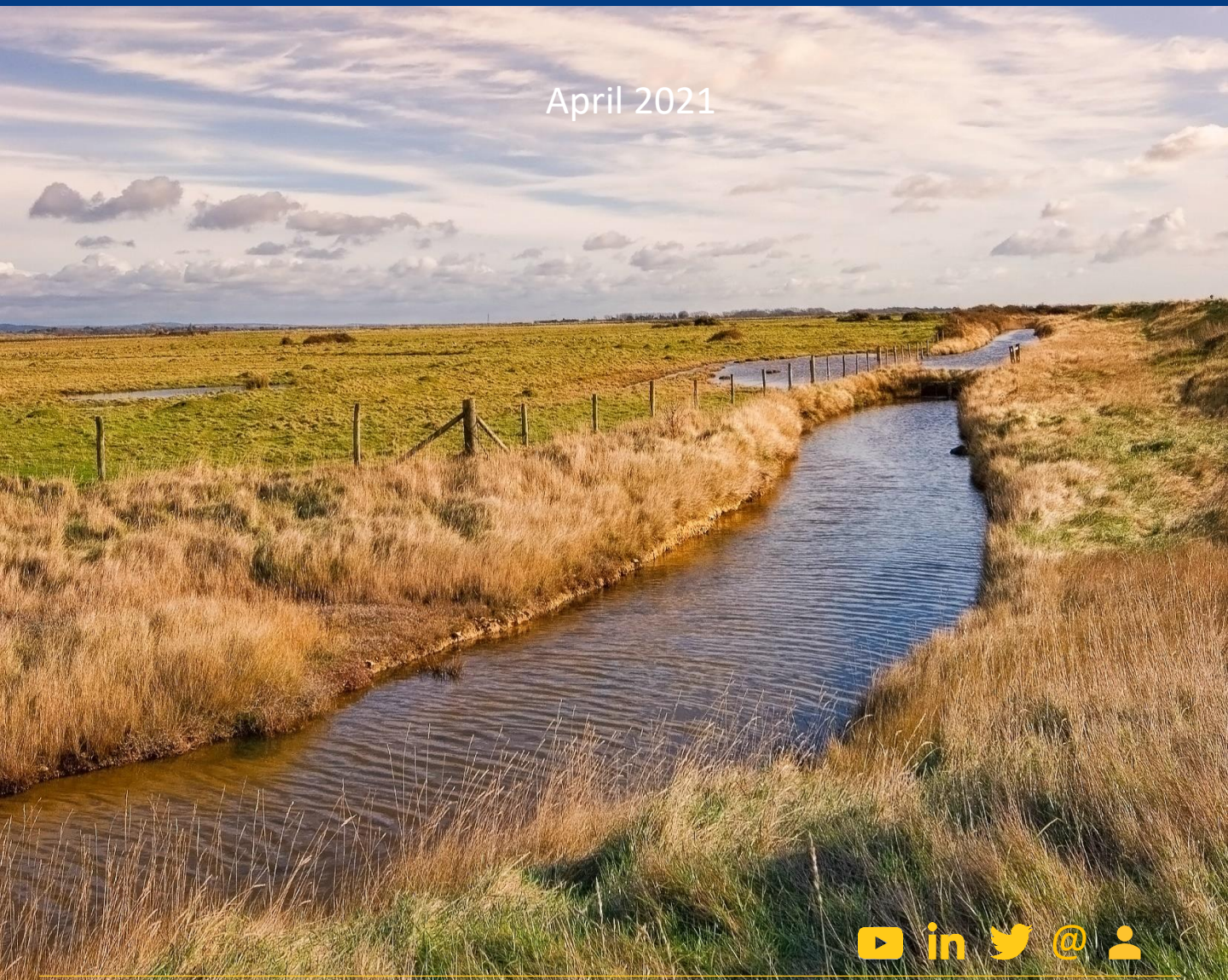
Water Europe
Technology & Innovation

BIODIVERSITY STRATEGY

Shared challenges for Water and Biodiversity Conservation

April 2021



Water Europe (WE) is the voice and promoter of water-related innovation and RTD in Europe. WE are a membership-based multi-stakeholder organisation representing over 200 members from academia, industry, technology providers, water users, water service providers, civil society, and public authorities. WE activities and positions are guided by its Water Vision "The Value of Water: Towards a Future-Proof European Water-Smart Society".

