

Investing in Nature for Norfolk's Water Security

Launch of Norfolk Water Fund business case
27 February 2024

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Welcome from Daniel Johns, Water Resources East

Agenda

Introduction and opening remarks

Daniel Johns, Managing Director, Water Resources East

A business case for the Norfolk Water Fund

- Introduction - **Rob Cunningham**, The Nature Conservancy and **Michael Vice**, Nature for Water Facility
- A portfolio of NbS for Norfolk water security - **Jack Beard**, Nature for Water Facility
- The financial case for investment in NbS - **Thomas Skurtis**, Nature for Water Facility
- Next steps for the Norfolk Water Fund - **Hannah Gray**, Water Resources East

Building the project pipeline

- Sennowe, Yare, Stiffkey - **Jonah Tosney**, Norfolk Rivers Trust
- Wendling Beck, landscape recovery schemes - **Glenn Anderson**, Wendling Beck Environment Project
- Advanced-WINEP and the East of England Planning Hub - **Kate Trumper**, Anglian Water

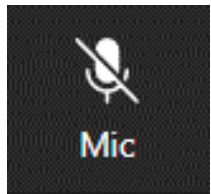
Panel discussion: Why are NbS relevant to Norfolk?

Panel members: **Robin Price**, Anglian Water; **Ed Bramham-Jones**, Norfolk Rivers Trust; **Glenn Anderson**, Wendling Beck Environment Project; **Wendy Brooks**, Norfolk County Council; **Lucy Lee** - WWF

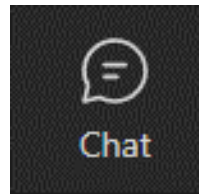
Audience Q&A

Final remarks and close

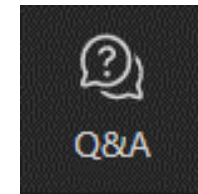
Housekeeping



Microphones and cameras have been set to 'off' to improve bandwidth



Please use **Teams Chat** function for technical issues/general comments only



Use **Teams Q&A** function for all questions



The session is being **recorded**. Slides and recording will be shared after the meeting

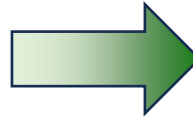


The business case for a Norfolk Water Fund

Developing Watershed Investment Programmes

What is the problem we try to solve for, and why we believe in nature-based solutions

Challenge: Water Security



Nature-based Solutions (NbS) @ Scale



Protection



Agricultural
BMPs



Invasive species
removal

Availability of an acceptable **quantity** and **quality** of water for health, livelihoods, ecosystems and production, coupled with an acceptable level of water-related risks to people, environments and economies.

(Grey and Sadoff, 2007).

Leveraging **nature** and power of healthy ecosystems to **protect people**, optimise infrastructure and safeguard a stable and biodiverse future.

(IUCN, 2024)

Who is Nature for Water?

N4W is a purpose-designed technical assistance platform to help Watershed Investment Programmes (WIP) reach their objectives

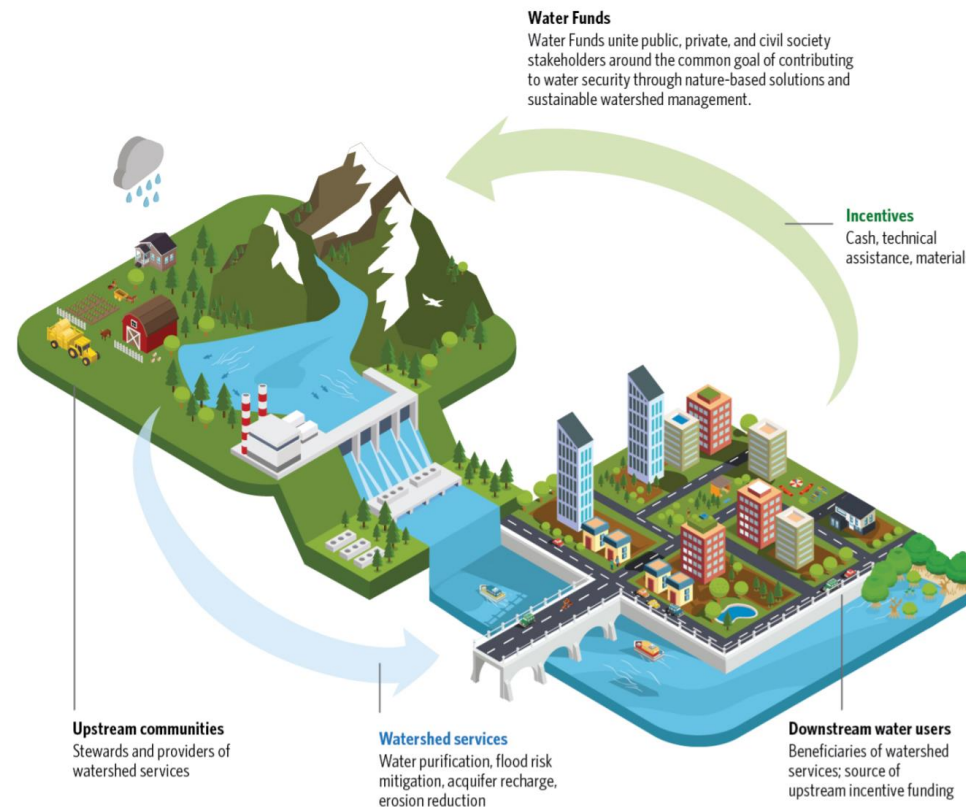
Who we are

- Partnership between



- Direct experience working across 30+ watershed investment programs
- Blended international team with staff model to support projects globally

‘Watershed Investment Program’ (“WIP”) Concept



- A collective action initiative **delivering ecosystem services** by **investing in the protection or restoration of nature**.
- WIPs aim to deliver water security and associated co-benefit outcomes NbS interventions.
- These kinds of programs are also called **Catchment/ Basin/ Watershed management** or **protection programs**

WIP: a global movement

Watershed Investment Programmes are being set up all over the world, with the UK leading the way in this innovative approach in Europe



Why Norfolk?

Productive farmlands, scarce chalk rivers, wildlife rich landscapes and the unique Broads wetlands



This exceptional water environment is at risk

A range of chronic pressures lead to serious environmental and economic consequences for the county.



The Norfolk Water Strategy Programme



Working since February 2021 to develop a strategy to scale up Nature-based Solutions for Norfolk's water resilience.



Ensure that **water** is not a **barrier** to economic growth



Deliver **wider benefits** in terms of **flooding** and **water quality**



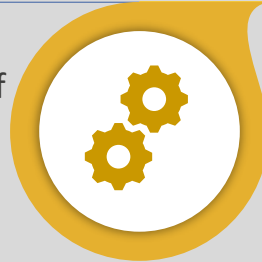
Provide **opportunities** for water-related businesses



Provide **academically rigorous evidence** to policy makers



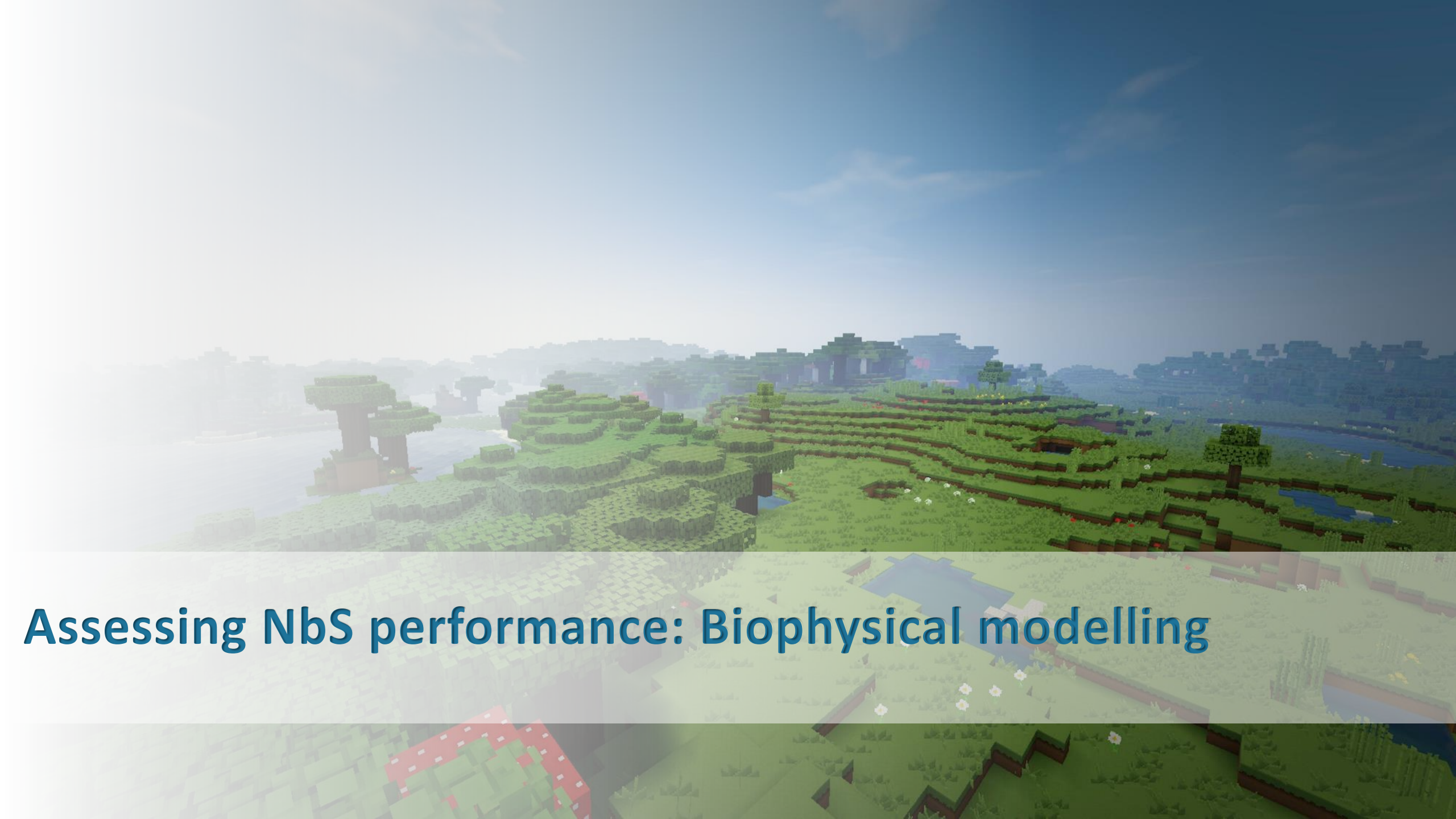
Increase resilience of water resources management for all



