

Ponds of Cabras and Mistras  
Photo © Egidio Trainito

## WETLAND ECOSYSTEM

Wetlands are areas where soil is covered by water either year-round or only during specific periods. They can be freshwater, brackish, or saline, and host unique ecosystems with plants and animals adapted to high humidity conditions.

Wetlands are found on all continents except Antarctica and are classified into five main types:

**Marine:** Coastal lagoons, coral reefs, rocky shores.

**Estuarine:** Deltas, tidal marshes, mangroves.

**Lacustrine:** Wetlands associated with lakes.

**Riverine:** Along rivers and streams.

**Palustrine:** Swamps, peat bogs, marshes.

In addition to these, there are artificial wetlands, such as reservoirs, irrigated fields and wastewater treatment areas.

### What threatens wetlands??

The main causes of wetland disappearance are:

- Urbanisation and land use change.
- Intensive agriculture and land drainage.
- Overexploitation of natural resources (hunting, fishing, deforestation).
- Climate change, such as prolonged droughts and rising sea levels.

40%

of animal and plant species depend on wetlands

Wetlands are among the planet's richest and most productive ecosystems; thanks to the numerous benefits they provide. These include:

- Supply of fresh water and food
- Provision of building materials
- Support for biodiversity
- Flood regulation
- Recharge of groundwater aquifers
- Coastal line stabilisation
- Protection from storms
- Retention of sediments and nutrients
- Contribution to climate change mitigation

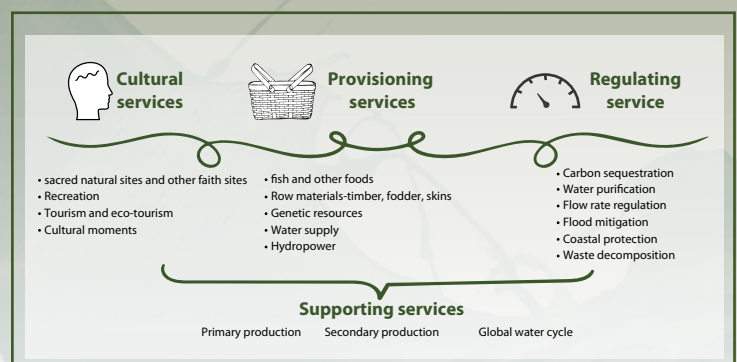


Figure 1. Ecosystem services from wetlands  
(Source: Ramsar Convention on Wetlands, 2018)

## Effects of Wetland Loss

### ENVIRONMENTAL LEVEL

- A drastic reduction in biodiversity
- Disruption of the hydrological cycle and a decrease in water quality.
- Increased coastal erosion and ecological instability

### SOCIO-ECONOMIC LEVEL

- Increased vulnerability of communities to extreme weather events
- Reduced natural resources available to over a billion people.
- Negative impact on food security and public health

## Agreements and Policies for Wetland Protection

### ➤ Ramsar Convention on Wetlands:

The only international treaty specifically dedicated to the conservation and sustainable use of wetlands was signed in the Iranian city of Ramsar in 1971. To date, 170 countries worldwide have joined the Convention..

### ➤ Natura 2000 Network of the European Union:

A network of protected areas that ensures conservation through legal protection and sustainable management.

### ➤ Convention on Biological Diversity (CBD):

Encourages nations to protect wetland habitats as part of broader efforts to preserve global biodiversity.

