

Broads Forum

AGENDA

2 February 2017

2.00pm

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1.	To receive apologies for absence	
2.	To receive and confirm the minutes of the meeting held on 28 July 2016 (herewith)	3 - 10
3.	Public Question Time To note whether any questions have been raised by members of the public	
4.	Summary of Progress/Actions/Response Taken following Discussions at Previous Meetings Report by Administrative Officer (herewith)	11 – 12
5.	Brograve Catchment Project – project by Ian Holman and Giles Bloomfield. Presentation by Giles Bloomfield, Internal Drainage Board	
6.	Broads Water Quality Report: River Thurne 2015 Presentation and Report by Rory Sanderson, Environment Agency	13 - 18
7.	Ulysse Pasquier on his PhD modelling flooding risk and climate change in the Broads. Presentation by Ulysse Pasquier, UEA Student	
8.	2016 Broads Water Plant Survey Results Report by Environment Officer	19 – 22
9.	Chief Executive's Report Report (herewith) – For information only	23 - 25
10.	Parish Issues Standing item for local community members to report	
11.	Current Issues	

12. **To note whether any items have been proposed as items of urgent business**
13. **Matters for Chairman to raise at next Broads Authority meeting**
14. **Matters to be discussed at the next meeting**
15. **To note the date of the next meeting – Thursday 27 April 2017 at 2.00pm at Yare House, 62-64 Thorpe Road, Norwich**

Broads Forum

Minutes of the meeting held on 28 July 2016

Present:

Dr Keith Bacon in the Chair

Mr Andrew Alston	Ms Barbara Greasley	Mr Richard Starling
Mr Henry Cator	Mr Peter Jermy	Mr Charles Swan
Mr Michael Flett	Ms Jennifer Parkhouse (1/1-1/8)	Mr John Tibbenham
Mr Tony Gibbons	Mr Philip Pearson	Mr Peter Wall
Mr Robin Godber	Mr Paul Savage	

In Attendance:

Mr Adrian Clarke – Senior Waterway and Recreation Officer
Ms Esmeralda Guds – Administrative Officer
Mr Simon Hooton – Head of Strategy and Projects
Ms Andrea Kelly – Senior Ecologist
Mr John Packman – Chief Executive
Mr Neil Punchard – Broadland Catchment Partnership Officer
Ms Trudi Wakelin – Director of Operations

Also in attendance:

Claire Piper – Assistant Process Manager of Asset Planning, Anglian Water
Maria Woods – Environment Permitting Scientist, Anglian Water
Tom Williamson – University of East Anglia, Professor of History, Landscape Group, School of History, UEA

1/1 Apologies and Welcome

Apologies for absence were received from Brian Barker, Julian Barnwell, Martyn Davey, John Hiskett, John Lurkins, Bryan Read, Hugh Taylor and Anthony Wright.

The Chair welcomed Jacquie Claire Piper, Maria Woods and Tom Williamson to the meeting.

1/2 Appointment of Chairman and Vice-Chairman

The Chief Executive invited nominations for the appointment of the Chairman to the Committee.

Michael Flett (MF) nominated, seconded by Henry Cator (HC), that Keith Bacon be appointed as Chairman. No other nominations were forthcoming.

RESOLVED

that Dr Keith Bacon be appointed as Chairman of the Broads Forum.

Dr Keith Bacon in the Chair

The Chairman invited nominations for the appointment of Vice-Chairman to the Committee.

Henry Cator (HC) nominated, seconded by Robin Godber (RG), that Michael Flett be appointed as Vice-Chairman. No other nominations were forthcoming.

RESOLVED

that Mr Michael Flett be appointed as Vice-Chairman of the Broads Forum.

1/3 Chairman's Announcements

The Chairman asked for a minute's silence to pay tribute to the late Martin George, former member of the Broads Forum.

The Chairman further congratulated Jacquie Burgess on her new appointment as Chair of National Park UK and welcomed Peter Wall (PW) to his first meeting as a new Member of the Broads Forum.

1/4 To receive and confirm the minutes of the meeting held on 4 February 2016

The minutes of the meeting held on 4 February 2016 were confirmed as a correct record and signed by the Chairman.

1/5 Public Question Time

No questions were raised by members of the public.

In response to a question on the implications of Brexit for National Parks, the Forum was given an update on Government changes that Rory Stewart had been promoted to Minister of State for International Development and it was not clear who would replace him.

1/6 Summary of Progress/Actions/Response taken following discussions at previous meetings

A report summarising the progress of current issues was received and the Forum was advised that there were no further updates concerning Ludham Bridge and Mutford Lock.

Members noted the report.

1/7 Water Recycling in the Broads

Members received a presentation from Anglian Water (AW) which covered Environmental Discharge Permits and Compliances, business context and future investment and first time sewerage schemes.

It was made clear that no legal discharge could be made without a permit stating what, where and how much could be discharged.

It was further pointed out that AW was a private company with many different stakeholders, the Government being the main one, each with their own demands. The aim was to strike a balance between keeping the stakeholders satisfied and making a profit while providing water as a public need at an affordable and fair price.