Identify **opportunities & mechanisms** to **restore and enhance** the environment



Deliver **water related climate change mitigation and adaptation strategies**



Assessing NbS performance: Biophysical modelling

The scale of the challenges...

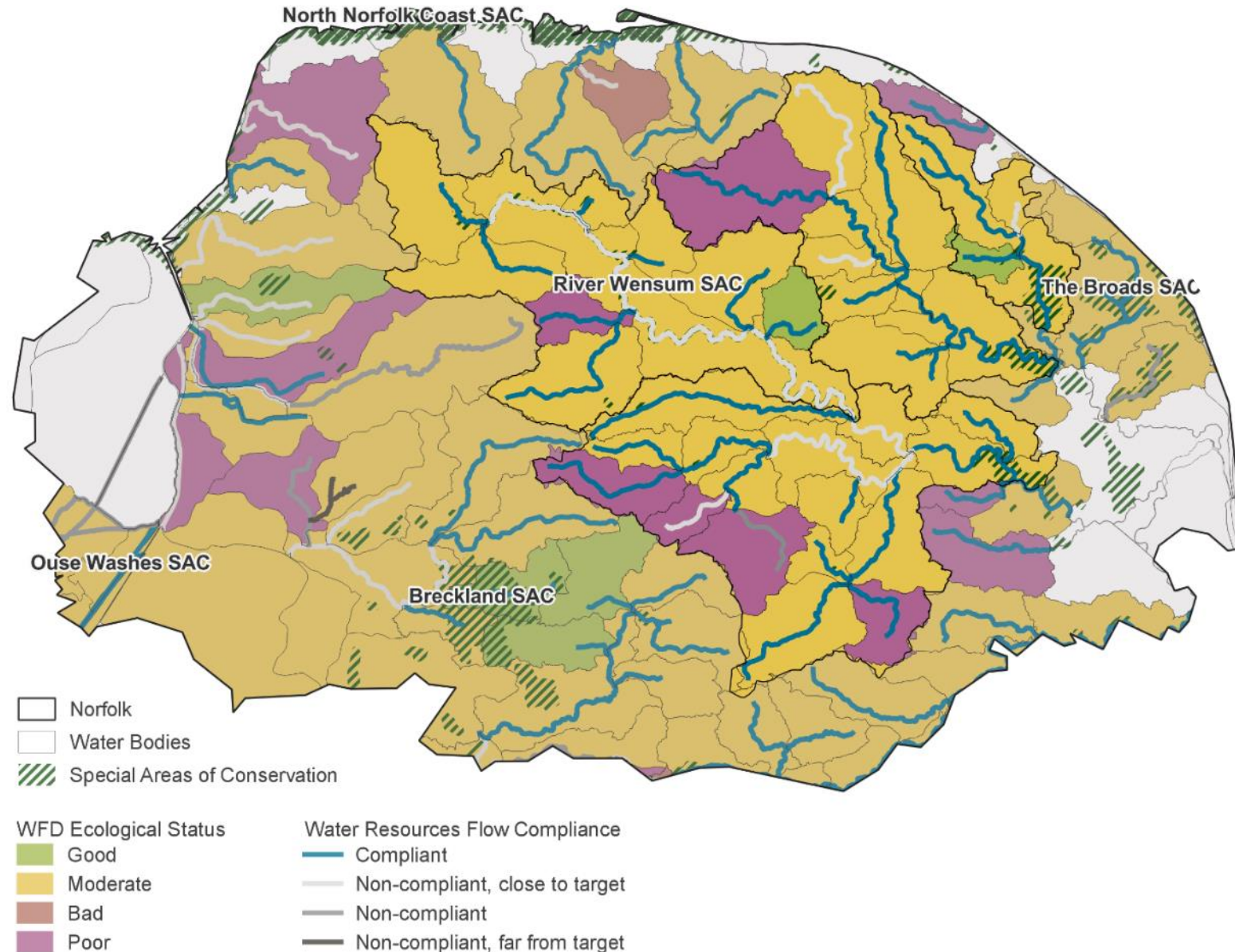
Key challenges include:

Water Quality

- Many waterbodies **failing 'good ecological status'** under **Water Framework Directive** (or stricter targets)
- **Nutrient Neutrality** – stalled growth and development

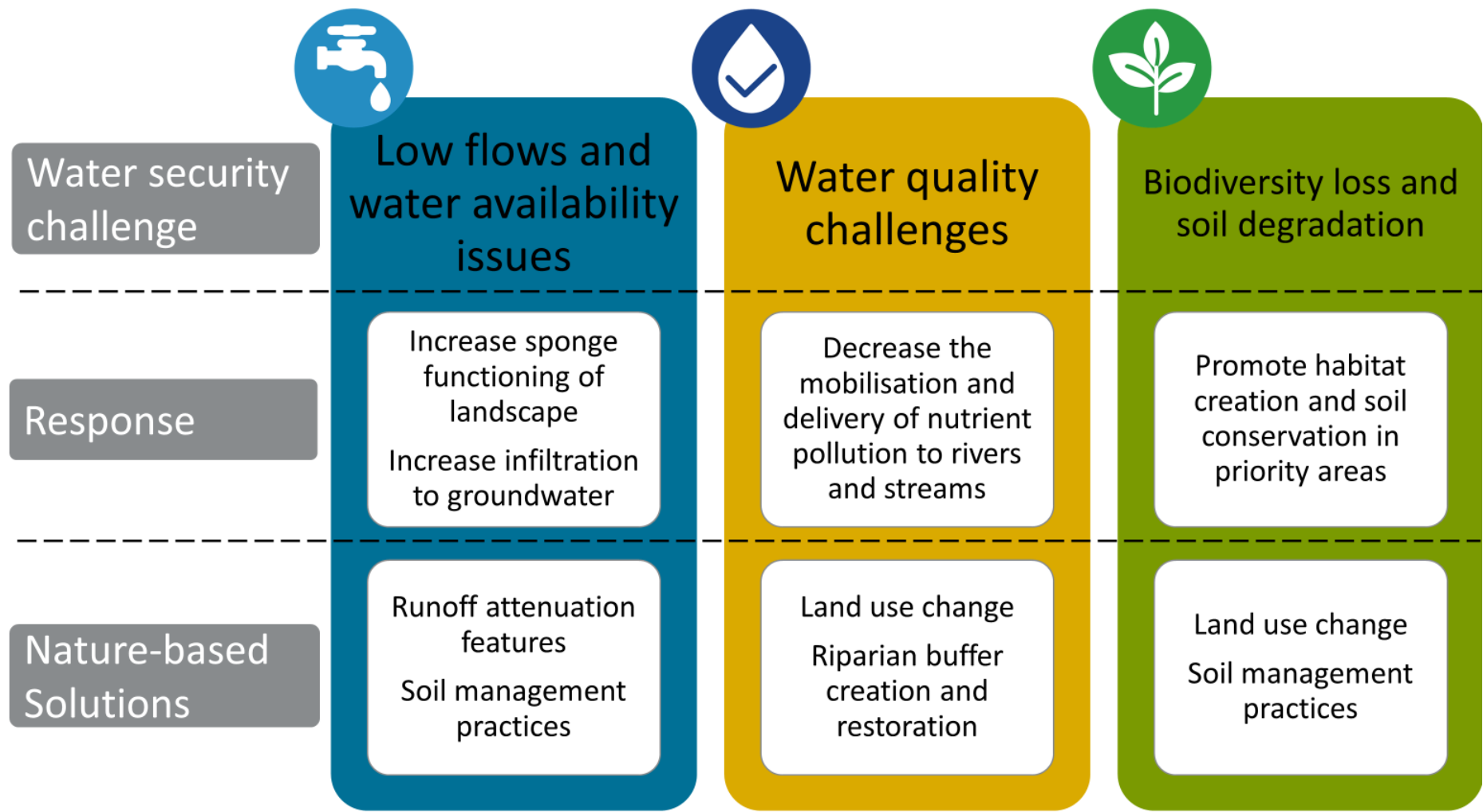
Water Quantity

- **Environmental risk** – low flows and impact to ecology
- **Water availability to abstractors** (e.g. PWS, irrigators) – less water to abstract, temporary drought restrictions, licence capping



Nature is a highly effective solution

We need to restore ecosystem function to deliver multiple water and biodiversity outcomes



Runoff Attenuation Features



Riparian Zone Restoration



Soil Management



Where will nature have the greatest impact?



