

# Broads Biodiversity and Water Strategy: Action Plan 2019-2024

The Action Plan focuses on priorities for the Broads Authority as a lead or joint delivery partner, and on key projects led by other organisations working in the Broads. Several actions would not be possible without the support of volunteers, who make a huge positive contribution to our biodiversity work.

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## Focus: Restoring, maintaining and enhancing water quality to achieve ‘good’ ecological status/potential

**Table 1**

Carry out lake restoration, maintenance and enhancement work, including bio-manipulation; use monitoring evidence to trial and implement further innovative lake (broad) and river restoration techniques

Ref	Detailed actions	Lead	Partners	Timescale	Desired benefits	Progress
1.1	Facilitate use of PCLake model to assess thresholds for ecological change in lakes relating to phosphorus and other management, as part of coordinating a strategic approach to lake restoration	BA (WEG & BIFFA)	NWT, EA BBP	2019/20	Managers of lakes are using the tool to make more informed decisions on the most important factors relating to lake restoration	Status: Complete
1.2	Complete Hickling Broad Enhancement Project as part of <a href="#">CANAPE</a> Interreg Project, in line with project plan	BA (CANAPE)	NWT	2018 - 2021	Larger areas of reed swamp are providing better habitat for wildlife such as bittern and protecting an area of shallows so water plants can grow in sheltered conditions created	Status: On track
1.3	Implement biomanipulation work at Barton Broad and Ranworth Broad in line with project plan	NWT (BIFFA)	BA, EA	2019/20	Restoration work is increasing the diversity of water plants, improving the aquatic	Status: Complete

					environment for species and enhancing wildlife viewing opportunities for visitors	
1.4	Complete <a href="#">Hoveton Great Broad LIFE and HLF Project</a> in line with <a href="#">project plan</a>	NE (LIFE and HLF)	BBP	2018 - 2021	Larger areas of reed swamp and clearer water are providing better habitat for wildlife and increasing public understanding	Status: On track  Sediment removal and fen creation complete, fish barriers gained approval from EA, July 20
1.5	Implement erosion prevention and river bank works and provide protective conditions on development to safeguard fish habitats in line with work plan	BA	EA	Ongoing	Resilient river habitat is supporting a sustainable, balanced and healthy fishery	Status: Ongoing
1.6	Carry out fish management and fishery enhancement at Ormesby Broad and repair fish barriers in line with management plan	ESW (NWT)	TBP	Ongoing	Clear water is enhancing water plant and water bird populations	Status: Ongoing
1.7	Implement measures to maintain clear water at Whitlingham LNR, including bird feeding management, sensitive water plant	WCT		tbc	The many environmental benefits of clear water for	Status: Ongoing  Management transferred to the Estate

	management and assessing impact of potential fish introduction				people, habitats and wildlife are ongoing	
1.8	Investigate options to manage water and land via replacing water management assets such as 14 pumps in Upper Thurne and those on Halvergate	Broads IDB	BBP	2020 - 2021	The many environmental benefits of clear water for people, habitats and wildlife are ongoing	Status: On track Funding for scoping work secured, additional funding secured for wetland farming pilot
1.9	Implement Environment Section of <a href="#">River Wensum Strategy</a>	Norwich CC	BA, NCC, EA	tbc	The River Wensum urban corridor is supporting more wildlife and improving people's enjoyment of this area	Status:

**Table 2**

Promote and implement measures to reduce point and diffuse pollution into the floodplain and water courses, commensurate with EU/national water and habitat targets and with sustainable farming

