

BROAD SHEET



Broads Authority dredging team removing sediment from Hickling Broad

New vision for Hickling as dredging starts

A new vision for Hickling to enhance the broad for navigation, recreation and conservation has been agreed while the long-awaited dredging of the marked channel has begun.

The vision, which was originally developed with the Upper Thurne Working Group and has been agreed by partner organisations and stakeholders, will be delivered through a long term project if funding can be secured.

Meanwhile the Authority is dredging 3,500m³ from the marked channel this winter from the area in front of Hickling Sailing Club to remove a bar which has been causing problems for the club, boatyard and pub. Work started in November and will run to the end of February.

The material is going to Duck Broad island to fill the previously prepared lagoon built using Prisma funding (see page 6 – Living Waterways Award). Once filled the reed and reed-mace will have a better opportunity to colonise and give further shelter to over-wintering birds in Duck Broad.

The total desired dredging volume is 47,000m³ – enough to fill more than 16 Olympic swimming pools – and further dredging will form part of the wider vision for the broad.

The aspirations for the vision are

- improved waterway depths.
- improved aquatic environment in sheltered bays providing more reedbed areas, better water quality, water plants and higher numbers of water birds.
- beneficial reuse of dredged material in island construction and bank restoration
- improved understanding by local communities, visitors and partners of the importance of integrated waterway management to enhance the special qualities of the Broads.

Hickling covers 1.4 km² making it the biggest broad and one of the largest expanses of open water in East Anglia.

Over the years it has grown as a result of a combination of factors such as coypu and

more recently greylag geese grazing the reed and speeding up bank erosion. But it has also become slightly shallower due to this eroded material and build-up of dead algae.

One of the major constraints to working in Hickling Broad is *Prymnesium parvum*, a microscopic algae that is naturally present in the broad and throughout the Upper Thurne. On occasions this algae can release a toxin that is deadly to fish. Any work in this area needs to be carefully designed to monitor *Prymnesium* levels and protect fish health.

Annual open day

The Authority's open day will this year form part of the Broads Outdoors Festival which takes place from 7 to 22 May. Please keep an eye on www.outdoorsfestival.co.uk for dates and details.



Turntide jetty restoration in progress - photo ©GT Rochester

Turntide jetty restored

Much needed work on the 160-year-old Turntide Jetty on Breydon Water was completed in July at a cost of £357,000.

The essential part of Turntide Jetty is now secure for several decades and, with new piling, sits higher above the water to be more visible to boaters passing at high tide.

The Broads Authority awarded a contract in January 2015 for the re-piling of the jetty, which was first constructed in the 1860s.

This jetty directs the flow of the rivers Yare and Waveney where they meet at the western end of Breydon Water and is a prominent landmark for vessels heading across Breydon Water to the southern rivers and broads.

The Authority inherited it when management of the Breydon Water and Lower Bure navigation was transferred from the Great Yarmouth Port Authority in 2010 and recognised that, like a number of other timber structures on Breydon Water, it was in a poor condition with some of the piled walls failing and becoming a hazard to navigation.

As significant investment was required the Authority began by commissioning a sediment and water flow study.

This hydromorphological study involved modelling the typical flow regimes in and around Breydon Water to predict the likely consequences of maintaining or removing the declining structures of Turntide Jetty and the Dickey Works.

The research also helped understanding of the likely dredging requirements under different scenarios of replaced or removed structures.

It was undertaken by a team of specialists from JBA Consulting based in Yorkshire, partnered with the renowned Dutch hydraulic specialists Deltares, who gathered the data and ran specialist 3D computer models.

The study showed that Turntide Jetty does effectively direct the flow of the Yare and reduce accumulation of sediment in the Waveney channel. It did however also suggest that a shorter jetty would still produce the same effect, and direct the flow of the River Yare as desired.

On this basis the decision was made to embark on a project to reconstruct only the essential part of the jetty.

Together with Norwich-based engineering consultants from Canham Consulting, a design was drawn up for a hardwood piled structure similar to the existing jetty which has lasted since the 1860s.

A tender process was then undertaken at the end of 2014 for the construction work and the successful contractor GT Rochester Plant from Aylsham began work on site in March 2015 and took four months to complete.

Tolls rise to pay for extra work

The rise in tolls for 2016/17 will allow extra work to be carried out for the benefit of the boating community.

Overall 92% of private boats will be subject to a rise of less than £20 a year and this will fund practical work at Hickling Broad (page 1) together with an increase in overall operational activities, such as tree clearance across the system.