NORFOLK WATER
STRATEGY PROGRAMME



Portfolio Area

Flood Zone Interventions

- Flood Zone Interventions
- Floodplain Reconnection Potential

Catchment Storage Interventions

- Catchment Storage Areas
- Runoff Attenuation Features

Buffering

- Riparian Buffer Areas



JBA
consulting

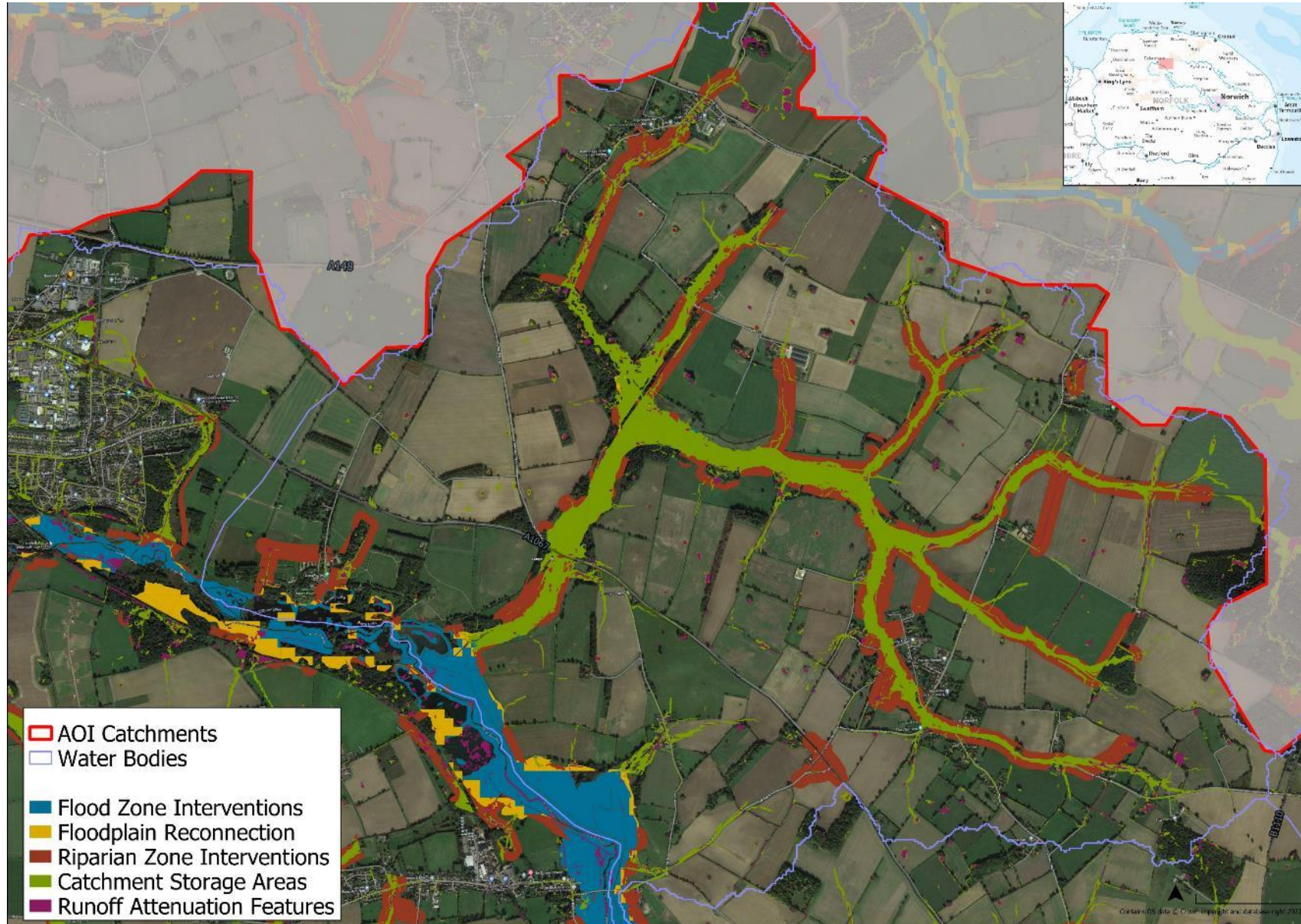


Environment
Agency



0 10 20 km

Where will nature have the highest impact?



Modelling options for maximum impact

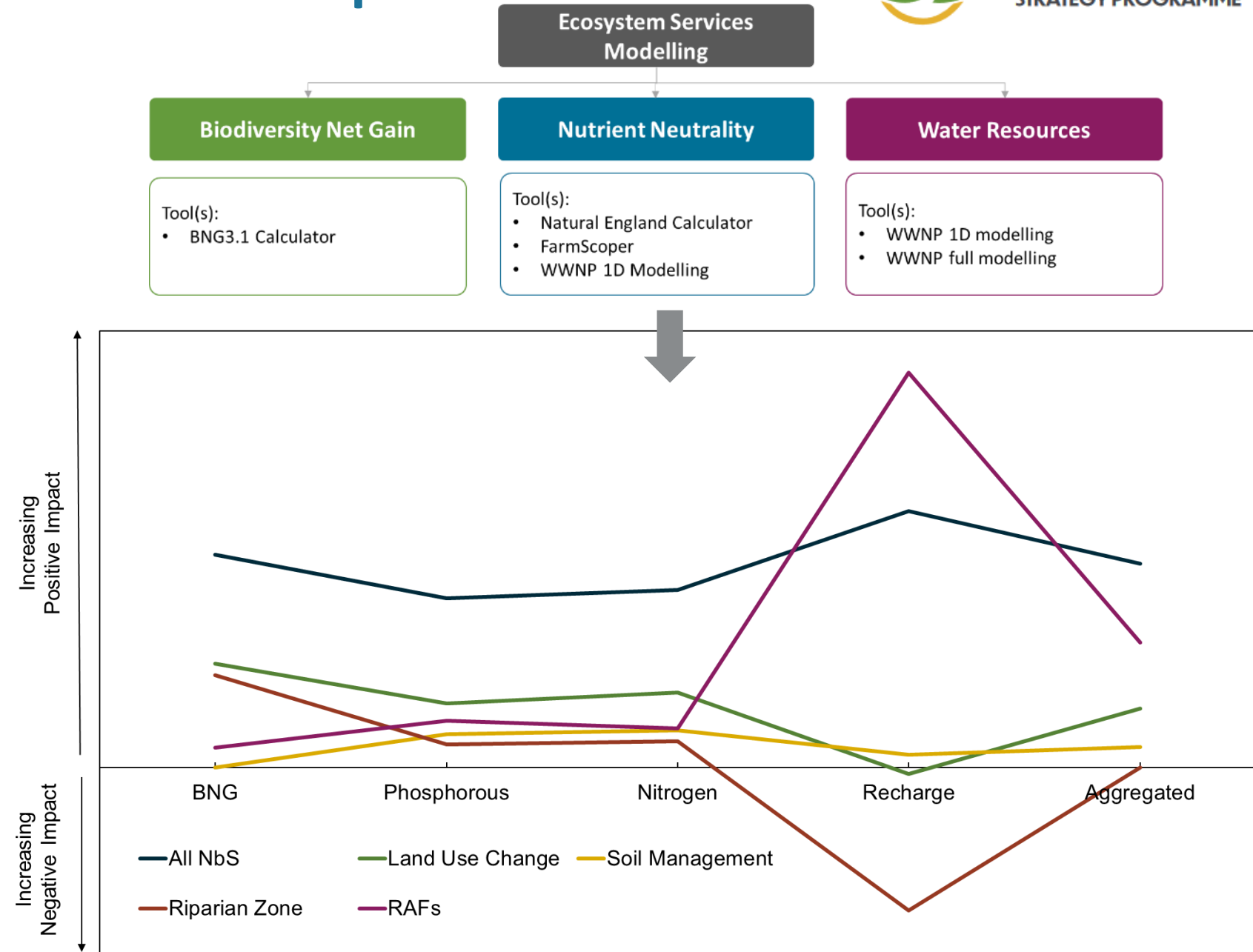
Key messages

Trade offs:

- Trade-offs exist between the ecosystem services delivered by different portfolios of NbS
- Maximising delivery of multiple benefits requires a **mixed portfolio of NbS**

Scaling:

- Linear relationships exist between delivery of NbS and outcomes





Is it a good investment? Financial and economic modelling

Our approach to assessing the economic opportunity

Economic and financial analyses to inform decision makers and potential funders

Economic analysis

Costs

Negative impacts related to the implementation of NbS, including **potential losses of revenues by landowners** in case of transition from arable land to other uses.

