement Plan 2023](#)

Appendix 1 – Annual dredging progress 2024/25 (to end April 2024)

Appendix 2 - Final annual dredging figures 2023-24 (April 2023 to end March 2024)

Appendix 3 - Final percentage of operational staff time spent on navigation work types (year April 2023 – March 2024)

## Appendix 1 – Annual dredging progress 2024/25 (for April 2024)

Project title Dredge site and sediment re-use location	Active Broads Authority dredging weeks completed/planned	Planned volume removed m <sup>3</sup>	Actual volume removed m <sup>3</sup>	Planned annual project cost <sup>1</sup>	Actual project cost
<b>River Bure</b> (continuation from 2023/24) Juby's Farm to Hoveton Viaduct	5/27	17,900	2,800	£190,710	£8,140
<i>Lagoon re-use site</i>					
<b>River Yare</b> Rockland Broad (channels & dykes)	0/26	13,500	0	£190,020	£110
<i>Rockland Short Dyke &amp; Postwick Marshes re-use sites &amp; Postwick Tip</i>					
<b>River Ant</b> Stalham Dyke	0/3	830	0	£37,140	0
<i>Hunsett Mill re-use site</i>					
<b>River Yare</b> Bargate Broad –	0/4	2,400	0	£45,150	£70
<i>Postwick Marshes re-use &amp; Postwick Tip</i>					
<b>River Thurne</b> Catfield Dyke	0/4	2,000	0	£27,350	£90
<i>Sidecast</i>					

<b>Project title</b> Dredge site and sediment re-use location	<b>Active Broads Authority</b> dredging weeks completed/planned	<b>Planned</b> volume removed m <sup>3</sup>	<b>Actual</b> volume removed m <sup>3</sup>	<b>Planned</b> annual project cost <sup>1</sup>	<b>Actual</b> project cost
<b>Site restoration</b>	-	-	-		0
<b>Future site preparation</b> Survey, mitigation & set-up	-	-	-	£	£80
<b>Dredging support activities</b> Maintenance of ancillary dredging kit etc.	-	-	-	-	£170
<b>Total</b>	<b>64</b>	<b>36,630</b>	<b>2,800</b>	<b>490,370</b>	<b>8,660</b>

<sup>1</sup> 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.



## Appendix 2 – Final annual dredging figures 2023-24 (April 2023 to end March 2024)

<b>Project title Dredge site and sediment re-use location</b>	<b>Active Broads Authority dredging weeks completed/planned</b>	<b>Planned volume removed m<sup>3</sup></b>	<b>Actual volume removed m<sup>3</sup></b>	<b>Planned annual project cost <sup>1</sup></b>	<b>Actual project cost</b>
<b>River Ant</b> River Ant – Wayford to Barton (Apr '23 – Jul '23)	18/17	12,230	12,920	£115,740	£112,070
<i>COMPLETE – lower actual cost was due to slightly lower staff numbers needed to achieve the targets than planned</i>					
<b>River Waveney</b> Oulton Broad (Apr '23 – Sept '23)	23/16	7,600	12,490	£98,430	£121,880
<i>COMPLETE – final costs reflect extension of time on this project</i>					
<b>River Bure</b> Coltishall to Hoveton Viaduct (Oct '23 – Mar '24)	9/30	13,630	4,910	£176,510	£138,270
<i>Planned start delayed owing to mobilisation restrictions. Progress to date interrupted by concrete pump breakdowns.</i>					
<b>River Yare</b> Haddiscoe Cut (Nov '23 – Jan '24)	7/13	6,590	4,430	£80,630	£43,020
<i>Planned dredging time reduced owing to extension at Oulton. Commencement delayed owing to new crane delivery.</i>					
<b>Site restoration</b> Hardley Flood ( <i>yet to be fully completed</i> )	-	-	-	£8,800	£1,900
<b>Future site preparation</b> Survey, mitigation & set-up	-	-	-	£6,810	£9,460
<b>Dredging support activities</b>					

<b>Project title Dredge site and sediment re-use location</b>	<b>Active Broads Authority dredging weeks completed/planned</b>	<b>Planned volume removed m<sup>3</sup></b>	<b>Actual volume removed m<sup>3</sup></b>	<b>Planned annual project cost <sup>1</sup></b>	<b>Actual project cost</b>
Maintenance of ancillary dredging kit etc.	-	-	-	-	£18,920
<b>Total</b>	<b>57/76</b>	<b>40,050</b>	<b>34,750</b>	<b>486,920</b>	<b>£445,520</b>

Appendix 3 – Final percentage of operational staff time spent on navigation work types (year April 2023 – March 2024)

Navigation work type	Staff days planned - Days	Staff days planned - % of annual total	Staff days actual - Days	Staff days actual - % of annual total
Dredging	1,773	60	1,471	58
Mooring maintenance & repairs	621	21	551	21
Riverside tree management	89	3	78	3
Water plant cutting	236	8	282	11
Other navigation works	236	8	172	7
<b>Total</b>	<b>2,955</b>	<b>100</b>	<b>2,554</b>	<b>100</b>