

## Appendix 2: Interview Report – Challenges and evidence needs for river woodlands

**Julie Rostan, Keith Marshall, Kerry A. Waylen, Flurina Wartmann,  
Susan Cooksley, Kerr Adams, Josie Geris, Mark Wilkinson, Marc Stutter**





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# 1 Introduction

The RivyEvi project ([Creating healthy and resilient river systems across Scotland: prioritising research and development gap opportunities for river woodlands](#)) aims to update and prioritise the research and development (R&D) needs identified in the prior 2022 Riverwoods Evidence Review (Ogilvy *et al.*, 2022). This project is based on a phase of evidence review and extensive stakeholder

engagement. The RivyEvi project phases are described in Figure 1.

This report summarises the results of the interview phase of the stakeholder engagement following the survey and the workshop (Appendix 1). Summarised data are available in the project database (Appendix 6).

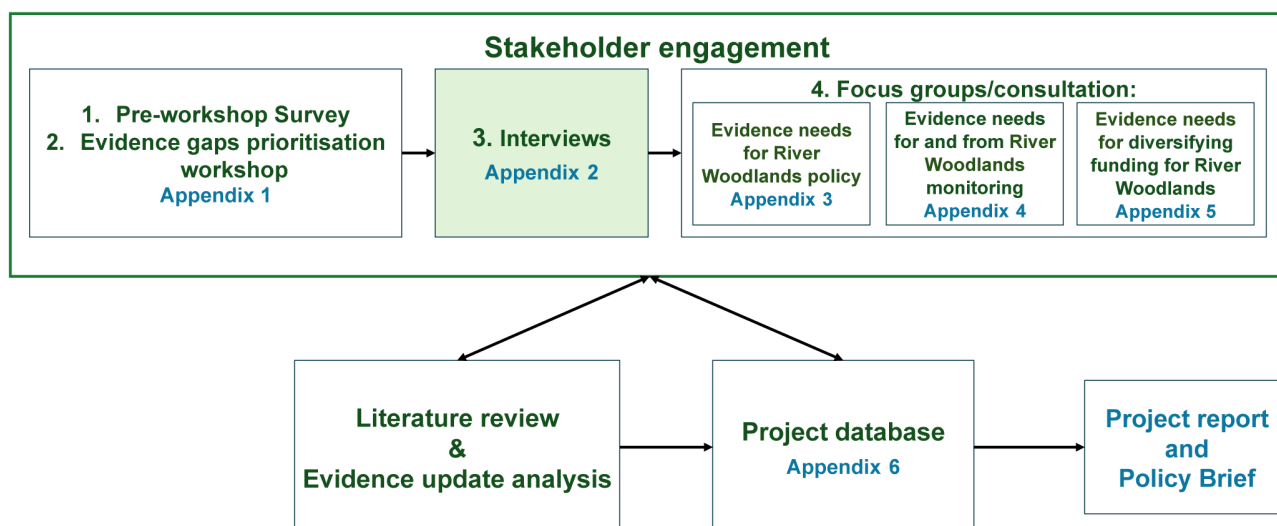


Figure 1: RivyEvi project steps and linked outputs. All the project outputs can be found on the CREW website.

## 2 Interview methods

The interviews were conducted following the RivyEvi survey and workshop that aimed to prioritise an initial list of evidence gaps identified in the 2022 Riverwoods Evidence Review across various benefit areas. The purpose of the interviews was to engage a broader range of stakeholders, including those less familiar with specific evidence gaps, necessitating more in-depth conversations about their needs and challenges. Rather than focusing solely on a predefined list of gaps, the interviews explored what evidence would be required to improve stakeholders' involvement in river woodland (RW) restoration and address their current challenges.

