

Current trends and threats to biodiversity in Europe

BIODIVERSITY IS DECLINING GLOBALLY

WWF estimates that up to 52 % of the world’s biodiversity has disappeared. This decline is particularly acute in the freshwater and marine realms, where it is estimated that up to 76% and 39% of species have been lost, respectively. The loss of aquatic biodiversity is critical as aquatic ecosystems provide numerous economic and societal benefits in the form of ecosystem services. For example, they supply individuals with food, some ecosystems help to prevent floods, and they offer opportunities for recreation. Many of these valuable aquatic ecosystems and the services they provide are at risk of being irreversibly damaged by pressures caused by human activities, such as pollution, invasive species, overfishing, among others (EEA, 2015). These pressures are intensified by global challenges such as population growth, increasing competition for natural resources, and climate change.

What is threatening aquatic biodiversity in Europe?

The AQUACROSS project has identified six major threats to Europe’s aquatic biodiversity, as well as the main drivers behind these threats*:

Threats



Nutrient Pollution: Nutrient enrichment poses a continuous major threat to the aquatic ecosystems of Europe. For example, this pressure can contribute to an increase in plant growth, changes in nutrient cycling, uncontrolled growth of algae, eutrophication, acidification, an increase of organic matter settlement, cyanobacteria blooms, oxygen depletion, and mortality of benthic fauna and fish. Most European coastal and marine waters still carry enough nitrogen to lead to eutrophication. In freshwaters, enough nitrogen and Phosphorus still remains to lead to the loss of biodiversity.

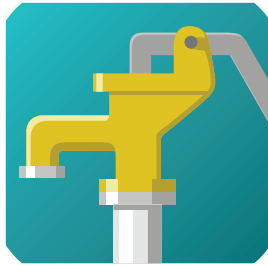
Drivers

- Agriculture**
- Aquaculture**
- Energy**
- Transport**
- Waste sector**
- Tourism**



Species extraction: Signs of improvement are present. In 2007, 94% of assessed fish stocks in the EU North-East Atlantic Ocean and the Baltic Sea were fished above Maximum Sustainable Yield (MSY) rates. Promising trends have been observed since then, with the number of overfished stocks falling from 94% in 2007 to 39% in 2013 in those regional seas (EEA, 2015). However, the level of knowledge on species extraction is still very limited, especially in the Mediterranean Sea and Black Sea regions, making it impossible to assess change over time.

Fishing



Water abstraction: Over-abstraction is especially severe in the Mediterranean region, where the threat can lead to reduced river flows, lower lake and groundwater levels, and drying up of wetlands, which can alter responses of ecosystems and their functions.

Agriculture
Energy
Tourism



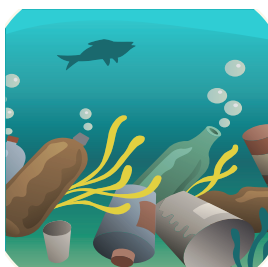
Invasive Alien Species (IAS): IAS are being introduced in Europe's seas with increasing regularity, with around 1 400 IAS currently. The Mediterranean is the European sea with the largest number of IAS, with over a fifth (21%) of all threatened and near threatened freshwater fish species currently being threatened by IAS. Additionally, even though species extraction is on a positive trend, fishing in the marine environment has had severe repercussions and has in some instances led to species endangerment beyond recovery.

Aquaculture
Transport
Tourism



Alterations to morphology: Historically, European rivers have undergone significant modifications through land improvements, damming and increased water abstraction associated with the expansion and intensification of agriculture, industrial revolutions, and more recently the post-war economic growth. While the rate of morphological alterations has likely reduced, it is not established whether trends have reversed or will in the future. With the risk of extreme events growing, additional flood protection may be put in place.

Agriculture
Energy
Transport
Tourism



Plastic waste: The amount of plastic waste generated dramatically increased during the 20th century and is now pervasive in all water realms. Packaging waste represents the major source of plastic pollution in Europe. It is important to note that, although recycling and recovery rates may be improving, the actual amount of plastic waste produced has remained roughly the same over the last 10 years. There is little information on the amounts, rates or impacts of plastic waste in freshwater environments. A major effort is underway to quantify those in coastal and marine areas.

Fishing
Aquaculture
Transport
Waste sector
Tourism

* Other relevant threats also threaten biodiversity, for example, in freshwater, micropollutants (e.g. pesticides), changes in temperature and hydrological changes due to climate change.

THE POLICY RESPONSE

At the level of the European Union, the **EU Biodiversity Strategy to 2020** transposes the Convention on Biological Diversity's Aichi targets into EU policy. The Strategy aims to halt the loss of biodiversity and ecosystem services in the EU and help stop global biodiversity loss by 2020. A 2015 mid-term review of the Strategy by the EU Commission concluded that the loss of biodiversity and the degradation of ecosystem services have not been halted by the Strategy.

The review indicated that biodiversity loss would continue throughout the EU and globally, with potential significant implications for the capacity of biodiversity to meet human needs in the future. For more on the EU policy response, read the brief "[What's the problem with current policies and management practices for aquatic biodiversity?](#)".

www.aquacross.eu/results

Go to Brief #2:
Current biodiversity
management: Issues



Further information

This is one of 38 short briefs summarising the key results of the AQUACROSS Project. For more detailed information on the topics covered in this brief, see the following:

- [AQUACROSS leaflet](#)
- Gómez et al. (2016) The AQUACROSS Innovative Concept. Deliverable 3.1, European Union's Horizon 2020 Framework Programme for Research and Innovation grant agreement No. 642317. ([Deliverable](#) and [Executive Summary](#))
- Piet et al. (2017) Making ecosystem-based management operational. Deliverable 8.1, European Union's Horizon 2020 Framework Programme for Research and Innovation grant agreement No. 642317. ([Deliverable](#) and [Executive Summary](#))
- O'Higgins, T. 2016. You Can't Eat Biodiversity: Agency and Irrational Norms in European Aquatic Environmental Law. *Challenges in Sustainability* 5(1): 43-51. DOI: [10.12924/cis2017.05010043](https://doi.org/10.12924/cis2017.05010043)
- AQUACROSS Policy Brief: Managing biodiversity from local to global: an EU perspective.



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