Benefits

To actors in relevant sectors, the general public and the environment:

- Reduction in nutrient pollution.
- Increase in water availability through additional infiltration.
- Climate regulation and improved air-quality
- Unlocking housing development.

Financial analysis

Costs

Costs of **designing, managing, implementing and monitoring** the impact of a portfolio of NbS.

Supported by project developers.

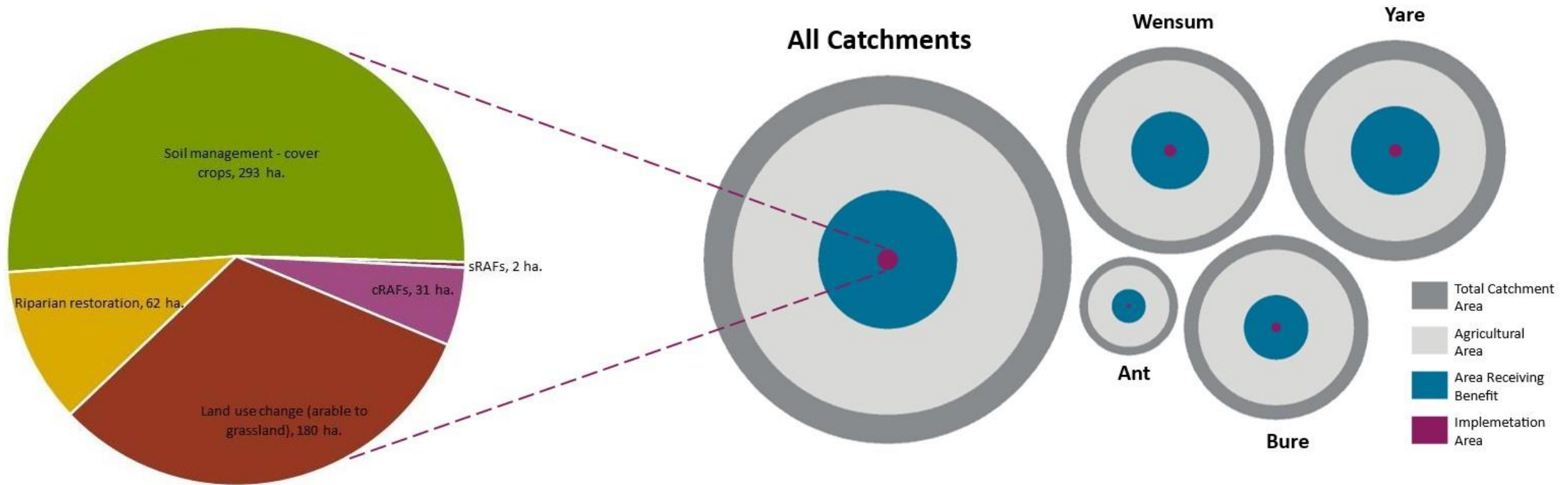
Revenues

- Sale of **Nutrient Neutrality** phosphorus and nitrogen offsets.
- Sale of **Biodiversity Net Gains** units.

Collected by landowners and shared with project developers to cover financial costs.

Portfolio of nature-based solutions

A realistic £30 million portfolio reflecting medium-term funding opportunities and accounting for the long-term maintenance and monitoring obligations imposed by NN and BNG environmental markets



This translates into 568 ha. of nature-based solutions implemented across the catchment and influencing 25,800 ha. downstream of interventions

The economic case of the Norfolk Water Fund



A clear case for nature-based solutions...

Each £1 invested in nature yields £6.7 in benefits

3.7 million m³/year

More water in the landscape
through infiltration

£10.8 million

Worth of CO₂ capture and removal
of micro-particles improving
climate and air quality

25,800 hectares benefiting

from NbS interventions
Improving habitats for Norfolk's
wildlife

273 kgs of phosphorus

and

13,794 kgs of nitrogen

offset per year, improving river
water quality

1,721 houses unlocked

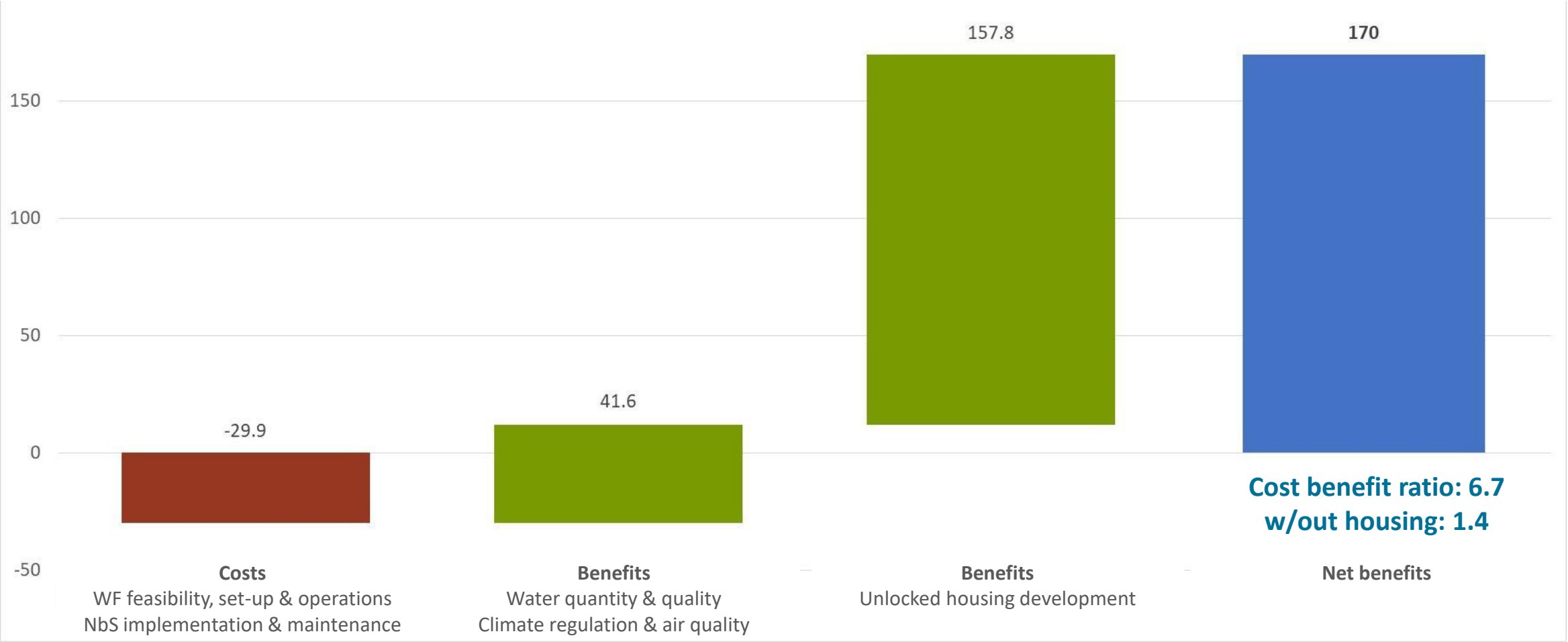
Worth £158 million

Plus a significant opportunity to create jobs, generate social co-benefits, and multiple other benefits
[not included in the business case]

The economic case of the Norfolk Water Fund

...even without benefits from unlocking housing development

Cost benefit waterfall – Net present value in million pounds



Attractive return on investment

but scalability will be constrained by the size of the Nutrient Neutrality and BNG markets

Project revenues and financial indicators			
Total costs	29.9		
Programme costs (set-up, admin. & management)	6.3	21%	m GBP (NPV)
Design, implementation & maintenance costs	23.6	79%	m GBP (NPV)
Project revenues	44.5		
Sale of NN offsets	27.2	61%	m GBP (NPV)
Biodiversity Net Gains	17.3	39%	m GBP (NPV)
Financial indicators			
Revenue to cost ratio	1.5x		Multiple
Net present value	14.7		m GBP (NPV)

Now is the time for collective action centered on NbS

Opportunities to deliver nature-based solutions and associated benefits is far greater than the modelled portfolio



Famed for its iconic wetlands, Norfolk is one of the UK's driest counties with climate change compounding concerns over water scarcity, quality, and flood risk.

