



# The Baltic Sea: Ecological Significance, Challenges, and Conservation Strategies

The Baltic Sea is a unique brackish water ecosystem. This presentation covers ecological significance, challenges, and conservation.

# Introduction: A Unique Brackish Water Ecosystem

## Brackish Nature

The Baltic Sea has low salinity. It's due to freshwater inflow and limited exchange.

## Biodiversity

It is home to unique flora and fauna. These are adapted to brackish conditions.

## Environmental Sensitivity

The Sea is very sensitive to pollution. Slow water exchange makes it vulnerable.





# Ecological Importance: Biodiversity Hotspot and Key Habitats

1

## Biodiversity Hotspot

The Baltic Sea supports many species. Some are rare and endangered.

2

## Key Habitats

It provides breeding grounds for birds. Fish spawning areas are also here.

3

## Ecological Functions

It plays a crucial role in nutrient cycling. The Sea is essential for the food web.



# Major Environmental Challenges: Eutrophication and Pollution

## Eutrophication

Excessive nutrients cause algal blooms. These deplete oxygen, harming life.

## Pollution

Industrial and agricultural runoff pollutes. Chemicals and plastics pose threat.

## Dead Zones

Oxygen-depleted areas kill marine life. Eutrophication creates these zones.



# Overfishing and Its Impact on Marine Life



## Depleted Stocks

Overfishing reduces fish populations. Cod and herring are heavily affected.



## Ecosystem Imbalance

Removal of key species disrupts the food web. This leads to ecological imbalance.



## Need for Regulation

Sustainable fishing practices are essential. Enforcement of quotas is important.





# Climate Change Effects: Rising Temperatures and Sea Levels

1

## Rising Temperatures

Increased water temperature affects species. Distribution and reproduction change.

2

## Sea Level Rise

Coastal habitats are threatened. Flooding and erosion increase risk.

3

## Ocean Acidification

Increased CO<sub>2</sub> absorption acidifies water. This harms shellfish and plankton.





# International Cooperation: The Helsinki Convention (HELCOM)

1

## Regional Agreement

HELCOM is a key agreement. It involves all Baltic Sea countries.

2

## Environmental Goals

It aims to protect the marine environment. Reduction of pollution is the main goal.

3

## Collaborative Efforts

HELCOM promotes joint actions. Monitoring and research are coordinated.

# Conservation Strategies: Marine Protected Areas and Sustainable Practices

**Marine Protected Areas**  
MPAs safeguard sensitive habitats. They protect biodiversity.



## Sustainable Fishing

Quotas and gear restrictions help. They ensure fish stock recovery.

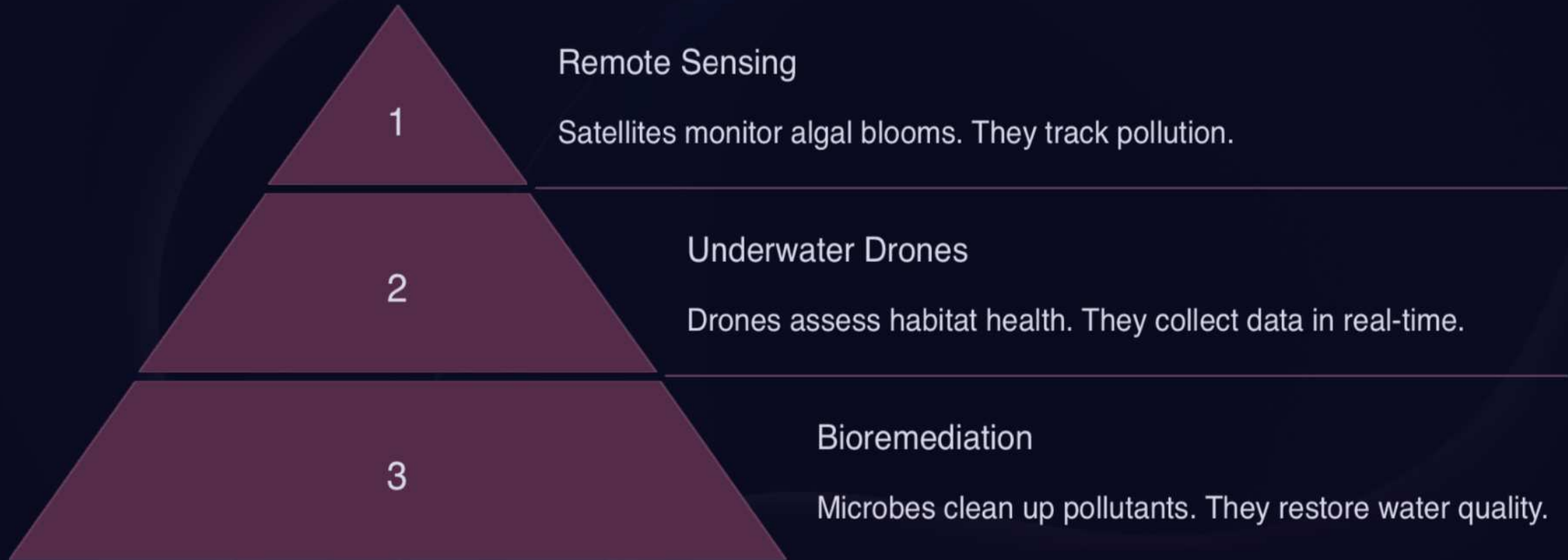
## Reduce Pollution

Better wastewater treatment is vital. Agricultural runoff must be controlled.





# Technological Innovations for Monitoring and Remediation



# Future Outlook: A Call to Action for Baltic Sea Protection

1 Raise Awareness

2 Implement Policies

3 Fund Research

The Baltic Sea needs urgent action. Protecting its future is everyone's responsibility. Future efforts require raising public awareness, implementing effective policies and funding of research.