Stakeholder groups identified as underrepresented in the workshop included farming and land use, nature finance and the private sector, planning, and the health sector were invited to participate. The interviews also aimed to expand on the initial input provided by restoration practitioners. Interviewees were selected from the project's stakeholder list, supplemented by recommendations from the

research team and the project steering group. Invitations were sent to 34 selected stakeholders, with reminders issued when necessary. Ultimately, 13 interviews were conducted between September and November 2024.

The interviews followed a semi-structured format, guided by the following questions:

- What is your and your organisation's involvement with river woodlands?
- What is currently limiting this involvement? What are the main challenges you are facing?
- What evidence would your organisation need before starting a project or becoming involved in one? What evidence do you wish you had before becoming involved?
- What evidence would help you improve or overcome specific challenges in your work?

While the primary focus of this project is on identifying evidence needs and priorities, understanding the broader challenges faced by

stakeholders in RW restoration provides crucial context. During the interviews, participants were asked about the key obstacles they encounter, consistently with the approach used in the survey and workshop. All interviews were conducted via Microsoft Teams and audio-recorded with participants' consent. Each session lasted between 30 minutes and one hour. The recordings were transcribed and analysed using thematic analysis to identify key patterns and themes in the responses. The different areas focused on for the thematic coding were: general challenges faced

by stakeholders involved in RW, areas of evidence needs (whether directly or indirectly mentioned), as well as monitoring, policy, public funding, private finance, social acceptability and a space for other new areas of discussion.

**We should note that the interview sample does not intend to be representative of entire sectors. It aims to present in depth examples and perspectives of people in specific sectors of interest.**

## 3 Interview results

An anonymised summary of the interview findings is available in the project database (Appendix 6 – tab 3). The results of the interviews are also discussed in the context of the other stakeholder engagement phases and the evidence review in the main project report.

### 3.1 Interview participants

Thirteen interviews were conducted with participants belonging to categories of stakeholders available in Table 1.

### 3.2 Challenges faced by interviewees with regards to river woodlands

The challenges stated by the participants revealed the importance of structural element and context to better understand evidence needs for RW. These challenges are reported below according to themes. We should note that some of these challenges linked directly to evidence needs and, in this case, they are reported in section 3.3.

### Lack of funding

The ecological specificity of RW as well as a lack of long-term funding emerged as a central issue for many participants. *“For riparian woodlands one of the challenges is that they are often below the threshold for woodland grant schemes eligibility, because they are long and linear.”* (INTERVIEWEE 10: RESTORATION PRACTITIONER).

Current reliance on short-term grants is seen as insufficient for the comprehensive planning, execution, and monitoring required for successful restoration projects. Some interviewees suggested exploring private investment as a potential solution, though they also noted significant challenges in aligning private sector interests with ecological goals. One participant reflected: *“We’ve had some public funding previously, but it’s hard to keep these going long-term without more support.”* (INTERVIEWEE 1: NATURAL SCIENCE/PRIVATE SECTOR CONSULTANCY).

**Table 1: Description of the different sectors of the interviewees and focus. (There are some overlaps between sectors and expertise).**

Sector of interest	Number of interviewees	Specific focus and number
Private sector/business and nature finance	5	1 Consultancy Natural science - practical restoration 2 Investors in practical restoration 2 Consultancy Nature finance & monitoring
Local authorities	1	Planning
Farming	2	Policy and local farming practices
Restoration practitioners	3	1 Ecology 1 Citizen science 1 Planning
Human health	2	1 Academia Health and Nature - green prescribing 1 Public sector - Health and Climate change

## Community engagement and acceptance

Community buy-in is widely acknowledged as essential for successful restoration efforts. Without clear communication of benefits, it is perceived that some people may resist or misunderstand these projects. However, participants also stressed the importance of integrating local ecological knowledge and tailoring communication strategies to address community concerns and priorities. *“The locals know the land better than anyone... but it’s rarely taken into account.”* (INTERVIEWEE 7: FARMING SECTOR).