The three principle uses of the income are dredging the rivers and broads, maintaining the infrastructure and facilities, particularly the network of nearly 60 free 24 hour moorings, and patrolling by the Authority's Rangers.

Members of the Authority adopted the recommendations of its Navigation Committee including the reduction in the multiplier for weekly hired craft from 2.62 to 2.55. This was in recognition of both the importance of the hire boat industry to the local economy and the pressures upon it.

The new charges mean that a small private sailing boat of 5m² will pay an extra £2.52 for the year and a similar sized private motor boat an extra £5.04.

In cash terms the reduction in the multiplier will bring the increase for hire boats more in line with the rise for private boats. For example a 48m² private boat will pay an extra £26.04 for the year and the same sized hire boat £32.15. If the multiplier had been left unchanged the rise for the hire boat would have been £57.69.





Stones Mill, one of the heritage assets within the project area - photo by Julian

Multi-million pound award for Broads project

The Broads Landscape Partnership received an earmarked grant of £2.6m from the Heritage Lottery Fund (HLF) for the Water, Mills and Marshes project, it was announced in October.

The project aims to enrich and promote heritage sites in the area between Norwich, Great Yarmouth, Lowestoft, Acle and Loddon, unlock the benefits of this distinctive landscape for local people and give them the skills to protect it as a legacy for future generations.

Development funding of £226,000 has also been awarded through the HLF's Landscape Partnership (LP) programme to help the partnership progress its plans to apply for a full grant at a later date. Work on the development phase will begin this year while the second round is scheduled for 2017.

Fifty-five organisations will then be involved in implementing 38 individual projects over a five-year delivery phase. The project will be worth a total of £4.5m including match funding.

The scheme will see people from all walks of life and ages, from urban and rural areas, understanding, benefitting from and enjoying the special qualities of the Broads. Capturing stories from older generations and training younger people in heritage skills, will also

ensure that the Broads is enjoyed for the future.

Iconic drainage mills on Halvergate marshes, an area which boasts one of the greatest concentrations in Europe, will be documented and renovated through a Heritage Construction Skills training scheme.

Local people's access to, and appreciation of, activities on their doorstep will improve through activity points at each of the urban hubs, improved interpretation and information throughout the area and through initiatives like Youth Ranger schemes and special celebrations.

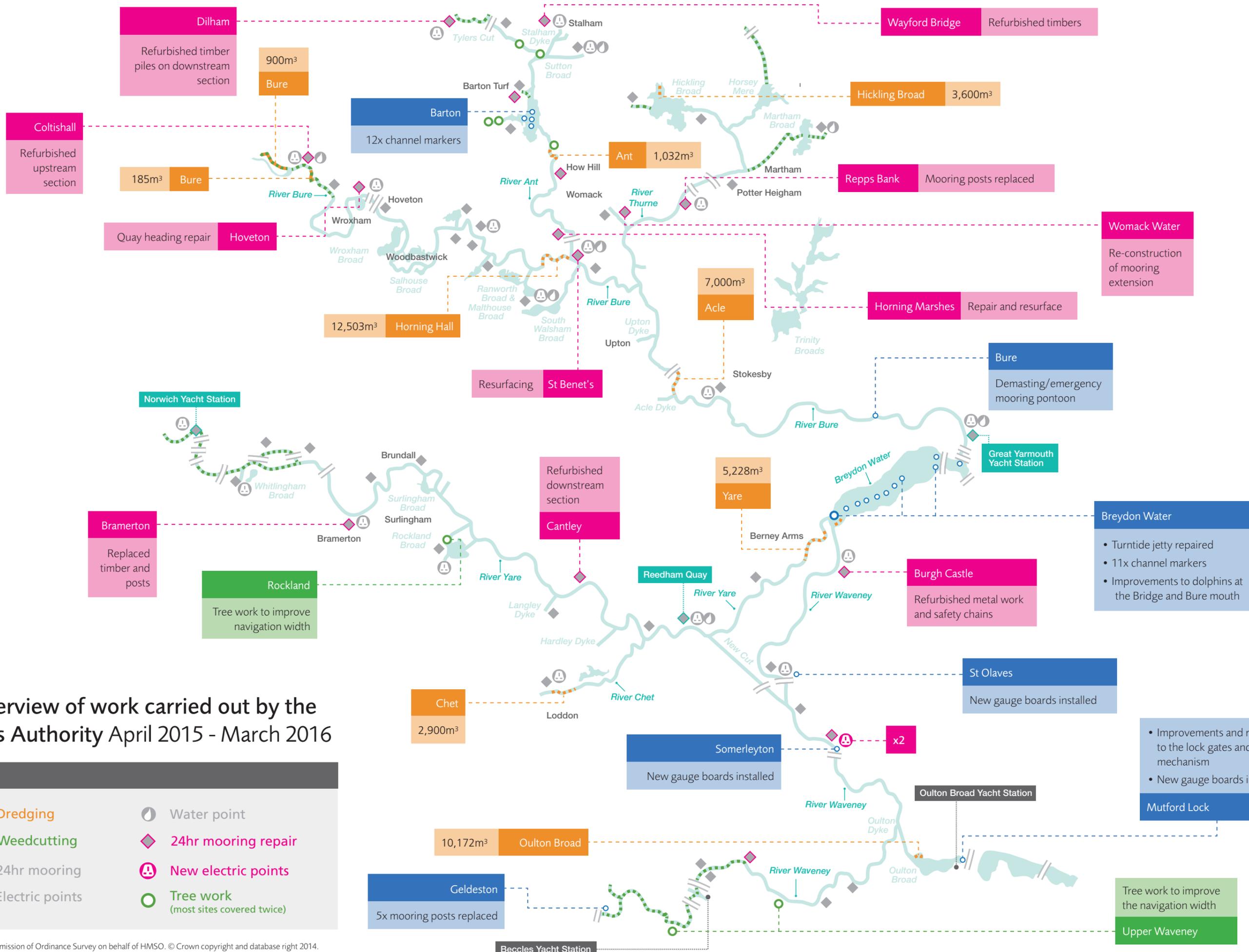
The project will also explore potential archaeological sites and recreate the skills required in the reconstruction of the medieval Chet boat.