Claire Piper (CP) agreed that especially villages in the Broads and with climate change the sewer systems can fail at times leading to what is termed Combined Sewer Overflows (CSOs) and that working together with Parish Councils and partners to improve communications should be encouraged. Problems should be reported to AW and that this might be something to incorporate into the 5 year plan. In addition, as the Broads is a key watersports amenity area, there is a case for the successful communication between water companies and surfers/beach users to be replicated in areas such as the Broads.

CP suggested offering a further presentation in March 2018 when the result of the assessment of the Combined Sewer Overflows in the Broads that could affect the amenity value of the area was known. AW confirmed that the programme of investments has not yet responded to recent reports, such as the Bure Diffuse Water Pollution Assessment that has been funded by NE and undertaken by the West Country Rivers Trust, although this can be considered for the next 5 year plan cycle. CP also confirmed that AW is very interested in constructed or created wetlands to help improve water quality and that they are currently undertaking a project with Norfolk River Trust. Members were informed that if the project proved successful this would mean AW could be more involved with wetlands in the next 5 year plan cycle.

It was clarified that a report would come out in 2017 to determine if it is possible for water companies to lower phosphorus limits.

In regards to septic tanks members were informed that AW has a clear process for considering septic tanks which was sent out in the papers. AK added that the impact of septic tanks on water quality, with a particular focus on SSSI's was looked into by Centre for Ecology and Hydrology, funded by NE and BA and that she could forward these reports if anyone was interested.

Some members who had more specific queries were asked to contact CP directly.

1/8 The Staithes of the Broads: A History and Assessment

Members received a presentation from Prof Tom Williamson summarising the findings of an academic research project on the history, recording and status of staithes in the Broads which the Authority had commissioned the UEA to carry out.

Professor Williamson explained that public staithes are best understood as a matter of *rights* rather than of *ownership*. Where two different kinds of public highway – by land and by water – meet, a right of transhipment would become established. Over time ownership of staithe sites may have changed but the rights connected to them remain unchanged

Further the presentation highlighted that while the use of some staithes had lapsed and others were rendered redundant by siltation in theory lapsed staithes while currently not in use, could potentially be brought back into use.

It was confirmed that Prof Williamson's report would be made public. It was explained that the presentation only covered part of the research findings relating to some staithes but the full report covered the whole Broads area.

Prof Williamson confirmed that all the research had been carried out by assessing historic document and not by interview. The research concentrated on enclosure maps and awards (early 19th century), tithe maps and schedules circa 1840, and finance act maps and documents of 1910.

Members applauded the presentation.

1/9 Lake Restoration Action Plan 2016/17 – 2021/22

Members received a report which outlined a Lake Restoration Action Plan which had been formed following on from the scientific Lake Review (2015) and based on the prioritisation adopted in the Lake Restoration Strategy (2008). The Action Plan had been drawn up with key partners. Both large and small-scale lake restoration projects were ongoing and planned in the Broads. These combined efforts put the Broads as a national and international leader in lake restoration. The report further updated members on the progress made on the Hickling Broad Enhancement Project towards delivery of the Strategic Priority.

In light of Brexit it was explained that there were two parts to the funding of the Hickling Project. One part was funded from the core navigation and National Park funds while funding for the long-term goals is being sought from CANAPE (via European funding application). Officers of the RSPB who are taking the lead on the external funding had assured partners that they are continuing to lead the project and partners are awaiting the decision on the submitted Expression of Interest which is due in September.

John Tibbenham was disappointed to hear that Wroxham Island would no longer be restored especially as it was the only part of Hoveton Great Broad proposals which was open to the public.

It was explained that Natural England had removed this element from their proposals as the external funders were not prepared to fund it as Wroxham Island is not within the designated site.

Richard Starling (RS) believed that the Authority should rely more on the Drainage Board for good water quality and therefore suggested to invite Mr Bloomfield to the next Broads Forum meeting to give a presentation.

In regards to the catchment work it was explained that whilst this needs to continue and play a primary role, it was a long-term aim which was still years away in delivering results. It was pointed out that in the mean time it was essential to take small steps to create short term results while continuing with the long term plan.

RS raised an issue about geese and the Senior Ecologist recognised that geese were a concern and they do have an impact on reed margins. Although egg pricking was an acceptable method, it can only check the trend of the geese population growth and is not a solution. Andrew Alston (AA) mentioned that unless the surroundings were made less appealing, geese would still continue to fly in from somewhere else.

Members noted the report.

1/10 Mooring Strategy Update

Members received a report which provided them with an update on the Authority's mooring strategy and the action plan to maintain the Authority's moorings that was adopted by the Broads Authority in November 2014. The report summarised the works that had recently been carried out to the Authority's existing moorings and identified that a number of sites had been prioritised for the development of new 24-hour moorings, safety moorings and demasting moorings.

The Forum was reminded that Members of the Authority had decided that the Authority should not seek to take on new mooring sites if the acquisition of those sites would result in an increase in its piling responsibilities. Although they did consider that the Authority should consider acquiring sites if there was no piling liability connected to them.

Further the Navigation Committee had given officers unequivocal advice that the Authority should not consider entering leases for mooring sites that require the payment of annual fees higher than those recommended by our property advisers.

Paul Savage (PS) believed there is a greater need for demasting moorings and informal moorings and that better ways of communications were needed about what other solutions of moorings were available.

