Freshwater biodiversity in the region: regional challenges and opportunities

Workshop on Protecting Water Quality and Biodiversity for Improved Water Management
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Outline

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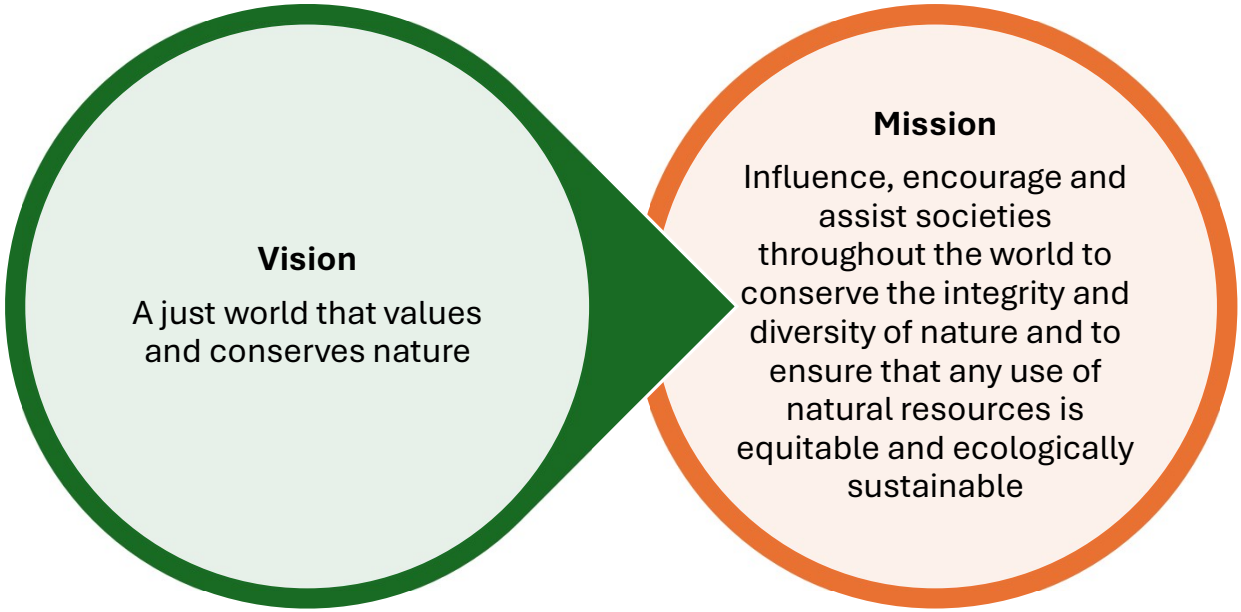
- IUCN's role in West Asia.
- IUCN's standards of relevance.
- Freshwater and biodiversity – Current Status and challenges in West Asia
- Freshwater and biodiversity – Potential solutions
- Opportunities showcase

IUCN at a glance

IUCN is a membership union established in 1948; composed of both government and civil society organisations, IUCN harnesses the experience, resources and reach of its more than 1,400 Member organisations and the input of more than18,000 experts

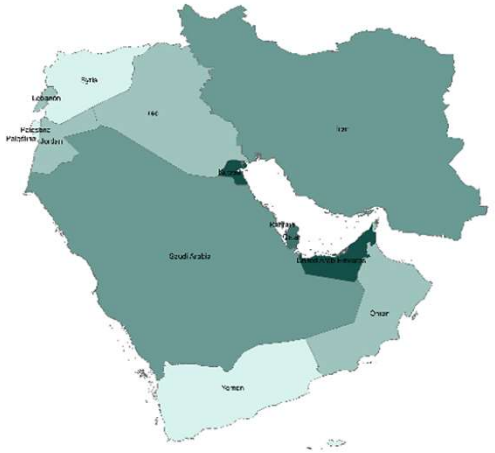


IUCN's role in West Asia region – Countries

IUCN's role in West Asia region

Critical issues that face the region:

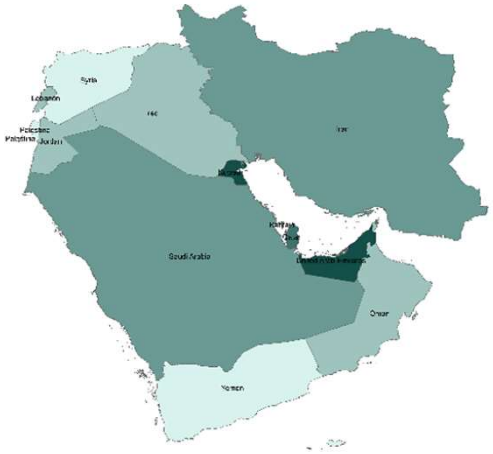
- Land Degradation, aridity and desertification
- Unsustainable water extraction and use
- Biodiversity and habitat loss, and species extinction
- Threats to sensitive marine ecosystems through pollution, habitat destruction, invasive alien species, and unplanned coastal development



IUCN's role in West Asia region

Core Programs:

- The Protected Areas and Biodiversity Program
- The water and Climate Change Program
- The Drylands, livelihood and Gender Program
- The Marine and Coastal Management Program



Why Freshwater Biodiversity is Important?

Freshwater Biodiversity provides a vast array of services to people:

- Material (food; health and genetic resources; material goods)
- Non-material (culture; education and science; recreation)
- Regulating (catchment integrity; climate regulation; water purification and nutrient cycling)

If freshwater biodiversity is protected, conserved, and restored in an integrated manner, as well as more broadly appreciated by humanity, it will continue to contribute to human well-being and our sustainable future.

IUCN's standards of relevance

IUCN Red List of Threatened Species

The IUCN Red List is the world's most trusted information source on global species biodiversity and the gold standard for identifying threatened species. Produced with the active participation and support of the Red List Partnership, it includes the Green Status of Species tool, which assesses the recovery of species populations, measuring conservation success.

Green List of Protected and Conserved Areas Standard

The IUCN Green List of Protected and Conserved Areas Standard is the global standard for effective area-based conservation. It provides governments and site managers with a framework for assessing and improving the conservation status of their protected areas, and a way to publicly demonstrate their commitment to conservation and sustainable development.

IUCN's standards of relevance

[IUCN NbS Standard]

Nature-based Solutions (NbS) are "actions to protect, sustainably manage and restore natural or modified ecosystems that address societal challenges effectively and adaptively, simultaneously providing human well-being and biodiversity benefits"

IUCN's standards of relevance

IUCN NbS Standard

- The IUCN Global Standard for Nature-based Solutions guides users to design and implement NbS in a way that allows nature to deliver its valuable ecosystem services. In addition, the Global Standard sets clear benchmarks to measure the progress of NbS.

- This framework consists of **8** criteria with **28** associated indicators with guiding questions that help the user assess and improve their solution.

- Users of the Global Standard are encouraged to also use the IUCN Online NbS Self-Assessment Tool. This tool can be used to:
  - design new Nature-based Solutions;
  - upscale pilots by identifying gaps;
  - self-assess past projects and future proposals.