NbS are clearly a highly cost-effective solution for Norfolk for improved water resources and water quality, enhanced habitats for wildlife, and the ability to unlock housing growth while protecting the environment.



£30m
call for
investment
in nature

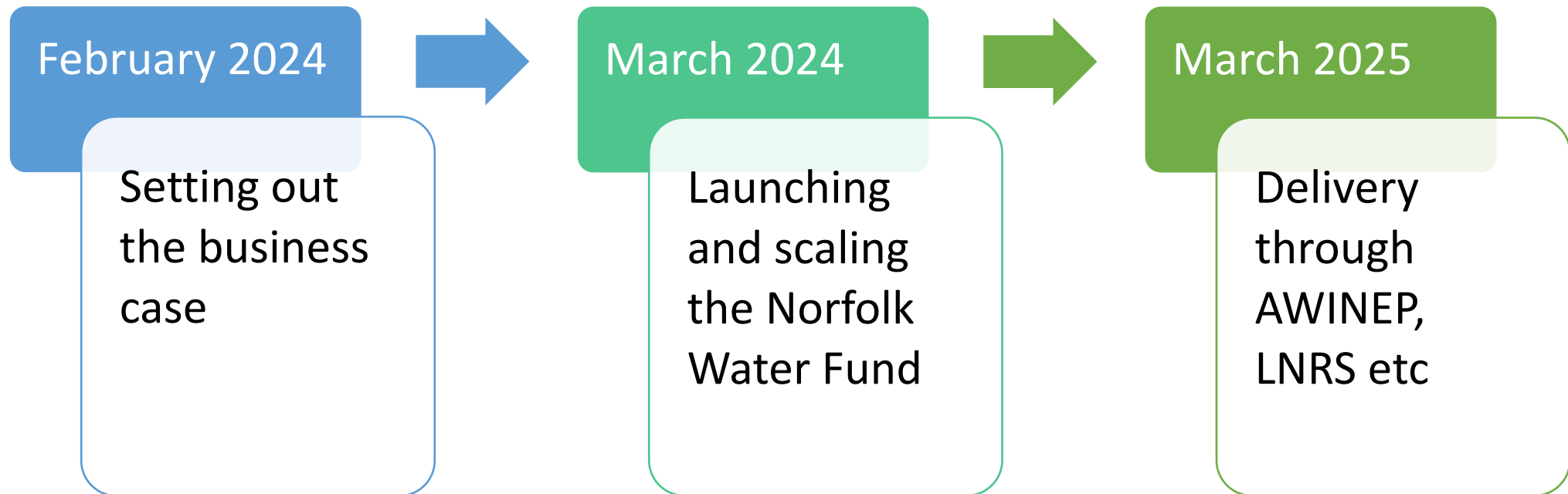
Establishing a **Norfolk Water Fund to address the challenges** that threaten wildlife & economic prosperity.

Next Steps



Next 12-18 months

- Seeking backers to support an additional £1.2m to grow our portfolio of demonstrator projects.
- Gathering evidence and experience through pilot projects and engagement with landowners and academics.
- Finalising governance and structure of the Norfolk Water Fund.
- Align the fund to delivery schemes such as Advanced-WINEP, LNRS, Landscape Recovery etc.



Contact us!



Are you a farmer interested in exploring some of these solutions on your land?



Are you a funder looking to invest in NbS for water in Norfolk?



Do you work for an organisation who could deliver NbS on the ground?

Email:

Hannah Gray – Programme Manager nwsp@wre.org.uk

Download the business case and summary:

<https://wre.org.uk/projects/norfolk-water-strategy-programme/>



Building the project pipeline

Norfolk Water fund Business Case Launch
Norfolk Rivers Trust
Jonah Tonsey

River Stiffkey Restoration – Wighton to Warham (Holkham Estate)

- Started in June 2023
- Nearly 2km of newly created river channel
- Nearly 0.7km of newly created back channel (not including river or ditches)
- Green Recovery Fund and Anglian Water funded