A participant also underlined the high reputation stakes for projects, insisting on the balance of initiatives being carried out and monitored thoroughly alongside ongoing engagement and transparency: *“One project done badly can damage future funding or acceptance of other projects entirely.”* (INTERVIEWEE 1: PRIVATE SECTOR/CONSULTANCY).

Evidence demonstrating tangible community benefits, such as improved local biodiversity or reduced flood risk, could help foster acceptance and active involvement. In section 3.3 we highlighted how some elements of community engagement and acceptance link to potential evidence needs.

## Policy alignment and regulatory challenges

The disconnect between national policies and local needs emerged as a recurring theme. Stakeholders highlighted the need for evidence to be actionable and easily accessible to inform policy decisions in a practical and timely manner. This includes improving policy implementation through clearer regulatory guidance and greater alignment with on-the-ground realities. Frequent shifts in policy terminology, and frameworks were specifically noted as challenging. One participant noted some gaps around “Nature Networks,” which was perceived as creating confusion, and missing some central local consideration. *“Nature Networks didn’t include local designations, and it didn’t consider any of our other networks. River corridors is a completely obvious place to start... It seems to me that some important things are not getting properly considered there.”* (INTERVIEWEE 6: LOCAL AUTHORITIES/PLANNING).

Navigating various policy frameworks is often perceived as complex and time-consuming. One stakeholder emphasised the critical role of the planning application process in restoration projects, highlighting that project developers may underestimate the time required and sometimes

lack awareness regarding its broader implications. Simplifying and better information about these processes — while ensuring compliance with regulations and alignment with ecological objectives — could enhance the feasibility of restoration projects for local authorities and land managers. *“Planning can be complex, and even seemingly small details matter. [...] Early consultation with planning authorities and other stakeholders helps anticipate these hurdles.”* (INTERVIEWEE 10: RESTORATION PRACTITIONER).

## Monitoring and knowledge exchange

Despite the wealth of existing data and experience, the lack of effective knowledge-sharing mechanisms was frequently highlighted. Stakeholders pointed out that valuable insights from past projects often fail to reach practitioners due to limited capacity, funding, or structured networks for exchange. The lack of consistent monitoring and feedback mechanisms was seen as a major gap in current restoration efforts. Without systematic follow-through, stakeholders struggle to evaluate the long-term effectiveness of projects, undermining the ability to refine approaches or secure further support. A call for structured platforms for knowledge exchange was prominent, with stakeholders advocating for more opportunities to share best practices and lessons learned across projects. *“I think we need to start bringing in more standardised reporting with standardised units to help tell the story from impactful nature metrics all the way through to ecosystem services-type reporting, so companies understand what they’re investing in.”* (INTERVIEWEE 4: PRIVATE SECTOR/CONSULTANCY).

## 3.3 Evidence needs for river woodlands

### 3.3.1 Various approaches to discussing evidence

The interviews began with broad questions about participants' involvement and experience in RW restoration, as well as the primary challenges they faced in this context. For some, these discussions naturally led to considerations of evidence needs. For example, conversations on biodiversity net gain (BNG) and invasive non-native species (INNS) often highlighted gaps in current management possibilities and tools, with one participant stating: *“The catchment has a massive giant hogweed problem that needs a long term approach and you know we’re working on that but biodiversity the tools for measuring biodiversity net gain doesn’t*



*lend itself to securing funding to work on those problems [...] current metrics do not enable long term work which is obviously what's needed on invasives and that's an issue for our river systems."* (Interviewee 6: Local authorities/planning).

Some participants expressed a lack of confidence and hesitation when the conversation turned to evidence, often attributing this to their non-scientific backgrounds or limited familiarity with current scientific literature. One participant noted, *"I think I can identify challenges but not necessarily turn those into evidence needs for you if you see what I mean."* (INTERVIEWEE 6: LOCAL AUTHORITIES/PLANNING). Conversely, some participants had clear and specific ideas about information gaps and the improvements needed to advance their work usually reflecting on an academic perspective or familiarity with the scientific literature.

