proteus

The importance of wetlands for business

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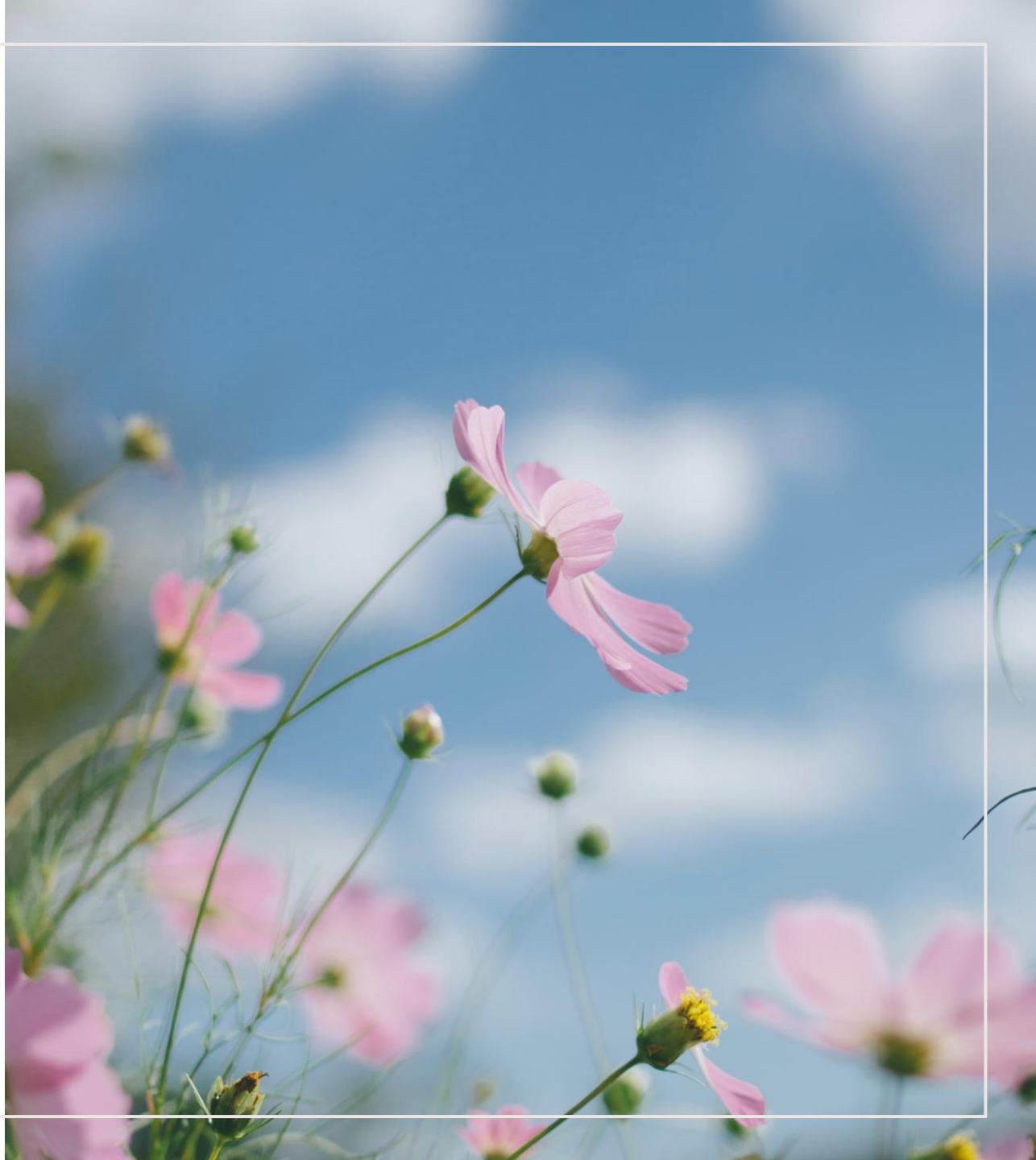
Engie

24/10/2023

TRAINING OBJECTIVES

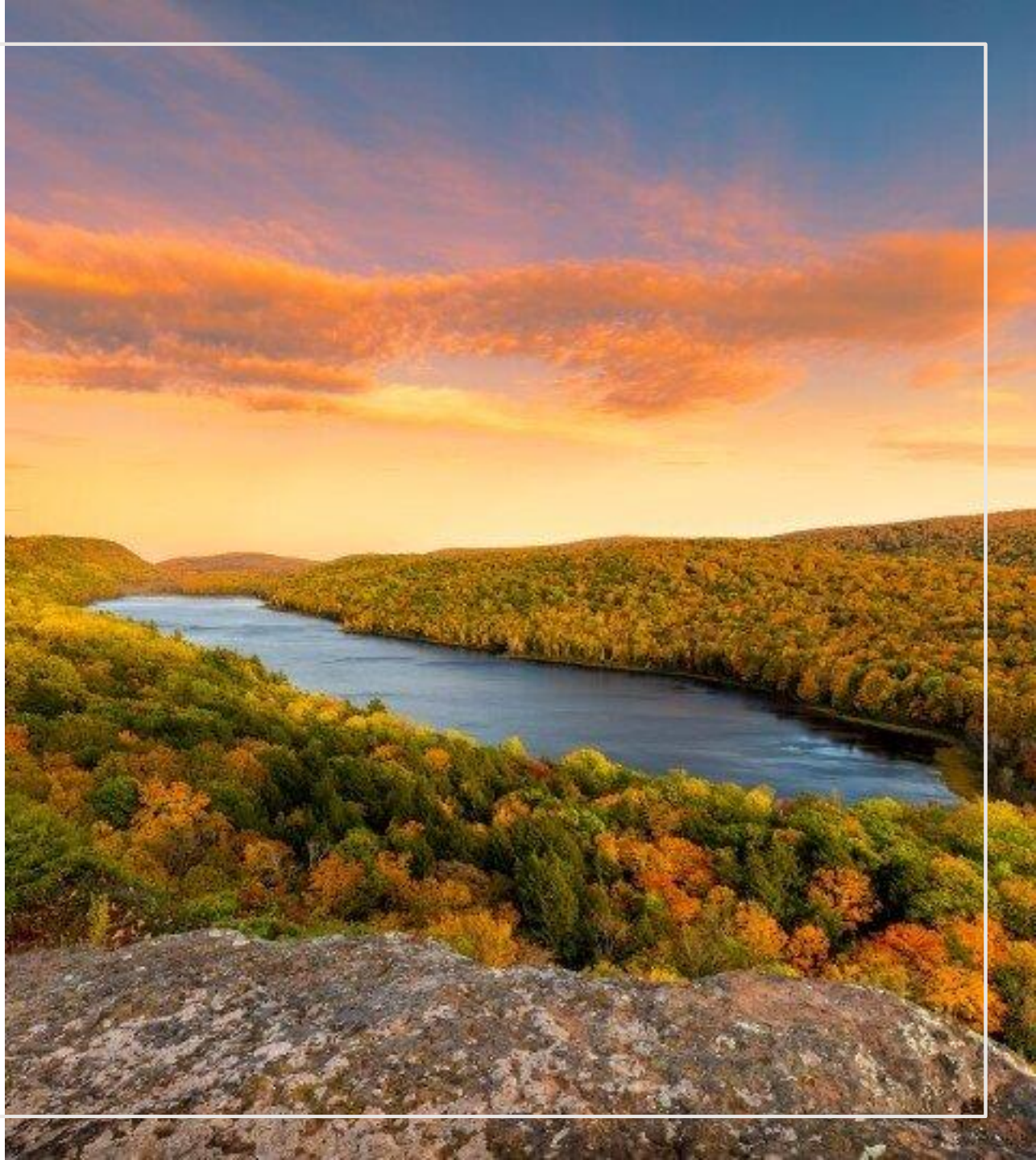
At the end of the training you will be familiar with:

- The types, characteristics, and ecological significance of wetlands
- The role of wetlands in society and business and the type of services they provide
- Strategies for preserving and contributing to the conservation and restoration of wetlands



AGENDA

- What are wetlands?
- The business case for managing wetlands
- What can businesses do to conserve and restore wetlands?
- Supporting frameworks and tools
- Use cases and case studies of wetlands supporting business processes
- What Engie commits to do