Explaining the importance of the HLF's support, Robyn Llewellyn, Head of Heritage Lottery Fund East of England, said: "The Broads is Britain's largest protected wetland and third largest inland waterway, and one of the UK's most beautiful and recognisable landscapes.

"It also contains a fascinating array of built, industrial heritage in the form of drainage mills, ancient dykes and listed buildings. I'm delighted that thanks to National Lottery players we have been able to fund this project to save this precious drained marsh landscape, conserve threatened habitats and species, and to reconnect people with the natural heritage all around them."

The Broads Authority is lead partner in the project. John Packman, Chief Executive said: "We are absolutely thrilled with this award which will not only help enhance the Broads landscape but will broaden people's idea of what that landscape means, help them connect with it and give them the skills to cherish it."

Jacquie Burgess, Chairman of the Broads Authority, said: "Members are delighted that the hard work by Broads Authority staff and our partners in preparing the bid has been rewarded. We all look forward to an exciting 18 months, as plans for the projects included in the bid are firmed up."



An overview of work carried out by the Broads Authority April 2015 - March 2016

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Innovative project commended in national awards

A project to restore an eroded reedbed utilising barricade building techniques used by the Army in Afghanistan was commended at a national awards ceremony.

The Broads Authority project at Duck Broad was one of four shortlisted for the Environment category in the Living Waterways Awards which took place at a ceremony in London in October.

The project has helped separate the broad from the main channel and improved water quality within it. As a result wildfowl have been seen making their homes there again.

It competed against the Inland Waterways Association Himalayan Balsam Campaign and fellow runners up the River Tale Restoration at Ottery St Mary and Wolvercote Lakes in Oxford.

An independent panel of experts, led by

Christopher Rodrigues CBE, selected the finalists for the awards which were launched by the Canal & River Trust in January in a bid to recognise the most inspiring and exciting waterway-based improvement projects across the UK.

Tony Hales, chairman of the Canal & River Trust, said: "The Living Waterways Awards celebrate the individuals, communities and organisations that have done the most to make a difference to the nation's rivers, canals, lochs, lakes, reservoirs and docks, making them exciting places to live, learn and spend time.

"After a series of visits and assessments, which saw the expert judges travel from

Sandwich to Enniskillen and from Glasgow to Devon, we are thrilled to announce the shortlist of finalists."

The project at Duck Broad saw reinforced steel baskets, filled with rocks and sediment, joined together to make the perimeter of a one hectare spit of land. This was filled with 12,000 cubic metres of sediment dredged from Heigham Sound and planted with common reed and reedmace.

It restored the reedbed to how it would have looked in 1946, based on aerial photography.

The dredging of Heigham Sound to create the reedbed has also improved channel depth for navigation.

New apprentices

The Authority welcomed three new apprentices this year in a bid to train young people in a range of practical skills and boost the future talent base.