It was notable that none of the interviewees mentioned a lack of evidence as a major barrier, some underlining that overall knowledge was sufficient in their work. For example, one participant stated, *"Maybe I've got slightly rose tinted glasses because I'm an ecologist. I think we probably know a lot of the information and have a reasonably good understanding of the kind of processes and things that are involved and the benefits [...] But I think that some of the difficulties lies around the fact that there are, either genuine or perceived, lack of convincing evidence by third parties."* (INTERVIEWEE 3: PRIVATE SECTOR/UTILITIES). Another interviewee emphasised the need for communication and application rather than additional data collection. *"I couldn't say like oh there's a massive gap here because I don't know what has already been done. But I think it's more a question of taking those individual research projects or trials and like communicating them to the right people."* (INTERVIEWEE 8: FARMING SECTOR).

From the thirteen conversations, multiple areas of evidence needs and other discussion points around evidence were raised. We summarise in Table 2 evidence discussion points per sector and discuss in the followings sections evidence needs across emerging themes.

### 3.3.2 Benefits and impacts of river woodlands

Many of the evidence gaps identified in the interviews aligned with priorities established in the survey and workshop. One key area was the demonstration of biodiversity benefits and trade-offs, particularly for sensitive species. Participants emphasise that clear, robust data in this area

could increase confidence and encourage future investment. Some interviewees raised concerns about potential negative impacts on specific species (e.g., lichens, waders) and the general fragile and complex ecosystems, highlighting the importance of balanced evidence. Gaps were also noted in managing INNS and their management in restoration contexts. *"With lichens as well one of the queries was about if you've got old trees lichens, [...] is there ecological continuity between them to maintain those populations or is there a lot of younger trees or other species just coming in or crowding things out, or providing too much shade. There might be negative impacts from dense woodland as well as positive ones."* (INTERVIEWEE 3: PRIVATE SECTOR/UTILITIES).

Another recurring theme was the impact of RW on flood risk and the role of large woody debris (LWD). While some interviewees were convinced of the benefits of LWD, others highlighted the need for studies that quantify these effects, particularly in balancing benefits like flood attenuation with challenges like clogging infrastructure. One interviewee reflected, *"For large woody debris and the general perception, the general view is that that isn't a problem. Like I say trying to persuade some of our stakeholders that there are not any issues around that is a bit more challenging but perhaps something around...something to fill in that kind of evidence gap would be really helpful."* (INTERVIEWEE 3: PRIVATE SECTOR/UTILITIES).

While participants acknowledged the multiple benefits of RW – biodiversity, flood management, and carbon sequestration – they called for more evidence on how these benefits and potential unintended impacts interconnect. More studies on multi-benefit outcomes were seen as essential to strengthening policy support.

### 3.3.3 Practical Implementation: optimising tree placement

A significant theme was the need for evidence to optimise tree placement. This includes data on preferred environmental conditions, suitable tree species, and habitat connectivity. Similarly, setting restoration targets, such as tree density and species composition, emerged as a key area of need. One participant spoke in detail about the need to measure riparian restoration in terms of the extent and structure of natural areas, stressing that projects need to define how much of a riparian zone should be functioning naturally for it to be effective, underlining the central role of long-term