<b>Ref</b>	<b>Detailed actions</b>	<b>Lead</b>	<b>Partners</b>	<b>Timescale</b>	<b>Desired benefits</b>	<b>Progress</b>
2.1	Develop Waterways Management Strategy	BA	BBP	2020 - 21	Wildlife (particularly fish) breeding, wintering and feeding areas are improving to ensure maximum benefit is gained from every pound spent	Status: On track
2.2	Respond to policy consultations to help justify water quality and protection of water resources (e.g. Water Framework Directive, Water Cycle Studies, Water Abstractions)	BA	n/a	Ongoing	Policy makers are understanding more clearly the impact of their policy decisions on the Broads ecosystems and are making policy changes to help improve management	Status: Ongoing  Responded to WFD consultation
2.3	Implement Diffuse Water Pollution Plans following completion	EA, NE	BCP	2019 - 2020	The Plans are supporting improved water quality and more wildlife, in turn improving peoples'	Status: Wensum report completed, publication in early 2020, Bure research beginning, progress ahead of other areas

					enjoyment of these areas	
2.4	Support development of local guidance for Environmental Land Management Schemes (ELMS) for resource protection to inform plans (links to action 3.4)	NE	BCP, BBP, landowners	2021-2022	Farmers are using locally agreed information to achieve better environmental benefits	Status: On track  Tier Structure complete  Collaboration topics and process agreed and Local Board progressing
2.5	Implement <a href="#">Water Sensitive Farming</a> land management engagement and advice	NRT	BCP	2019-2020	Effective farmer engagement is supporting uptake of innovative measures to protect and enhance water and wildlife	Status: On track
2.6	Carry out six litter picks annually to reduce pollution in Broads waterways and support other litter picking initiatives	BA	n/a	Ongoing	Less litter in Broads' waterways is reducing harmful impacts on aquatic and marine food chains	Status: On track

## Focus: Managing existing fen, reed bed, wet grassland and wet woodland

### Table3

Maintain and enhance existing areas of priority fen, reed bed, grazing marsh and wet woodland through site management agreements/ prescriptions and support services to site managers

Ref	Detailed Actions	Lead	Partners	Timescale	Desired benefits	Progress
3.1	Respond to policy consultations to help secure support for wetland management and species conservation (e.g. Net Gain, Environment Strategy, Peatland Strategy and input into Lowland Peatland Agriculture Task Force)	BA	BBP partners also likely to respond	Ongoing	Policy makers are understanding more clearly the impact of their policy decisions on the Broads ecosystems and are making policy changes to help improve management	Status: Ongoing  Responded to ELMS and Peatland Strategy consultation in June/July 20
3.2	Carry out innovative water seepage work at How Hill NNR through management of surface water and catch dykes and creation of greater areas of open water as part of Water Environment Grant	BA (WEG)	RSPB, NWT	2019-2021	Wildlife is being protected and obligations to meet designated site conditions are being met while adapting to a changing climate  Natural water seepage is supplying fens and creating conditions for lost fen vegetation communities to re-establish	Status: On track  Modified catch dyke element to create further open water
3.3	Develop collaborative programme of fen management measures additional to those required for agri-environmental schemes (e.g. enhancing natural water seepage	BA	BBP	2021	Farmers and land managers are collaborating to achieve appropriate management to	Status: On track  ELM T&T

	and flows, turf ponding, scrapes and foot drains) and seek funding to support farmers and land managers to implement measures				support achievement of biodiversity and wider environmental benefits	
3.4	Support development of local guidance for Environmental Land Management Schemes (ELMS) for fen, marsh and woodland to inform plans	NE	Farmers, land managers BBP,	2022	Farmers and land managers are using locally agreed information to achieve better environmental benefits	Status: On track  ELM T&T
3.5	Develop proposal for Defra on elements of ELMS to test and trial, including scheme design, role of coordinated advice and farm clusters	BA	BBP, BCP, Farmers and land managers, Defra	2019-2020	Ideas and discussions from the Broads are informing the development of the future ELMS	Status: Complete ELM T&T agreement in place, work contracted and programmed
3.6	Provide advice on wetland management to landowners and organisations on request and during fen management demonstration	Broads Land Management Service (BLMS) (BA, RSPB)	BBP, BRASCA and advisors	2021	Farmers and land managers are being supported by expert knowledge and appropriate management is being undertaken, working with sustainable	Status: On track  Completed: Fen wetland farming demonstration event Feb 20

