

**Forum:** Environment Commission II

**Issue:** Restoring life to the Baltic Sea

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## Introduction

The Baltic Sea is a water body of Northern Europe. The features of this inland brackish sea provide the foundation to many precious aquatic habitats. It remains unique as an inland sea and is the mainland of Europe, the Scandinavian Peninsula and the Danish Islands. Due to its structure, the salinity of water varies from 0.5 to 30 grams of salt per liter of water.

However, due to the increasing human activities such as industrialization, specifically speaking, unmonitored toxic disposal methods, the Baltic Sea is facing numerous threats. Due to high concentration of phosphorus and nitrogen, distinct water zones with no oxygen, referred as marine dead zones, are created in the Baltic Sea. Furthermore, increase of pollutants fuels the growth of algae, which consequently increases the amount of algae corpse. This phenomenon leads to the dead algae body sinking to the seabed and starting to decompose that uses up the oxygen of the water body, and thus causing eutrophication.

Therefore, nations are advised to consider international cooperation and come up with solutions to neutralize the concentration of the pollutants in the Baltic Sea. Possible solutions is to set up filters and dumping limits of toxic waste. There have been action plans and organizations such as the The Helsinki Commission (HELCOM) Baltic Sea Action Plan that succeeded in reducing the phosphorus and nitrogen discharges in both water and air. The delegates are encouraged to debate by building upon existing action plans due to its complexity.

## Definition of Key Terms

### Salinity

The salt content in grams per liter of water sources, used to measure the saltiness or the salt content dissolved in a body of water. An ecological factor that closely relates to the organisms that live in a body of water

## Marine dead zones

Various areas in the Baltic Sea that is occupied by oxygen-less body of water due to the overwhelming absorption of oxygen through the process of decomposing algae.

## Eutrophication

The process of increasing the concentration of chemical nutrients within an ecosystem which leads to the overgrowth of primary productivity in the ecosystem, possible reduction in quality of water and population of marine creatures

## Brackish

An intermediate of seawater and freshwater. Since freshwater has a salt content of 0.5g per liter and seawater has 30g per liter, the range of brackish water is huge and the various organisms have adapted well to specific salinity of the water, therefore its species is extremely rare.

## General Overview

### The causes of the Baltic Sea pollution

As mentioned, the Baltic Sea is polluted with mostly phosphorus and nitrogen that induces the increase of dead algae decomposing that absorbs most of the oxygen in the water. This phenomena is known as marine dead zones where life is absent in said specific locations and areas of the body of water. In such cases, human activities are responsible for the destruction of the Baltic Sea ecosystem.

#### *Agriculture and Industrialization*

The agricultural sector contributes most to the discharge of phosphorus and nitrogen. The excess of these substances are able to cause the excessive growth of microscopic and macroscopic plants, which severely reduces the oxygen levels in the water. The routes, which these substances take to reach the water largely, result from agriculture. Overabundant chemical fertilizers travel through soil and reach the water. Other industrializing countries have factories which emit nitrogen gas and it travels through the air and gets trapped in the coastal regions of the water body.

#### *Eutrophication*

Eutrophication is the phenomena of excessive nutrients in an ecosystem that allows for an overgrowth in microscopic plants. This leads to the absorption of oxygen in the water. When this occurs, the oxygen level in water is very low such that no fishes/organisms can live in the area. This is also known as the marine dead zone.

## Effects on the marine ecosystem

Some confusion may occur when looking at the main factor that contributes the most negativity to the issue. It is not the concern of the excess of phosphorus and nitrogen that results the marine dead zone, it is in fact the indirect effects of eutrophication that brings attention to the Baltic Sea coast nations. Due to the increase in microscopic plants, the transparency of the sea lessens and thus sunlight is unable to penetrate into the seabed, disrupting the photosynthetic plant growth, which results in the decrease of vegetal and ultimately leading to the breakdown of the food chain.

## Timeline of Events

Date	Description of event
2005	First successful launch of the Baltic Sea Action Plan concept
7, March 2006	Official initiation of the action plan done by Helsinki
8-9, March 2006	Recognition of the first core elements to restore the Baltic Sea, setting a common goal and vision
March 2007	First draft of an action plan and reviewed by the Helsinki Commission

## UN Involvement, Relevant Resolutions, Treaties and Events

The HELCOM is the sole organization that focuses extensively on the Baltic restoration by forming action plans and annual conferences. It has been successful in reducing the phosphorus and nitrogen content by almost half the original total discharge in both land and air.

## Bibliography

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