

1) Abstract for the general public

Reports of uncontrolled pollution of the seas have increased in recent years. Human activity is increasing the amount of debris in the oceans, but the impact is most evident in coastal areas. However, this contamination is not only present in the macroscopic range, but also microscopically or in the form of dissolved particles. Precisely these microscopic and dissolved particles can harm many microorganisms, disrupting the food chain right at the base. As a result, such a disturbance has an effect on changes in oxygen concentrations in the sea, which in turn is negative for humans, since a reduction in dissolved oxygen will lead to a reduction in fish stocks.

The following project is dealing with the connection between pollution caused by human activity and important living microorganisms in the marine coastal area. For this purpose, samples are taken from the North Sea, the Baltic Sea and the Mediterranean Sea and will be analysed. These three seas are important areas for fishing and their health is very important to many people as fish is their main source of food. The focus of this study is on examining pollutants such as microplastics, heavy metals, pesticides, sunscreen or antibiotics, which are introduced into the sea through human activity. Based on this data, conclusions should be drawn as to which parameters are most harmful to marine microorganisms and which should be better avoided by humans in the future.