Table 2: Summary of the evidence needs per interviewee sectors.	
Sector	Evidence needs and broader evidence discussion points
<b>Private/business sector</b>	<ul style="list-style-type: none"> <li>• Evidence gaps in specific benefits of RW (e.g., flood risk, biodiversity).</li> <li>• Evidence on the negative impacts of river woodlands.</li> <li>• Better baseline data on river processes, temperature, and water quality classifications.</li> <li>• Guidance on where to place trees to achieve specific benefits.</li> <li>• Need for more precise and locally accurate data on optimal locations to promote infiltration, temperature mitigation, and habitat connectivity.</li> <li>• Identification of species best adapted to specific sites.</li> <li>• Comparative evidence on different woodland types and their effects on flood and drought mitigation.</li> <li>• Biodiversity effects on specific species and complex relationships with interventions (e.g., beaver reintroduction, tree planting).</li> <li>• Integrated ecological-finance mechanisms for sustainable projects.</li> <li>• Research priorities should be data-driven, focusing on quantifiable outcomes (e.g., effectiveness of river management practices).</li> <li>• Development of measurable metrics (e.g., canopy cover, species composition) for monitoring restoration outcomes.</li> </ul>
<b>Planning</b>	<ul style="list-style-type: none"> <li>• Evidence gaps not seen as a major issue but require better communication of existing evidence to policymakers and communities.</li> <li>• Evidence for effective consideration of invasive non-native species (INNS).</li> <li>• Need for more effective tools/metrics for biodiversity accounting and habitat connectivity.</li> </ul>
<b>Farming</b>	<ul style="list-style-type: none"> <li>• Evidence not perceived as a major gap; primary challenges are resource constraints and communication issues.</li> <li>• Duplication of research, unclear priorities, and lack of awareness about existing evidence, poor communication hindering progress despite existing data.</li> <li>• Need for understanding cultural barrier to RW.</li> <li>• Advocates for collaborative approaches aligning evidence, funding, and policy incentives.</li> </ul>
<b>Restoration practitioners</b>	<ul style="list-style-type: none"> <li>• Need for pre-project baseline data (e.g., water quality, temperature) despite cost challenges.</li> <li>• Studies on catchment-based solutions and their large-scale impacts.</li> <li>• Gaps in biodiversity impacts on invertebrates, waders, and other species.</li> <li>• Evidence on planting conditions, species compatibility, and site-specific habitat needs.</li> </ul>
<b>Human health</b>	<ul style="list-style-type: none"> <li>• Evidence on the benefits of increased access and volunteering in conservation.</li> <li>• Research on economic benefits of nature-health interventions (e.g., cost-benefit analysis and economic arguments to scale projects).</li> <li>• Gaps in localised evidence reduce healthcare confidence in nature prescriptions.</li> <li>• Research needed on the potential adverse effects of increased accessibility to natural spaces (e.g., litter, carbon emissions from transport).</li> </ul>

monitoring: *“Even at 10 years, you're not going to have a fully formed forest, but you'll probably have multiple age classes of species, some natural regeneration, and different strata emerging in the system. You have to understand these longer trajectories to recovery. We know that the endpoint of a functioning riparian mature woodland won't happen for decades, but within the timeframe of monitoring, you can track indicators to see if it's on track.”* (INTERVIEWEE 5: ACADEMIA/CONSULTANCY).

Interviewees highlighted the importance of base line site-specific data for practical implementation. This includes localised information on water quality, hydrology, and specific ecosystems. *“Ideally, we'd have consistent data for years before projects start, like water quality and temperature data, but this is costly and not always feasible. [...] Some of data on water quality and temperature taken consistently on a number of key rivers for example. This would make monitoring much more consistent.”* (INTERVIEWEE 10: RESTORATION PRACTITIONER).

As the previous quotes illustrate, conversations often led to the topic of monitoring and feedback mechanisms to support adaptive management. While monitoring was flagged as a gap in the survey, interviews underscored the distinction between project-specific monitoring (to assess individual projects outcomes) and broader monitoring frameworks (to enable comparability across projects). Longitudinal studies tracking biodiversity, flood resilience, and water quality improvements were identified as particularly important across the interviews. As well as tracking socio-economic effects over time. Such evidence would help justify broader health and environmental initiatives linked to nature restoration.

### 3.3.4 Economic viability and private investment

The potential for sustainable funding through private investment was frequently mentioned. Participants also stressed the need for research on sustainable financing models, including integrating private investment into public initiatives. One interviewee underlined the need for better evaluation the ecological, social, and economic benefits of RW restoration seen as critical for gaining the support of policymakers, private finance and communities. This includes evidence on measurable benefits of restoration at smaller scales. *“Private investment could play a role, but we need clearer evidence to attract it” – “There’s a big gap in evidence around the actual effectiveness of some of these interventions... It’s hard to quantify the exact benefits of these measures.”* (INTERVIEWEE 2: PRIVATE SECTOR – INVESTING IN RESTORATION).