					businesses and under clear agreements, to create biodiversity and wider environmental benefits	
3.7	Provide advice to land managers to deliver maximum benefits for breeding waders, wintering waterfowl and other priority species through effective use of environmental stewardship	BLMS	BA, (WMM Lottery) BBP and advisors	2019-2020	BLMS trial is providing effective ways of farmer engagement and uptake of schemes to result in public benefits e.g. wildlife, carbon in soils	Status: On track  Broads Landscape Partnership Scheme: Water Mills and Marshes (WMM)
3.8	Revise and implement management plans for How Hill NNR, extending the declaration to Buttle Marsh, Valentine Meadow.	BA	NE	2021	Wildlife is being protected and landowners' obligations to meet conditions in the Management Plan and any designations are being met	Status: On track
3.9	Investigate Buttle Marsh hydrological function and the feasibility to enhance biodiversity, store winter and spring water, long term carbon.	BA		2020	Wildlife is being protected and landowners' obligations to meet Management Plan conditions are being met while adapting to a changing climate	Status: On track

3.10	Manage BA contracted wetland sites in accordance with annual and longer-term management agreements and plans	BA	landowners	Ongoing	Wildlife is being protected and landowners' obligations to meet designated site conditions are being met	Status: On track
3.11	Carry out joint review of key management plans such as Breydon, Barton, Hickling, Sutton and mid-Yare	BBP	-	Ongoing	Partners are working together to protect wildlife and landowners' obligations and designated site conditions are being met	Status:
3.12	Test conversion of cut material from wetland agriculture (paludiculture) into products such as biochar and soil improvers, and evaluate product viability and markets as part of <a href="#">CANAPE</a> and Broads Landscape Partnership Scheme: Wild Compost	BA (CANAPE, WMM)	Business, landowners	2019-2022	Business and farmers are more aware of opportunities for new product creation and supply logistics from wetlands. Products are being market tested to develop greater understanding of	Status: On track

					paludiculture supply chains	
3.13	Map peat, greenhouse gas emissions and paludiculture potential, as alternative agricultural system for reducing carbon emissions as part of <a href="#">CANAPE</a>	BA (CANAPE)	BBP, Farmers, land managers	2019-2022	Business and farmers are more aware of opportunities for income generation and markets for products from wetlands	Status: On track
3.14	Implement peat citizen science and peat engagement project as part of <a href="#">CANAPE</a> Interreg project and linkup with education work in Broads Landscape Partnership Scheme:	BA (CANAPE)	BBP	2019-2021	The gained knowledge and skills of 6 <sup>th</sup> form students are engaging their peers and the community about biodiversity and geodiversity in the Broads  People's learning about different citizen science	Status: On track  Developed on line learning tasks and new website learning packages

					projects is improving future projects	
3.15	Implement Broads Landscape Partnership Scheme Programme 5: Natural Landscapes Wild Watch and aquatic invertebrate identification training	BA (WMM)	Broads LPS Board, BBP	2019-2021	People are becoming more engaged with biodiversity in the Broads and their knowledge and skills are improving	Status: On track

**Table 4**

Define, implement and monitor management regimes for priority species

Ref	Detailed Actions	Lead	Partners	Timescale	Desired benefits	Progress
4.1	Monitor approved programme for water plants, fen plant transects and water levels at selected sites and Crested Buckler Fern, Swallowtail larvae, butterfly	BA	BBP at non-BA owned or managed sites	Annually	Trends in species populations are being understood in accordance with environment change and management	Status: On track

	transect, breeding Bittern at How Hill and Buttle Marsh					
4.2	Facilitate data input to maintain overview of trends and identify action required where issues are identified	BBP	-	Ongoing	Trends in species populations are being understood in accordance with environment change and management	Status:
4.3	Review EA hydrology monitoring network, linkages to BBP (BA, NWT and RSPB) monitoring network according to funding constraints, management and knowledge priorities	EA	BA	2019/20	Partners are agreeing priorities for the monitoring framework	Status:
4.4	Define environmental triggers to support further lake restoration decisions on Trinity Broads	TBP	-	2019/20	Lake restoration in the Trinity Broads is achieving better results, having been informed by more robust evidence	Status: Complete

