

## MARINE LITTER

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The Earth is often called "the Blue planet " because 70.8% of its surface is covered by water, and up to 97% of this water surface are the oceans and seas. Therefore, it is particularly important to preserve this valuable wealth. We all have to understand the problem of marine pollution and try together to solve it.

Marine litter represents only one of the many harmful effects to the marine ecosystem health, which in this day and age becomes an increasing problem. Annually about 10 million tons of garbage ends up in the seas and oceans.

The accumulation of waste, in addition to the aesthetic problem that affects tourism and economy, has a negative impact on the wildlife in the sea and on human health. Waste from the sea annually kills more than one million birds and 100,000 marine mammals. Number of animals that have been injured by marine litter is uncountable. Sharp objects, such as pieces of glass or rusty metal can cause significant harm, especially if they are on the beaches or in shallow parts of the sea. Contaminated medical waste or sewage discharges threaten human health because of the possibility of transmission of various diseases. Floating waste can adversely affect and threaten the fishing activity, if it comes to his entanglement in the propellers of ships.

Based on the research from 2007 which included about 400,000 participants from 76 countries of the world, it is estimated that the highest percentage of affected animals are **birds** (about 35%), followed by **fish** (about 27%), **invertebrates** (20%), **sea mammals** (about 13%), etc. It is estimated that the greatest threat to marine life in the sea are abandoned fishing tools, such as: abandoned nets, ropes recognized as most important threats; followed by plastic bags, wires, glass packaging (bottles), textiles ... One of the biggest problems is plastic waste, which is also the most common types of waste in the marine environment, due to its very weak degradation. The largest percentage of marine litter, over 83%, is of plastic waste.

Research in 2008 has been conducted in the Eastern Mediterranean and in one part of the Adriatic Sea. It is estimated that the amount of waste is around 230 kg per km<sup>2</sup>, or 0002-2627 kg / km<sup>2</sup>. Such large quantities of waste resulting in higher concentrations of metal objects or wooden pallets in certain areas.



(activity of Marine Biology Institute for marine litter cleaning)

### **The impact on the seabed:**

If we are talking about sinking litter, the impact on the sea bed is enormous. By covering the sea bottom area, the litter has a direct impact on the bottom living communities, occupying space and preventing further growth and development.

Floating waste has a huge impact on marine mammals. For example, the research which was carried out on sea turtles, gave the results that from the total of 92 turtles that were the subject of research, 8 of them were in some way damaged by marine waste. Turtles usually swallow plastic waste or nailon, probably believing that it is a jellyfish.

### **The management and recycling of marine litter:**

There are a number of instruments that are used to reduce the amount of waste found in the sea, but we all know that, and they have their limits and that they can not remove 100% of the waste. The marine litter is usually the result of irresponsibility and carelessness of people. Sometimes it is due to the production of disposable items, which often find their place in the water, and depending on the material they are made of, the waste can stay in the water for decades. As there are laws and penalties for waste piling up in the streets so it should be the same for the problem that we have at sea. Therefore it is very important to do something about it, such as to open more recycling centres that can economically benefit the country.

Reducing the consumption of disposable materials reduces the percentage of their possible accumulation as marine litter. Recycling also reduces the CO<sub>2</sub> emissions that would be created by using of new polymers.

The amount of the produced material requires also adequate removal and disposal to the designated areas, especially for materials that can not be reused or recycled. If we do not follow the appropriate protocol, the accumulation of waste is polluting the seas and oceans and due to the poor accessibility of the terrain it can not be effectively removed.

**Reuse and reduction of packaging and plastics:**

Many manufacturers have reduced the size of their packaging and thus the amount of material that is required for them, and this is one way of reducing the generation of waste. But although created from recycled materials, the question of whether the material can be broken down in the water where the temperature and pressure different than on the ground?

<p><b>The most common marine waste:</b>  <b>Plastic:</b> bags, balloons, drinking water bottles  <b>Glass:</b> bottles, light bulbs ...  <b>Paper</b>  <b>Metal objects</b>  <b>Clothing:</b>  <b>Rubber items:</b>  <b>Fishing Waste:</b> nets and other tools  <b>Wood</b></p> <p><i>Source: The Ocean Conservancy, "Pocket Guide to Marine Debris", 2005.</i></p>	<p><b>How much time is needed to dissolve marine waste?</b>  <b>Glass bottles:</b> million years  <b>Fishing Nylon:</b> 600 years  <b>Plastic bottle:</b> 450 years  <b>Aluminum cans:</b> 80-200 years  <b>Rubber:</b> 50-80 years  <b>Plastic cup:</b> 50 years  <b>Plastic bags:</b> 10-20 years  <b>Woolen clothes:</b> 1-5 years  <b>Carton of milk:</b> 3 months  <b>Newspaper:</b> 6 weeks  <b>Paper towel:</b> 2-4 weeks</p>
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It is necessary to organize more activities to collect and recycle marine litter.

Marine Biology Institute has organized an activity for collecting marine litter in the project DeFishGear and collected about 500kg of waste.

Every human being should be asked: Are we eating the waste that we throw into the sea?

**Our message: Take care of the sea, our health and the health of the environment that surrounds you !!!**

*(Source of information: Marine Biology Institute, internet)*