MENTI-QUIZ

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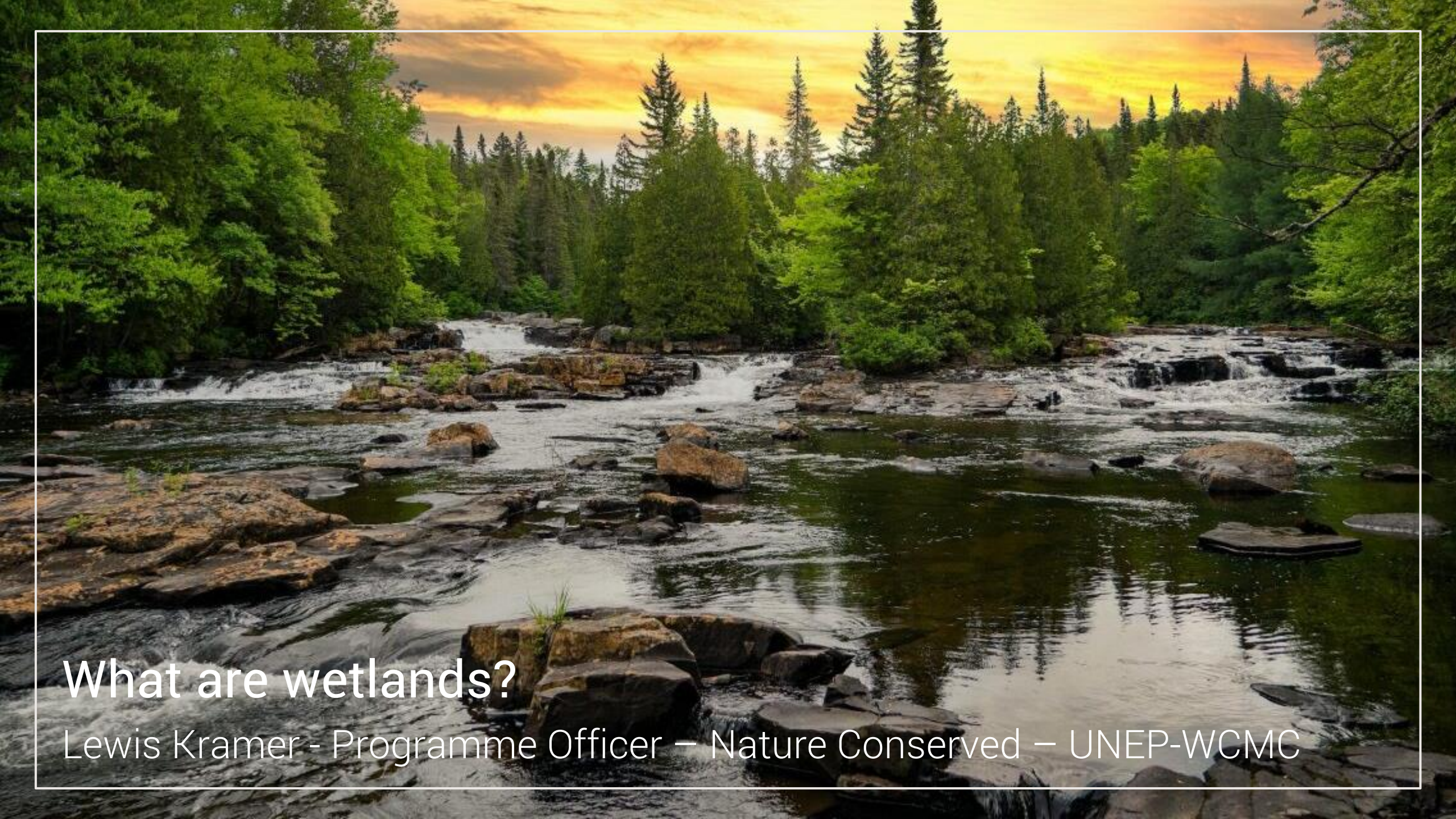


What are wetlands?

Lewis Kramer - Programme Officer – Nature Conserved – UNEP-WCMC

DEFINING WETLANDS

“Areas of marsh, fen, peatland or water, whether natural or artificial, permanent or temporary, with water that is static or flowing, fresh, brackish or salt, including areas of marine water the depth of which at low tide does not exceed six metres”

- Convention on Wetlands

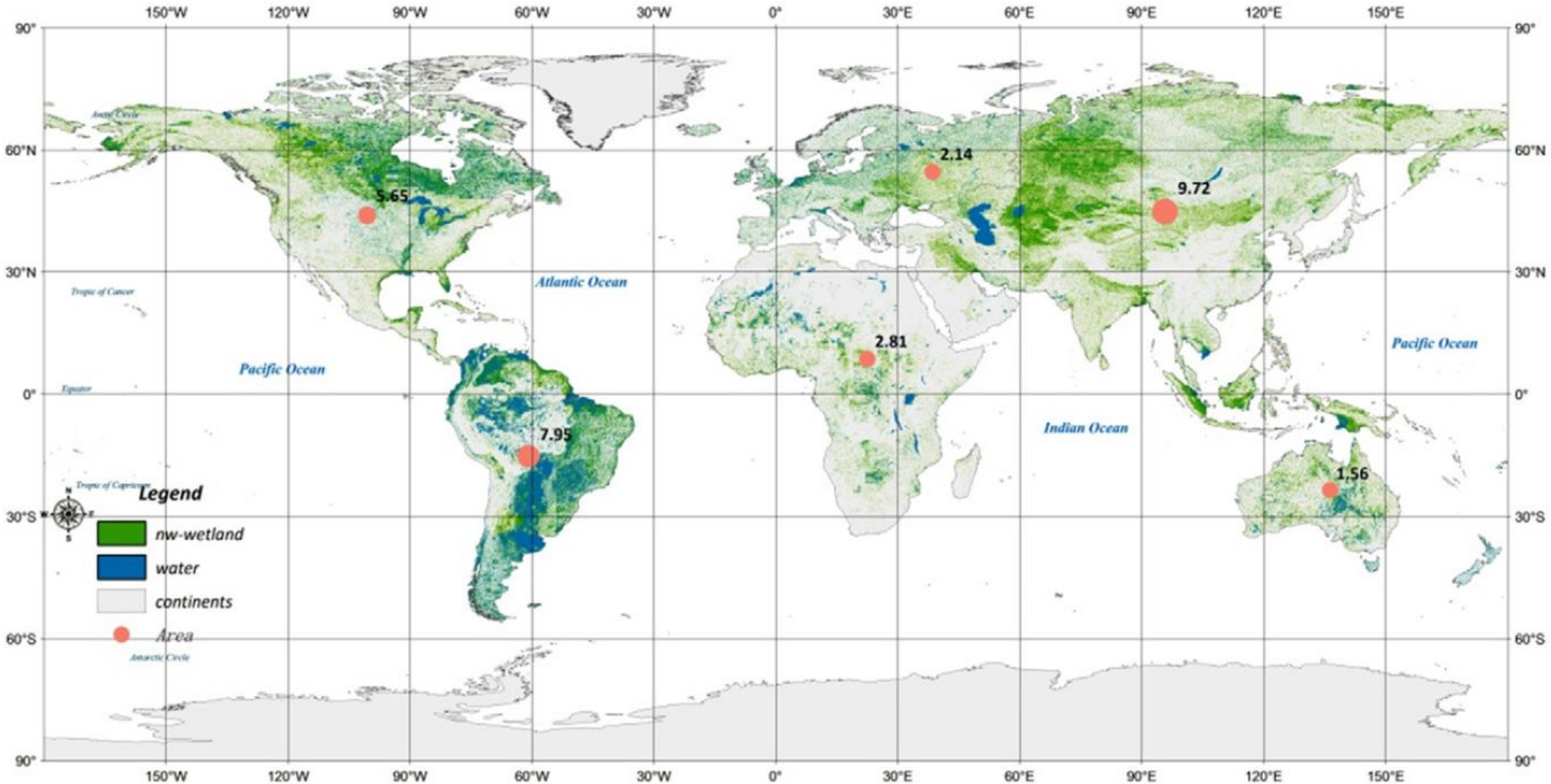
TYPES OF WETLAND

- **Marine:** oceans, reefs, and coasts
- **Estuarine:** river deltas and mangroves
- **Lacustrine**: lakes and still freshwater bodies
- **Riverine:** rivers and flowing freshwater
- **Palustrine:** marshes and peatlands

GLOBAL DISTRIBUTION

There are approximately 1.5-1-6 billion ha of wetland globally.