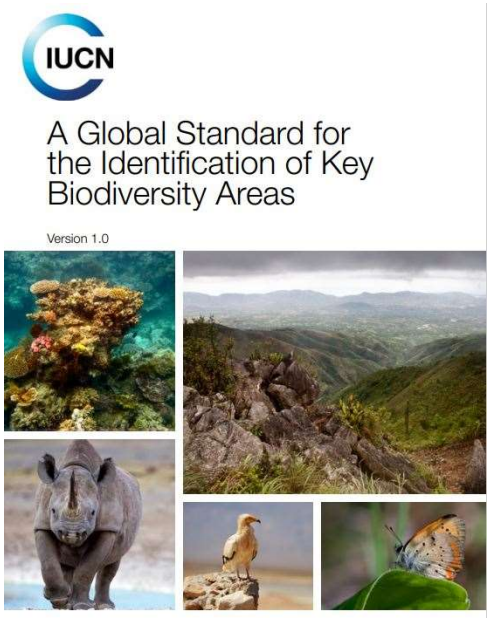
Key Biodiversity Areas (KBAs) –

- As defined by IUCN, Key Biodiversity Areas (KBA) are '**sites contributing significantly to the global persistence of biodiversity**', in terrestrial, freshwater and marine ecosystems. The Global Standard for the Identification of Key Biodiversity Areas (IUCN 2016) sets out globally agreed criteria for the identification of KBAs worldwide.

- These KBAs provide resources that are essential for guiding decisions on the conservation and sustainable management of freshwater biodiversity in the region.

IUCN's standards of relevance

IUCN's Global Standard for Identification of Key Biodiversity Areas



The aims of the KBA Standard are to:

- Harmonise existing approaches to the identification of important sites for biodiversity; § Support the identification of important sites for elements of biodiversity not considered in existing approaches;
- Provide a system that can be applied consistently and in a repeatable manner by different users and institutions in different places and over time;
- Ensure that KBA identification is objective, transparent and rigorous through application of quantitative thresholds; § Provide decision-makers with an improved understanding of why particular sites are important for biodiversity.

Freshwater Biodiversity in West Asia – Key challenges

Habitat Loss

- Due to urbanization, infrastructure development, and agricultural expansion
- Examples: Draining of Mesopotamian Marshes and Shrinking of Lake Urmia

Water Issues

- Many West Asian countries have less than 500 cubic meters of renewable water resources per capita annually.
- Over-extraction leads to drying rivers, shrinking lakes, and depleted aquifers
- Example: Azraq Wetland, Jordan which is shrinking due to over abstraction.

Pollution

- **Sources:** Industrial waste, agricultural runoff (pesticides and fertilizers), untreated urban sewage.
- **Effects:** Degradation of water quality, health problems for humans and wildlife.

Climate Change

- Increased temperatures, altered precipitation patterns, more frequent droughts which causes reduced water availability, stressed ecosystems, species migration or extinction.

Freshwater Key Biodiversity Areas (KBAs) – *Examples*

Mesopotamian Marshes – Iraq

One of the largest wetland ecosystems in the Middle East.
Home to numerous bird species including endangered ones
Supports fish populations critical for local livelihoods.

Lake Urmia – Iran

One of largest hypersaline lakes in the world (now facing severe shrinkage).
It's a critical habitat for migratory birds.

Azraq Wetland – Jordan

A Ramsar zone wetland that is a critical habitat for migratory birds and several unique fish species

The over abstraction of water is leading to its shrinkage and habitat loss.

Freshwater Biodiversity in West Asia –example ecosystems and species

Mangroves

Mangroves can be seen along side the coastlines of the UAE, Oman, and Iran

Coral Reefs

Coral Reefs in the Red Sea are found in Suadi Arabia, Jordan, and Egypt.