SHARED CHALLENGES FOR WATER AND BIODIVERSITY CONSERVATION

Water Europe Vision

Water Europe has set out a blueprint for a society in which the true value of water is recognised and realised, and all available water sources are managed in such a way that water scarcity and pollution of water are avoided, water and resource loops are largely closed to foster a circular economy and optimal resource efficiency, while the water system is resilient against the impact of climate change events.

Multiple Waters

Digital Water

Value in Water

Hybrid Grey-Green Infrastructure

EU Biodiversity Strategy for 2030

The EU's Biodiversity Strategy for 2030 is a comprehensive, ambitious and long-term plan that aims to protect nature and reverse the degradation of ecosystems.

The strategy maps out the necessary steps to put Europe's biodiversity on a path to recovery by 2030, through addressing the impact of climate change and restoring degraded ecosystems.

Water Europe welcomes the nature restoration targets under EU biodiversity strategy and encourages synergies between different sectors. Particularly, we welcome the consideration of freshwater ecosystems and wetlands – one of the most endangered ecosystems – as a multiplier of benefits in many areas of the EU Green Deal, since wetlands:

- sustain 40% of the world's species[1]
- maintain and improve water quality by acting as filtering systems for sediments, nutrients and water pollutants
- act as a natural buffer against flooding, soaking up heavy rainfall
- slowly release the excess water thus protecting against droughts
- act as very effective carbon sinks

"Nature requirements have not been sufficiently incorporated into key land- and water-use policies to overcome the negative pressures"[2], particularly from rural and urban areas. The biodiversity strategy should lead to water conservation through water efficiency and water reuse to significantly reduce water abstraction and the consequent stress on water ecosystems. In addition, the preservation of ecosystems and biodiversity reduces the risk of zoonotic diseases and pandemics[3].

Water Europe has identified three areas where more effort is needed to properly sustain the Strategy's objectives in line with the recommendation of the OECD to finance water-related needs in Europe[4]:

1. https://www.iucn.org/news/water/202001/call-ambitious-global-biodiversity-framework-world-wetlands-day-2020
2. Report on the status and trends in 2013 - 2018 of species and habitat types protected by the Birds and Habitats Directives, https://eur-lex.europa.eu/legal-content/EN/TXT/?uri=COM:2020:635:FIN
3. Van Langevelde, F., Rivera Mendoza, H.R. (December 2020), The link between biodiversity loss and the increasing spread of zoonotic diseases, In-depth analysis requested by the ENVI Committee – European Parliament, https://www.europarl.europa.eu/RegData/etudes/IDAN/2020/658217/IPOL_IDA(2020)658217_EN.pdf
4. OCDE (2020), *Financing Water Supply, Sanitation and Flood Protection : Challenges in EU Member States and Policy Options*, OECD Studies on Water, Éditions OCDE, Paris, https://doi.org/10.1787/6893cdac-en.

1 ENHANCING THE ROLE OF RESEARCH AND INNOVATION

Without underestimating the role of the LIFE+ programme[5], the Biodiversity Strategy must include strong calls to tap into the potential of research and innovative solutions to minimise future financing needs[6]. These, along with the application of existing solutions, will increase effectiveness, reduce cost and allow biodiversity projects to use Horizon Europe funding programme dedicated to innovation. Particular attention should be given to:

- **Integrated hybrid Grey-Green Infrastructure.** The use of both natural and engineered techniques in the water cycle and beyond, such as the use of techniques promoting natural water retention (e.g. buffers) builds resilience against climate change events (particularly droughts and floods), support the restoration of biodiversity, while controlling the risk of pollution.[7]

- **Water-oriented Living Labs (WoLLs)**[8] are cross-sectoral ecosystems that provide a "field lab" to develop, test, and validate a combination of new technologies, business models and policies based on the value of water, all while allowing citizen participation. Water Europe has identified more than a hundred existing WoLLs in Europe. Their potential to explore synergies between industry, agriculture, natural habitats and society needs to be fully exploited through the biodiversity strategy.