It was explained that the provision of informal moorings was not always possible and that where provided for the public, needed to be safe.

It was pointed out that the Authority does not own the riverbanks and landowners do not have to allow (except in limited circumstances) or provide facilities for mooring so therefore more often than not the Authority had to negotiate with the landowners. It was explained that one of the reasons landowners do not want trees to be cut down was because this can encourage mooring.

Barbara Greasley informed the Forum that the results of a survey she carried out showed that visitors to the Broads do not believe there are enough mooring sites, especially near places to eat.

It was noted that the Authority was aware of the demand for mooring and would continue to seek to negotiate with landowners for new mooring sites but that this would require resources. It was highlighted that stakeholders fully supported that the Authority should maintain its free moorings, therefore the Authority had encouraged double moorings; better mooring and included the mooring strategy as part of the Broads Plan.

PW was concerned about the impact of stern-on mooring, especially on sailing boats that had to manoeuvre through narrow channels with increased vegetation.

Members noted the report.

1/11 Wet Grassland Project

Members of the Forum received a report which outlined that wet grassland was a priority habitat which dominated the landscape of the Broads and rural farming economy (Broads Biodiversity Action Plan, 2009, Biodiversity and Water Strategy, 2013 and Why Farming Matters to the Broads, 2010). Investment in biodiversity was required to enhance bird and dyke wildlife populations of the marshes. This partnership project provided an excellent collaborative model for bidding for Heritage Lottery Funds for biodiversity work. These combined efforts put the Broads as one of the 8-9 national leaders in wetland restoration.

It was explained that as receiving EU LIFE funding had been made more difficult due to Brexit the proposal had been broken down in smaller bids.

While Philip Pearson (PP) supported the project AA enquired whether the project would be better suited for farmers who were too small to gain agri-environment payments and advice.

The Senior Ecologist responded that this project is part of a partnership approach to offering advice, together with other projects it would provide an improved service.

RS pointed out that for the Wet Grassland Project to be a success, good quality water was crucial.

Members noted the report.

1/12 Chief Executive's Report

The Members of the Forum were updated that "Broads Village" at this year's Royal Norfolk Show had been very successful and the Authority much appreciated the support from other organisations. Officers would be working with Royal Norfolk Agricultural Association with a view to attending in 2017.

The Chief Executive said that although the Waste Workshop had been helpful in identifying the issues, it had not managed to offer any resolutions.

In general Members of the Forum were interested to know whether the Authority would be able to put more pressure on the district councils or whether it would be helpful to start a publicity campaign, i.e on Twitter. Although it was recognised this could be useful, the Members of the Forum were reminded that ultimately this issue was about money and the Authority did not have the resources nor was it set up to deal with waste disposal like district councils were.

It was confirmed that the definition of 'commercial waste' was correct, and that legal advice received by the Authority said that Norfolk County Council was acting within its powers, although the regulations are subject to review next year.

Members noted the report.

1/13 Parish Issues

In regards to the Wherryman's Way RG mentioned that as well as the footpath to Hardly Flood, the diverted path via Chedgrave Common to Chedgrave had now been closed as well. Although Members of the Forum recognised this was not the Broads Authority's responsibility, they believed that the Authority should put more pressure on finding a solution as there was a concern that the situation would get harder to resolve the longer it was left.

Members were updated that Norfolk County Council had now agreed to put up a notice informing the public of the closure of the footpath for safety reasons and that there had been talks of jointly funding the felling of trees and clearing of scrub on the front face of the bank.

They were further informed that the Authority had been monitoring tidal fluctuations upstream of Hardley Flood to see whether the erosion of the bank

was currently having a negative effect on navigation. The early results of this monitoring did not show any evidence of the depth of the river being affected.

The Forum was made aware that work on the Wherryman's Way from Pitt's Lane to Chedgrave Common would start in September 2016 and a report updating them of the progress on this was requested for the next Broads Forum meeting.

1/14 Current Issues

No items were proposed as current issues.

1/15 To note whether any items have been proposed as items of urgent business

No items were proposed as items of urgent business.

1/16 Matters for Chairman to raise at next Broads Authority meeting

The Chairman would report to the Broads Authority meeting on the various issues discussed by the Forum.

1/17 Matters to be discussed at the next meeting

RG suggested an update on work being done on the Wherryman's Way and RS suggested a report from Mr Bloomfield from the Drainage Board on water quality.

1/18 Date of Next Meeting

To note that the date of the next meeting would be Thursday 3 November 2016 at 2.00pm at Yare House, 62-64 Thorpe Road, Norwich.

The meeting concluded at 5.20 pm.