### ➤ 2030 Agenda for Sustainable Development and the Sustainable Development Goals (SDGs):

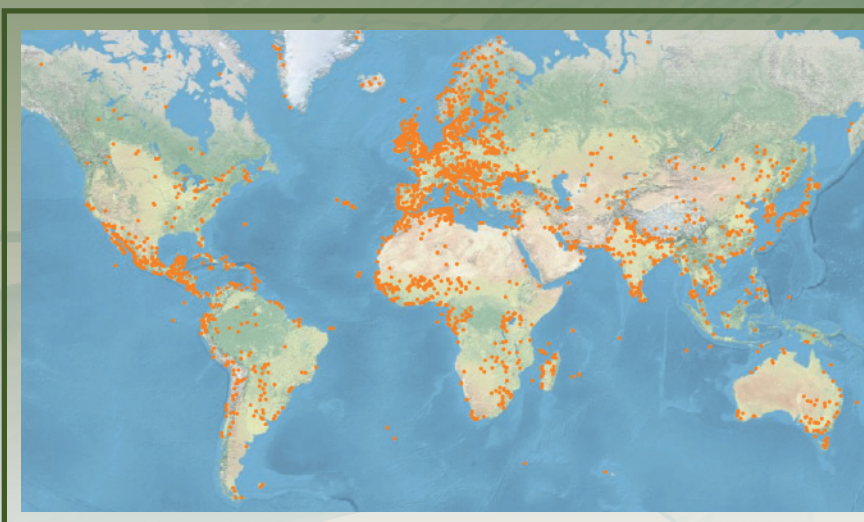
Wetlands are central to achieving many of the 17 United Nations Sustainable Development Goals (SDGs) and their 169 associated targets, focusing on issues such as poverty, hunger, health, energy, consumption, and climate change.

### ➤ Paris Agreement:

In December 2015, 196 countries agreed on a climate action plan under the United Nations Framework Convention on Climate Change, urging nations to develop Nationally Determined Contributions (NDCs) that include nature-based solutions, such as wetlands.

### ➤ Sendai Framework for Disaster Risk Reduction:

The United Nations Office for Disaster Risk Reduction launched a five-year strategy that emphasises integrated environmental management. This strategy highlights the role of wetlands in building resilience by reducing flood risks and storm damage.



# 2300

Ramsar sites worldwide covering nearly 2.5 million square kilometres—an area larger than Greenland.



Pond of Corru Sittiri  
Photo © Livio Mura



## Ramsar Sites in Sardinia

Sardinia is home to 9 Ramsar Sites, covering 17% of Italy's wetland area, making it a leader in wetland conservation efforts.

### STAGNO DI MOLENTARGIUS:

Established in 1976, it covers an area of 1,401 ha

### STAGNO DI CAGLIARI

Established in 1976, it covers an area of 3,466 ha

### STAGNO DI CABRAS

Established in 1979, it covers an area of 3,575 ha

### STAGNO DI CORRU S'ITTIRI, STAGNI DI SAN GIOVANNI E MARCEDDÌ

Established in 1979, it covers an area of 2,610 ha

### STAGNO DI PAULI MAIORI

Established in 1979, it covers an area of 287 ha

### STAGNO DI SALE PORCUS

Established in 1982, it covers an area of 330 ha

### STAGNO DI MISTRAS

Established in 1982, it covers an area of 680 ha

### FOCE DEL RIO POSADA

Established in 2021, it covers an area of 736 ha

### STAGNO DI S'ENA ARRUBIA

Established in 1976, it covers an area of 223 ha

## Challenges and Future Prospects

Despite conservation efforts, several challenges persist.

The lack of adequate funding, conflicts of interest between economic development and environmental protection, and the absence of effective global coordination represent significant obstacles

However, **future prospects indicate:**

- An increasing **integration** of wetlands into climate adaptation plans.
- The use of advanced technologies for **monitoring** and **sustainable management**.
- Greater **collaboration** between governments, local communities, and international organisations for more effective governance.

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The Wetland Observatory supports the conservation and sustainable management of wetlands in Sardinia. It collects and analyzes environmental data to monitor ecosystems, threats, and conservation strategies. Through webGIS and technical reports, it disseminates information on ecological status, biodiversity, and ecosystem services, raising awareness of the importance of wetlands in tackling climate change.

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The project received funding from the European Union's Horizon 2020 research and innovation program under grant agreement number 101036683

*Pond of Corru Siltiri*  
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