However, wetland area is declining across the world.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120°W
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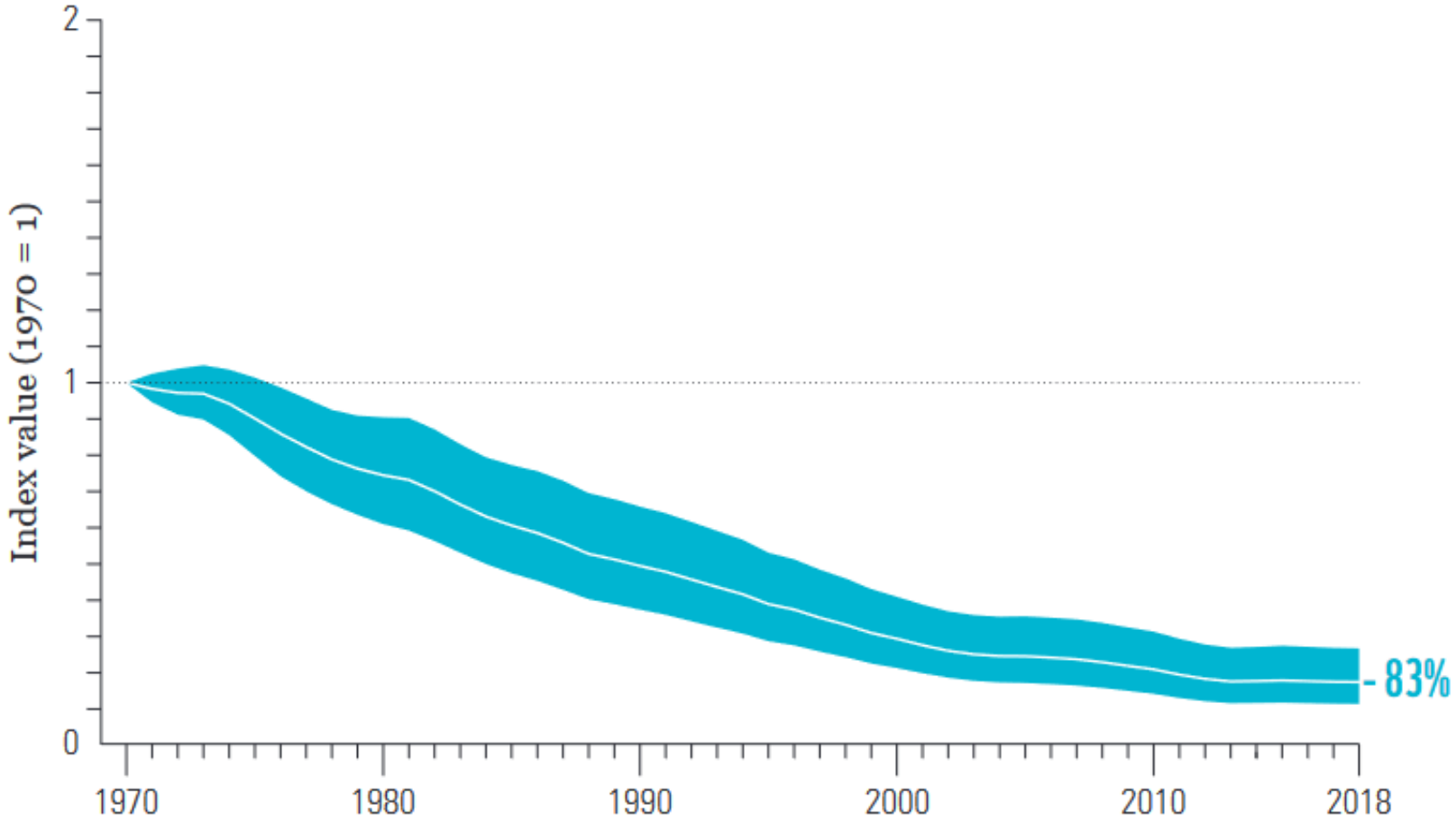
60°E
90°E
120°E
150°E
90°
60°N
30°N
0°
30°S
60°S
Arctic Circle
Tropic of Cancer
Equator
Tropic of Capricorn
Antarctic Circle
Atlantic Ocean
Pacific Ocean
Pacific Ocean
Indian Ocean
5.65
2.14
9.72
2.81
7.95
1.56
Legend
nw-wetland
water
continents
Area

ECOLOGICAL SIGNIFICANCE OF WETLANDS

Wetlands represent some of the most biodiverse ecosystems in the world.

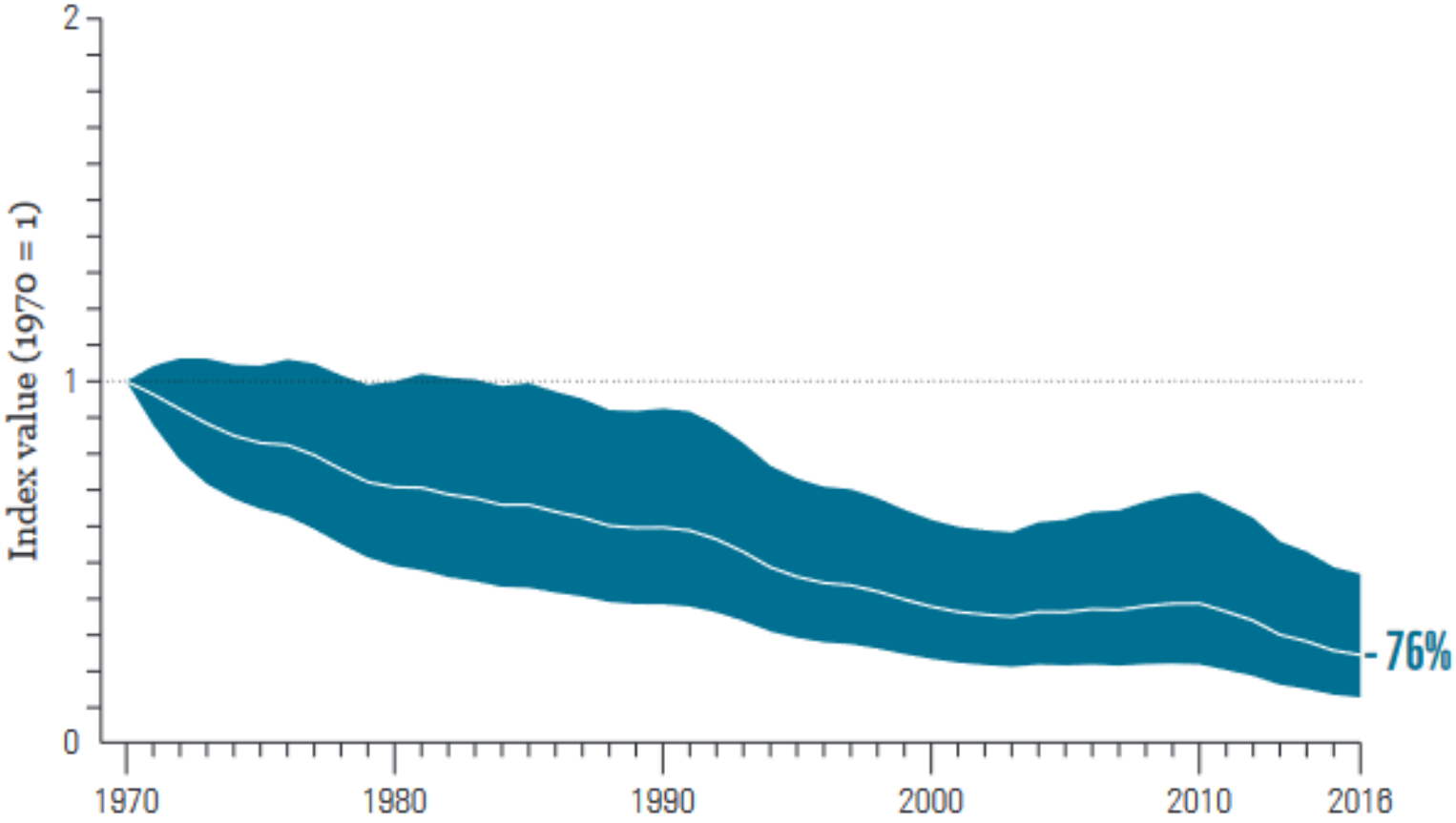
But they are also among the most threatened.

FRESHWATER LIVING PLANET INDEX



WWF, Living Planet Report 2022

LIVING PLANET INDEX OF FRESHWATER MIGRATORY FISH



WWF, Living Planet Report 2022

ANTHROPOGENIC THREATS TO WETLANDS

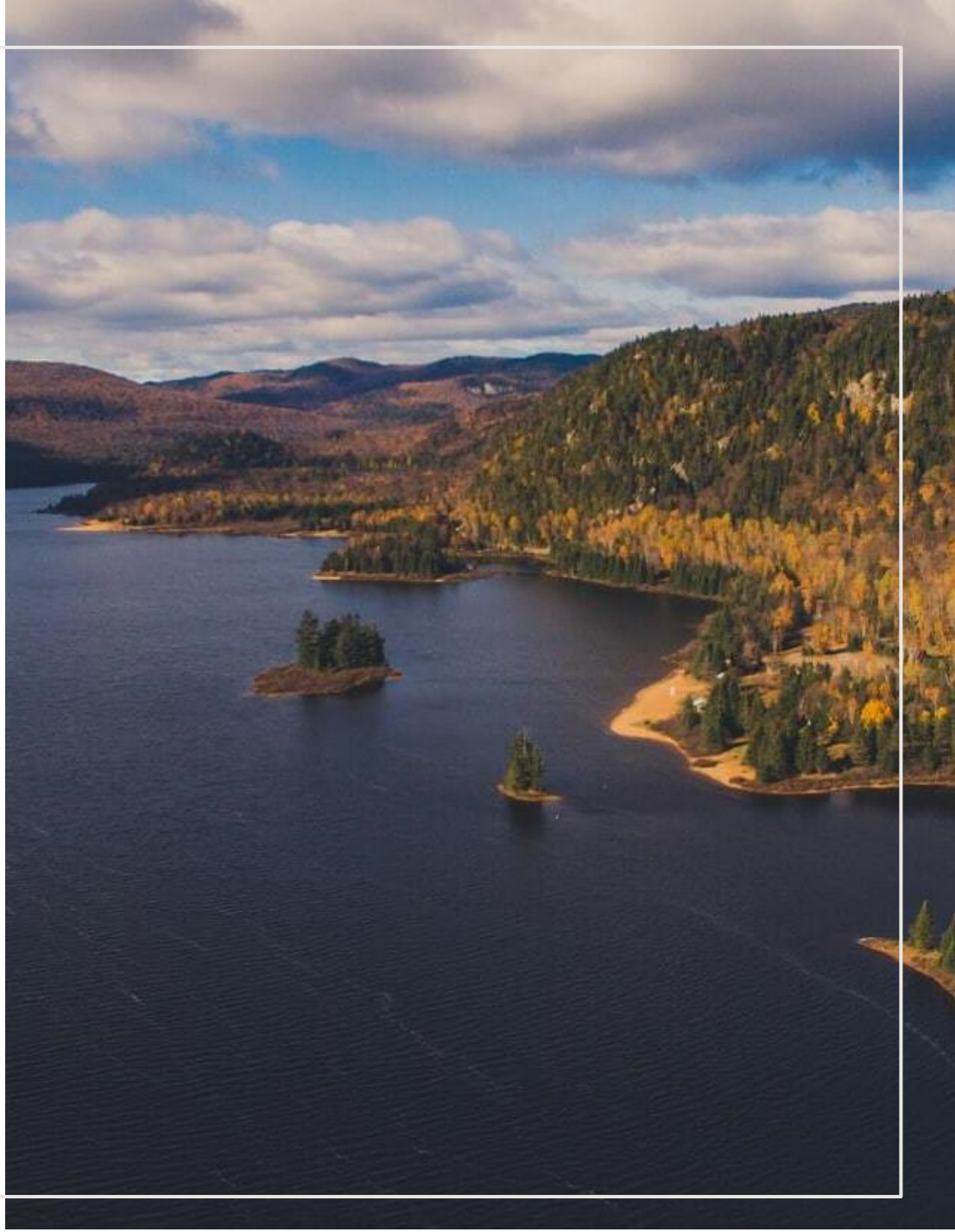
- **Habitat destruction**, for uses such as agriculture or infrastructure development
- **Pollution**, including fertilizers, plastic, and other waste
- **Overexploitation**, including overextraction of water and overfishing
- **Invasive alien species**, including introduced plants, animals, and pathogens
- **Climate change**, including through causing changed water and climatic regimes

