CREW CENTRE OF EXPERTISE FOR WATERS

Appendix 5:
Consultation Report – What evidence can help diversify funding for river woodlands?

Julie Rostan, Flurina Wartmann, Kerry A. Waylen

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1 Introduction

This consultation report is a product of the RivyEvi project "Creating healthy and resilient river systems across Scotland: prioritising research and development gap opportunities for river woodlands". Healthy river woodlands (RW) potentially offer many benefits to society, so are a priority for restoration and management. This project aims to identify and prioritise evidence gaps. If filled, these can help to enable the creation of future RW across Scotland. Project steps are detailed in Figure 1.

Enabling RW at scale will require the involvement of diverse groups in society. However, work for RW has typically been led by and dominated by environmental NGOs and related public sector bodies tasked with delivery of environmental policies. Prioritising evidence gaps therefore entails understanding more about the perspectives of other groups, especially from private sector actors.

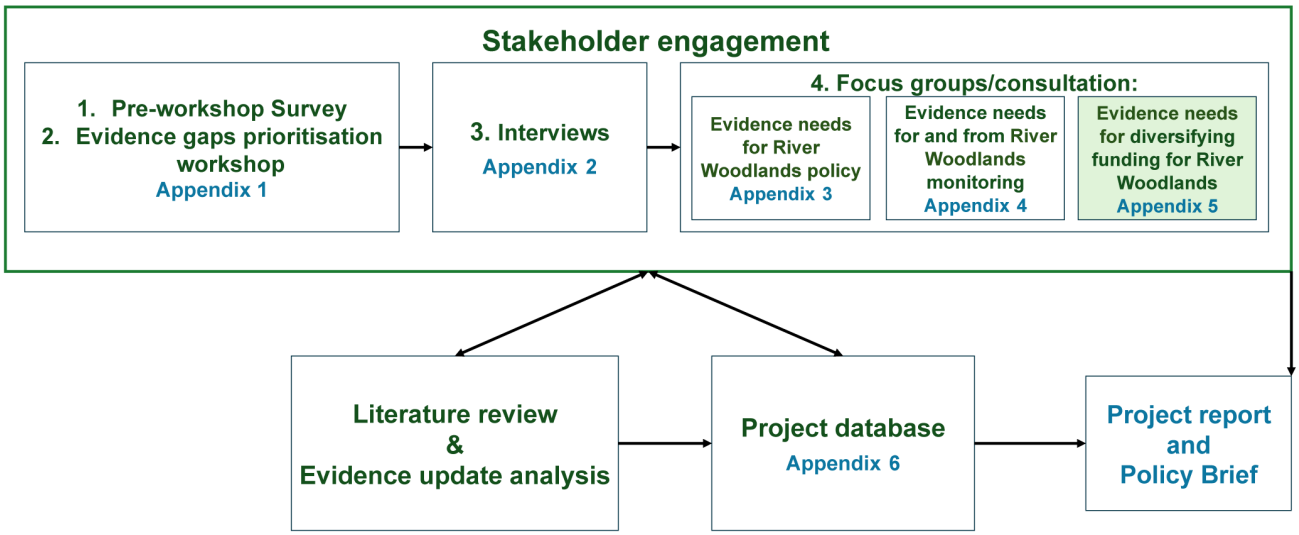

Figure 1: RivyEvi project steps and linked outputs. All the project outputs can be found on the CREW website.

2 Methods

This report is based on the four phases of engagement linked to the RivyEvi project throughout 2024. These are; a survey of experts (66 respondents), an expert stakeholder workshop (15 participants), interviews (13 participants), (Appendices 1 and 2) and written responses and comments on a draft version of this consultation report.

Annex I provides more information about these engagements, Annex II presents an appraisal of which groups benefit from healthy RW (Adapted from Ogilvy *et al*., 2022). In the following report, we synthesise the findings from across these different phases of RivyEvi engagement as well as additional engagement with experts through a consultation to understand evidence needs for that can unlock and diversify funding for RW. The consultation was disseminated widely in relevant stakeholder networks to seek feedback, from participants from or with knowledge of private sector actors who might invest in RW. An initial briefing was circulated to relevant groups, including the Riverwoods Finance Group and Scottish Nature Finance Pioneers. Stakeholders were invited to provide feedback via Basecamp (a project management and team collaboration tool), email, an MS Form or direct conversations/interviews. Questions focused on identifying evidence needs for diversifying funding, recommendations for addressing these gaps, and feedback on the briefing itself. Responses were analysed and integrated into this revised consultation report, ensuring a broad representation of perspectives from stakeholders less traditionally involved in RW restoration.

