

FLOODPLAIN REWETTING IN BELGIUM

Policy insights from the Ardennes peatland catchment for integrating floodplain restoration into catchment-scale water management



CONTEXT AND CURRENT POLICY LANDSCAPE

Wetlands in Belgium have declined significantly due to drainage, agriculture, infrastructure development and urban expansion. Despite a strong policy framework at EU directives (Biodiversity Strate-

gy, Habitats and Nature Directives) and regional levels, many wetlands remain in poor ecological condition, with nutrient pollution and altered hydrology continuing to threaten bogs, mires and fens.

Water and wetland management responsibilities are divided across several authorities, limiting coordination and slowing implementation despite existing plans and regulations.

WHY IS RESTORATION HARD TO SCALE?

Barriers to effective wetland restoration

Fragmented governance

Responsibilities are spread across multiple departments, reducing coordination.

Uneven protection coverage

Natura 2000 protection is strong in some areas but incomplete in others, especially plateau regions.

Nutrient pollution pressures

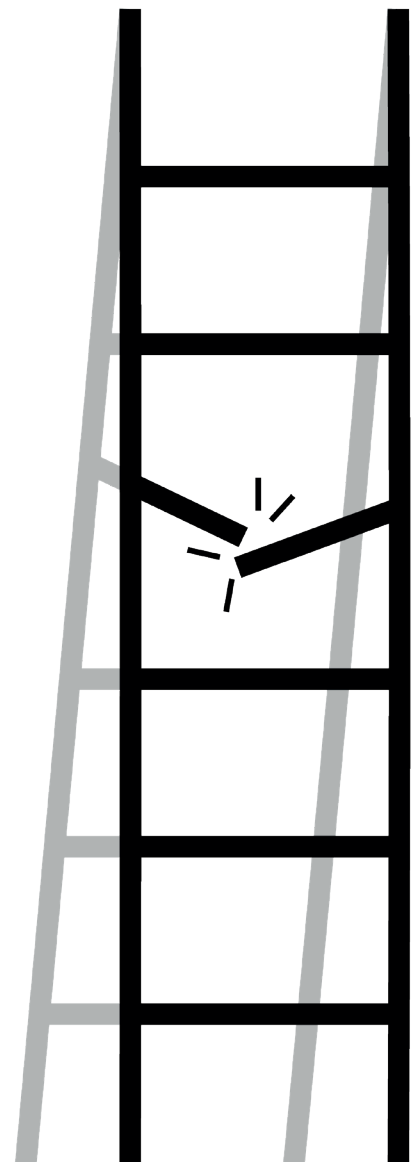
Nitrogen deposition and agricultural runoff degrade ecosystems.

Implementation gaps

Strong legal frameworks are not consistently translated into action.

Competing land uses

Agriculture and urban expansion continue to drive drainage and land conversion.



PRIORITY POLICY MEASURES

Integrated river–floodplain restoration

Restoring natural hydrology—by reconnecting upstream and downstream systems, blocking drainage channels, and allowing water to spread across floodplains—can

- Improve water retention,
- Reduce flood risks,
- and support biodiversity

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EVIDENCE FROM PRACTICE

Restoration of an upstream peatland catchment in the Ardennes

This project is restoring a drained upstream peatland catchment in the Ardennes by blocking drainage channels and re-establishing natural hydrology. Around 3.5 km of drainage channels were blocked to slow water flow, increase infiltration, and restore water and carbon storage functions. The area was previously affected by drainage and spruce plantations, which increased runoff and downstream flood risks. These are the results obtained:

Biodiversity impacts

- Increased beetle diversity.
- Return of sphagnum moss and wetland vegetation.
- Gradual shift toward more natural wetland ecosystems.

Climate impacts

- Early data suggest potential reductions in greenhouse gas emissions.
- Short monitoring periods and lack of baseline data limit robust conclusions.



WHAT DOES THIS CASE SHOW?

Restoration sites in Belgium show improved hydrological functioning, with rewetted areas retaining more water during dry periods and reducing flood peaks during wet periods, strengthening the landscape's sponge function.

Early monitoring suggests potential emission reductions, although short observation periods and limited baseline data make firm conclusions difficult. This highlights the importance of long-term monitoring before and after restoration.

POLICY PROPOSALS

Make nature-based solutions the default approach in water and land management, supported by stronger institutional coordination and long-term monitoring.

- Prioritise nature-based solutions in water management and spatial planning.
- Restore hydrological connectivity across catchments and floodplains.
- Use engineered solutions only where nature-based options are not feasible.
- Align flood protection, climate adaptation and biodiversity objectives.

HOW TO SCALE AND ACCELERATE?

- Strengthen coordination between water, agriculture and nature authorities.
- Prioritise upstream catchments to maximise downstream benefits.
- Secure long-term funding for restoration, monitoring and maintenance.
- Improve enforcement of existing drainage and land conversion regulations.
- Support long-term monitoring to enable adaptive management.





rewet-he.eu/

 **info@rewet-he.eu**

 **@rewet_he**

 **rewet**

 **@rewet_he**



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