STATUS OF WETLAND CONSERVATION AND RESTORATION

Ramsar sites cover approximately 256,786,000 ha over 2,494 sites, but we don't yet know the full extent of wetland coverage by protected and conserved areas.

Restoration work is ongoing globally, including via river re-meandering and dam removal.

Countries party to the CBD have committed to protect 30% of inland waters areas, and restore an additional 30% of degraded inland waters areas.

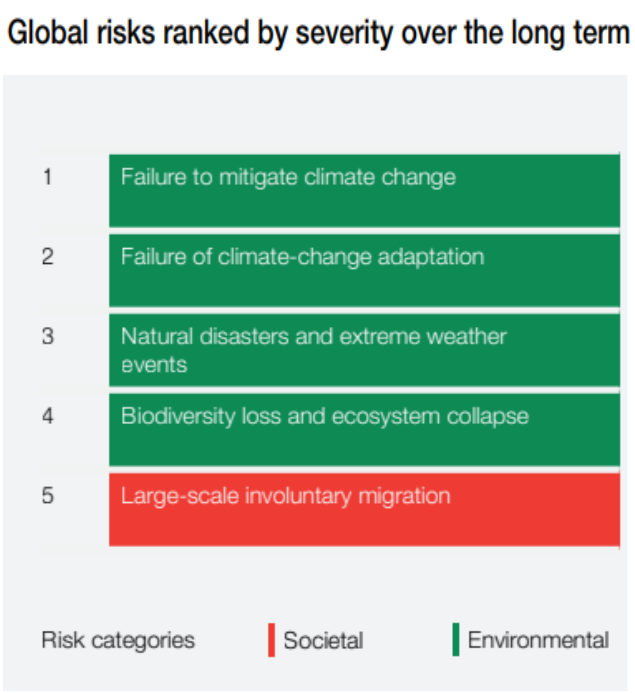


The business case for managing wetlands

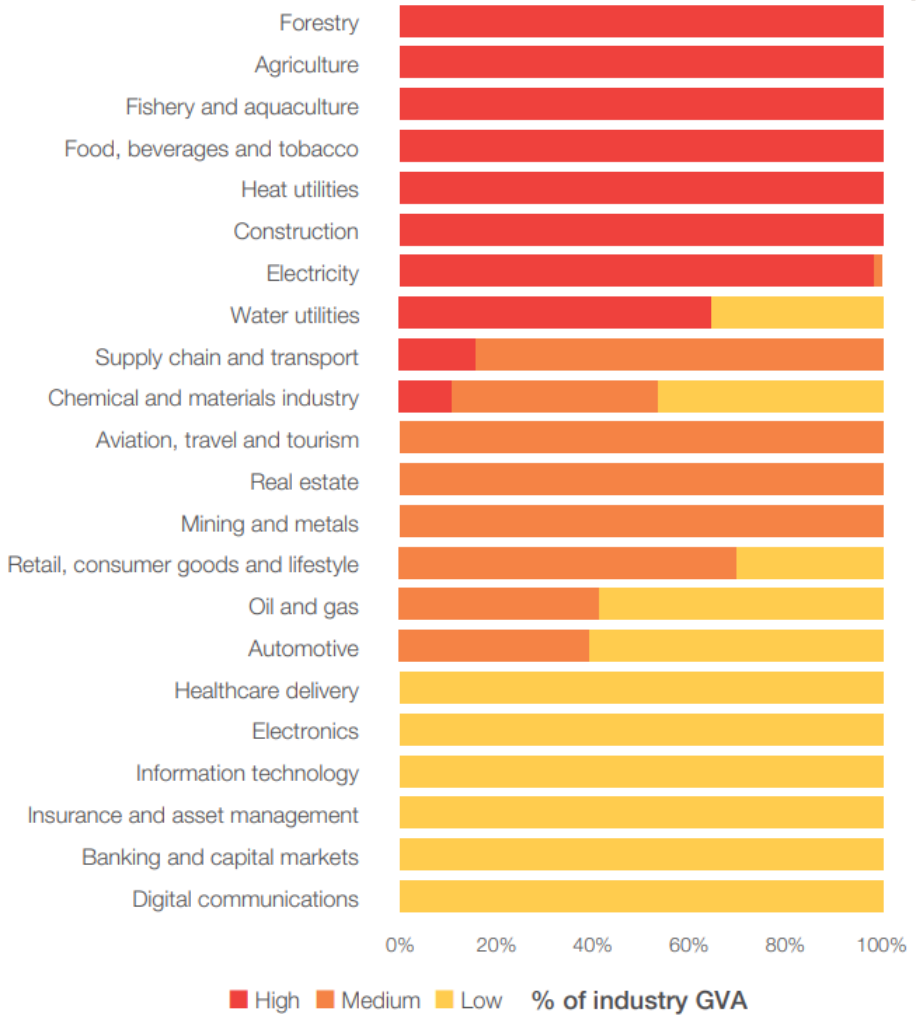
Bálint Ternyik - Programme Officer – Nature Economy – UNEP-WCMC

BIODIVERSITY LOSS IS INCREASINGLY SEEN AS A MATERIAL BUSINESS RISK

- All businesses **impact and depend on biodiversity** directly and through their supply chains
- Global biodiversity loss affects key areas of risk for any business
- $44 trillion/year at risk (50% of global GDP)



WEF, Global Risks Report 2023



WEF, Nature Risk Rising 2020

NATURE-RELATED RISKS

WETLAND SERVICES

- Flood prevention
- Drought mitigation
- Groundwater recharge
- Water filtration and purification
- Carbon sequestration
- Biodiversity conservation
- Food provision
- Cultural and spiritual values
- Human health support

NATURE-RELATED OPPORTUNITIES

TNFD (2023)

NATURE-RELATED OPPORTUNITIES

TNFD (2023)

WETLANDS AND CLIMATE CHANGE ADAPTATION

- Increasing number of extreme climate events
- Increasing amount of economic damage
- Wetlands attenuate and mitigate damages
- Coastal wetlands alone save $447 Billion and 4,620 lives annually
- Hurricane Sandy - $625 million avoided in damages
- Hurricane Irma - $1.5 billion avoided in damages
  - 500,000 people protected
  - 25% less damage with mangroves

MANGROVES IN COASTAL PROTECTION

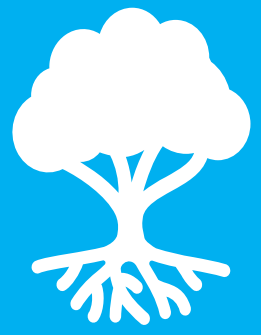
WETLANDS AND CLIMATE CHANGE MITIGATION

- 35% of global terrestrial carbon is contained in wetlands (covering 6% of land)
- Peatlands are the most efficient carbon stores of all terrestrial ecosystems
- Investment in wetlands can be 100x more cost effective than other climate mitigation option
- Degrading wetlands need to be better managed and degraded wetlands rehabilitated

OPPORTUNITIES FOR FUNDING

- Governments and the private sector are making funds available
- Carbon and biodiversity credits are being explored:
  - Norfolk river project received £170k
- Landscape Finance Lab – examples of wetland projects across +3M hectares