This report is part of a series of RivyEvi reports published in 2025. The main project report discusses the finding in the context of the other phases of stakeholder engagement and an update to the evidence review. The data collected as part of this consultation is available in the project database Appendix 6, tab 5.

3 Results

3.1 What benefits do river woodlands provide? And what groups might be interested in funding their restoration?

The 2022 Riverwoods Evidence Review (Ogilvy *et al.,* 2022) highlighted 11 main benefits arising from RW, such as cleaning water and sustaining soils (see Annex II). The current project is refining our understanding of these benefits, commonly known as ecosystem services, but not significantly changing it. These 11 benefits therefore provide a solid foundation for identifying groups that benefit from RW, and who may therefore be motivated to support them. These beneficiaries are listed for each benefit within Annex II; they include land managers, participants in the agri-food supply chain, purchasers of carbon and nature credits, outdoor leisure and tourism businesses, freshwater angling enthusiasts, and organisations focused on improving public health.

This is a diverse group, including some within the public sector, such as the health sector, which have not traditionally had significant involvement in RW. However, in this document we do not identify the specific needs of particular sectors or organisations, instead synthesising and reflecting on the diverse needs of participants and their backgrounds with whom we have interacted. Additionally, certain benefits are influenced more by location than by business model - particularly those related to flood risk. This indicates that a spatially specific understanding is necessary to identify the relevant stakeholders for proposals to restore RW in specific landscapes.

3.2 When and where is more evidence needed?

Although some respondents indicated that lack of evidence was not blocking investment for RW, respondents across various sectors and general comments highlighted several reasons and situations when additional information is needed to support decision-making for RW.

Rationales for improving the evidence base:

To create site-specific baselines: Most new private sector involvement schemes, such as those for carbon or nature credits, require some form of monitoring to ensure that contractual obligations are met. Collecting baseline data on the functions of riparian systems before restoration can enhance confidence in the effectiveness of new interventions. For example, understanding the carbon sequestration provided by current systems can be valuable. Such studies may also inform wider learning. However, different schemes often use varying metrics and focus on distinct issues. Furthermore, conducting site-specific appraisals for every location could be highly resource-intensive. Some respondents indicated that accredited metrics and measurements were already in place for catchment-wide restoration projects that include RW.

To be able to confidently predict effects over time: Before allocating resources to RW, most organisations will need confidence in how and when their desired benefits will be delivered. Some will also require that information to be presented in monetised terms to assess their Return on Investment (ROI). Some sectors will classify information by 'quality standards' that may exclude single-source data. While low-quality evidence can be sufficient for initial discussions and opportunity appraisals, justifying a final investment decision will often require higher-quality data.

Whenever something is perceived as risky or contentious: Worries about risks may arise from uncertainty about the benefits of investing in RW, and the 'right' design needed to achieve these. There may also be concerns about potential unintended consequences (and consequent liabilities) that deter involvement. The private financial sector may perceive nature markets in general to be too risky, and a need for more evidence on nature market liquidity and scalability that was needed to unblock investments. More blended finance and more government regulations may further help to de-risk nature markets such as those for RW.

To check the wider (dis)benefits of interventions: Many organisations prioritise investments in ecosystem restoration based on a single goal, often seeking to achieve it as efficiently as possible. While this targeted approach can yield significant benefits, it may also lead to unintended consequences, particularly for other aspects of ecosystem function that are not easily monetised or measured. For example, if carbon sequestration becomes the dominant driver behind the selection of sites and activities for ecosystem restoration, other ecosystem functions, such as biodiversity support, water regulation, and cultural services, might receive less attention or even be negatively

impacted. In the case of RW, it is crucial to adopt a holistic approach when appraising restoration projects. Therefore, it would be valuable to track the broader ecological and social consequences of any activities that are supported. By tracking co-benefits (e.g., enhanced biodiversity, improved water quality) and dis-benefits (e.g., disruption of existing habitats or hydrological processes), a more comprehensive understanding of the trade-offs between benefits and risks of supporting RW projects can be achieved. This evidence would support a more balanced perspective that ensures restoration efforts; and help reassure other potential partners that their investments will not have unintended consequences. Some respondents stated that the tracking of ecological benefits was well established with accredited metrics, but that the social impact measurements was still lagging behind the ecological metrics.