Chairman

Summary of Progress/Actions/Response Taken Following Discussions at Previous Meetings
Report by Administrative Officer

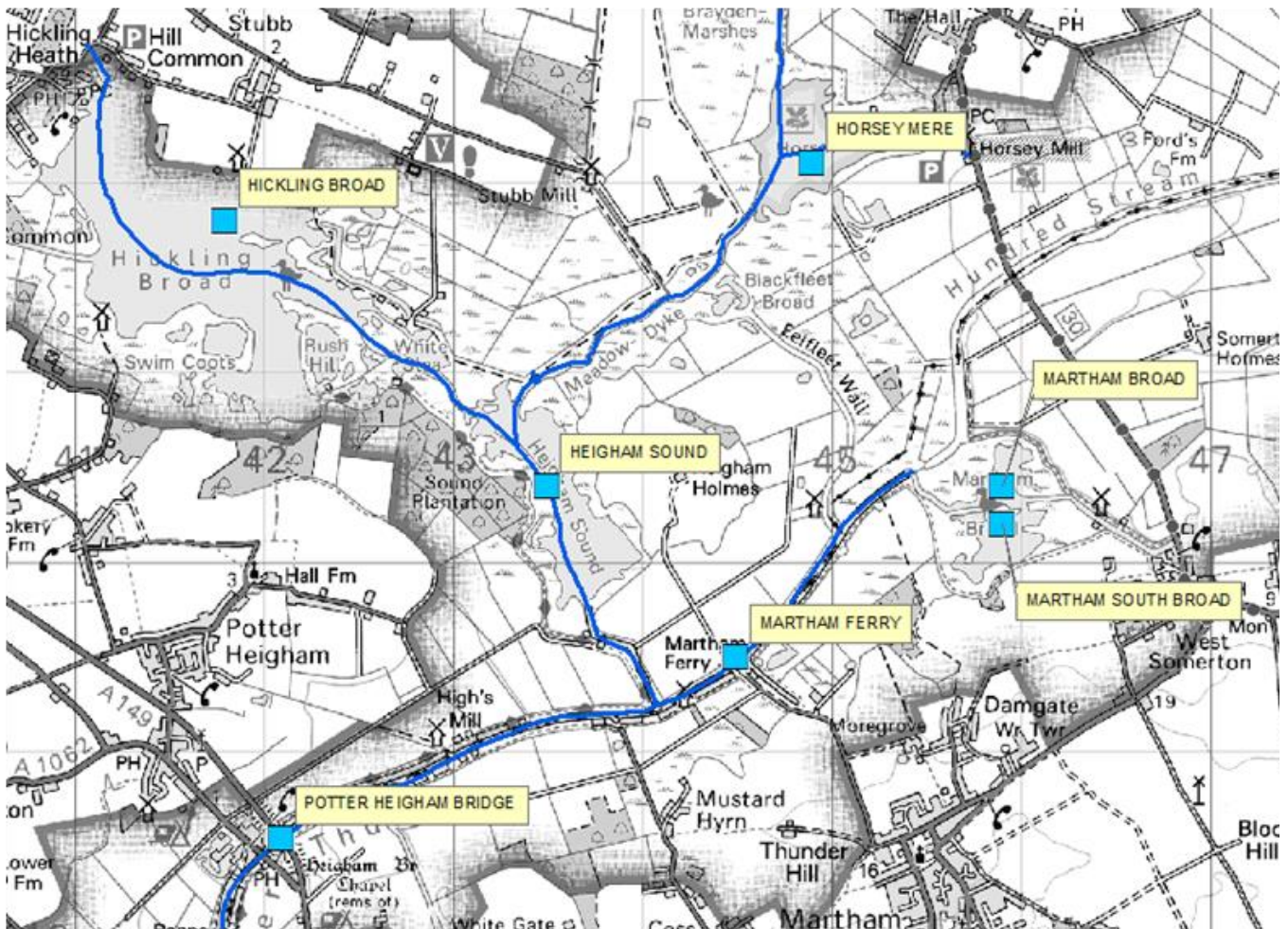
Date of Meeting and Minute No	Discussion	Responsible Person	Summary of Progress
6 November 2014 Minute 2/5 Summary of Progress	Outcome of future plans for the Ludham Bridge area which have been discussed with the Environment Agency	Asset Officer	Officers have had discussions and correspondence with the Environment Agency and position remains that we are still awaiting a reply from EA officers.
5 February 2015 Minute 3/10 Parish Issues	Any progress made with the Harbour Revision Order in regards to Mutford Lock.	Director of Operations	The tripartite agreement has been signed by all parties and is held pending completion of the HRO. MMO comments have now been received and advises that they require two HRO's to be completed, as two harbour authorities are seeking changes to their jurisdiction. Solicitors have been instructed accordingly.
28 July 2016 Minute 1/8 The Staithes of the Broads: A History and Assessment	It was confirmed that Prof Williamson's report would be made public.	Senior Waterways and Recreation Officer	Final text of Staithes report received from UEA. Currently waiting for map and photograph files of historic documents before publication.

Date of Meeting and Minute No	Discussion	Responsible Person	Summary of Progress
28 July 2016 Minute 1/13 Parrish Issues	The Forum was made aware that work on the Wherryman's Way from Pitt's Lane to Chedgrave Common would start in September 2016 and a report updating them of the progress on this was requested for the next Broads Forum meeting.	Senior Waterways and Recreation Officer	Work on the path was completed before Christmas and Norfolk county council has notified the Authority that the new easy access path is open for public use.

East Anglia Area (Essex, Norfolk and Suffolk)

Broads water quality report: River Thurne 2015

Broads Forum
2 February 2017
Agenda Item 6



Map showing the location of water quality sampling sites in the River Thurne and Broads.

