

MARE NOSTRUM





MULTILATERAL COMENIUS PROGRAMME *'MARE NOSTRUM'*

PLOUGASTEL-DAOULAS VISIT
31st MARCH-4th APRIL 2014

3rd JUNIOR HIGH SCHOOL OF ACHARNES



An underwater scene with a blue and cyan color palette. Several fish are visible swimming in the water. The background is slightly hazy, suggesting an underwater environment.

Environmental problems in the marine environment

- Rubbish, Urban wastewater
- Oil spill
- Industrial waste, Heavy metals
- Pesticides

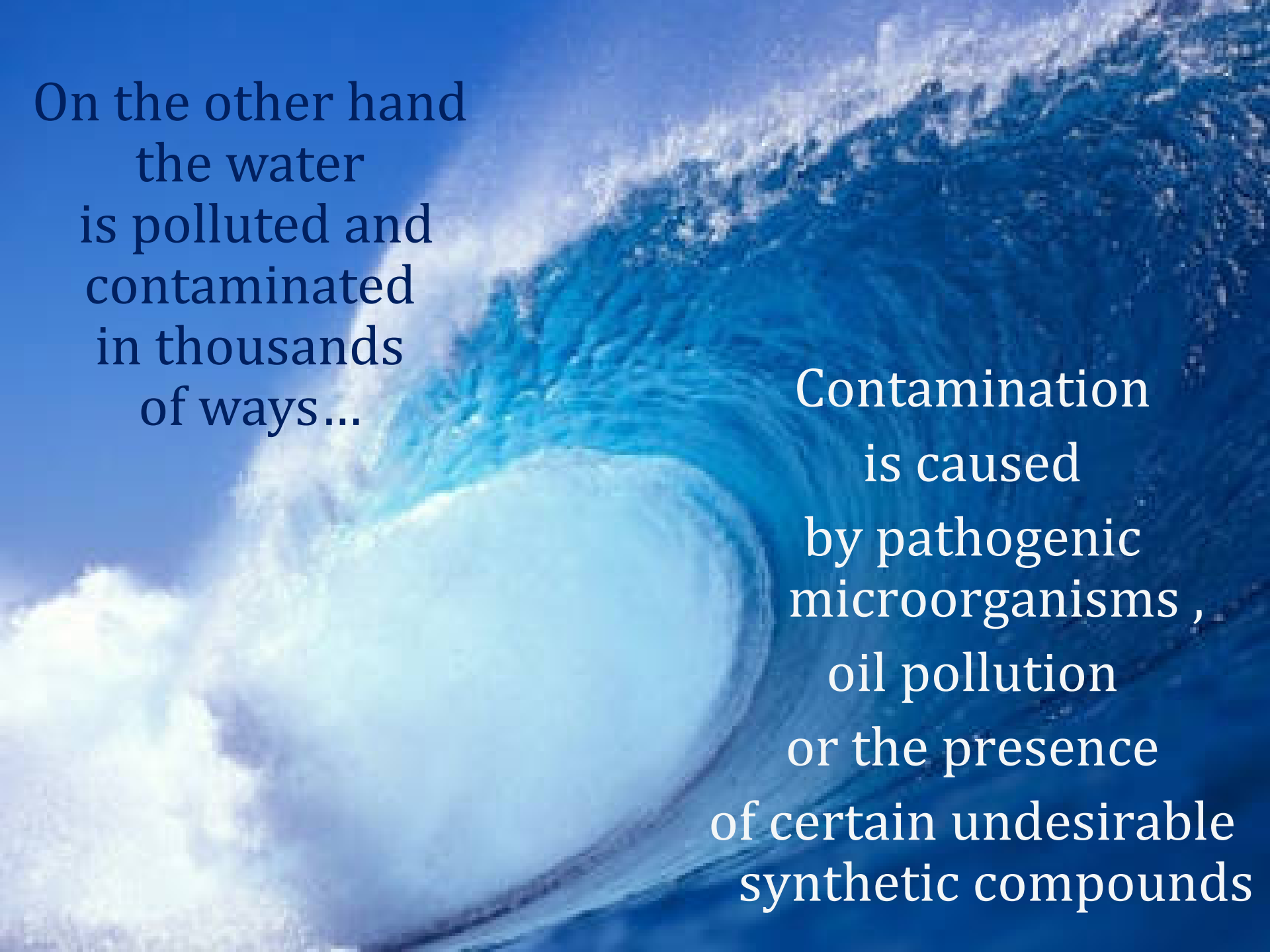
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A large, powerful ocean wave is crashing against a rocky shore. The water is a deep blue, and the white foam of the wave is prominent. The sky is a clear, bright blue. The overall scene is dynamic and captures the raw power of the ocean.