Participants from the health sector pointed to a lack of Scotland-specific research as a key limitation. This gap affects the confidence of practitioners in recommending nature-based interventions. For example, there was concern over the potential negative impacts of increased access to natural spaces, such as littering or carbon emissions from travel to rural areas. While health sector interviews often referred to environmental restoration broadly, they highlighted the need for evidence on the long-term health benefits of exposure to blue-green spaces (such as RW), including both physical and mental health outcomes.

One challenge mentioned with regards to private finance was the risk of “perverse incentives” in restoration. The complexity of nature finance was emphasised noting the different forms of finance (public, philanthropic, private) and the challenges of creating appropriate market mechanisms. Private investors looking for financial returns add an

economic layer to ecological decision-making, were seen as complicating the process. *“The challenge is to create financial mechanisms that don’t generate perverse incentives — projects that optimise certain ecosystem services for revenue, potentially to the detriment of others.”* (INTERVIEWEE 5: ACADEMIA/CONSULTANCY).

### 3.3.5 Community acceptance and engagement

Acceptability emerged as a consistent theme across interviews, either as an explicit evidence gap or as a broader challenge. Several participants noted the importance of demonstrating community benefits to increase local acceptance and encourage active involvement in restoration efforts. A key point raised was the need for evidence on community attitudes, perceptions, and effective engagement strategies. One participant involved in funding restoration project mentioned *“It’s one of the questions we ask projects in terms of do they have opportunities to engage local communities for example: opportunities to provide, education, raise awareness, things like that.”* (INTERVIEWEE 2: PRIVATE SECTOR – INVESTING IN RESTORATION).

Socio-cultural barriers were also mentioned as a potential evidence gap. *“There’s lots of things that we know are good for biodiversity, good for the climate, bring benefits for the farming business itself. But there’s still low uptake, they’re very uncommon in Scotland even though we know all the benefits. So I think if anything, research into those social and cultural barriers as to why they’ve not being up taken is probably quite valid.”* (INTERVIEWEE 8: FARMING SECTOR). Understanding those factors alongside tailored communication and addressing policy and funding barriers was suggested as an important step for encouraging land managers and farmers uptake. For farmers, resource constraints were highlighted as more significant than evidence gaps. As one participant explained, *“It’s not that they don’t have the information; it’s that they don’t have the time, resources or energy to act on it”* (INTERVIEWEE 7: FARMING SECTOR).

The relationship between active engagement – such as community volunteering or citizen science – and long-term behaviour towards nature was seen as an underexplored area. Evidence on whether such involvement yields added benefits for mental health and sustained pro-environmental attitudes is still limited. Participants emphasised the importance of quantifying how engagement fosters long-term stewardship and ecological awareness. *“I wonder if any engagement actually helps in changing people’s mindset... volunteering, community*

*gardening if any of those things potentially help. [...] If somebody is more connected to nature, would they want to do things that protect nature?"* (INTERVIEWEE 13: PUBLIC SECTOR / HEALTH). *"People get really involved and interested [in citizen science], and they develop a commitment to looking after their patch."* (INTERVIEWEE 9: RESTORATION EXPERT/ CITIZEN SCIENCE).

### 3.3.6 Evidence sharing and applicability

Participants frequently noted that existing evidence is not effectively shared or integrated into practice, emphasising the need for improved mechanisms to consolidate and disseminate both existing data and new findings. One participant remarked reflecting on a successful project they heard of *"What is the process is for disseminating that out*

*to policymakers? And saying okay if this works, let's make this an official policy. [...] It's just how you get it out to the people that need to hear it."* (INTERVIEWEE 8: FARMING SECTOR).