WHY CONSIDER WETLANDS? - SUMMARY

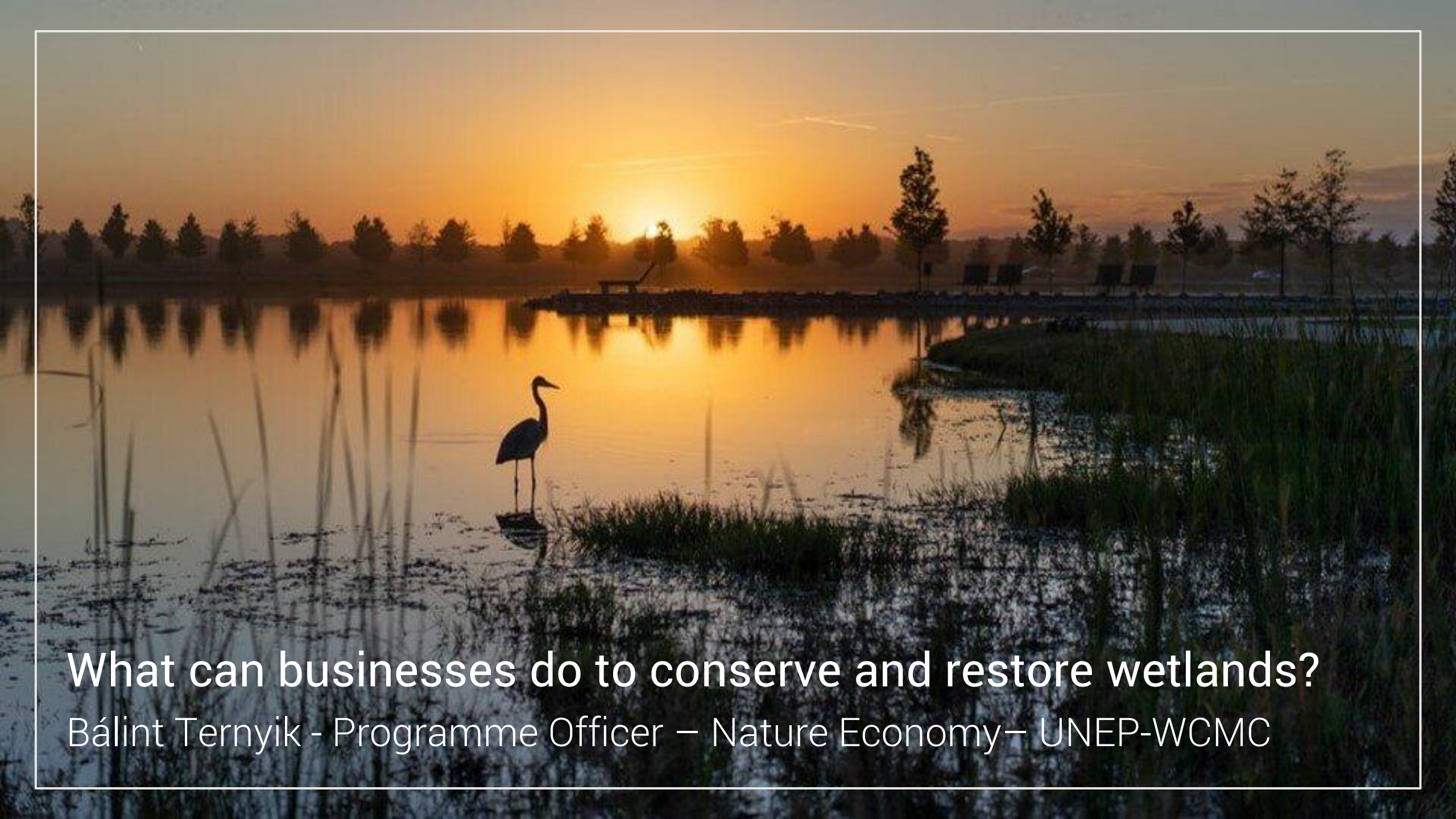


Climate Commitments

Biodiversity Commitments

Dependencies on Nature

Social Equity

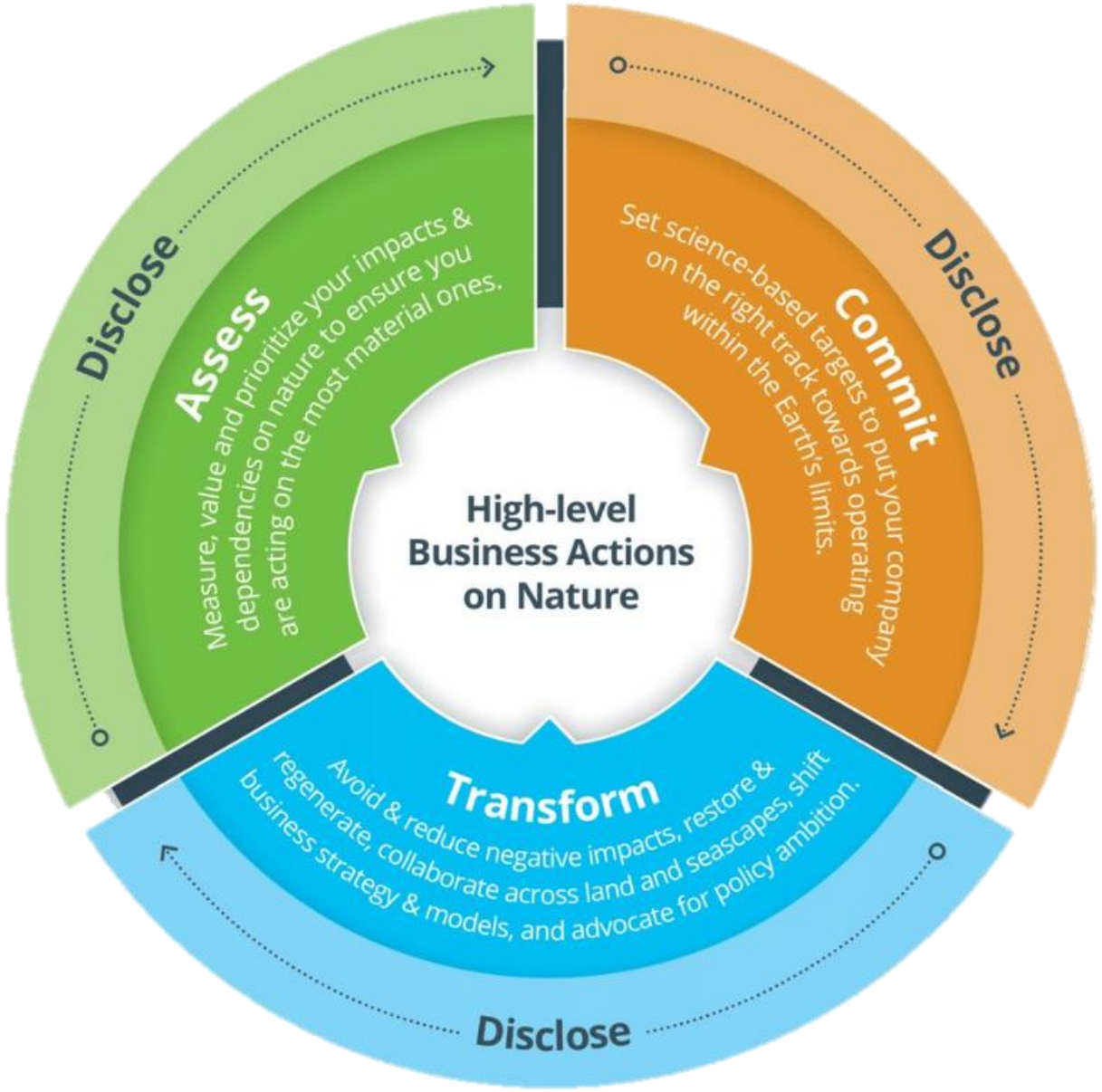


What can businesses do to conserve and restore wetlands?

Bálint Ternyik - Programme Officer – Nature Economy– UNEP-WCMC

BUSINESS ACTIONS

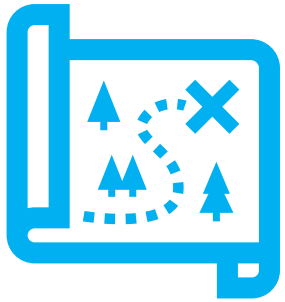
- **Assess** and disclose impacts and dependencies
- Make ambitious **commitments** aligned with global goals
- Maintain robust internal policies to deliver **transformative** systemic outcomes for nature
- **Disclose** information about the progress made