4.5	<p>Assess findings of surveys and species recovery programmes for Little Whirlpool Ramshorn snail, to inform guidance to farmers, land managers and advisors. Work includes:</p> <ul style="list-style-type: none"> <li>a. Translocate to four sites, monitor monthly</li> <li>b. Monitor ditch translocation for five years</li> <li>c. Monitor to ensure no population effects during wetland creation scheme</li> <li>d. Monitor monthly at three sites for four years, intensive studies on 6 sites, discussing management with landowners</li> <li>e. Steering meetings</li> </ul>	<p>BBP, Abrehart Ecology</p> <ul style="list-style-type: none"> <li>a. Highways England</li> <li>b. WMA</li> <li>c. SWT</li> <li>d. Abrehart Ecology</li> <li>e. AECOM</li> </ul>	BA	<p>Ongoing</p> <ul style="list-style-type: none"> <li>a. 2023</li> <li>b. 2023</li> <li>c. 2022</li> <li>d. 2020</li> <li>e. Ongoing</li> </ul>	Target species are making use of more opportunities to expand in the Broads	<p>Status: On track</p> <p>Actions and timescale being reviewed July-Aug 2020 along with summary report of species work</p>
4.6	<p>Review data for species recovery programmes for fen raft spider, including next steps, and submit report for national publications such as British Wildlife and Arachnology</p>	Helen Smith (consultant ecologist)	BA, RSPB, NE, SWT	2019/20	Target species are making use of more opportunities to expand in the Broads	<p>Status: On track</p> <p>Actions and timescale being reviewed July-Aug 2020 along with summary report of species work</p>

4.7	Assess findings of species recovery programmes for Fen Orchid to inform action plan	Plantlife	BBP	Ongoing	Target species are making use of more opportunities to expand in the Broads	Status: On track  Actions and timescale being reviewed July-Aug 2020 along with summary report of species work
4.8	Collect seed from Greater Water Parsnip for species recovery work with schools under Broads Landscape Partnership Scheme Programme	BA	LPS Board, NWT, RSPB	2019-2020	Target species are making use of more opportunities to expand in the Broads	Status: Complete
4.9	Monitor Whitlingham swift tower for nesting success, communicate findings to visitors of site and promote information leaflet on encouraging swift nesting	WCT		annually	Target species are making use of more opportunities to expand in the Broads	Status: On track
4.10	Through Norfolk Local Bat Conservation Plan, make proposals to regulate and manage countryside to deliver greater benefits to bats from planning system and other relevant mechanisms	NE	BTO, BBP		Information on the distribution of bats is helping to protect and enhance the most important local locations for bats	Status: Delayed / Changed?

4.11	Monitor <i>nathusius pipistrelle</i> bats around Broads and coast to improve understanding of species migration from Europe and breeding sites around Broads	Norwich Bat Group	BA, ESW	Annually	<i>Nathusius pipistrelle</i> breeding sites are being protected and migration routes are understood to support measures to conserve this species	Status: On track  MOTUS tracking stations installed. Interpretation panel being designed.
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**Table 5**

Define, implement and monitor management regimes for invasive non-native species (INNS)

Ref	Detailed Actions	Lead	Partners	Timescale	Desired benefits	Progress
5.1	Monitor invasive non-native species (INNS) as part of annual water plant survey	BA	NNNSI	Annually	Trends in invasive non-native species are being better understood in relation to environmental change and management action is better informed	Status: On track
5.2	Undertake direct control of priority INNS on BA land and close to areas with high risk of spread on priority basis	BA	BBP at non-BA owned or managed sites	Annually	Priority INNS are being eradicated or controlled to manageable background level to protect biodiversity, water flow and navigation	Status: On track