Introduction

The natural water is present in large amounts in Nature, either concentrated in lakes and seas or in the underground and in the atmosphere. It is also a key component of plant and animal organisms.

Two thirds of the humans' weight is water gained from drinking or from different foods.



On the other hand
the water
is polluted and
contaminated
in thousands
of ways...

Contamination
is caused
by pathogenic
microorganisms ,
oil pollution
or the presence
of certain undesirable
synthetic compounds

Rubbish

An underwater photograph showing a large, crumpled, clear plastic bag floating in the water. Several fish are visible around the bag, some appearing to be attracted to it. The background shows a coral reef and the surface of the water with ripples.

The animals are attracted by garbage because of their curiosity or when they need food or rest. They are trapped by the garbage because they get confused.

For example, turtles eat plastic bags because they look like jellyfish while birds eat or feed their young with pieces of plastic floating on the sea.

This can lead to starvation or malnutrition if their stomachs are filled with rubbish.



Urban wastewater

The unpleasant odor and colour, mainly caused by the organic material undergoes anaerobic decomposition by bacteria.

Organic materials in the entries are usually waste paper, food, soaps, detergents and other oils.

Inorganic constituents including sand, clay, ammonia, phosphates and other salts.

In general domestic or urban waste water consumed by humans for their needs .

Oil Spill



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Another category of major accidents is that of large oil tanker spills leaving thousands of tons of oil as the famous ship *Torref Canyon* that shed 100,000 tons in the English Channel.



That accident cost the lives of 100,000 birds. Furthermore, the impact on other marine organisms is incalculable.

For example, plankton surviving such an accident carries small amounts of oil that end up in fish.

Petroleum products are carcinogen. These turn together with the eggs go into humans.



Another part of the oil goes to the bottom where it destroys the algae that give food and cover for many organizations.

Industrial waste



Industrial development began with growing demand for energy, the source of which was the water.

Industrial processes such as cooling and washing, requiring even larger amounts of water, while the growing population, especially in big cities, need plenty of clean, healthy water.

The industrial use of water for cooling results in thermal water pollution in which reduced dissolved oxygen in the water accelerates physiological functions in organisms that often end in death .

Heavy metals



Organic and inorganic metals and metal substances released into the marine environment from industrial and mining activities, as well as by-products of combustion, particularly coal.

The most characteristic and devastating episode in environmental pollution by heavy metals occurred in *Minamata Bay* in Japan in the 1950s.

Today concerns are raising about the safety of treatment and the disposal of electronic waste which contain more than 1,000 materials, many of which have high toxicity.

Examples



Oil spill, industrial waste, heavy metals:

As it is known Eleusis Bay

was damaged in 20 years, from 1960-80,

- by the rough sea waste pipe of steel industry,
- by the Saturn and Botrys distilleries
- as well as the Hellenic refineries and Petrola.

The Central Sewage duct had also great contribution in this contamination

because through these years it has been estimated that 20% of urban effluents and wastes of Athens entered to Eleusis bay.

Rubbish:

A phenomenal environmental disaster occurred at the beach of Ropes in Andros, after a heavy downpour that hit the Island. The water swept away tons of waste into the sea, resulting in the beach burial under garbage and the sea color turning black.

Pesticides:

The harmful substances contained in pesticides affect and destroy flora and fauna of the region where they are used. Entire groups of harmful and beneficial animals and insects disappear and disrupt the natural balance. Grass, small plants and trees absorb these substances which in time are frequently destroyed. Some of these substances litter the subsoil and ground water.



Pesticides

The pollution of surface and ground water as well as that of the seas is characterized quite critical in many areas.

The agriculture fertilizers, pesticides and herbicides, industry waste and dwellings with sewage have contaminated groundwater aquifer reserves.

So, the amount of potable water and the seas become less suitable for aquatic life.

The problem is also influenced by the intensive fishing.

Thanks for your attention!



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