The trio spend a year with the Construction, Maintenance and Environment Team (CME) and will study for a Level 2 Certificate in work-based Environmental Conservation, through Easton & Otley College.

In addition to the academic qualification they will develop practical skills like brush cutter and clearing saw certificates, chainsaw proficiency, first aid, herbicide spraying and work boat handling.

All these skills will be learnt while carrying out practical work projects such as fen management, boardwalk repairs, mooring maintenance, pony movements and checks, erosion protection schemes, quay heading repairs and other works to maintain the environment and Authority assets.

Rob Rogers, Head of CME, said: "This exciting new scheme was developed to address a particular problem in that within the next 10 years more than 75% of our skilled and very experienced workforce within CME will have reached retirement age.

"Recruiting people with the correct skills, good knowledge of the Broads environment, boat handling skills, experience of working

outside in all weathers and a passion for the Broads has proven to be extremely difficult, so 'growing' our own is a big advance forward."

The Apprenticeship Programme is a rolling project and the Authority will start recruiting more young people in July 2016, ready for them to start in September as the first apprentices are completing their course.

Although it is not possible to guarantee any of the apprentices jobs at the end of the year, details will be kept on file so that when a vacancy arises they can be invited to apply.

Catchment work benefits all



Constructing an earth bund in an arable field to retain topsoil following heavy rainfall.

A project to improve the water that feeds into the Broads is underway for the benefit of all its users.

Slow the Flow has seen the construction of rural sustainable drainage systems across the catchment around the Broads area. Such systems are low tech, low cost solutions that can improve the quality of run-off from fields, roads and urban development.

The project is one of many being undertaken by the Broadland Catchment Partnership (BCP) as part of the Broadland Rivers Catchment Plan.

The partnership focuses on managing the land and water around the Broads, in an area ten times its size, to tackle issues of water quality, water shortage, flooding and wildlife habitats.

The Broads Authority co-hosts the BCP with the Norfolk Rivers Trust to deliver actions in the plan, manage projects, co-ordinate partners' activity and assist in funding applications.

Neil Punchard, BCP Officer, said: "Many rural sustainable drainage systems are already in place in the catchment but more widespread adoption is sought given increasing extreme rainfall events."

In addition, following the launch of the Broadland Rivers Catchment Plan in June 2014 various workshops and events have been held with stakeholders to gain their local knowledge and demonstrate equipment to help them with land and water management.

Funding for river restoration upstream on the Alma Beck in the Waveney catchment has been secured and is also being sought for a site at Ingworth on the Bure. An Environment Agency funded £28,000 project is also underway to install eel passes at four structures on the River Waveney.



Coot - photo by Andrew Parkinson / 2020 vision

Three decades of restoration

A major review has found that further work to reduce nutrients infiltrating the Broads from surrounding land is essential for water clarity and quality and to ensure a stable ecosystem.

The review of ecology and the assessment of the restoration of the Broads was carried out by some of the UK's leading freshwater scientists on behalf of the Authority, Natural England and their partners. It also concluded that many of the smaller broads had been restored but that there were no "quick wins".

An excess of nitrogen and phosphorus over the years has caused green water and the growth of algae which shades out water plants, without which fish and bird populations have declined.

Andrea Kelly, Senior Ecologist for the Broads Authority said: "Water plants are the cornerstone of ecological recovery of the broads, they provide ecological stability. Clear water is required to get plants established. A diverse range of aquatic plants providing high cover is needed for ecosystem stability. A realistic target would mean at least 10 species and more than 50% cover.

"Over the past decades partnership working has achieved better water quality in our waterways and shallow lakes. The Broads Authority has put in place projects to enhance 26 lakes over the past 25 years and it has been heartening to see rare water plants emerge from the clear water, providing food for water birds and a home to dragonflies and other water life.

"Despite this excellent work, there is much more to be done. We are working through an all-inclusive approach to planning action in the Broadland rivers."

The partners may also need to consider sediment removal or other techniques to isolate the water from sediment nutrients if levels cannot be reduced by further work with farmers and water companies. Success however will depend on the individual conditions.

The review also concluded that biomanipulation, or the temporary removal of selected fish species, to help prompt plant recovery can only be sustainable over the long term where nutrient levels in the water are low and the ultimate target would be a mixed fish community.

The effects of climate change on the ecology of the water also needs to be understood further.

Ms Kelly said: "The results show that we should expect that restoration will take time, perhaps five to ten years or more, and there are no quick wins. Monitoring is also essential to judge effectiveness of restoration measures and to learn from the results."