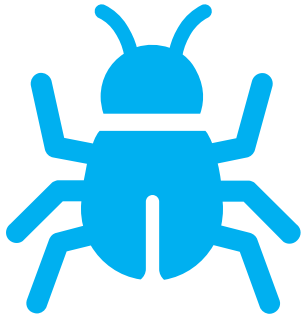
STRATEGIES FOR CONTRIBUTING TO WETLAND CONSERVATION AND RESTORATION

Assessing Wetlands

Plan for Sustainable Land Use



Protected Areas



Invasive Species Control

Water Management

Habitat Restoration

Education & Awareness

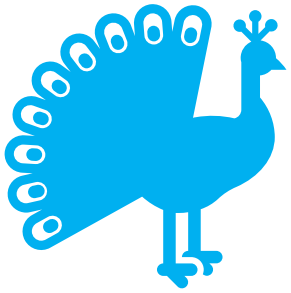
Policy & Legislation

INDICATORS FOR MONITORING WETLANDS

Wetland
Type & Area

Water
Quality

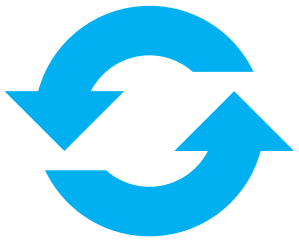
Hydrological
Conditions



Biodiversity

Ecosystem
Services

Invasive
Species Control

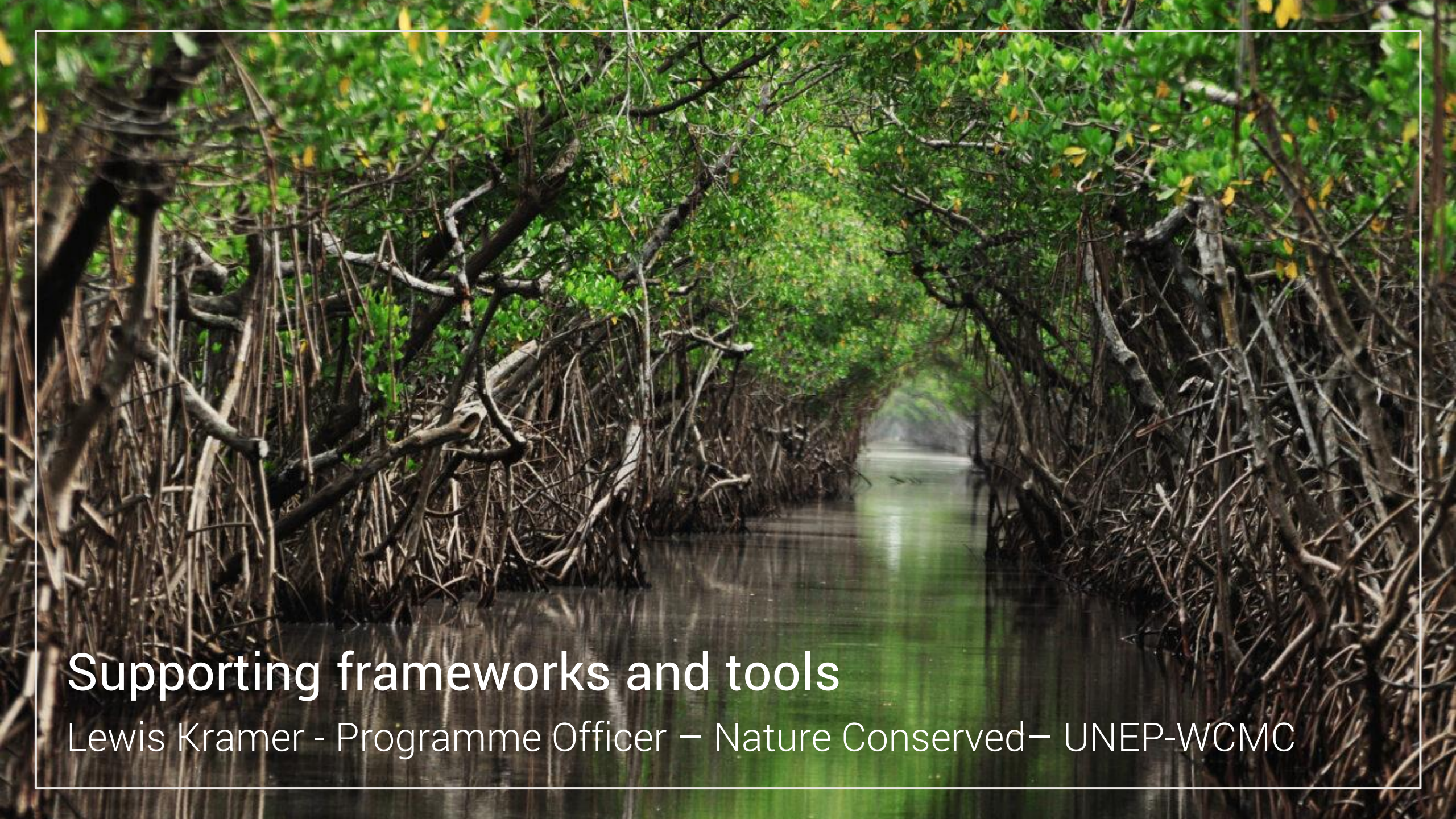


Restoration
Success

Community
Engagement

Public
Awareness

Policy
Implementation



Supporting frameworks and tools

Lewis Kramer - Programme Officer – Nature Conserved– UNEP-WCMC

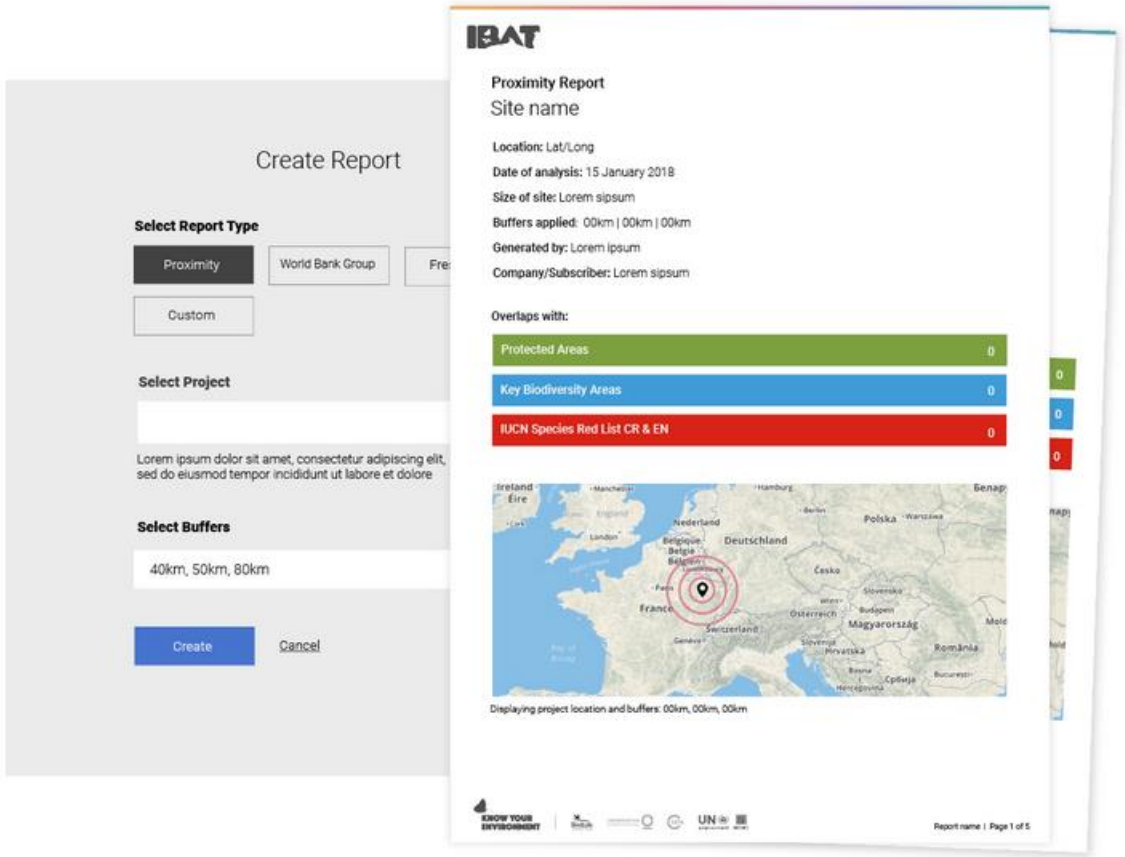
WETLAND-FOCUSED ORGANISATIONS AND FRAMEWORKS

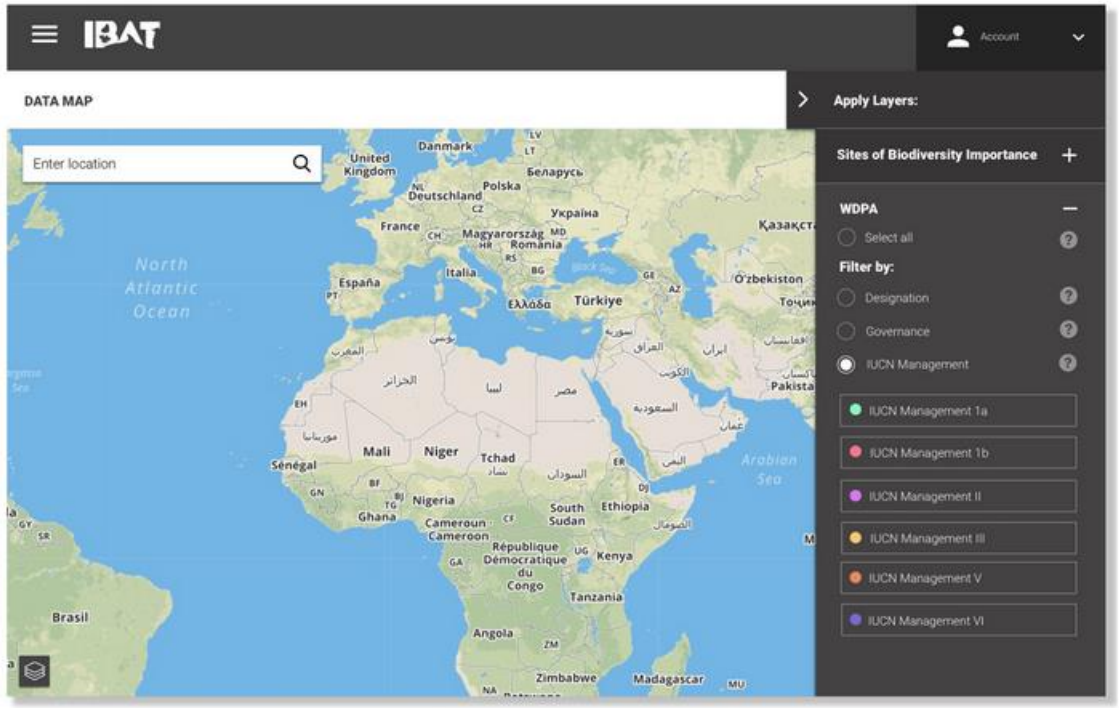
- Ramsar Convention on Wetlands
- EU legislation
- Other multilateral environmental agreements, including CBD
- NGOs and charities