Specific topics needing more evidence:

Evidence on effect of leaky barriers in watercourses: This topic, also referred to as woody debris, was frequently discussed throughout the project. Many view it as potentially highly beneficial for both ecological and hydrological restoration; however, concerns remain about its uncertain effects, which may be influenced by design specifics. One significant risk is the potential for exacerbating downstream flooding, an outcome that stakeholders are keen to avoid due to liability concerns. This concern can deter new organisations from getting involved in RW. While the level of confidence varied among stakeholders, the overall discussion highlighted the need for greater focus on developing and communicating evidence to inform funding for leaky barriers. This would help enhance understanding and confidence, while also preventing overly optimistic assumptions.

Evidence on how river restoration supports climate change mitigation: Terrestrial carbon sequestration metrics may not be directly applicable or suitable for riparian systems. Gaining a deeper understanding of the greenhouse gas emissions in riparian areas, and their relationship with broader terrestrial environments, would help in developing more appropriate metrics. This would enable RW to be considered by stakeholders focused on carbon sequestration. Given that many organisations across various sectors are seeking to reduce their net carbon emissions (either via insetting, or offsetting by purchase of carbon credits) understanding these dynamics could help motivate and justify their financial support for RW.

3.3 What other challenges need to be addressed to unlock funding?

It is important to note that several individuals we spoke with did not consider (ecological) evidence gaps to be a major barrier.

Market evidence: One respondent suggested that there is an evidence gap for market evidence to build trust in nature markets more generally and their scalability and liquidity, and that there is a need to develop more governmental regulatory frameworks and incentives that mirror the 'carrot and stick' approach used to progress on carbon credits.

Tailor projects through co-creation: Other respondents instead suggested that making other changes might be necessary to diversify the groups involved in funding and supporting RW.

"I don't think evidence gaps are an issue in barriers to riparian woodland creation (or riparian restoration generally). The challenge I see is structuring projects that will meet the needs of potential corporate funders."

Other respondents mirrored these statements. Brokers between landowners and financial clients stated that the clients demanded projects that specifically fit their needs and aspirations, requiring those projects to be tailored to the clients from an early stage and that there was a need for co-creation.

Furthermore, one respondent from private finance suggested there was a plethora of projects and landowners willing to engage with restoration, but that there was still less demand from private finance and that that demand was only growing very slowly:

"There is a tsunami of supply [of restoration projects] met by a glacier of private finance."

The importance of brokers: Several participants also noted that having intermediaries with the capacity to broker new relationships can be crucial for enabling new partnerships and investments in RW. One of these brokers thinks of themselves like 'spiders' connecting the different actors in a net of collaboration, such as landowners, private investors, data providers and more. While evidence can play a role in this process, achieving this primarily depends on the availability of skilled brokers who can forge new connections and help identify key contacts, and for evidence on nature market scalability to attract more private finance.

Review existing funding mechanisms: One respondent also suggested that to diversify funding, there was a need to review existing funding mechanisms, such as the Woodland Carbon Code and the Woodland for Water Code, and to strengthen relevance and value of riparian woodland within them. These codes could also be analysed for what evidence was being used, what the gaps where and importantly what the demand was for these codes. Flood management funds also need reviewed and what role RW play within them, and if there was scope to develop new funding mechanisms where insurers directly finance RW to reduce flood risk for their customers, for instance. Similarly, another existing funding avenue was mentioned as agri-environmental schemes, such as the Agri-Environmental Climate Scheme (AECS), where establishing and managing RW could be incentivised.

The previous observations by some respondents were that evidence was not blocking finance notwithstanding, there are areas that relate to evidence, but relate more to how knowledge is presented and communicated, rather than suggesting new evidence needs to be collected.