Status

- **River:** Water quality is good for dissolved oxygen, ammonia and nitrate.
- **Broads:** Nutrients (phosphorus and nitrogen – including ammonia and nitrate) are not all meeting the national and international standards
- High nutrient concentrations have a negative effect on the ecology of the broads. Nutrient sources include internal release from sediments, diffuse sources and tidal mixing of water from downstream. It is estimated that 97% of phosphorus in the Upper Thurne Broad and marshes comes from diffuse sources such as agriculture, minor point sources and septic tanks.
- Ammonia levels fail the water quality standards in Horsey Mere where concentrations are noticeably higher than the other broads in the Thurne. This is because there is an input of ammonia to the broad from the surface drains via Brograve drainage pump.
- The water in the Thurne river and broads is brackish. This is caused by sea water percolating through the ground close to the coast which is then drawn through drainage pumps into the broads and rivers.

Actions

- The water catchment around the Thurne is designated as a Nitrate Vulnerable Zone. In this zone limits are set on when and how much nitrogen can be applied to agricultural land to reduce the amount of nitrate reaching the rivers and broads.
<https://www.gov.uk/guidance/nutrient-management-nitrate-vulnerable-zones>
- Following studies done in 2014, the dominant source of ammonia in the Brograve drain is believed to be from agricultural activity. A Diffuse Water Pollution Plan (DWPP) has been written for the Upper Thurne Broad and Marshes SSSI and Shallam Dyke Marshes, Thurne SSSI. While many of the actions in the plan address diffuse sources of phosphorus, it is anticipated that these measures will also help to address diffuse sources of ammonia.
- Actions to improve water quality and aquatic habitats are undertaken by landowners and partners working within the area of the Broadland Rivers Catchment Partnership.
<http://www.catchmentbasedapproach.org/anglian/broadland-rivers>
- The Internal Drainage Board is looking at how land drainage can be improved to lower sea water and ochre input into the catchment. For more information contact info@wlma.org.uk
- Reed margin enhancements continue with recent Broads Authority work in Heigham Sound and Hickling Broad. <http://www.broads-authority.gov.uk/looking-after/projects/upper-thurne/hickling-wetland-creation> and <http://www.broads-authority.gov.uk/news-and-publications/news/world-wetlands-day-a-new-vision-for-hickling>

Water quality

- Full details of the water quality standards used are given in the appendix below.
- Water quality is shown as 'pass/fail' for 2015. The change from 2014 is shown to the right using the following symbols: [=] no change [↓] decline compared to 2014 [↑] improvement compared to 2014 and values are shown in grey

RIVER	Dissolved oxygen	Ammonia	Phosphate	Nitrate	Salinity status
SITE NAME	%sat	mg/l N	mg/l P	mg/l N	conductivity µS/cm
	(average value 2012-2014)				(range 2012-2014)
Martham Ferry	Pass [=] (87.5)	Pass [=] (0.09)	Pass [=] (0.01)	Pass [=] (0.706)	Brackish (2535-6596)
Potter Heigham Bridge	Pass [=] (92.0)	Pass [=] (0.10)	Pass [=] (0.01)	Pass [=] (0.864)	Brackish (1855-6555)

BROAD	Total phosphorus	Ammonia	Total Nitrogen	Salinity status
SITE NAME	µg/l P	mg/l N	mg/l N	conductivity µS/cm
	(average value 2012-2014)			(range 2012-2014)
Hickling Broad	Fail [=] (91)	Pass [=] (0.076)	Fail [=] (1.84)	Brackish (4120-6796)
Horse Mere	Fail [=] (54)	Fail [↓] (0.303)	Fail [=] (2.22)	Brackish (5201-11208)
Heigham Sound	Fail [=] (71)	No monitoring data	No monitoring data	Brackish (2886-7480)
Martham North and South Broad	Fail [=] (41)	Pass [=] (0.071)	No monitoring data	Brackish (1910-5992)

Fish surveys

Environment Agency surveys were carried out in 2015 at Potter Heigham boatyard and Catfield dyke. 7 fish species were recorded: Common bream, perch, pike, roach, rudd, flounder, roach x common bream hybrid.

Angling match results show that eel, gudgeon, ruffe and dace are also present in the Thurne. Furthermore, mullet, bass, sturgeon, carp and wels catfish have occasionally been caught. Carp and wels catfish are nonnative species and are likely to have been introduced illegally. Although European sturgeon are a protected migratory species it is unlikely that the sturgeon caught in the Thurne is one of these. It is probably a different species and should be considered nonnative alongside carp and Wels catfish.

Water plant surveys

The Broads Authority carries out annual plant surveys across the Broads National Park. The table below shows the results of the 2015 Thurne Broads survey.*

Broad name	Number of species found in 2015	2015 compared to 2014
Hickling Broad	15	[↑]
Horse Mere	4	[=]
Heigham Sound	10	[↓]
Martham North Broad	9	[↓]
Martham South Broad	19	[↑]

*Data from: http://www.broads-authority.gov.uk/_data/assets/pdf_file/0010/695827/Broads-Annual-Water-Plant-Survey-Report-2015.pdf

APPENDIX: Water quality standards used to assess the River Thurne and its Broad.