WETLANDS DATA AND TOOLS

- Integrated Biodiversity Assessment Tool (IBAT)
- Ramsar Site Information Service (RSIS)
- Restoration Opportunities data layer
- HydroSHEDS and other products
- Global Mangrove Watch

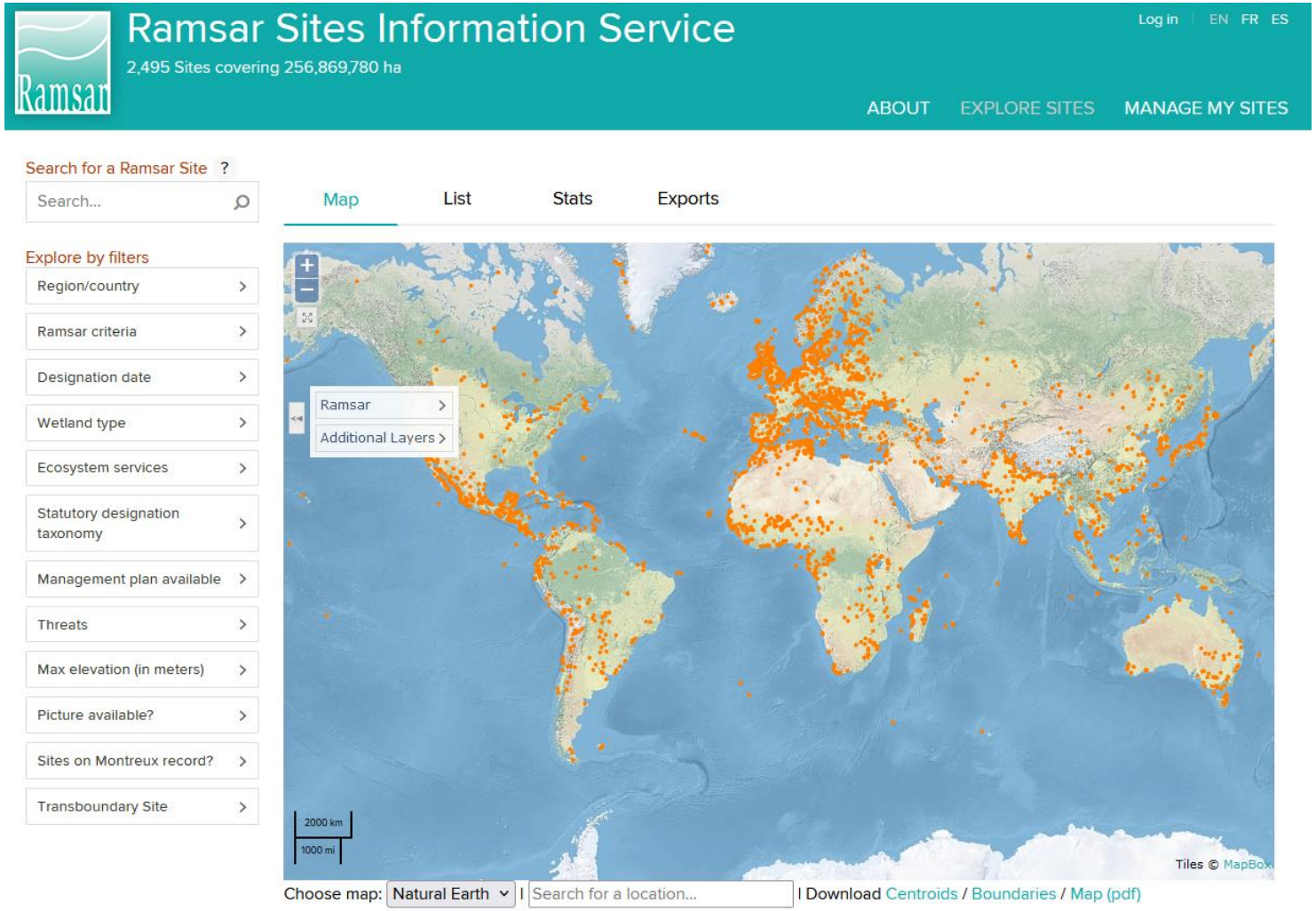
IBAT





https://www.ibat-alliance.org/

RAMSAR SITE INFORMATION SERVICE (RSIS)



https://rsis.ramsar.org/

Use cases and case studies for wetlands

Bálint Ternyik - Programme Officer – Nature Economy– UNEP-WCMC

USE CASE #1: ECOLOGICAL ENGINEERING FOR FLOOD RESILIENCE

- **Challenge**: Populated areas are increasingly under pressure from flooding events
- **Solution**: Implementation of natural catchment measures and floodplain storage
- **Benefits**: Natural habitat protection, community greenspaces, landscape beautification, carbon sequestration
- **Actors involved**: Environmental agencies, local and national park authorities, universities, local communities

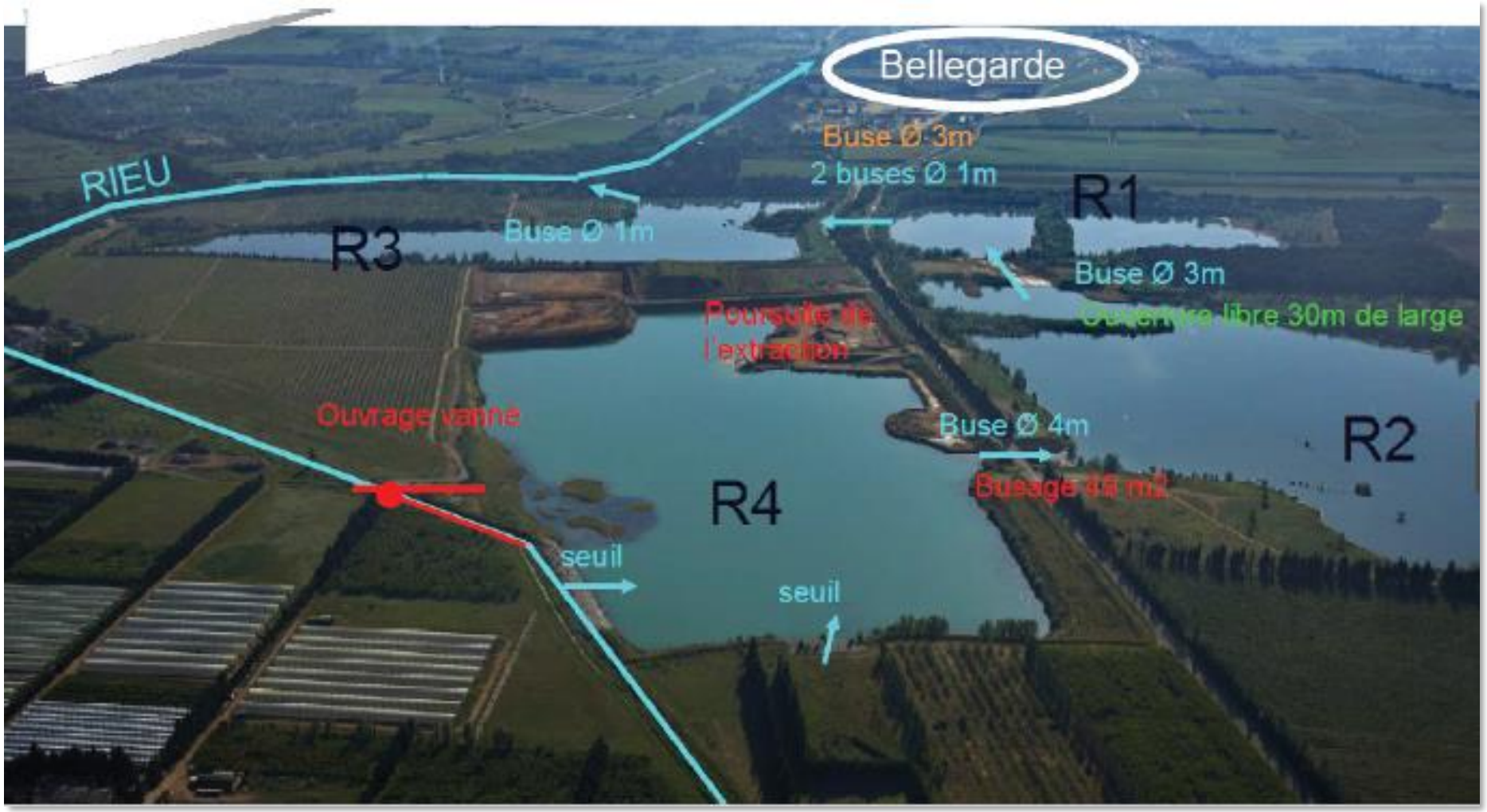
Source: Institution of Civil Engineers (2016)