Constructed Wetlands



Langham Wetland – River Stiffkey 2023



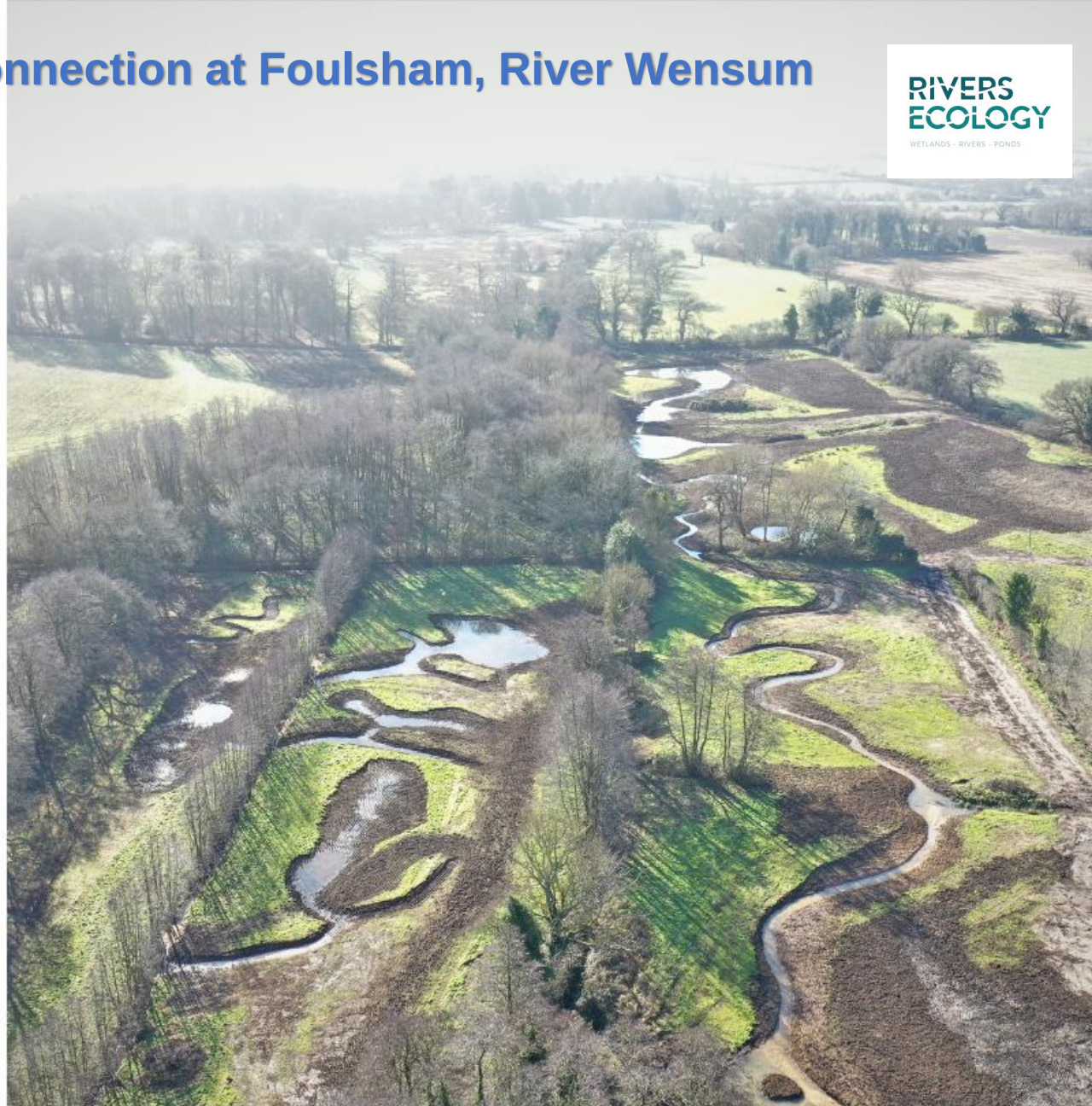
Ingoldisthorpe Wetland



Attenuate and infiltrate at Sporle



Stream restoration and floodplain reconnection at Foulsham, River Wensum



River Restoration and Floodplain Connection – River Yare



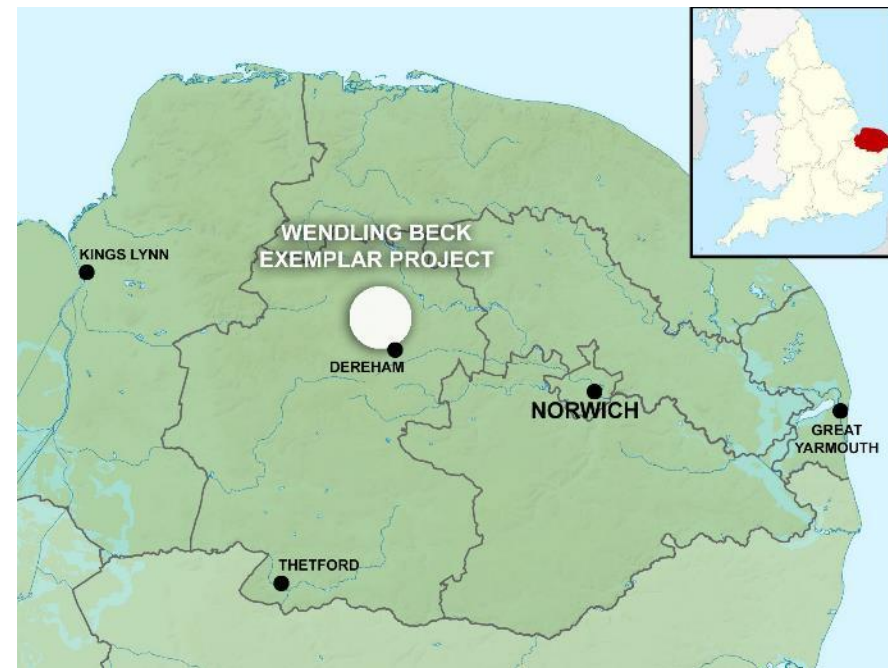
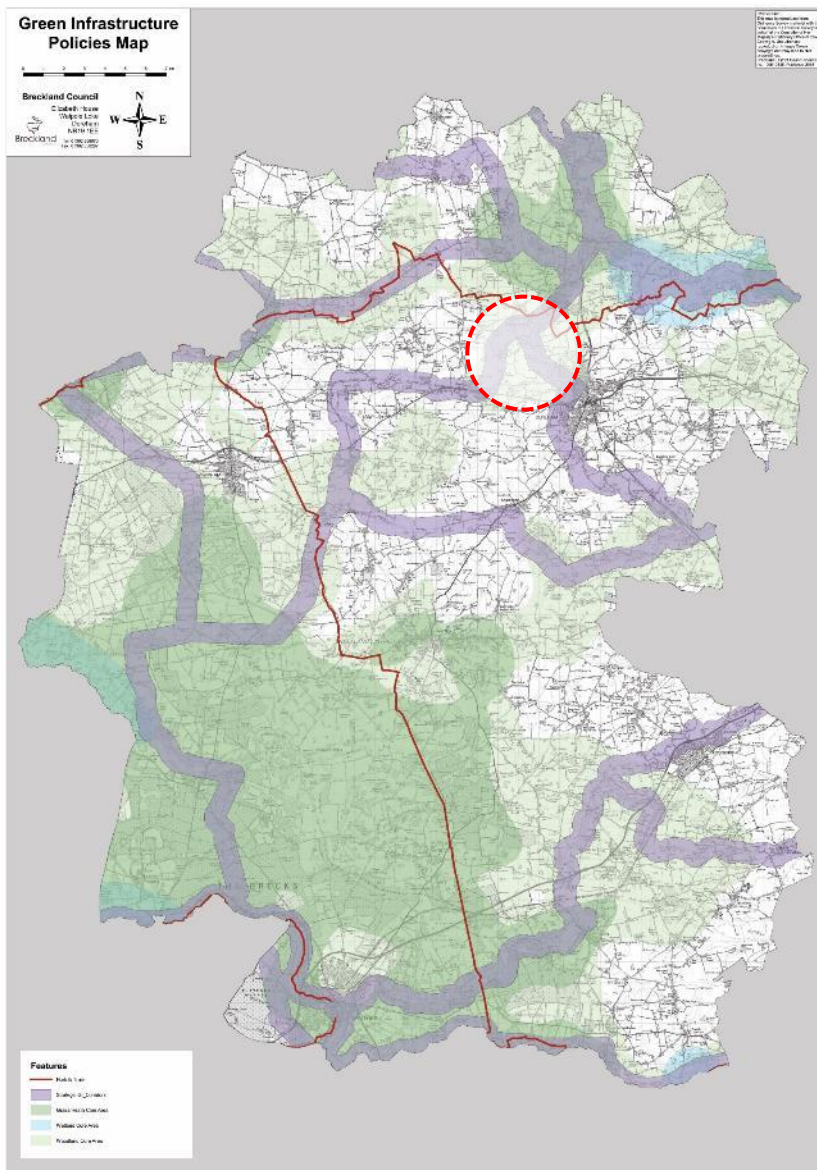
LANDSCAPE VISION:

Financing Nature Based Solutions at scale



Where are we?

WBEP is in mid-Norfolk, England, at a strategically important location in a habitat context



The Wendling Beck chalk stream, from where the project gets its' name, is a tributary to the important River Wensum. It flows centrally to the project area and links together three SSSI sites.

The project is also at a natural intersection on the Norfolk Trails network.

Features

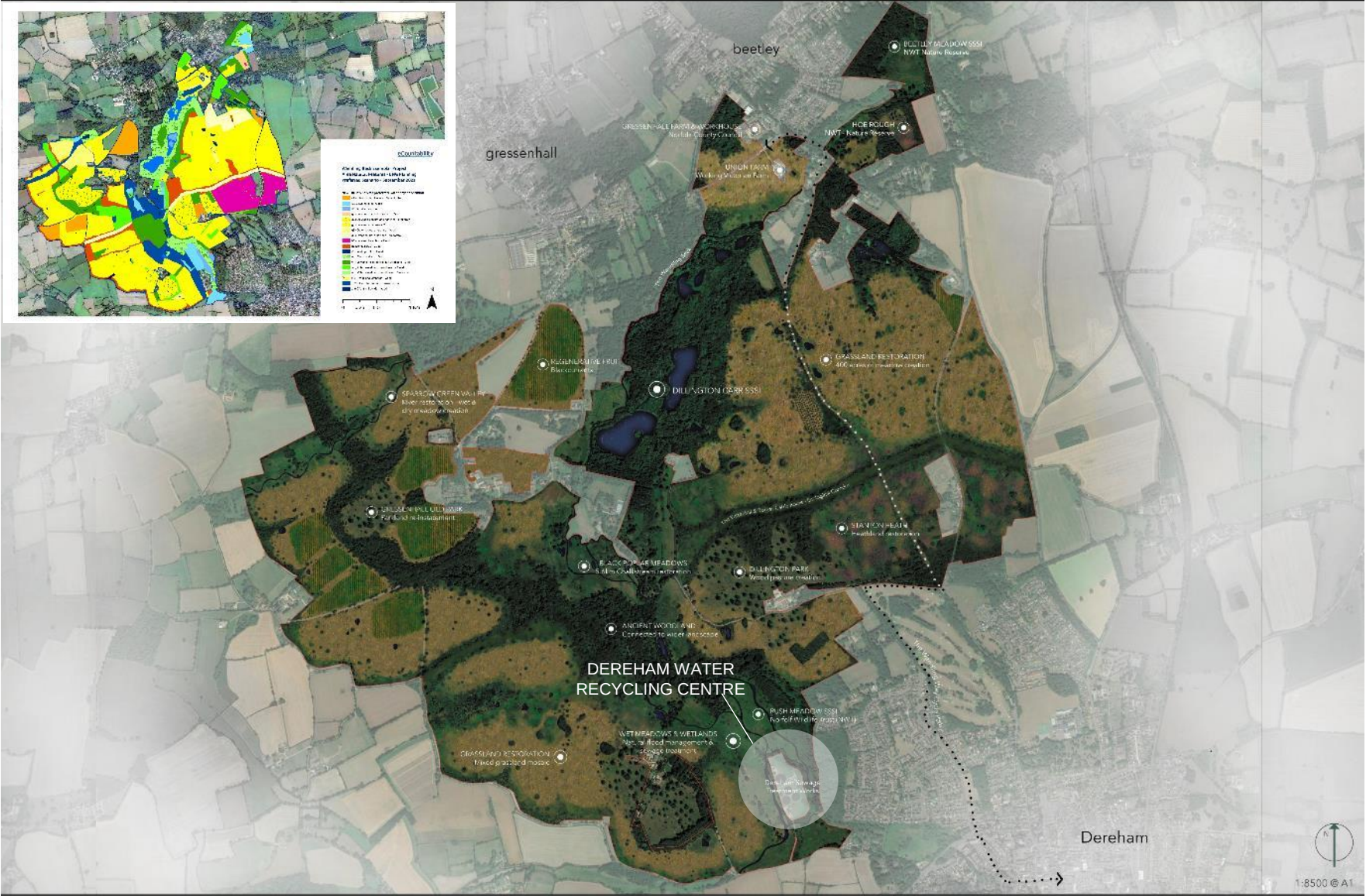
-  Norfolk Trails
 Strategic GI_Corridors
 Grass/Heath Core Area
 Wetland Core Area
 Woodland Core Area



What are we doing?
Our ambition is to take the land as it is now....