5.3	Carry out control programmes for American mink, Floating Pennywort and other priority invasive non-native species	NNNSI	-	Annually	Priority INNS are being eradicated or controlled to manageable background level to protect biodiversity, water flow and navigation	Status: On track
5.4	Carry out 'Check Clean Dry' and 'Be Plant Wise' awareness campaigns and highlight risks of new invasive species in Broadcaster, Broadsheet and key waterway access points	BA	Parish Councils	Annually	The public are helping to prevent the spread of INNS and playing their part in protecting their local biodiversity, water flow and navigation	Status: On track
5.5	Communicate success of biological control for Himalayan Balsam around River Bure and if successful roll out to other areas	NNNSI	-	2019	Himalayan Balsam stands are reducing their vigour and spread	Status: On track 2020 Update due

## Focus: Extending and creating new areas of high biodiversity value habitat, habitat networks and buffer zones within the Broads catchment

### Table 6

Create 'bigger, better and more joined up' areas of priority habitat by identifying opportunities and developing site specific plans for new habitat areas, connections, buffer zones and pollinator networks

Ref	Detailed Actions	Lead	Partners	Timescale	Desired benefits	Progress
6.1	Develop vision for Hickling and other Broads Living Landscapes projects, including reed swamp protection and creation by using dredged sediment	NWT	BA, NE, EA	Ongoing	Landowners and local people are being motivated around a single vision to do more for biodiversity and sustainable management	Status: On track
6.2	Deliver Suffolk Broads project creating larger areas of wetland, including habitat creation by using dredged sediment	SWT (HLF)	BA	Ongoing	Wetland species have larger areas managed for their needs and are able to move through a landscape, becoming more resilient to change including climate change	Status: On track
6.3	Deliver Bure and Thurne Living Landscapes Broads Project creating larger areas of wetland	NWT	BBP	Ongoing	Wetland species have larger areas managed for their needs and are able to move through a landscape, becoming more resilient to	Status: On track

					change including climate change	
6.4	Implement Natural Flood Management and River Restoration Projects, such as Upper Bure, Badley Moor on River Tud and Sculthorpe Moor, including fish habitat improvement plans	Various partners within BCP	-	Ongoing	River species are having better places to live, breed and eat, and the water flow regimes to allow them to survive	Status: On track
6.5	Implement programme of Catchment Sensitive Farming advice	NE, EA, Water Companies, NRT	BCP	Ongoing	Landowners are being supported by expert knowledge and the appropriate management is being undertaken, under clear agreements, to support achievement of wider environmental benefits and biodiversity	Status: On track
6.6	Deliver Broads Priority Landscape project, including development of Broads Land Management Services helping landowners create larger wildlife-rich areas (projects 3E1 and 5A within the HLF LPS WMM)	RSPB (WMM)	BBP, local FWAG	2018- 2022	Wetland species have larger areas managed for their needs and are able to move through a landscape, becoming more resilient to	Status: On track

					change including climate change	
6.7	Coordinate delivery of actions in Ant Valley as described in WEG project	RSPB	BA, Butterfly Conservation NWT	2019- 2020	Fen is being restored, and removal of acidic influence protecting Fen Orchid colonies and understanding of ecohydrology and impact of groundwater input on habitat condition is improving	Status: On track
6.8	Consult and decide on water abstraction licences based on ecological and hydrological evidence	EA	NE, BA, NFU, land managers and farmers	Ongoing	Protected areas that support sensitive water dependent habitats and species are being maintained and sites that have deteriorated are showing signs of recovery	Status: On track
6.9	Respond to planning applications and policy consultations to support ecosystem management and species conservation (such as Net Gain)	BA and other appropriate organisations	-	Ongoing	Planning applicants and policy makers are understanding more clearly the impact of policy decisions on the Broads ecosystems and are making changes	Status: On track