Using evidence in market governance: One participant suggested that already-existing evidence needed to be better or more visibly used in governance frameworks designed to enable private sector transactions for environmental goals. For example, certain evidence could be *"endorsed"*, or used to set standards and benchmarks, as *"this will help establish more market infrastructure, standardise approaches, develop desk-based tools for other ecosystem services like with the woodland code calculator or BNG [biodiversity net gain] metric"*.

Using evidence in policy and programme development: Some policy areas – including those that have not typically been seen as environmental – could be updated to respond to the importance of RW for providing societal benefits. Potential policies and schemes mentioned include Forestry Grant Schemes and agricultural policy making.

Challenging the status quo: Any change is likely to take effort, and to produce consequences that benefit some but not others. There were some observations that proposals for RW can face resistance from certain groups, such as those land managers who potentially face losses in production or need to alter their practices. There were also observations that much of Scotland's tree-free landscapes have been heavily modified, affecting geomorphology and biodiversity, yet these landscapes are culturally accepted and celebrated. This has two related implications. Firstly, some actors, especially land-managers may require support to make transitions. Secondly, some of the prevailing norms will need to be challenged to realise transformational changes to foster more sustainable landscapes. Scientific evidence can play a key role in this, helping to bring stakeholders on board and justify the need for changes in riparian and landscape management.

4 Conclusions

Our engagement with diverse stakeholders confirms that for some stakeholders more evidence can help diversify the organisations that get involved in supporting and financially supporting RW. In particular, it is useful to provide information that provides more benefits compared to a baseline, can enable Return on Investment (ROI) to be assessed; and information that reduces the perceived risks of financial involvement, by providing evidence on potential negative effects and unintended consequences. Exactly what is needed to do this will, however, be different for organisations in different sectors and locations. However, some stakeholders indicated that lack of evidence is not the main barrier and that changes to regulatory frameworks were more needed to unlock private or blended finance than evidence.

Recognise the diversity of sectoral needs: It is important to distinguish between the interests and information needs of diverse groups, in order to effectively motivate and justify their involvement. In particular, 'the' private sector is not a single entity but comprised of many and varied organisations. Every sector has distinct focal interests, and varying levels and types of information that they consider necessary to make informed decisions. One option for future work is to focus communication on priority topics related to specific sector(s), especially those who currently do not have a strong presence in conversations around RW, such as the healthcare sector. That said, the specific context and geographic location of an organisation also matters, creating unique evidence needs and interests that would require further interaction with research and researchers in order be satisfied.

Although priority needs will vary by different sectors and organisations, two further key topics from previous RivyEvi project interactions emerged as particularly important for diversifying funding.

More evidence is needed on the topics of carbon fluxes and leaky barriers: A deeper understanding of carbon flow in riparian systems, as well as the fluxes between land and water, is essential to build confidence among those seeking to sequester carbon, for instance through purchasing carbon credits or via 'insetting' (offsetting on their own land). Similarly, many organisations – typically at a more local level – are interested in reducing their exposure to flood risks. However, they may need more assurance that the measures they support will effectively reduce risks without creating new ones.

Prioritise communication of existing evidence and information: What constitutes an 'evidence gap' is not always necessarily linked to an actual research gap in science. For example, sometimes information may be available but not easily synthesised or accessible; or an actor may simply be unaware of it. This is particularly common for groups and organisations that are relatively new to considering RW, as many private sector organisations are. They may be unaware of the evidence review, for example. They may have concerns about uncertain effects of RW that are actually reasonably well understood by scientists (conversely, there may occasionally be some stakeholders who have a false degree of confidence in a topic, having just heard a single viewpoint on it). The topic of leaky barriers illustrates this, with a few stakeholders having very positive views of the topic – not always matched by science – and others with very deep concerns about the new downstream liabilities that could arise from installing them.

There are thus some 'gaps' in understanding, which can be filled by better communicating what we already know.

Acknowledgements

We thank all the survey respondents, as well as our interview, workshop, focus groups and consultation participants in RivyEvi for sharing their views and time. We gratefully acknowledge the input and support of the project Steering Group. This report is a product of the RivyEvi project "Creating healthy and resilient river systems across Scotland: prioritising research and development gap opportunities for river woodlands" project CRW2023_02 funded by Scotland's Centre of Expertise for Waters. KAW has also drawn on research in the Scottish Government Strategic Research Programme project JHI-D2-2.

