

WORLD WATER HUB

# ECOSYSTEMS & BIODIVERSITY

A VITAL ROLE IN SUPPORTING LIFE ON EARTH

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## Introduction

Water ecosystems, encompassing wetlands, rivers, and oceans, play a vital role in supporting a diverse array of life. This section will explore the importance of these ecosystems, the impact of water quality on aquatic biodiversity, and the essential need for the conservation of aquatic systems.

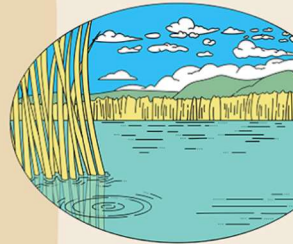
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## Why Are Water Ecosystems So Important?

### WETLANDS

- Act as a natural filter, removing pollutants and sediments from the water.
- Provide a critical habitat for diverse plant and animal species.
- Serve as a breeding ground for many fish and amphibians.



### RIVERS

- Contribute to nutrient cycling and sediment transport, influencing downstream ecosystems.
- Support diverse aquatic life, including fish, insects and mollusks.
- Provide water for agriculture, industry, and human consumption.



### OCEANS

- Generate oxygen through photosynthesis by marine plants (phytoplankton).
- Home to a staggering number of marine species, from microscopic organisms to large mammals.
- Regulate climate by absorbing and redistributing heat across the globe.



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# How Does Water Quality Impact Ecosystems?

## POLLUTION & HABITAT DEGRADATION

- Poor water quality resulting from pollution harms aquatic habitats, leading to the decline of species dependent on clean water.



## ALTERED NUTRIENT LEVELS



- Excessive nutrients, often from agricultural runoff or untreated sewage, can lead to algal blooms, oxygen depletion, and disruptions in aquatic food chains.

## CHEMICAL CONTAMINANTS

- Industrial discharges and improper waste disposal introduce chemicals that can be aquatic to aquatic organisms, affecting biodiversity and ecosystem health.



## TEMPERATURE CHANGES

- Alterations in water temperature, often associated with climate change or industrial processes, can impact the distribution and behavior of aquatic species.

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## Summary

Water ecosystems are indispensable for sustaining life on Earth, providing habitat, food, and vital ecosystem services. Recognizing the impact of water quality on aquatic biodiversity highlights the urgency of effective conservation strategies. Through responsible water management, habitat protection, and community involvement, we can contribute to the preservation of these invaluable ecosystems, ensuring their continued ability to support biodiversity and provide essential services for generations to come.

Learn about the most effective strategies for addressing water scarcity by becoming a member of the hub.