Landscape Transformation
...and to transform it into a flourishing habitat network providing benefits to the people and planet



© Higgs & Co. Studio

Drawn: 11/01/2024 (Date: 11/01/2024) | The Wendling Beck landscape plan is a conceptual plan and does not represent any specific site or project. It is intended to provide a general overview of the landscape and its potential for transformation.

1:8500 @ A1

Diggs & Co. Studio
landscape architecture

Project Overview

How will the Wendling Beck Environment Project be financed?



Biodiversity



Pathfinder project for Biodiversity Net Gain (BNG)

- Biodiversity Net Gain statutory credit scheme project
- We will deliver ~3000 - ~4000 Biodiversity Units
- BNG baseline surveys complete May 21
- One of 12 strategic regional nature recovery projects in England
- ELM T&T 23/24 – comparing novel M&E techniques



Ecosystem Services



Ecosystem services including Nutrient Neutrality

- Nutrient neutrality – Operating in a nutrient neutrality zone
- Catchment-scale phosphate + nitrate reduction strategy
- Delivered through 'in-perpetuity' agreement
- Natural Flood Management strategy - feasibility planning
- Regenerative farming



Carbon



Above & below ground carbon sequestration

- Hi-tech baseline of existing above ground carbon
- Developing data on carbon sequestration in high distinctiveness habitats
- Soil carbon baselining in collaboration with University East Anglia
- Soil carbon must demonstrate *additionality* and *permanence*



Specialist lawyers are also engaged in development of Conservation Covenants & contracts

Spade in ground works



© Daniel Casson

~ 60 Ha of Lowland Meadow has been sown

Spade in ground works



Spade in ground works



© Daniel Casson

~ river restoration and floodplain wetland mosaic

Spade in ground works



© Daniel Casson

~ 250 acres under management so far

Spade in ground works



© Daniel Casson

~ better access for all abilities

Spade in ground works



© Daniel Casson

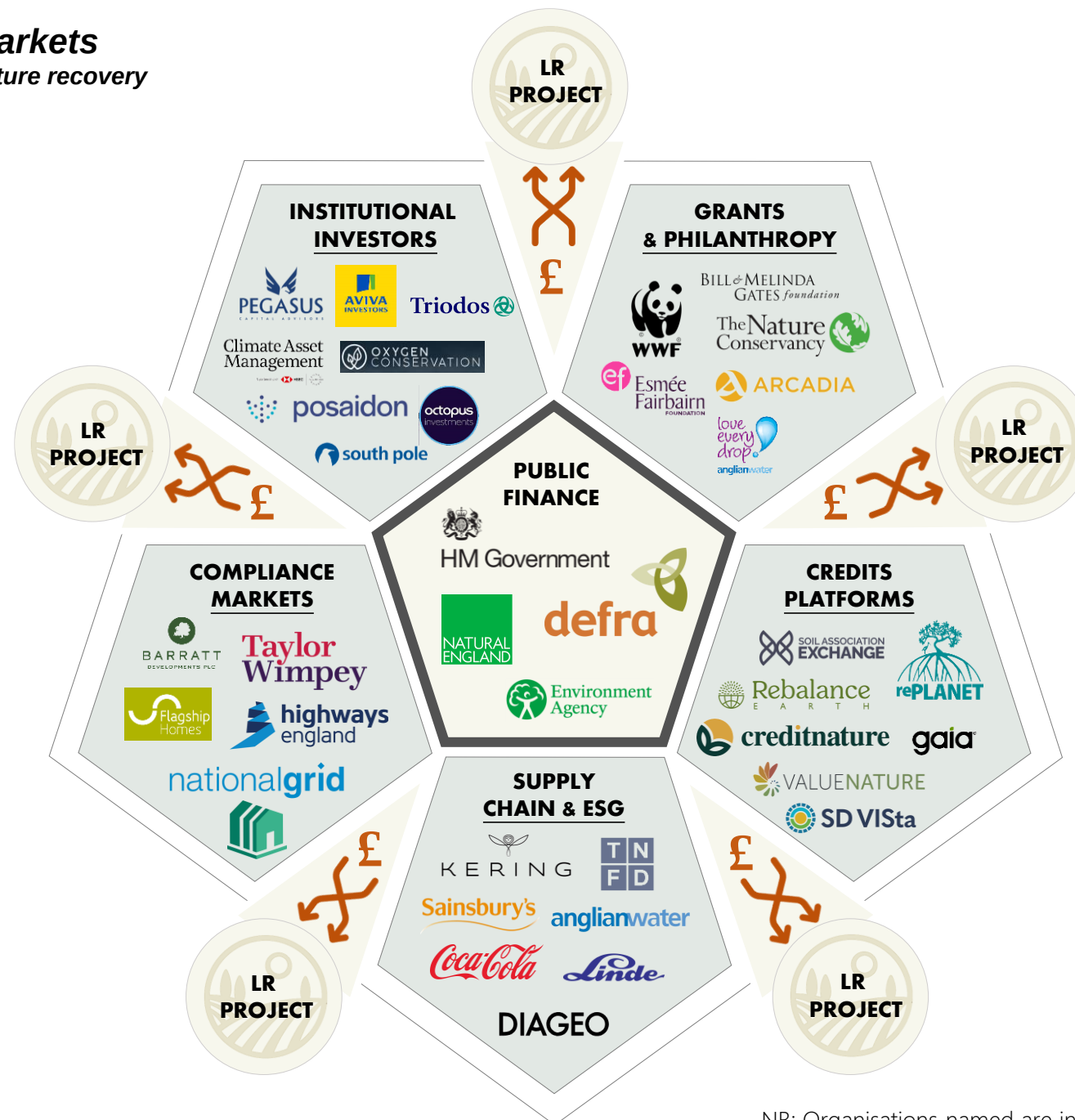
~ lowland fen and wet woodland creation and restoration

WENDLING BECK



Nature Markets

Financing nature recovery



*'It's your world now, Use well the time
Be part of something good, Leave something good behind'*

The Eagles – It's Your World Now – Long Road Out Of Eden



www.wendlingbeck.org

© Daniel Casson



Anglian's Advanced WINEP Proposal

Norfolk Water Fund Launch Webinar

Kate Trumper

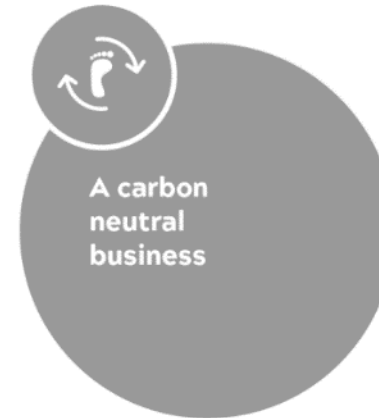


Our ambitions for 2050



Our purpose

To bring environmental and social prosperity to the region we serve through our commitment to **love every drop**

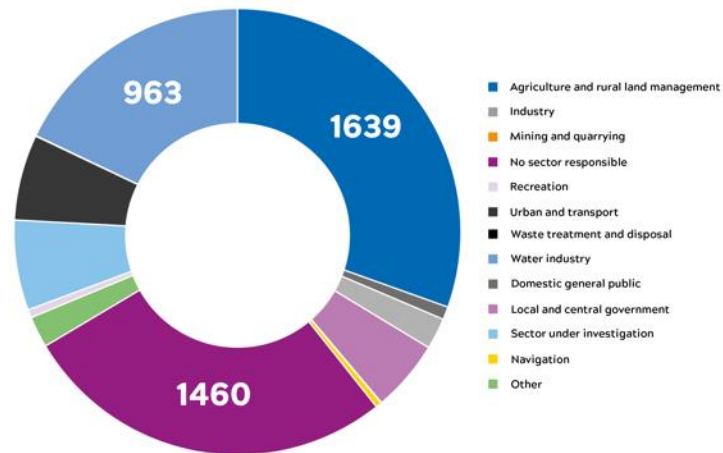




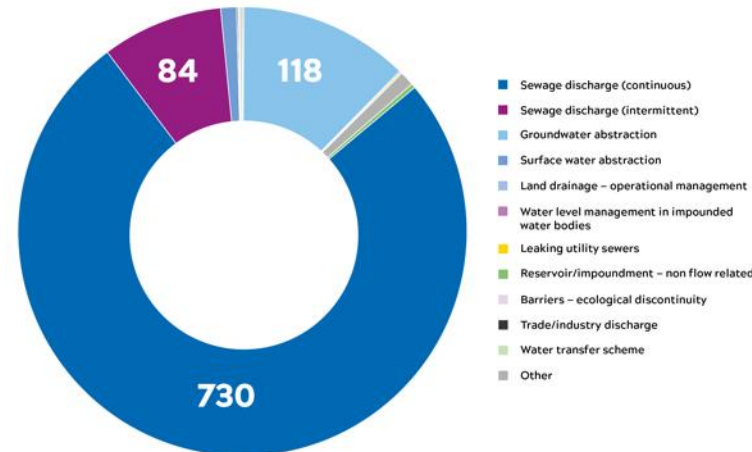
Work with others to achieve significant improvement in ecological quality across our catchments

Our aim is to remove all Reasons for Not Achieving Good Ecological Status (RNAGS)

RNAGS by sector



Water Industry RNAGS by activity



AMP8 investment

324,700kg/yr
Phosphorus
removed

224
Phosphorus
schemes
WINEP
obligations

**0.7Mg/l average
permit limit**
— average across all
permits with a
Phosphorus limit in 2030.

Use nature-based solutions
to create an area the size of
100 football pitches of
treatment wetlands, along
with **52** new sustainable
urban drainage systems.