The water quality standards, parameters and levels, set for rivers and lakes (Broad) are not the same because of the difference in the physical characteristics, pressures and ecology of the two water body types. The parameters and standards for each water body type are set to provide a measure of how much catchment pressures affect water quality.

RIVERS water quality standards

Source - The Water Framework Directive (Standards and Classification) Directions (England and Wales) 2015 http://www.legislation.gov.uk/uksi/2015/1623/pdfs/ukiod_20151623_en.pdf

Element	Statistic	Applies to which sites	PASS	FAIL
Ammonia (mg/l N)	90 %ile	All sites	<0.6	>0.6
Dissolved Oxygen (% sat)	10 %ile	All sites	>60	<60
Nitrate (mg/l N)	mean	All sites	<11.3	>11.3
Phosphate (mg/l P)	Annual Average	Martham Ferry	<0.087	>0.087
		Potter Heigham	<0.087	>0.087

BROADS water quality standards

The most stringent water quality standards that apply to the Broad have been used in this report.

	Total Phosphorus (ug/l P) annual mean		Ammonia (mg/l N) (90%tile)		Total Nitrogen (mg/l N) annual mean	
	Total phosphorus targets for lake Natura 2000 Protected Area Special Areas of Conservation (SACs)*		The Water Framework Directive (Standards and Classification) Directions (England and Wales) 2015**		Common Standards Monitoring for Freshwater Lakes Version March 2015***	
Broad Name	PASS	FAIL	PASS	FAIL	PASS	FAIL
Hickling Broad	<30	>30	<0.6	>0.6	<1.5	>1.5
Horse Mere	<30	>30	<0.6	>0.6	<1.5	>1.5
Martham Broad (North and South)	<30	>30	<0.6	>0.6	<1.5	>1.5
Heigham Sound	<30	>30	-	-	-	-

Source: * <http://publications.naturalengland.org.uk/publication/4841829396643840>
 ** http://www.legislation.gov.uk/uksi/2015/1623/pdfs/ukiod_20151623_en_auto.pdf
 *** http://jncc.defra.gov.uk/pdf/0315_CSM_Freshwater_lakes.pdf

Salinity - measured by conductivity (µS/cm)

Freshwater	Brackish	Seawater (North Sea)
700-1000	>1000 and <52000	52000

Where to get more Environment Agency data:

Water quality: access all water quality monitoring data for the period 2000-2015 here:

<http://environment.data.gov.uk/water-quality/view/landing>

Fish monitoring data: access freshwater fish counts for all species for all areas and all years:

https://ea.sharefile.com/share?cmd=d&id=se57eb49f66849b5a#/view/se57eb49f66849b5a?_k=0f6iby

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2016 Broads Water Plant Survey Results

Report by Environment Officer and Environment and Design Supervisor

Summary: This report presents and discusses the findings from the annual water plant survey carried out during summer 2016. A total of 28 broads were surveyed using a standard rake sampling technique. The River Waveney upstream of Beccles was surveyed for water plants, using a similar rake methodology, but specifically developed for rivers and linear channels. Barton and Hickling broads were surveyed using hydroacoustic survey equipment, to gain greater accuracy and resolution of the volume of water plants growing in the water, and their spatial extent over the bed of these broads.

The full survey report is available for Forum members to read and comments on this draft are welcomed. The web link below takes you to the page where the 2016 Broads Water plant Survey Report is available, with the pdf for the report listed under the “Annual water plant monitoring reports”.

<http://www.broads-authority.gov.uk/news-and-publications/publications-and-reports/conservation-publications-and-reports/water-conservation-reports>

1 Introduction

- 1.1 The Broads Authority has been surveying water plants within the open water bodies of the Broads since 1983 and has consequently collated a valuable dataset which allows monitoring and analysis of long terms trends of aquatic plants across the system. This report summarises the key findings of the annual water plant surveys completed in July to August 2016.
- 1.2 The revised Broads point survey method has been fully adopted and in use for the past three years. The data can now be compared in a more meaningful way between sites and years. The charts presented in the main report give a visual display of the point survey results for each regularly surveyed broad. Also included for each site is a table of abundance values for each species recorded.
- 1.3 This report also presents findings from a two other surveys, a river plant survey and the hydroacoustic survey.
- 1.4 The revised river plant survey method was used on the upper navigable reaches of the River Waveney (Geldeston Lock to Beccles). Each main river with water plant growth present is on a rotational survey schedule, with each river stretch being surveyed at least once every five years.

- 1.5 Hydroacoustic surveys show the volume of plants in the water column, and their spatial coverage across the bed of the broads. These surveys were carried out in Barton and Hickling Broads in June. The methodology involves a survey grid crossing the entire width of each broad to gain sufficient accuracy and coverage. In addition a second survey was conducted on Hickling Broad in October.