Knowledge-sharing platforms were identified as a key area for improvement. Participants highlighted the need for tools or systems that enable stakeholders to learn from restoration successes and failures in other regions. This would help avoid redundant trials and errors, saving time and resources. One interviewee noted, *"The plan is to be open about these projects, showing what's working and, importantly, what isn't. In previous projects, like over a 10-year period, we've learned from things that didn't work. We want both corporates and landowners to be vocal about what's happening—what's successful and what isn't."* (INTERVIEWEE 4: PRIVATE SECTOR/CONSULTANCY).



## 4 Discussion

### 4.1 Relationship to evidence: diverse perceptions across stakeholders

Stakeholders exhibit varied perceptions of what constitutes necessary evidence, as well as the sufficiency of existing data. This reflects the findings from the workshop and survey, where evidence needs were highly specific to each sector and even to individual respondents. While most interviewees acknowledged areas where additional evidence would be beneficial, there was a consensus that lack of evidence does not critically hinder RW restoration. Participants emphasised that restoration should not be delayed by an overly cautious approach, as risks can often be assessed, and the potential benefits outweigh the downsides. However, there is a clear need to leverage existing projects within Scotland to generate more locally relevant data.

### 4.2 Pathways to address evidence gaps

#### 4.2.1 The need for tailored, site-specific data

Effective restoration depends on localised evidence that accounts for unique ecological, hydrological, and social conditions. Participants highlighted the limitations of general data in addressing site-specific challenges, such as species compatibility, tree density, and hydrological impacts. This reinforced the importance of contextualising evidence gaps, with participants emphasising that localised challenges require targeted solutions. The nuanced discussion of site-specific versus generalisable data highlighted the importance of ensuring research designs meet both local and systemic needs as already underlined in our survey and workshop report.

Although the demand for entirely new research is limited, participants highlighted the need for existing data to be more applicable to practical contexts. For instance, combining datasets or improving the precision of data could enhance their relevance for local-scale decision-making, such as selecting suitable restoration sites.

Much of the feedback pointed toward reformatting evidence to be more tailored and actionable. Examples include site-specific recommendations, habitat connectivity mapping, and identifying optimal species for planting. Such refinements would ensure evidence serves restoration objectives more effectively and can be directly applied to real-world scenarios.

#### 4.2.2 Bridging research and policy

For RW to contribute meaningfully to Scotland's biodiversity and resilience goals, research must be both accessible and policy relevant. Many participants observed that existing evidence often lacks actionable insights and is misaligned with the priorities of governments and local authorities. *"They [Scottish Government] want us to create this Nature Network which is just like lines on a map really, most of which we have absolutely no control over because it's agriculture, or forestry, or something that as a Local Authority we have no powers to control."* (INTERVIEWEE 6: LOCAL AUTHORITIES/PLANNING).

A recurring suggestion was to document and disseminate best practices and successful case studies. Such resources would not only foster consistency in approaches across regions but also help inform evidence-based policies. There is a need to investigate current policy challenges and associated evidence needs, ensuring that research outputs are tailored to address real-world regulatory and implementation barriers effectively. We conducted a focus group discussion on these issues presented in Appendix 3.

#### 4.2.3 Economic viability and private investment

Securing sustainable funding for RW restoration requires robust evidence on economic benefits. Participants suggested research into innovative financial models, such as integrating private investment into public initiatives. This connects to findings from our survey where stakeholders highlighted the need for evidence clarifying financial metrics and addressing investor perceptions of risk. This could unlock new funding streams while reinforcing the case for restoration stressing the importance of demonstrating economic returns to attract private investors. Cost-benefit analyses of restoration projects, including social and ecological returns, could make a compelling case to policymakers and investors. Although it was hinted that demonstration of success would increase likelihood of further investments which reinforces the importance of monitoring. Following these interviews, we explored the needs for diversifying funding for RW in a stakeholder consultation presented in Appendix 5.