Gurra Rufa Fish

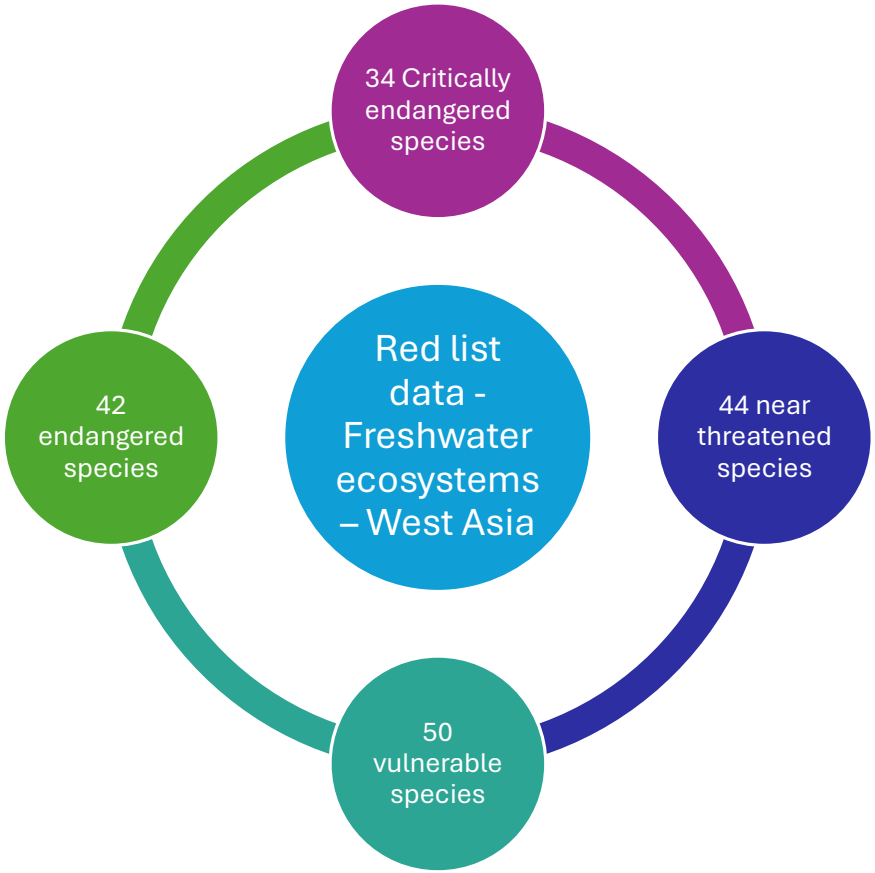
The Gurra Rufa fish is an endangered species that can be found in the streams in Iraq.

Freshwater and biodiversity – Current Status and challenges in West Asia

Definition of the categories used in the Red List (IUCN 2001; 2003)

Taxon	Definition
Critically Endangered	It is considered to be facing an extremely high risk of extinction
Vulnerable	It is considered to be facing a high risk of extinction
Endangered	It is considered to be facing a very high risk of extinction .
Near Threatened	A taxon is Near Threatened when it has been evaluated against the criteria but does not qualify for Critically Endangered, Endangered or Vulnerable now, but is close to qualifying for or is likely to qualify for a threatened category in the near future.
Least Concern	A taxon is Least Concern when it has been evaluated against the criteria and does not qualify for Critically Endangered, Endangered, Vulnerable or Near Threatened. Widespread and abundant taxa are included in this category.

Freshwater and biodiversity – Current Status and challenges in West Asia



Freshwater and biodiversity – Potential solutions

- Habitat restoration projects to improve the quality and connectivity of freshwater ecosystems.
- Establishing protected areas within KBAs with strict regulations to limit human disturbances and preserve critical habitats.
- Implementing sustainable water management practices to ensure the availability of water resources for freshwater ecosystems and species.
- Implementing Wetland Restoration projects to recover lost or degraded wetland and reviving habitats
- Conducting public awareness campaigns to educate local communities about the importance of conserving freshwater biodiversity.