					that improve ecosystem functioning	
6.10	Advise landowners and organisations, including Parish Councils, on managing land to extend more nature friendly land management and buffers for nature areas	NE, BA and other appropriate organisations	EA, local FWAGs, NRT, BA	Ongoing	Landowners are being supported by expert knowledge and the appropriate management is being undertaken, under clear agreements, to support achievement of biodiversity and wider environmental benefits	Status: On track  Wellbeing blogs for Norfolk ALC
6.11	Support development and implementation of Green Infrastructure and Recreational Avoidance and Mitigation Strategy to inform spatial planning decisions and policy	BA	Norfolk Strategic Planners Group	2020	The biodiversity value of sites is being protected from increasing recreational pressure and mitigation measures are being costed and put in place through Local Plans	Status: On track
6.12	Develop Local Natural Capital Plan and Norfolk and Suffolk Nature Recovery Strategy and key sites for improvement	NCC, SCC	BBP	2020	The delivery of the 25-year Environment Plan is becoming better integrated through local natural capital plans for specific places in England	Status: On track

**Table 7**

Improve partnership coordination and communication of Broads biodiversity monitoring and research efforts, linked to national biodiversity network

Ref	Detailed Actions	Lead	Partners	Timescale	Desired benefits	Progress
7.1	Look for funding for modelling of long-term sea-level rise in Broads and likely impact on freshwater dependant species, such as the Swallowtail breeding sites	BFI	Academic institutes		Translocation is being more clearly recognised and used	Status: Not started
7.2	Research detailed ecology of Swallowtail and its food plant milk parsley, including impact of salty water on the plant	UEA	BBP, Swallowtail & Birdwing Butterfly Trust	2019/20	Potentially costly translocations are being based on more robust evidence, bringing more chance of success	Status: Complete
7.3	Disseminate findings of research on water connection and environmental degradation in influencing species distributions and potential for species recovery as water quality improves	Hydroscape (NERC)	BA, EA, NE	2019-2020	Water management organisations are acting from better understanding about the impact of water connection on the control of invasive species and diseases of	Status: Delayed

					wildlife and humans at international, national and local level	
7.4	Research movements of fish in Broads via fish tracking	Portsmouth University	EA, Anglers	2018-2021	Water management organisations and anglers have a better understanding about the impact of waterway management on fish movement and are creating sustainable fisheries	Status: On track  Field data collection complete
7.5	Research historical microplastic pollution in Broads compared to more pristine waterways and report results to BBP and BCP	UCL	BA, NWT	2019-2022	The start time and extent of microplastic pollution is being understood more clearly	Status: On track
7.6	Send all wildlife records to NBIS including setting up systems to support public to submit wildlife records	BBP	NBIS	Ongoing	Better species abundance and distribution data is informing development and management	Status: On track
7.7	Update research topics identified at Fen Research Workshop 2017 and Lake Review 2015, and send research opportunities to academic	BA	BBP	2022	Academic research in the Broads is supporting better management regimes	Status: Not started

	institutes to attract research students to work with BBP					
7.8	Produce series of Broads wildlife identification books to promote public awareness and monitoring of species	NBIS	BBP, NCP	2019-2022	The public are recognising and reporting sightings of Broads species, creating stronger public interest and providing stronger data to inform management	Status: Not started

## Focus: Managing water resources and flood risk

**Table 8**

Catchment-scale water capture and water efficiency measures, incl. whole farm water management

Catchment-scale management of water resources, response to drought and water shortages

Long-term integrated coastal, tidal and fluvial flood risk strategic approach

Ref	Detailed Actions	Lead	Partners	Timescale	Desired benefits	Progress
8.1	Support holistic water plan for Broad water resources under 'Water for Tomorrow' Interreg bid to run computer scenarios of	Rivers Trust	WRE, EA, Farmers, BBP, AW, Broadland	2021	Water management organisations are acting together from better understanding of the	Status: Not started  Bid submitted in June

	multi-sector sustainable water storage and abstraction licensing to predict effects on ground and surface water and on dependent wetland habitats and species.		Agricultural Water Abstractors Group (BAWAG)		water environment and potential solutions	
8.2	Manage a partnership approach to future flood risk management in Broadland area, including High Level Options Study to inform discussions during engagement activities, and the option shortlisting process.	Broadland Futures Initiative (BFI)		2020	Informed discussion and holistic consideration of options	Status: On track