

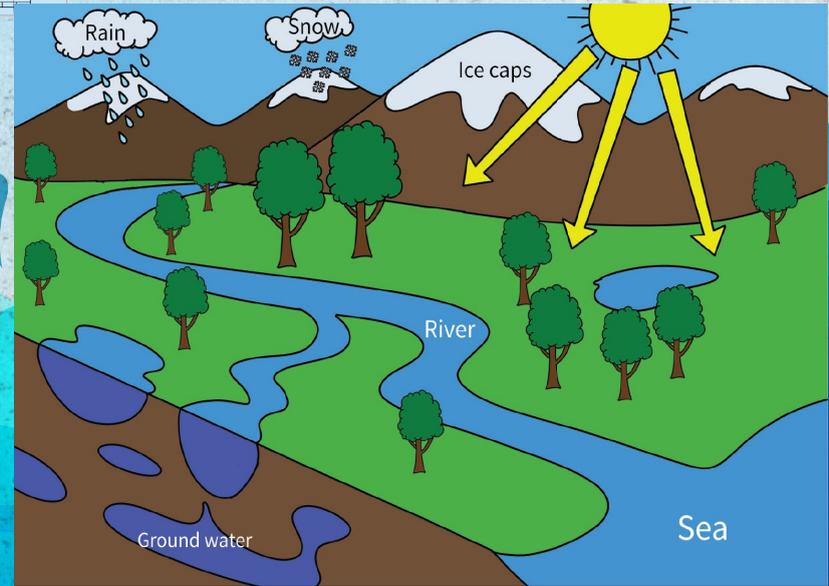
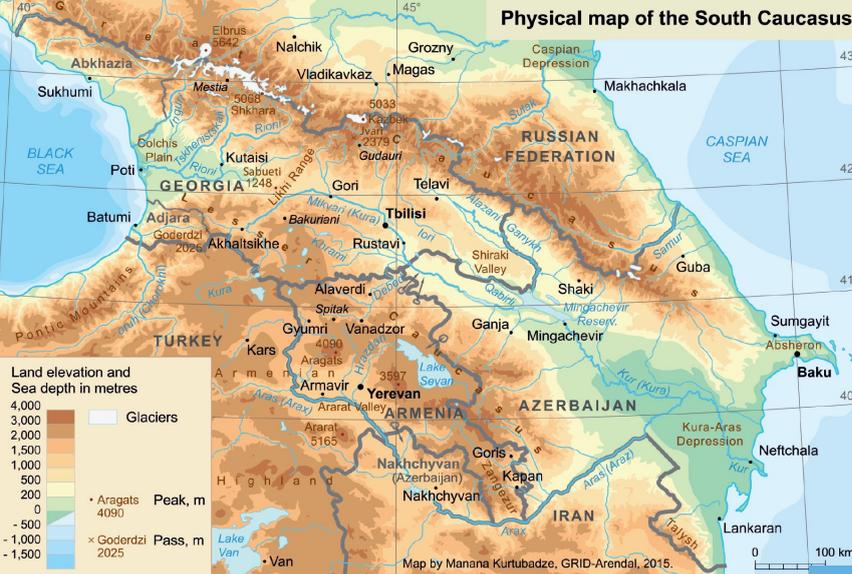


Protection of Water Quality

IX-XI Grades



Physical map of the South Caucasus



Protection of Water Quality

Of the total amount of water available on the Earth, only 1% is accessible to human beings. Water in oceans and seas is saline and thus unusable for human beings. 71% of Earth's waters are saline. Most of the fresh water is concentrated in glaciers and deep underground and subsequently their use either is difficult or carries a significant cost.

Due to the scarcity of water accessible by human beings, the resource is under intense pressure and is threatened with contamination. Indeed, global water contamination is our most urgent environmental problem, together with air pollution and climate change.

