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TACKLING POLICY DILEMMAS FOR WETLAND RESTORATION

As Europe accelerates efforts to restore wetlands and riverine ecosystems in line with biodiversity and climate goals, several complex policy dilemmas are emerging. This policy brief explores the key tensions and outlines governance approaches to support effective and inclusive restoration.

The EU biodiversity and climate regulations call for a significant scaling up of wetland restoration across the EU. While restoration offers significant long-term benefits for biodiversity, climate resilience, and ecosystem services, its implementation often confronts conflicting objectives embedded in existing legal, financial, and sectoral frameworks. Examples include *tensions between species protection goals and dynamic ecosystem processes*, trade-offs between carbon-focused rewetting and biodiversity needs, and mismatches between restoration incentives and agricultural subsidies. Addressing these dilemmas is essential to ensure restoration efforts are effective, scalable, and socially acceptable. This policy brief identifies integrated, multi-level governance approaches that have the capacity to address such dilemmas.

THE PROBLEM

Dilemma 1: Static versus dynamic management

The EU Habitats and Birds Directives aim to conserve current biodiversity by protecting specific species and habitats. However, this species- and habitat-oriented approach can sometimes conflict with broader ecosystem restoration goals. Conservation efforts in support of particular species often focus on maintaining fixed habitat conditions—such as stable water levels or static vegetation structures

Due to widespread human interventions like canalization, dam construction, and water regulation, natural processes have been significantly disrupted.

As a result, many remaining natural areas are managed as static systems, detached from the dynamic forces that once shaped them. Meeting fixed biodiversity targets in such settings is not only costly but also limits essential ecological processes like flooding, sediment transport, and natural succession.

In contrast, ecosystem restoration seeks to reintroduce natural processes and rebuild self-sustaining systems, even if this leads to shifts in species composition or habitat characteristics. For long-term ecological sustainability, it is crucial to restore underlying soil and water systems to more natural conditions. This enables key processes such as flooding, groundwater recharge, and ecological succession, supporting resilient and adaptive ecosystems.

photo: National Park Weerribben-Wieden – The Netherlands
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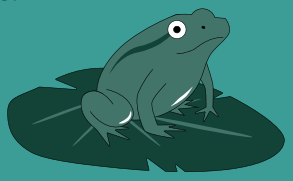
Danube Delta: Balancing natural processes and pre-set conservation targets

The Danube Delta, shared by Romania and Ukraine, is Europe's second-largest river delta and a UNESCO World Heritage Site. It hosts exceptional biodiversity, including many species and habitats protected under the EU Habitats and Birds Directives. Historically, the delta was shaped by dynamic natural processes such as seasonal flooding, sediment transport, and channel shifts, which created diverse, ever-changing wetland habitats.

However, large parts of the delta were altered in the 20th century through canalization, dike construction, and water regulation for agriculture, fish farming, and flood protection. Today, static management approaches, such as maintaining stable water levels and specific vegetation structures, are often applied to meet EU conservation targets for particular species and habitat types. This can involve costly infrastructure and limits natural dynamics.

In contrast, restoration projects in areas like the Babina and Cernovca polders have removed dikes and allowed natural flooding to resume. These efforts prioritize reestablishing dynamic processes such as sediment deposition and ecological succession, creating more resilient ecosystems over time. However, such approaches may lead to shifts in species composition, potentially conflicting with strict habitat and species conservation targets.

This case illustrates the complex trade-off between static biodiversity protection and dynamic ecosystem restoration in Europe's riverine landscapes.



Dilemma 2: tradeoffs between climate and biodiversity targets

In many wetland restoration projects across Europe, a growing emphasis is placed on climate mitigation—particularly through rewetting drained peatlands to reduce carbon emissions and enhance carbon sequestration. While this climate-driven approach delivers measurable benefits for greenhouse gas reduction, it can inadvertently undermine biodiversity targets set under the EU Nature Directives and the proposed Nature Restoration Regulation.

Rewetting efforts often prioritize creating saturated conditions year-round to preserve peat and limit CO_2 release. However, such hydrological regimes may not support the full range of wetland biodiversity, especially species that depend on seasonal water fluctuations, open water, or early successional stages. In some cases, dense, monodominant vegetation may be favored for their carbon storage potential, leading to habitat homogenization and reduced structural diversity.

In the Dutch REWET Open Lab, closing existing drainage ditches would enhance rewetting and significantly boost carbon sequestration potential. However, this measure would also eliminate the ditches' biodiversity-rich aquatic habitats, creating a clear trade-off between climate mitigation and biodiversity conservation.

Climate-focused restoration may also suppress natural disturbances like flooding, drought, or fire, which are essential for maintaining dynamic habitats and preventing ecological succession. This creates a core dilemma: management strategies that optimize carbon outcomes may degrade conditions needed by priority species and habitats.

To align both climate and biodiversity goals, restoration planning must assess trade-offs on a site-specific basis and adopt a more integrated, adaptive management approach.

Neusiedler See: When laws and management collide

At Lake Neusiedl in eastern Austria, a clear conflict has emerged between environmental legislation and effective habitat management. Since 2006, prescribed burning has been prohibited under Austrian federal law. However, fire management is recognized by experts as the only effective tool to restore critical reed belt habitats for rare breeding bird species. The sole legal exception to this ban is the creation of firebreaks, limiting its ecological application.

