

Planning, financing and implementing large-scale floodplain restoration for multiple benefits: Insights from North Norfolk.

Overview:

Work submission date	30 th March 2025
Methodology	Technical systematic literature review
Location	North Norfolk
Summary	Assessing the potential for floodplain restoration and additional carbon sequestration potential across five chalk stream catchments within North Norfolk.
Key words	<i>Floodplain restoration, nature-based solutions, carbon sequestration, nutrient cycling</i>

Background:

WWF has a partnership with Reckitt brand Finish to support the implementation of nature-based solutions technology to safeguard Norfolk's network of chalk streams. There is a shared goal of replenishing 500 million liters of freshwater during the lifetime of partnership.

As part of this project, WWF-UK together with Norfolk Rivers Trust has an opportunity to design and deliver a freshwater advocacy project to explore the challenges and opportunities of large-floodplain restoration and promote the value and multiple benefits of wetlands when implemented at scale more widely across the UK.

The project will be split into a technical systematic literature review and a stakeholder engagement piece which will both feed into a final spatial analysis on selected catchments within North Norfolk. The work outlined for this proposal will focus on the initial technical systematic literature review.

Context:

Wetlands have been found to be one of the most effective carbon sinks on our planet, locking away carbon within plants and soils. However, wetlands also release greenhouse gases with high potent global warming potential, particularly methane and nitrous oxides. Therefore, careful monitoring and evaluation of the carbon fluxes considering catchment characteristics is required to explore the true carbon sequestration benefit of these systems.

Allowing the river system to return to a more natural state through floodplain restoration also enables the land to store greater volume of surface water during extreme rainfall events, thereby reducing the risk of flooding and providing opportunities for aquifer recharge. Alongside this, biological processes (fermentation, denitrification, phosphorus removal etc.) within wetlands can result in removal of pollutants and nutrients. In freshwater habitats and estuaries, elevated nitrogen and phosphorus levels can lead to poor water quality through nutrient enrichment and floodplain restoration of wetlands has been found to alleviate this.

The freshwater chalk streams of Norfolk are a rare and valuable habitat with huge ecological and biodiversity value. The 5 river catchments considered within the scope are the Wensum, Hun, Burn, Stiffkey and Glaven. These are chalk stream catchments in North Norfolk, therefore they have similarities in soil types, topography and hydrological regimes. They have relevance to WWF-UK's work in Norfolk (specifically multi-coastal habitat restoration and Landscape Recovery +).