USE CASE #2: ECOSYSTEM-BASED ADAPTATION FOR COASTAL PROTECTION

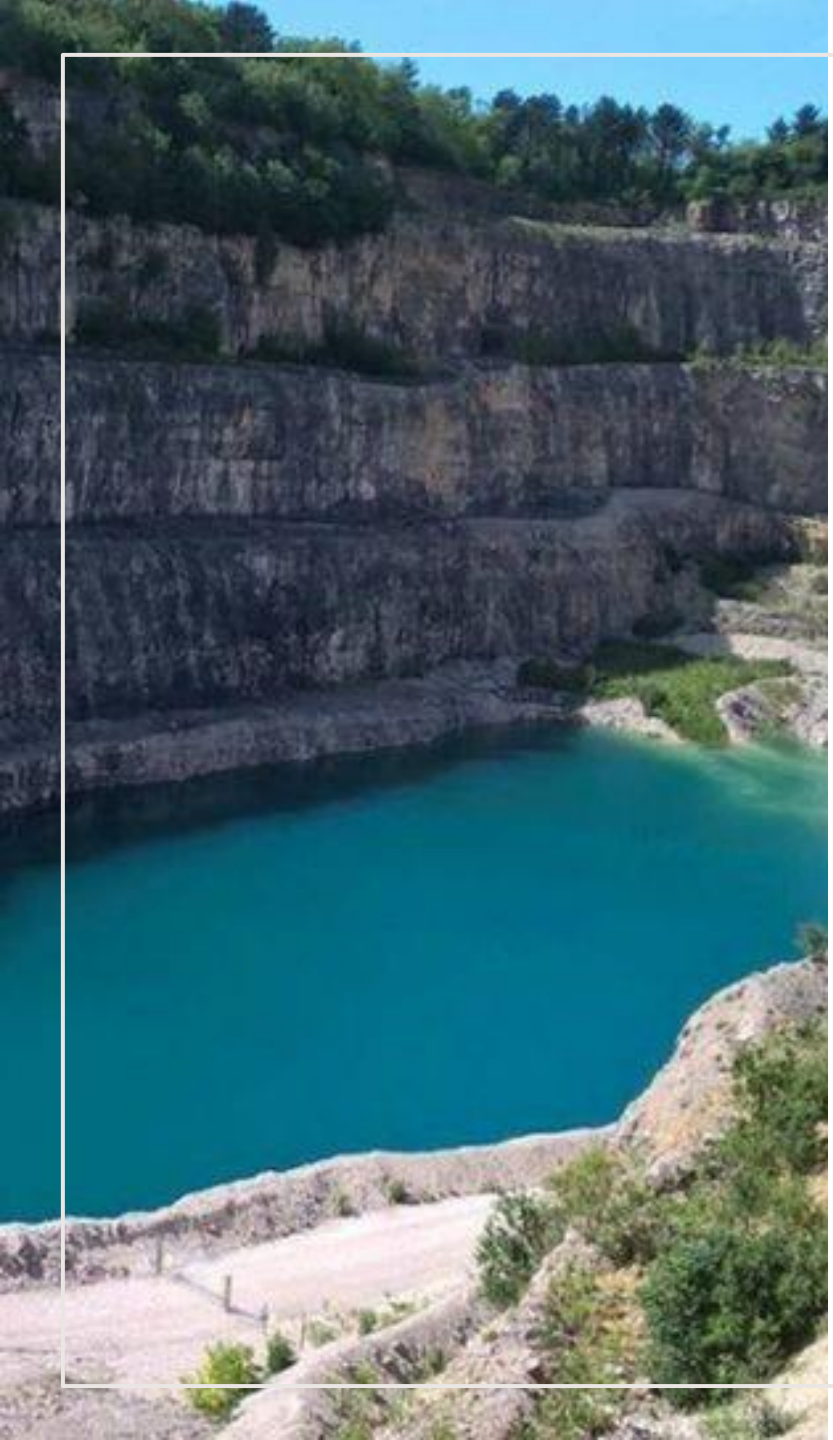
- **Challenge**: Coastal communities and business operations are threatened by flooding and erosion caused by storm surges
- **Solution**: Restoration and sustainable use of mangroves which protect the coastline
- **Benefits**: Habitat provision, increased fish stocks, carbon sequestration
- **Actors involved**: Local communities, businesses, NGOs, donor agencies, experts, government

Source: Marine Conservation Institute (2018)

QUARRY BROWNFIELD SITE, BELLEGARDE/ FRANCE



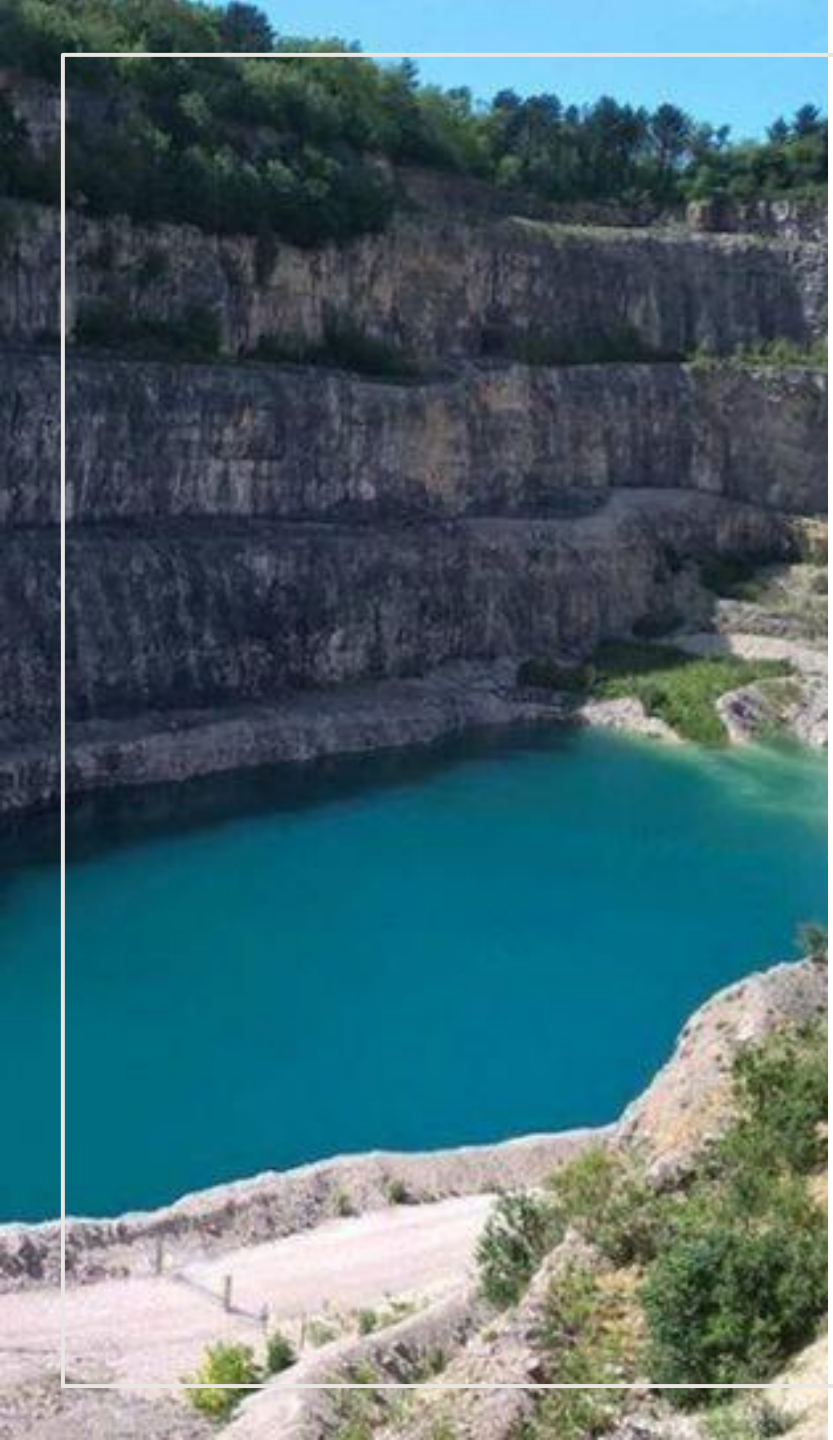
Source: WBCSD (2015) Natural Infrastructure Case Study: Water management and flood prevention in France.



CHALLENGE AND ACTIONS TAKEN

Challenge: Seasonal flooding of sites and adjacent communities (disruption of operations and safety risks)

Actions: Expand flood prevention infrastructure through quarry rehabilitation and creation of wetlands



OUTCOME AND BENEFITS

Outcome: Reduced flood risk to operations and local communities

Benefits: Habitat creation for a variety of species, regulating Ecosystem Services (such as water purification)

ITAIPU DAM, PARAGUAY/BRAZIL

Source: Rycerz R., Bugler W., Messling L., and Wade, G. (2020) Itaipu Dam: How natural ecosystems support one of the world's largest hydroelectric dams. Resilience Shift Case Study.

CHALLENGE AND ACTIONS TAKEN

Challenge: Potential loss of function due to sedimentation and reduced water supply

Actions: Watershed forest restoration and management (>100,000 ha); Management of other land including altered agricultural practices

OUTCOME AND BENEFITS

Outcome: Reduced dredging costs; More consistent water supply

Benefits: Biodiversity conservation; Carbon-storage in restored forest

What Engie commits to do?

Virginie Quilichini - Social Responsibility Lead - Engie

Q&A

MENTI-QUIZ

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