#### 4.2.4 Monitoring

While the benefits of RW restoration are well-documented, respondents stressed the importance of rigorously verifying claimed outcomes to avoid unintended consequences. This includes ensuring that projects do not inadvertently harm certain species or ecosystems. Participants called for greater investment in long-term monitoring to provide data on the broader benefits of restoration, such as biodiversity, flood resilience, and carbon sequestration. Long-term studies would support adaptive management practices and strengthen the case for sustainable funding, including private investment. Standardised methods and shared platforms for data collection and dissemination were also proposed as critical components of effective monitoring efforts.

*“Monitoring is crucial but hard to fund. It’s difficult to track impacts across decades, and it requires sustainable, scientifically robust methods, which aren’t easy. Innovations in remote monitoring and technologies like eDNA could streamline the process and offer long-term data collection solutions.”* (Interviewee 11: Restoration practitioner).

Following the interviews, we conducted a focus group dedicated to monitoring for RW which is detailed in Appendix 4.

#### 4.2.5 Community engagement and acceptability

Participants noted that RW restoration delivers benefits beyond biodiversity, including flood management, climate resilience, and improved

water quality. Multi-dimensional planning, monitoring and communication of these overlapping benefits are essential to maximise outcomes and secure support from diverse stakeholders.

Engaging communities and ensuring acceptability emerged as vital for the success of restoration projects. Evidence demonstrating the tangible benefits of RW for local communities – such as flood protection or recreational opportunities – could help increase support and participation. Storytelling and narrative-building were identified as valuable tools to highlight successes and share lessons learned.

This aligns with previous finding from our stakeholder workshop (Appendix 1) where participants underlined the value of sector champions and peer-to-peer learning to improve public engagement. Clear communication about the tangible benefits of RW, combined with accessible data-sharing initiatives, could help foster stronger community support and participation.

Citizen science and volunteering were highlighted as opportunities to bridge gaps between communities and the environment, fostering stewardship and awareness. Citizen science could also play a role in enhancing monitoring efforts by increasing data collection capacity, fostering local engagement, and providing valuable insights into long-term changes. Its success should rely on reproducible protocols, appropriate training for participants, and sufficient resources allocated to data analysis, ensuring that the data collected is both reliable and actionable.

## Conclusion

These interviews provided a better understanding of key sectors' needs, reinforcing the importance of addressing major barriers to RW restoration, such as lack of funding and landowner uptake. Stakeholders in this engagement phase generally perceived that sufficient knowledge exists to support RW restoration efforts in Scotland, though targeted research and better integration of existing evidence could enhance decision-making and implementation.

Stakeholders particularly emphasised the need to address site-specific challenges and develop tools for optimal design and placement. The interviews highlighted the importance of developing baseline data to inform and optimise the design of restoration efforts, while also emphasising the need for clear evidence and narratives around the benefits of RW. Stakeholders also expressed a desire for a better understanding of the potential trade-offs associated with interventions in order to reduce the risk of unintended impacts. Monitoring plays a critical role here, not only to verify outcomes but also for adaptive management.

Engaging stakeholders and communities remains central to success. Knowledge exchange and effective communication strategies are essential for fostering acceptance and participation, ensuring that the multiple co-benefits of RW — such as biodiversity enhancement, flood resilience, and carbon sequestration — are widely understood and embraced.

In addition to the main report, these interviews complement other research phases, including a survey and workshop (Appendix 1), focus groups (Appendices 3 and 4), and a consultation (Appendix 5). A literature review further provides insights into existing knowledge and formal evidence gaps, which is discussed in the main report.

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## References

Ogilvy, T., Melville, N., Martinez Contributing, R., Martinez, R., Stutter, M., Sime, I., Wilkinson, M., Morison, J., Broadmeadow, S., & O'Brien, L. 2022. *Riverwoods for Scotland Report on Scientific Evidence*.



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