2 Key Findings of the Annual Water Plant Survey 2016

- 2.1 Once again in response to the recent and on-going trend of mild winters and springs, and an earlier growing season, the start of the broad's surveys began in early July and continued until the end of August. This is about two weeks earlier than surveys carried out prior to 2014. This slight shift ensures the peak growth of water plants is captured during the survey period.
- 2.2 This year has seen a shift in dominant species in a few of the regularly surveyed broads. However, it must be noted that water plants can be very variable between years and between broads, hence the value of a long-term monitoring strategy. The underlying cause why a certain plant species outcompetes another in a particular year can be related to a whole host of reasons including; competition for light early in the growth season; water levels; nutrient availability, etc. Those broads which had a change in dominant species were; Decoy Broad, Mautby Decoy, Rockland Broad, and Whitlingham Little Broad.
- 2.3 Blackfleet Broad was surveyed this year; it has been ten years since it was surveyed last. Blackfleet is located between Horsey Mere and Heigham Sound, adjacent to Meadow dyke. The site is dominated by stonewort species and appears to be a relatively stable site for this type of plant growth in the Upper Thurne.
- 2.4 The broads which showed a noticeable decrease in abundance scores over the past three years include Cockshoot Broad, Cromes Broad and Upton Little Broad.
- 2.4.1 Cockshoot appeared to have had a 64% decrease in holly-leaved naiad abundance compared to 2015. This could be due to the natural environmental conditions not being ideal here in 2016.
- 2.4.2 Cromes has had a decrease in the abundance of stoneworts over the past three years, over 50% from 2014 to 2015 and then a further decrease in 2016. The increased levels of filamentous algae found in 2015 and 2016 appear to have been at the expense of the vascular plants and stoneworts. Due to this increase in filamentous algae and decrease in the rarer plants, nutrient enrichment may be one possible cause, alongside natural variability in plant species abundances. An investigation into the water quality data is suggested to help determine the significance of external nutrient sources on water plant growth.

- 2.4.3 Upton Little has had a large decrease in the quantity of stoneworts surveyed since 2014. This trend is suggestive of an on-going stabilisation of the plant community following the huge explosion of stoneworts immediately following the mudpumping in 2011.
- 2.5 Over the past three years broads which showed a noticeable increase in their abundance scores include; Alderfen Broad, Decoy Broad and Little Broad. Alderfen has returned to a condition similar to that from 2014 although without the same quantity of stonewort. Decoy has an increased number of species recorded and the quantities therein. At Little Broad, stoneworts have returned in moderate numbers although not to the same peak in growth found in 2010 and the years immediately after mud pumping in 2008.
- 2.6 At Wroxham Broad a species which had not been recorded since 2011 has resurfaced, horned pondweed, *Zannichellia palustris*, and was found at three points within the broad, albeit in small amounts.
- 2.7 The River Waveney was surveyed this year, the areas selected were Geldeston Dyke and then through Beccles.
- 2.8 The hydroacoustic survey has shown that the early season surveys conducted in June on Barton and Hickling show similar results in terms of water plant abundance to those conducted in 2015. The additional survey at Hickling in October 2016 did show that the percentage of the bed covered by plants had increased along with their percentage volume within the water column. The good weather and extended growth period in the autumn allowed the plants to keep growing for longer, with clear water conditions observed within the stonewort beds in the west of the Broad.

3 Conclusions and Future Applications

- 3.1 Now that there is a three year data set for the point based survey method, recent trends can be looked at more easily. However this data set is still only three years old and caution is advised in inferring longer term patterns from the sometimes high variability in growth of particular species between years.
- 3.2 The comparison of plant abundance between sites has been facilitated through adopting the point based sampling methodology. The graphs presented in section 3.3 of the main report highlight for example the relatively poor growth of water plants in Barton Broad and Horsey Mere, which are a long way off meeting their SSSI conservation targets. At the other end of the scale Martham South and North broads both had very strong stonewort populations over the majority of their beds, as is expected for shallow lake sites with good water quality.
- 3.3 The forward plan to rotationally survey two river sites each year is an important aim for these surveys. There has been increasing demand on the weed harvester operation and continued reports on increased water plant growth having an impacting on navigational access in specific areas. The key sites include the River Bure (Coltishall Lock to Belaugh); River Thurne (West Somerton to Martham Ferry; Waxham Cut & Catfield Dyke); River Ant (Tyler's

Cut); River Wensum/Yare (New Mills to Whitlingham Broad); River Waveney (Geldeston Lock to Beccles). Observing the trends and species present at these sites will assist the sustainable management of these areas and strike a good balance between navigational access and ecological functioning. As water quality continues to improve and water plant growth responds accordingly, the challenge of managing appropriate water depth and safe navigation also continues.

- 3.4 The combination of rake based surveys and hydroacoustic surveys continue to be a very powerful tool for guiding site management, such as prioritisation of areas for restoration and ecological enhancement, e.g. Churchill's Bay at Hickling Broad. Water plant growth has been raised as an impact on navigational access, particularly sailing in Hickling Broad. The analysis of plant growth over the whole site is critical in establishing any likely impacts on this European Protected site and the conservation interest features at Hickling, before considering the possibility of managing the height of plant growth outside of the marked channel.

Background papers:	see Water Plant Survey Report 2016, located on the linked page http://www.broads-authority.gov.uk/news-and-publications/publications-and-reports/conservation-publications-and-reports/water-conservation-reports
Authors:	Gavin Devaney & Dan Hoare
Date of report:	10 January 2017
Broads Plan Objectives:	BD4; BD6; NA3;
Appendices:	None

Chief Executive's Report

Summary: This report summarises the current position in respect of a number of important projects and events, including any decisions taken during the recent cycle of committee meetings. It does not include matters which are already on the agenda for this meeting. Members are asked to note the report.