134 MI/d reduction
in actual and potential
abstraction,
contributing towards
the resolution of 79
flow RNAGs.



Work with others to achieve significant improvement in ecological quality across our catchments

Our proposed investment for 2025-30

Our improvements for 2025-30

WINEP					
First time sewerage £59m	Advanced WINEP £26m	Chemicals removal and investigations £63m	Monitoring £264m	Reducing total pollutions 41%	Improving river water quality 15%
	Water WINEP £51m	Investigations £24m	Nutrient and sanitary parameters £638m	Reducing serious pollutions 100%	Permit compliance 100%
					Biodiversity units created 22



Work with others to achieve significant improvement in ecological quality across our catchments

Taking a nature first approach



Ingoldisthorpe
treatment
wetland



Rain garden



Catchment
management

Our Get River Positive commitments



Commitment 1

Ensure storm
overflows, sewage
treatment works
and abstraction
do not harm rivers



Commitment 2

Create more
opportunities
for everyone
to enjoy our
region's rivers



Commitment 3

Support others
to improve and
care for rivers



Commitment 4

Enhance our
rivers and create
new habitats
so wildlife
can thrive



Commitment 5

Be open and
transparent
about our
performance
and our plans



Partnership with Norfolk Rivers Trust in the Stiffkey

Our partners include:





Work with others to achieve significant improvement in ecological quality across our catchments

Advanced WINEP – Partnership for regeneration and resilience

We are led by our Purpose: to bring environmental and social prosperity to the region we serve through our commitment to love every drop.

“Your A-WINEP has the potential to achieve more for the environment and customers and provide valuable learnings for the wider industry than your standard WINEP programme would otherwise be able to do. Thank you for your positive approach and embracing the spirit of collaboration.”

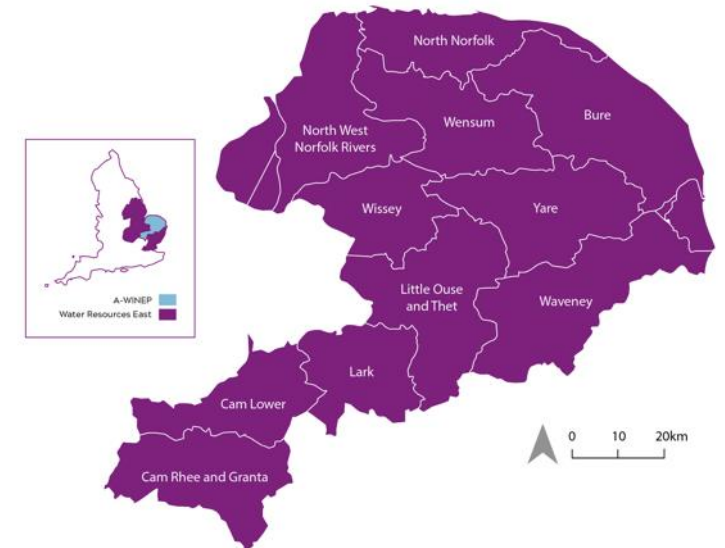
The Environment Agency on our A-WINEP plans, September 2023.

Our A-WINEP commitments. We will:

- Deliver all statutory WINEP obligations
- Explore how we can go further and deliver more for the environment
- Maximise partnership contributions
- Be accountable for delivering value to customers
- Ensure customers will only pay for benefits beyond statutory requirements where they are willing to do so
- Protect customers if we do not deliver through a proposed PCD
- Share our results, whether successful or not

Smarter regulation, better outcomes

Through working in partnership, we expect to generate £2.33 for every £1 spent, through an ambitious target of 70% partnership funding across target catchments in Norfolk, Suffolk (Lark), Cambridge (Cam), and Southend.





Work with others to achieve significant improvement in ecological quality across our catchments

Advanced WINEP

Our innovative approach to go further, faster for the environment, by building partnerships for the future.

A-WINEP will deliver:

Partnership Centre of Excellence

Wider Environmental Outcomes
Grant Fund

Catchment-Scale Surface Water
Management

Co-Designed Catchment Solutions

Catchment regeneration example

Traditional WINEP options deliver:

- Technically feasible levels of nutrient removal at large works
- River length improved through water quality improvement and habitat restoration
- Increased flow resilience

A-WINEP options (£Traditional + £Grant) deliver:

- Identify opportunities to deliver greater nutrient reductions through catchment approaches
- Deliver non-statutory improvements in small waterbodies of most value to our customers
- Address more Reasons for Not Achieving Good (RNAGs) to get more waterbodies to Good Ecological Status
- Incentivise Nature Based Solutions that are co-funded by partners to deliver wider environmental benefits alongside reducing risk for drinking water protection, habitats and nutrients
- Opportunity for Biodiversity net gain, green skills and volunteering benefits

The A-WINEP approach can support more environmental gain over a wider geography and help align action across sectors



Catchment-scale



Collaborative



Long-term



Rural and urban



Pooling resources

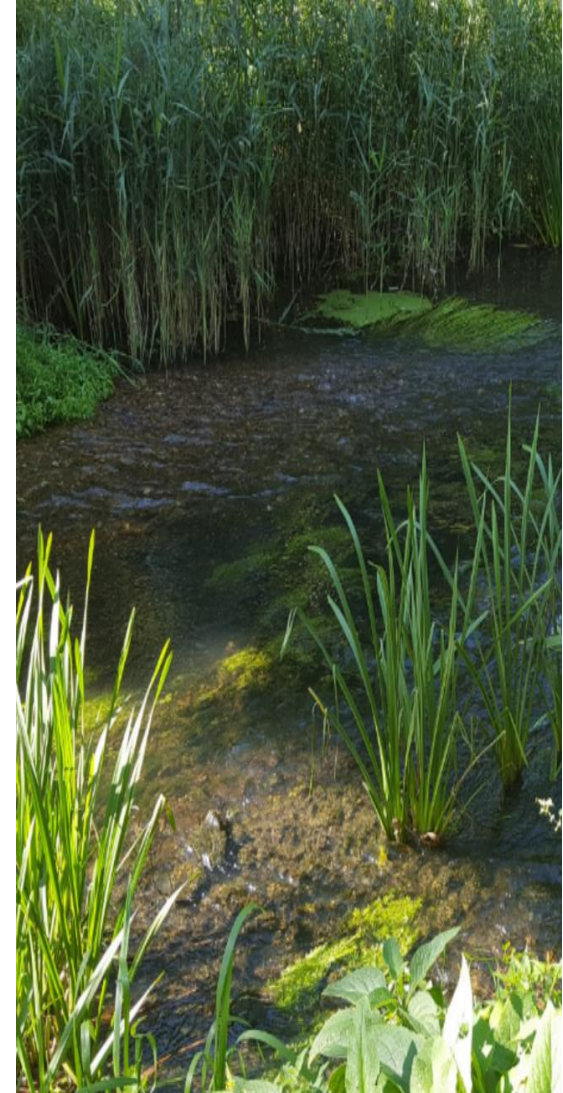


A collaborative web-based platform to accelerate delivery of nature-based solutions to protect and enhance the water environment

- A collaboration between Anglian Water, the NWSP and The Rivers Trust.
- An open-source spatial planning platform that enables strategic planning of nature-based solutions.
- Enables catchment partnerships to see collaboration and funding opportunities by accessing datasets developed by the NWSP and others.
- Helps us understand land suitability for NbS both within the NWSP's target catchments and more broadly across the Anglian Water region.
- Organisations can record NbS opportunities and track project delivery
- Improve transparency – everyone can see where the opportunities are

The Hub will improve transparency and increase partners' ability to effectively plan catchment delivery and identify opportunities for collaboration.

<https://east-of-england-caba-hub-theriverstrust.hub.arcgis.com/>





Panel discussion

Why are Nature-based Solutions relevant to Norfolk?

Panel members:

- **Dr Robin Price**, Director of Quality and the Environment, Anglian Water
- **Ed Bramham-Jones**, CEO, Norfolk Rivers Trust
- **Glenn Anderson**, Project Lead, Wendling Beck Environment Project
- **Wendy Brooks**, Head of Environment, Norfolk County Council
- **Lucy Lee**, UK Chief Advisor, WWF-UK



Audience Q & A



Closing remarks



Download the business case and summary:

<https://wre.org.uk/projects/norfolk-water-strategy-programme/>

Contact us:

Hannah Gray – NWSP Programme Manager nwsp@wre.org.uk