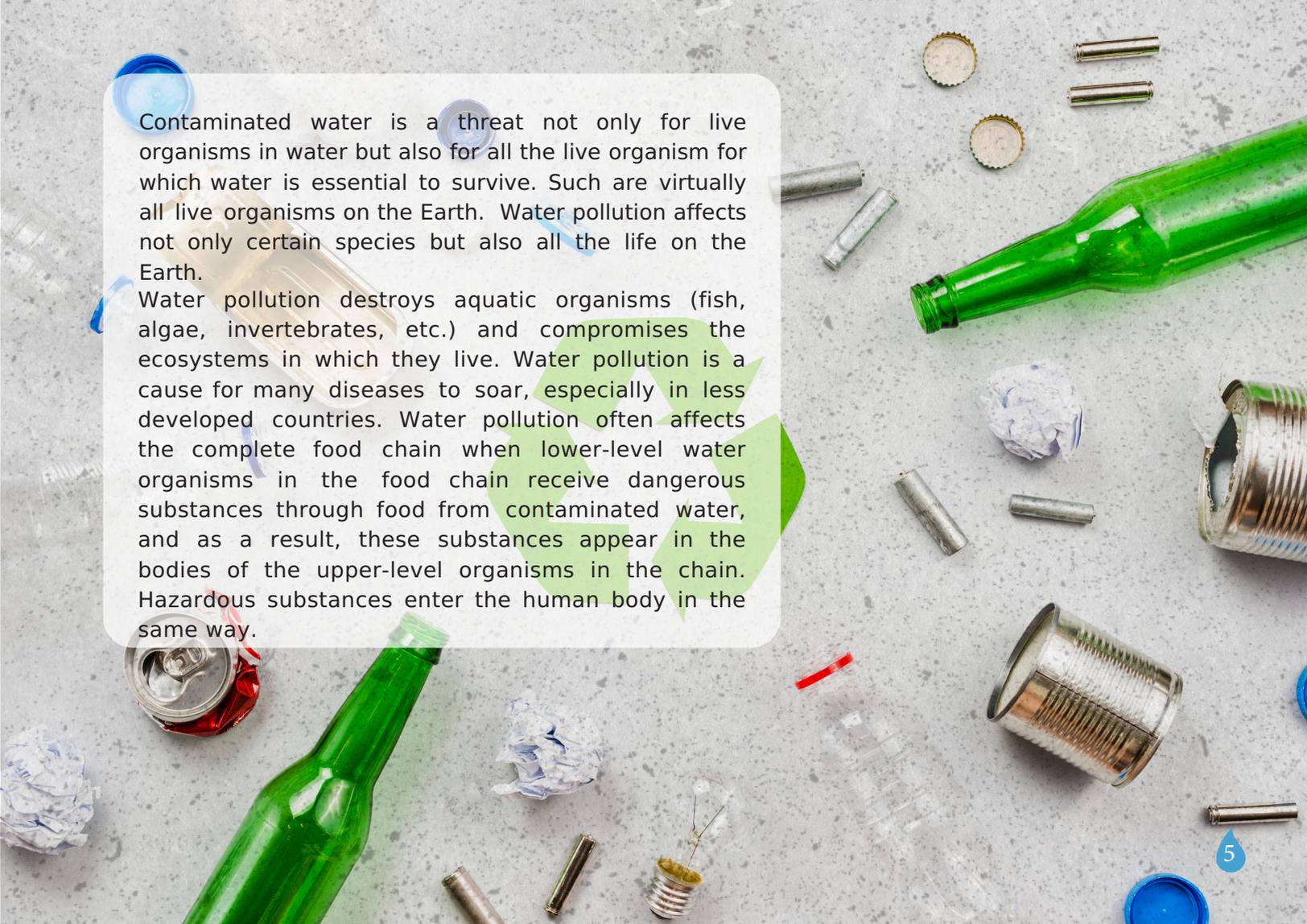


What is water pollution? Water pollution is contamination of water (rivers, lakes, seas and oceans, groundwater, etc.), usually as a result of human activities. Sometimes water pollution is caused by natural factors (for instance, storms, volcanoes, remnants of animals, mudflows carried down by rivers, etc.), though it is mainly caused by human activities.

Water pollution occurs when pollutants, which consist of various types of waste; solids, chemical substances, wastewater, etc., flow directly or indirectly into bodies of water without adequate intervention and treatment. Human activities are the main source of pollutants appearing in water on our planet.

It Is Interesting Minamata Disease

A pesticide factory started operations in City of Minamata, Japan in 1908. Over the years the waste produced by the factory was deposited in Minamata Bay, close to Minamata, over a number of years. One of the significant pollutants in the operations was Mercury sulfate. The waste released in the bay polluted the ichthyofauna that lived in the Bay. Most Minamata residents were fishermen, who fished in Minamata Bay to make a living. Consequently, an illness was discovered in Minamata residents, which was connected to the high concentration of mercury in their bodies. The illness was referred to as Minamata disease. After this fact was revealed, the international community mobilized to fight against the uncontrolled release of mercury in the environment. Their efforts were reflected in an international treaty, known today as Minamata Convention.



Contaminated water is a threat not only for live organisms in water but also for all the live organism for which water is essential to survive. Such are virtually all live organisms on the Earth. Water pollution affects not only certain species but also all the life on the Earth.

Water pollution destroys aquatic organisms (fish, algae, invertebrates, etc.) and compromises the ecosystems in which they live. Water pollution is a cause for many diseases to soar, especially in less developed countries. Water pollution often affects the complete food chain when lower-level water organisms in the food chain receive dangerous substances through food from contaminated water, and as a result, these substances appear in the bodies of the upper-level organisms in the chain. Hazardous substances enter the human body in the same way.

It is clear that human-induced pollution of the aquatic environment further reduces the availability of this most crucial resource. Global warming and water-related natural disasters are additional factors which impact the amount and quality of water resources. The sum and outcome of these impacts significantly decreases the availability of clean water worldwide and has reached alarming levels in some parts of the world.

Given the situation, it is essential that the world population channel their combined efforts to combat this problem, but first and foremost the solution begins at the individual level. Each of us need to comprehend the problem and work to end water pollution in our daily lives. Sometimes this is quite simple and it requires only small changes in our established habits and behavior. For instance, stop using single-use items (e.g. plastic and cellophane items are considered to be one of the main polluters), reduce use of chemicals in daily life, or use such substances which are safe for environment (fertilizers, crop protection products, detergents, etc.), and make an effort to reduce environmental pollution as soon and as much as possible.



Do It Yourself

- ◆ Discuss and analyze what kind of environmental pollution the industrial/agricultural/household sectors in your city can cause. Provide examples of types of pollution in the area where you live. Finally, prepare presentations (infographics) and discuss your findings with your teacher and classmates.
- ◆ Discuss with your classmates how water contamination can be avoided in your immediate surroundings and local environment.





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