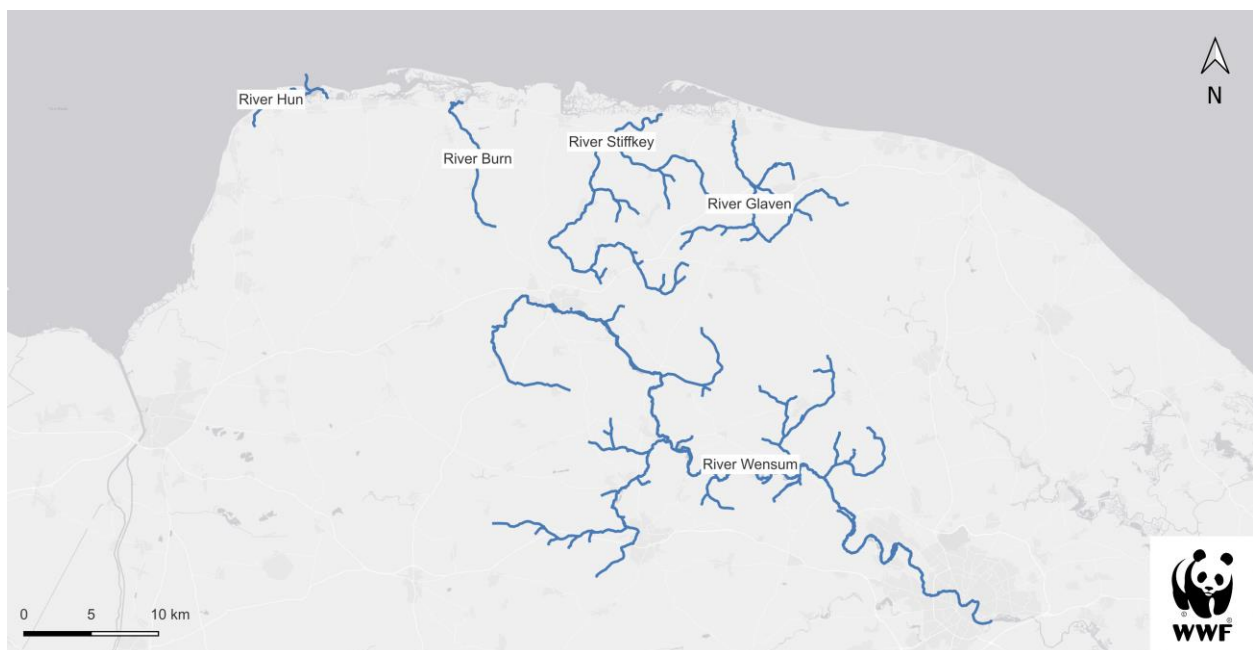


Figure 1. The rivers considered within scope.

Purpose:

We are seeking a consultant, or consultancy to undertake a scientific literature review to enable WWF-UK to understand the evidence base for the multiple benefits and trade offs for large scale floodplain restoration within North Norfolk. This will include an analysis of potential changes in GHG fluxes (emissions, sequestration and storage), the impact on nutrient cycling within the system, exploring the potential for aquifer recharge and the

impact on flood storage capacity from large scale floodplain restoration within North Norfolk. WWF-UK is not aware of any studies which have been carried out exploring these multiple benefits within the area.

The findings of this work, alongside a stakeholder engagement project, will inform a subsequent spatial analysis to identify potential large-scale floodplain restoration geographical focus areas within North Norfolk. This technical systematic review may also provide insights that can support policy advocacy on land (floodplain) management and might lend itself to academic publication (to be discussed and agreed with WWF-UK). The output will inform WWF-UK and partners to support delivery of our programmatic work within the North Norfolk region and wider Wholescape.

Main aim:

To assess, through a systematic literature review, the potential multi benefits and tradeoffs for floodplain restoration across the river catchments in scope (Wensum, Hun, Burn, Stiffkey and Glaven). This includes exploring greenhouse gas (GHG) sequestration, nutrient cycling, aquifer recharge and flood storage capacity. *To note: Assessing biodiversity is considered out of scope but could be considered in future phases.*

Outputs:

- A short inception meeting with relevant team members from WWF-UK and Norfolk Rivers Trust. This would be followed up with an outline of the proposed literature review structure and an agreed search protocol for identifying the most relevant review papers.
- A draft (systematic) literature review to help us understand the evidence base for benefits and disbenefits from floodplain restoration in similar contexts. Final report from the literature review outlining the outputs below, which should include maps of physical restoration potential and a synthesis of stacked benefits and tradeoffs at catchment scale. This should be between 30-40 pages not including references and supplementary material. Please submit this as a PDF alongside a short summary of findings.
- An annotated bibliography of papers covered by the review.
- Presentation, including a powerpoint slide deck summarising the concluding outcomes of the literature review to relevant WWF and Norfolk Rivers Trust team members, including potential areas for further research.

The final report should;

- Assess the potential multiple outcomes, benefits, and trade-offs associated with floodplain restoration efforts in comparable contexts
- Explore the floodplain habitat role in carbon flux changes and the factors which determine whether the floodplain is a carbon emitter or sink (such as habitat type, phase in evolution, time of year, condition)
- Recommend a per hectare (ha) GHG (carbon) potential for the floodplain and methodologies to track and measure GHG's as a precursor to reporting a valid per ha tonnage value
- Explore nutrient cycling processes within a floodplain system and potential benefits and trade offs
- Consider the scarcity and security of water flows and the potential floodplain restoration brings for aquifer recharge
- Explore whether the damage to Norfolk's floodplains is unique and what scale of restoration efforts would be required.
- Conclude on outcomes, benefits and trade-offs.
- Ensure that the findings are scalable to other regions of similar contexts e.g. East Anglia.