- **Balance trade-offs** between environmental aims and water service supply needs across Europe. Studies need to explore best management practices in compromising environmental needs and service demand. Innovative approaches need to improve biodiversity in Europe's freshwater ecosystems but keeping water service infrastructure operational, financeable and durable at the same time. Interdisciplinary research is needed (e.g. meteorology, hydrology, engineering, ecology, economics and social science), taking advantage of WoLLs and new hybrid infrastructure concepts.

2 DEPLOYING DIGITAL MEANS FOR AGILE MONITORING AND PREVENTION

Moreover, only 40% of cities over 150.000 inhabitants in the EU have climate change adaption plans based on sustainable models[9]. A full digitalisation of the water sector would bring great benefits to biodiversity conservation efforts, granting faster response times in case of emergencies, agility in disaster prevention and accurate monitoring of water for contaminants and pollutants.

- **Risk control management:** digital sensors and monitoring tools can act as early warning systems concerning water, food, energy, biodiversity and other water-related nexus. They can ensure, faster response times in case of emergencies, as well as more agility in disaster prevention, increasing water conservation and reducing the cost of extreme weather events;

- **Monitoring of pollutants and contaminants**: improving the quantity and quality of available data on freshwater both in nature and for human use is central to the protection and recovery of biodiversity, closely tracking the presence of pollutants and contaminants, facilitating their removal and thus water conservation and reuse. As of today, only 20% of global wastewater is treated before being released into the environment[10]: digital monitoring of pollutants will contribute to cleaner water streams and habitat restoration;

5. Life Programme: https://ec.europa.eu/easme/en/life
6. OCDE (2020), *Financing Water Supply, Sanitation and Flood Protection : Challenges in EU Member States and Policy Options*, OECD Studies on Water, Éditions OCDE, Paris, https://doi.org/10.1787/6893cdac-en.
7. Water Europe working group on hybrid grey and green water infrastructure, white paper, *Working title: Development and implementation of HYBRID Green and Grey Infrastructure in water management*, soon.
8. Water Europe, Atlas of the EU Water Oriented LivingLabs, https://watereurope.eu/wp-content/uploads/2019/07/Atlas-of-the-EU-Water-Oriented-Living-Labs.pdf
9. Data from April 2018: Report on the implementation of the EU Climate Change Adaptation Strategy (2018)
10. United Nations, https://www.unwater.org/water-facts/quality-and-wastewater-2/ ; The World Bank (2020), https://www.worldbank.org/en/news/press-release/2020/03/19/wastewater-a-resource-that-can-pay-dividends-for-people-the-environment-and-economies-says-world-bank

3 DEVELOPING WATER-RELATED SUPPORTING CONDITIONS FOR BIODIVERSITY

The EU must tap into the potential of the water-related legislation to maximise the benefits for our biodiversity. The Urban Waste Water Treatment Directive (UWWTD) and the Industrial Emissions Directive (IED) have been absolutely fundamental in restoring the biodiversity of EU water bodies. We can enhance the potential of EU waters to support the biodiversity, e.g, by tackling the stormwater runoffs in the urban environment, homogenizing the views on small systems and individual systems, enhancing the IED to further frame the industrial discharges into municipal sewers and increase water efficiency in industrial processes.

The proposal to restore at least 25,000 km of waterways into free-flowing rivers by 2030[11] should also be implemented with the objective of transforming these water bodies into biodiversity corridors, connecting natural habitats across rural and urbanised regions, thus strengthening conservation efforts and enhancing the benefits to healthy natural ecosystems. With the growing fragmentation of wildlife habitats and the loss of wetlands all across Europe, the value of waterways such as rivers and navigable channels has greatly increased. Paired with the healthy soil strategy, waterways as biodiversity corridors can contribute to mitigating extreme weather events effects, better nutrient cycling and soil health, as well as protection against soil erosion.

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Wetlands lost since the beginning of the 20th century

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EU Water-oriented Living Labs which can carry soil-water-waste challenges

11. European Biodiversity Strategy, page12


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