1 High Level Review on Flood Risk Management for the Broads and Coast

Contact Officer/Broads Plan Objective: Simon Hooton/CC3.2

- 1.1 Following the special Broads Forum workshop looking at the High Level Review on flood risk a set of notes reflecting the main elements of the discussion and highlighting the main points to take forward has been put on the Broads Authority website and all invitees informed.
- 1.2 Further discussions have been held with some local authority chief executives and leaders and more are planned along with discussions with local MPs. The Broads Climate Partnership met in December to try and establish a draft framework for action. From this it was emphasised that it would be important to create an effective framework to involve stakeholders and put the local democratic bodies at the heart of the decisions to be made. The scope and initial targets for the coming work also need to be consolidated. Ideas from this Forum are welcome and can help build a draft to form a central part of the discussion with local authorities and MPs in the coming quarter.
- 1.3 This framework for action will have a series of strands – from the short term planning needed to retain the necessary permissions for flood management schemes, to the medium term policy convergence and research needs. This will be supported by initiatives to raise awareness and stimulate fresh thought on how to improve our flood risk management response. It will however primarily be about medium term planning and ensuring the approach to flood risk management, and wherever possible all water management, is holistic, resilient and adapting.

2 Tolls Review 2016 and Setting of Navigation Charges for 2017/18

Contact Officer / Broads Plan Objective: John Packman/Bill Housden/ None

- 2.1 Following the Tolls Review Workshop with key stakeholders in June, those present were invited to consult their respective organisations and provide

comments by the end of July. Due to the extended consultation period, changes to the timescales for production of the final report were made in order to give the consultation comments detailed consideration. Therefore, the full report from the Tolls Review Group was provided to the Navigation Committee for its meeting on 27 October 2016. The Committee supported the three main recommendations which were:

- (i) A new set of Guiding Principles for Tolls.
- (ii) A revised structure for the tolls in which for each class of vessel the owner will pay a set amount per square metre. Wherries, rowing boats, canoes and kayaks will pay a flat rate charge.
- (iii) A flexible charging structure, such that the different fleets on the Broads can be levied different rates per square metre.

- 2.2 Members of the Authority gave careful consideration to the Tolls Review Group (TRG) report at the meeting on 18 November 2016 together with the recommendations from the Navigation Committee on the proposed new structure for tolls and the setting of navigation charges for the next year. The Authority adopted the recommendations of the Navigation Committee in their entirety on the understanding that the impacts of the new structure would be monitored closely.
- 2.3 This included the proposed charges for the navigation area and adjacent waters for 2017/2018 with the addition that the Chief Executive was given delegated powers to consult with the TRG and set the charges for Passenger Vessels and any redistribution of charges within the commercial fleet. The Authority also agreed that the non-display of toll plaques trial should be extended for a further year. Finally Members agreed to undertake an objective evaluation of the impact of the changes in the tolls structure in the autumn of 2019 as part of a second round of stakeholder research, the first of which had informed the Tolls Review. The Collectors of Tolls has since provided a number of options to the Tolls Review Group regarding Passenger Tolls. The Group unanimously agreed to support the charges set out in the report to the Broads Authority and these are being implemented.
- 2.4 Members advocated providing all toll payers with a clear explanation of the reasons for introducing a new structure and the implications. Therefore a special edition of the Broadsheet was published. A full copy of the report to the Authority that includes the report from the Tolls Review Group can be viewed via the Authority's website.
http://www.broads-authority.gov.uk/data/assets/pdf_file/0010/818785/Tolls-Review-2016-and-Proposed-Navigation-Charges-for-2016-17-in-the-Navigation-Area-and-Adjacent-Waters-ba181116.pdf

3 Broads Local Plan

Contact Officer/Broads Plan Objective: Natalie Beal/None

- 3.1 At the Authority's meeting on 18 November 2016, the Broads Local Plan Preferred Options version was approved for public consultation. This also includes the Sustainability Appraisal, Habitats Regulation Assessment and the Viability Assessment as well as various pieces of evidence and topic papers. All Members of the Broads Forum together with your respective organisations have been notified and invited to comment. The Consultation period is from 5 December running for nine weeks until 3 February 2017. The document is available in a number of formats with hard copies being available at libraries and council offices throughout the Broads area and copies of the documents are also on line. <http://broadsdev.nationalparks.gov.uk/planning/planning-policies/development/future-local-plan>
- 3.2 Three drop in sessions were held at Horning Village Hall, Oulton Community Centre and at Loddon and Chedgrave Jubilee Hall Sports & Social Club in December and January.
- 3.3 The Authority also approved the New Flood Risk Supplementary Planning Document for consultation between 21 November and 23 December 2016.
- 3.4 The planning guides on Biodiversity Enhancements and Waterside Chalets and Bungalows were adopted by the Authority at its meeting on 18 November 2016.

Background papers:	None
Author:	Sandra Becket / Esmeralda Guds
Date of report:	11 January 2017
Broads Plan Objectives:	Multiple
Appendices:	None