Showcase 1 - Iraq Marshlands

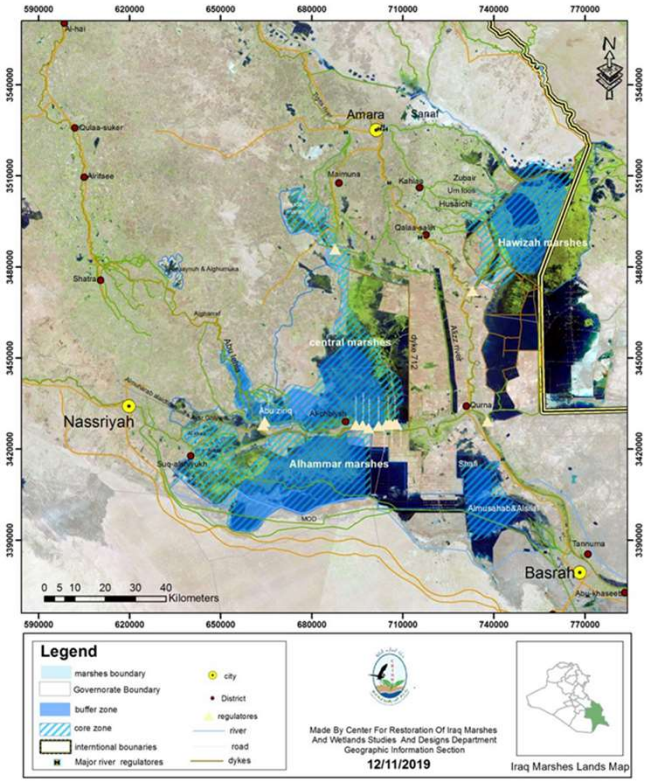
- **Biodiversity**: Marshes are home to a diverse array of plant and animal species and also it serves as a habitat and attraction for migrating bird
- Marshes act as natural filters, trapping sediments and pollutants from water that flows through them. The vegetation and the structure of the **Water filtration:** marsh help to remove excess nutrients, chemicals, and contaminants, contributing to improved water quality.
- **Flood Control:** Marshes play a crucial role in managing water levels and reducing the risk of flooding. The vegetation in marshlands absorbs and slows down water flow, helping to mitigate the impacts of storms and heavy rainfall. This can protect nearby areas from flooding and erosion.
- **Carbon Sequestration:** Marshes are effective at capturing and storing carbon. The organic matter in the soil accumulates over time, locking away carbon and helping to mitigate climate change.
- **Aesthetics:** Marshlands often provide recreational opportunities

Current Status

- **Water scarcity**
- **Pollution**
- **Water & Soil Salinization**
- **Climate Change**

➢ **Marshes formerly covered almost 20,000 sq.km, now shrinking to third their size**

➢ **The water buffalo, main source of income for local community, reduced by 10% in 2008.**



Map of Al Ahwar (Source: Center of Restoration of Iraq Marshes and Wetland Studies and Designs Department Geographic Information)

Showcase 1 - Project Overall goal

Overall Goal

Improving local communities' resilience and adaptive capacity to climate induced water related challenges as well as climate proofing the underlying ecosystems in the Marshes area by adopting a WEFE nexus approach and building resilient agriculture and land management practices.

Showcase 1 - Project design – Main components

- Introduce NbS for enhancing water security and improving water quality (Artificial wetlands and fodder farmland).
- Introduce sustainable farming practices (water-efficient, soilless systems).
- Update the integrated management plan for marshes by fostering the WEFE Nexus approach.
- Improve the resilience of local farmers, fishermen, and breeders (production input and equipment).
- Improve the livelihood opportunities of the local community (establish small local production enterprises).
- Raise awareness and build the capacities of local communities and authorities related to climate change and marshes' conservation.

Showcase 1 - Project objectives

- **Objective (1):** Strengthen community and ecosystem climate resilience and adaptive capacity by applying water-related nature-based solution (NBS) and updating the integrated management plan for the marshes.

- **Objective (2):** Improve local communities' livelihoods and food security by introducing climate-resilient farming practices and establishing income generating opportunities.

- **Objective (3):** Enhance the knowledge and awareness of local communities and local authorities on climate resilience, planning for optimal resource management, and marshes conservation.

Showcase 2 - Towards sustainable management in the Mujib river basin

- As an effort to assist managing and better allocation of the limited water resources in Jordan, the project “Towards Sustainable Management in the Mujib River Basin” aims to apply the “integrated river basin approach’ in the Mujib basin in central Jordan.

- Mujib basin is of high importance for biodiversity due to its location and climatic conditions.

- This participatory approach involves all stakeholders in planning for the water resources of the watershed to ensure the best allocation. In addition, it aims to ensure the integration of environmental flow, which supports vital habitats for the unique biodiversity of the region

Thank you for your attention!

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