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Annex I

The RivyEvi project used several different methods to collect stakeholder views about diversifying funding for RW. Ideas about this subject were sometimes part of broader conversations about evidence and RW. All data were collected and managed in accordance with GDPR, and for all of these conversations and engagements prior ethical approval was provided the James Hutton Institute Research Ethics Committee.

1. **Survey of Experts:** A survey collected input from 66 respondents, gathering insights on barriers, priorities, and knowledge gaps related to RW focusing on gaps initially identified by the Riverwoods evidence review (Appendix 1).
2. **Expert Stakeholder Workshop:** A one-day workshop attended by 15 participants built upon the survey results to refine and prioritise identified evidence gaps (Appendix 1).
3. **Interviews:** A series of 13 semi-structured interviews engaged stakeholders from under-represented sectors, such as private sector, farming, planning, and health, to broaden the scope of perspectives (Appendix 2).
4. **Consultation and feedback on a draft report, in late 2024.** The insights from these phases, were analysed qualitatively and used by the authors to develop an initial version of the present report. The draft report was shared by email to RivyEvi stakeholders, in the Scottish Forum for Natural Capital 'basecamp' discussion forums related to nature finance, and featured in the December newsletter of the Ecosystem Knowledge Network. Recipients were invited to provide feedback via a simple Microsoft Form questionnaire, email or phone discussion. The Microsoft Form containing the following questions: *(i) What evidence would help with diversifying funding for river woodlands? (ii) What recommendations do you have for addressing these evidence gaps? And (iii) Do you agree or disagree with points raised in the report? Please provide details.* In total 5 comments were received in feedback.

Responses from all these engagements were collated and qualitatively analysed to produce this final report.

Annex II

Table 1: Appraisal of which groups benefit from healthy river woodlands. Table adapted from https://www.riverwoods.org.uk/resource/riverwoods-evidence-review/ with addition of left hand column to identify potential beneficiaries. Widespread benefits to general public not shown. Local authorities are tasked as representing local populations, as well as tackling many societal challenges; and may also be relevant.

River woodland benefit	Detailed functions and strength of evidence				Direct beneficiaries other than the general public
	Very strong	Strong	Moderate	Weak	
Clean water	Stabilising riverbanks	Controlling nitrogen pollution Controlling phosphorus pollution Controlling excessive algae & periphyton Capturing sediment pollution Capturing pesticides		Capturing pathogens	• Drinking water provision (Scottish Water) • Anglers • Recreational instream and riparian water users • Water-using industries including, whisky production, water abstraction for farming.
Conserve Biodiversity & Ecosystems	Supporting aquatic processes	Supporting other species Supporting river hydro-morphological processes and diversity	Providing habitat connectivity & supporting genetic diversity		• Outdoor leisure & tourism sector • Education & Research
Climate action: water stress & drought adaptation		Modifying local climate conditions: shading and cooling air	Modifying local climate conditions: hydraulic lifting	Maintaining water yields & low flows	• Water-using industries including land-management, whisky production.
Climate action: Flood risk alleviation			Slowing the flow Reducing coarse sediment delivery and siltation of channels		• Any organisation located with at-risk infrastructure, often located in riparian zones, such as distilleries. (Re)Insurance.
Climate action: Carbon storage			Carbon sequestration & carbon storage		• Actors seeking to offset or inset carbon emissions
Clean air		Capturing air pollutants			• Potentially, tourism and leisure
Sustaining soils		Reducing soil loss		Improving soil health	• Land-managers and agri-food supply chain (food processors, retailers)
Good human health		Exposure to river woodlands Cooling air			• NHS, Public health Scotland • Leisure & tourism sector
Wild fish and angling		Regulating local climate through shading	Providing food for fish	Improving habitat for fish with large woody material	• Anglers, riparian beat owners
Sustain food production		Supporting pollination Providing shelter & shade for livestock	Providing fodder for livestock		• Land-managers and agri-food supply chain (food processors, retailers)
Clean energy Biomass		Provision of biomass for energy			• Especially rural and energy-intensive businesses

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