Simultaneously, large-scale die-off of old reed stands is occurring, likely due to natural succession processes that are no longer being reset. In the past, natural fluctuations in water levels would have controlled this succession, but water regulation infrastructure has largely eliminated these dynamics. This poses a significant challenge to achieving biodiversity targets set under Natura 2000, the EU Nature Directives, and the proposed Nature Restoration Regulation. The core dilemma: natural dynamics have been suppressed, yet policy demands the conservation of species that depend on specific, disturbance-driven habitat stages.

Compounding the issue, reed harvesting —traditionally carried out on frozen soil to prevent damage—is now conducted during milder winters, causing rhizome damage due to heavy machinery use and further contributing to reed decline.

This case illustrates the need to reconcile rigid legal frameworks with adaptive, process-based ecosystem management strategies.

Dilemma 3: Carbon credits or agricultural subsidies?

Restoring wetlands on former farmland—particularly rewetting peatlands—offers significant climate benefits by reducing CO_2 emissions and increasing carbon storage. Carbon offset schemes aim to reward landowners for these benefits through compensation payments for emission reductions. However, these payments are currently not competitive compared to conventional farming subsidized under the Common Agricultural Policy (CAP), which rewards continued agricultural production per hectare, even on marginal or degraded land.

As a result, landowners often face a financial disincentive to convert farmland to restored wetlands, even when ecological and climate benefits are substantial. The opportunity cost of taking farmland out of subsidized production often outweighs the voluntary or pilot-stage carbon payments currently available through carbon markets or government-funded schemes.

This creates a policy dilemma: while EU climate and biodiversity targets call for large-scale wetland restoration, the structure of the CAP continues to incentivize land use practices that may be incompatible with those goals. Without better integration of climate and biodiversity objectives into agricultural policy and more competitive compensation models, it is unlikely that the EU restoration targets for wetlands on agricultural land will be achieved.

Nationalpark Neusiedler See - Seewinkel
View more by barbFoto from Getty Images

Case: Peatland Rewetting in Mecklenburg-Vorpommern, Germany

In Mecklenburg-Vorpommern, northern Germany, drained peatlands are a significant source of CO_2 emissions due to peat oxidation from agricultural use. These peat soils were historically converted for livestock grazing and forage production, supported by subsidies under the EU's CAP.

Restoring these peatlands through "rewetting" offers substantial climate benefits by halting emissions and restoring biodiversity. The regional MoorFutures carbon offset scheme allows landowners to receive payments for restoring peatlands through voluntary carbon credits. However, these payments—typically around €100–300 per hectare annually—are far lower than the combined income from farming and CAP subsidies, which can exceed €400–600 per hectare, even on degraded peatlands.

This creates a financial barrier to restoration. Farmers risk losing not only agricultural income but also CAP payments, which are often contingent on keeping land in "active agricultural use." As a result, many landowners are reluctant to restore peatlands, despite strong environmental benefits.

This case highlights a broader policy conflict in Europe: while EU climate and biodiversity targets call for large-scale wetland restoration, existing CAP subsidies continue to incentivize farming on marginal lands. Without reforms that better integrate climate goals into agricultural policy—and offer competitive payments for ecosystem restoration—restoration targets will remain out of reach.

POLICY OPTIONS TO ADDRESS DILEMMA'S

The above examples show how important it is to have clear, consistent policies that balance different goals. Drawing on recommendations from UNEP's Global Peatland Assessment and findings from case study research in the Wet Horizons and REWET projects, we propose the following to address these challenges:

1 **Assuring policy coherence to support landscape-scale restoration**

Existing policies in the environmental, spatial as well as financial domains must be critically re-evaluated and revised to support the scaling up of wetland restoration. Rather than addressing isolated symptoms, the focus should shift toward enabling systemic, landscape-/ watershed level solutions.

2 **Tackle the rigidity of conservation targets with dynamic ecosystem restoration standards:**

Develop national or EU-wide ecosystem restoration markets (like Scotland's proposed Ecosystem Restoration Code) that certify improvements in ecosystem function and resilience, rather than biodiversity gains and losses. These may be embedded in both planning and permitting systems (as compliance markets) as well as in voluntary markets, allowing for natural ecological change while upholding legal conservation safeguards.

3 Prioritize public funding using multi-benefit targeting models

Adopt decision-support tools across EU Member States to spatially target restoration funding toward projects that deliver the greatest combined benefits for biodiversity, climate, water regulation, and local livelihoods, enabling public funding to be prioritised to maximise public good. Such tools may also be used to identify the sites most likely to attract private finance for natural capital improvements (e.g. via carbon markets), to further optimise public spending, and where relevant, blend public funding with private finance to leverage and derisk investment in natural capital markets.

4 Align restoration finance by blending public subsidies with private investment

Design subsidy schemes that co-fund but do not fully cover restoration costs, ensuring eligibility for private investment under voluntary carbon and biodiversity markets. Enable "stacking" of multiple ecosystem services (e.g. carbon, biodiversity, water) in landscapes transitioning to practices like paludiculture or biochar use, or being restored back to semi-natural habitats, so that the funds available exceed the opportunity costs of existing land uses, making these more sustainable practices financially viable.

Danube Delta by Ivanica Monica from Getty Images

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