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Natural Capital and River Basin Management Planning

Lorna J Cole¹, Julia McCarthy², Alistair McVittie³, Sarah Buckingham¹, Victoria Barthelmess¹, Brady Stevens¹, Rebecca Audsley¹

¹SAC Consulting, Food & Footprint Team, The King’s Buildings, West Mains Road, Edinburgh, EH9 3JG

²University of Edinburgh, School of Geosciences at Drummond St, Edinburgh EH8 9XP

³Scotland’s Rural College (SRUC), The King’s Buildings, West Mains Road, Edinburgh, EH9 3JG

The problem

Scotland is globally renowned for its natural resources like clean rivers, rich wildlife, heather moorlands and fresh air. Protecting, enhancing and restoring these resources provides us with many benefits and is essential to safeguard our future environment, well-being and the economy.

Historically, nature was rarely considered in decision making. This resulted in the loss and degradation of natural resources and the benefits they provide. Things are, however, beginning to change, with growing recognition that restoring nature is essential to tackle some of society’s biggest challenges: climate change, biodiversity loss, public health, and food security.

River Basin Management Planning (RBMP) provides a framework to reduce pressures on Scotland’s water

environment and protect and enhance the benefits that our rivers, lochs, wetlands and groundwaters provide.

In the past, RBMP has focused mainly on actions close to rivers (e.g. removal of weirs, creation of flood-plains), potentially missing opportunities to restore natural resources across the wider river catchment. Going forward, RBMP provides an opportunity to adopt a natural capital approach, building our understanding of the range of benefits that restoring nature provides and ensuring that these are better incorporated into decision-making.

This project aimed to build our understanding of how natural resources within catchments influence the water environment and the benefits provided. This will inform future policy and help identify and prioritise actions to protect, enhance and restore these resources.

River Basin Management Planning (RBMP) is a strategic framework under the EU Water Framework Directive for managing water resources at the catchment scale to improve water quality, ecological status, and resilience.

Natural Capital refers to the natural resources (e.g. soil, air, water, habitats, species) that provide society with benefits such as clean air, fresh water, and natural flood management.

Key research questions



What benefits are provided by the water environment in Scotland?



What natural resources have the greatest impact on rivers, lochs groundwaters?



How do nature-based solutions impact on the water environment and wider benefits?



What are the costs and benefits of investing in nature-based solutions?



How do natural capital markets account for benefits to waters?



What data/tools exist on natural resource extent, condition and opportunities?

The opportunity

How we manage natural resources across a catchment has a strong influence on the health of its water environment. Protecting, enhancing and restoring natural resources improves the water environment, providing a wide range of benefits. Healthy rivers, groundwaters, lochs and wetlands provide clean water, support wildlife, provide opportunities for recreation, enhance health and wellbeing and help us tackle climate change.

Many Scottish industries strongly rely on the benefits the water environment provides, including forestry, agriculture, fisheries, water and sewage, food and drink, and tourism (Scottish Government 2025a). A natural capital approach to RBMP therefore plays a strategic role in supporting wellbeing, the environment and the economy, whilst building resilience to climate change.

Nature-based solutions NbS (i.e. actions to protect, enhance and restore natural resources) provide benefits that extend well beyond the water environment. They store carbon, improve air quality, support wildlife and create greenspaces for people to enjoy. Nature restoration has a wide range of beneficiaries, including insurers through reduced flood risks, water companies through lowered water treatment costs, and health services through improved health and wellbeing.

Nature-based solutions (NbS) are actions targeted to protect, enhance and restore natural resources enhancing the benefits they provide to society. These include creating and managing native woodlands, urban ponds, restoring peatlands and nature-friendly farming.

Nature's benefits, however, can be difficult to quantify and even more difficult to monetise. How do you measure the impact that peatland restoration has had on water quality or flood risk? How do you value taking a walk in nature? To build the business case for NbS, we need robust ways to communicate the full range of benefits that these actions provide and to understand where these actions will create the greatest impact.

Building this evidence base will ensure nature is properly accounted for in decision-making, attracting private investment alongside public funding for nature restoration.

To optimise the benefits gained and ensure value for money, we must be strategic. NbS will deliver different benefits depending on where they are placed and how they are designed and managed. For example, an urban woodland with paths provides more benefits to people (and local health boards through increased wellbeing) than a remote woodland that is difficult to access. Planting such woodlands along rivers creates further benefits – intercepting pollutants from nearby land and buffering rivers against extreme temperatures. This in turn benefits species like salmon which need cold, clean rivers to survive (benefitting anglers and local river trusts).

Identifying key linkages between natural resources, NbS, and the benefits they deliver is an important step to create a shared understanding between stakeholders within a catchment. There is a lot of useful information, including datasets, guidance and tools, that can support planning and prioritise decision-making.

A natural capital approach brings a broader perspective to future RBMP, enhancing outcomes for water, nature recovery, climate resilience, the economy and societal wellbeing.

Recommendations



Adopt a whole catchment approach to RBMP. Catchments provide an appropriate scale for decision making. Whole catchment approaches enable cumulative pressures and interactions to be understood and addressed.



Strengthen the evidence for NbS. We need to improve understanding of how NbS impact water-related services, their costs and benefits, and identify how NbS can help us adapt to climate change.



Develop a robust monitoring framework. Develop a framework to ensure monitoring accurately reflects the impact of projects on water-related outcomes. This will build buyer confidence.



Strategically align across sectors and funding decisions. Ensure that climate, nature, health, planning and sustainable land use policies account for the benefits natural resources provide for the water environment and beyond.



Unlock private investment. Public funding alone is not sufficient to restore nature. We need to reduce barriers to private investment in water and nature projects and explore how regulation could target funding to where it is needed.



Support practical delivery. Share learnings, develop clear guidance and collate existing data and tools to build capacity to deliver catchment-scale action.

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