Partners will be working together on enhancements to Hickling (page 1) and the Trinity Broads as top priorities in the next few years and will also work through the Catchment Partnership. Natural England has also won nearly £2 million from the Heritage Lottery Fund to improve water quality in Hoveton Great Broad.

The review will help direct management actions for the Broads over the next few decades.

On board with safety

Tripping and falling remain the top causes of accidents on boats so the message is to wear the right footwear, always wear a lifejacket when on deck and don't jump when coming in to moor.

A number of new lifejackets were launched this year which are lighter and more comfortable without compromising function and you can check these out at your local chandlers.

Steve Birtles, Head of Safety Management at the Broads Authority, also urged boaters to fit smoke alarms to keep safe, particularly if they sleep aboard.

"Prevention is always your primary protection from fire on boats but a smoke alarm can be your next line of defence. Smoke from a boat fire will affect your ability to breathe, a sensation similar to drowning. With two to three breaths of toxic smoke you could be unconscious," he said.

"Boats are often full of combustible materials and highly flammable fuels, which mean that fire can spread rapidly. But the real killers are smoke and toxic fumes which kill very rapidly. If you are asleep, your survival will almost certainly depend upon being woken very quickly before the smoke and fumes reach you."

Smoke alarms are cheap, easy to fit and maintain and are readily available in chandleries, high-street stores, supermarkets, DIY stores and online suppliers but make sure they are suitable for a marine environment.

All crew and passengers must also know what to do in an emergency so make a fire action plan and ensure everyone on board knows it.

For more information on fire safety and a list of appropriate smoke alarms see: www.boatsafetyscheme.org

Carbon monoxide campaign

A campaign has been launched focusing on the dangers of carbon monoxide in the wake of the double fatality on a boat on Lake Windermere.

Carbon monoxide is highly toxic gas, it is odourless, tasteless and invisible and is known as 'the silent killer'.

Please check out the Boat Safety Scheme advice at: [www.boatsafetyscheme.org/stay-safe/carbon-monoxide-\(co\)](http://www.boatsafetyscheme.org/stay-safe/carbon-monoxide-(co))



Changes to Boat Safety Scheme

The Boat Safety Scheme (BSS) requirements for hire boats are changing following a review by its committees.

The changes include aligning the requirements with those applied to private boats but there is still an additional level of requirements as hirers may not be familiar with boats and their systems.

New features have also been included such as smoke alarms on all boats with overnight accommodation and carbon monoxide alarms on boats with solid fuel stoves.

The changes will be implemented on 1 April 2017 but hire boat operators are encouraged to apply them during the interim period.

Safety and insurance renewal checks

The Authority is checking for boats that are overdue for their BSS inspection. If boats remain in the navigation or adjacent waters and fall under the scheme legally they must comply with its requirements.

Reducing engine running at moorings

Thousands of key rings have been given to boaters with a message asking them to think about others and refrain from running their engines at moorings as part of a campaign to reduce the practice.

The key rings, with the 'Wear It' logo on the other side, went to hire boat yards and the Norfolk and Suffolk Boating Association (NSBA) to be handed out to visitors and NSBA members.

Posters with the same message also went on notice boards at 24hr moorings.

Running engines at moorings during the day or night is a byelaw offence subject to a maximum fine of £1,000 plus costs. It is a particular disturbance between 8pm and 8am.

Boat owners are sent a reminder letter two months before the examination is due and owners are encouraged to book their examinations early to avoid missing the renewal date. Boat insurance may be affected if an examination is overdue.

In 2015 the Authority also checked third party insurance on 100 boats and, while compliance was good, there were cases of insurance not being renewed promptly.

Boat owners must keep valid third party liability insurance for the duration that their boats are on the water so please don't forget to renew.

www.boatsafetyscheme.org/boat-examination/arranging-the-examination

New radar guns

Eight new radar guns have been helping rangers keep speeding boaters in check.

The Kustom Falcon radar guns replaced equipment which was 30 years old and difficult to maintain. As they do not have to be plugged in to operate they are lightweight and mobile.

More than 7,000 verbal and 275 written warnings were issued for speeding last year while 13 were reported for prosecution.

Cases heard by magistrates so far include one involving an inflatable going three times the speed limit on the Yare. Magistrates gave the helmsman a 12 month conditional discharge and ordered him to pay costs of £195.

There were also 730 reports of tolls offences, including 38 submitted for prosecution at magistrates court.

- While there is no speed limit on Breydon water care and caution must be taken as navigation bylaws apply.