Process

WWF-UK is leading this piece of work, with close participation from Norfolk Rivers Trust. To support the delivery of required outputs we envision the following process:

- Inception meeting and proposal
- Literature search and collation of results
- Preparation of a draft report
- A meeting to agree amendments prior to finalising the report
- A presentation to WWF staff on the findings

Timeframe:

Timeframe and milestones (some flexibility may be possible upon negotiation):

DESCRIPTION	DUE DATE
Issue of RFP	09/09/24
Email confirmation of interested to submit a proposal	16/09/24

Deadline for Vendor questions	23/09/24
WWF-UK response to all questions issued	25/09/24
Deadline for electronic submissions	27/09/24
Award	14/10/24
Contract signature	25/10/24
Contract start date & Inception meeting with relevant team members from WWF-UK and Norfolk Rivers Trust	late October / early November 2024
Submission of draft report	28/02/25
Submission of final report	30/03/25
Presentation of report and findings	TBC/04/25

- Tendering process:

Please provide a written quote for the work described above by midday Friday 27th September, to Fiona Watters, WWF-UK, FWatters@wwf.org.uk.

In your response, please share your:

Service Proposal

In this section we will be looking for your service proposal, overall experience, research methodology and layout of the report outcome’.

Experience and Resources

- Evidence your organisation’s capability to provide the entire scope of research describe in this terms of reference.
- Please evidence your organisation’s expertise in providing similar studies. Please include examples of past projects.
- Please provide short biographies or CV for those who will be leading or key player in the research study and high-light how relevant this experience is to this specific research.

Research Methodology

- Propose your high level approach and methodology to the study

- Please include a high level timeline to achieve the required completion dates.
- Please describe how you provide updates, track progress and ensure success of the project?
- Explain the mechanisms in place for providing regular updates and tracking progress against agreed objectives
- Detail your approach to ethical research practices, consent, confidentiality and data protection.

Outcome

- Please detail or provide an example of how the final report will be formatted.

Financial Proposal

In this section we will be evaluating the total cost of your service and delivery of report.

- Please provide a total proposal cost - Pricing must be in clearly labelled in Pounds Sterling (£) and be inclusive of all costs.
- WWF-UK is seeking to develop a mutually satisfactory relationship with the successful supplier based on transparency and communication : Please disclose here your high level cost break down of the total price - at minimum research and study fees and outcome production material (e.g. report)

N.B The contractor's budget should include all expected expenses. The consultant will be expected to provide all their own office and communication facilities.

Please note that all submissions longer than 8 pages will be automatically discounted; therefore, link or signpost to any additional information, for example policies, statements etc.

As part of the tendering process, please confirm the following additional requests:

- You have read and are willing to work to the WWF-UK standard T&C's. Should you have any mandatory amends, these will need to be documented via a word document, which will be shared with the WWF-UK legal team for review.

- You have read and accept the WWF-UK 3rd party expenses policy.
- You have read and accept to work to the WWF-UK supplier code of conduct.
- You are willing to register on Panda Purchasing, the WWF PO & invoice system.

Please also complete the enclosed WWF Supplier Sustainable Procurement Questionnaire.

Evaluation:

All proposals will be evaluated on total cost and service levels which provide optimal benefit to WWF-UK.

The following criteria will be used for evaluation:

1. Financial and Terms Proposal 45%

- Total cost of the proposal
- Contractual terms

2. Services Proposal 45%

- Alignment between WWF-UK requirement and the vendor's capacity
- Knowledge of location(s) (of lead researchers and/or potential sub-contractors)

3. Company Profile and Values including sustainability approach 10%

- Evidence that the vendor is proactively reducing their impact on the planet.

To discuss any of the above information, or if you require accessibility accommodations in order to submit the application within the given deadline, please email: Fiona Watters, WWF-UK, FWatters@wwf.org.uk.

To submit an application, please email: Fiona Watters, WWF-UK, FWatters@wwf.org.uk with the email title '**Floodplain Restoration for North Norfolk Literature Review**' and request confirmation of receipt (NB: please follow up if you do not receive confirmation, to ensure submissions have not gone into 'junk' inboxes).