



Circular Economy Lab & Observatory

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ECOFUNCTIONS

Water pollution and climate change

Lithuania-5.2



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From 2000 – 2022 people had a challenging time with strong hurricanes and other natural disasters. The problems have been increasing, and it is starting to affect more lives all around the world; the effect of water pollution and climate change on nature has been drastically increasing to the point where it would be incredibly difficult to revert it, for example, the massive fires in Australia, Italy, Greece, Turkey, and America.

Increased heat, drought, and insect outbreaks in Eastern Europe (Poland, Slovakia, Romania, etc.) and North Europe (Lithuania, Latvia, Estonia, Sweden, etc.) were caused by earlier problems. However, the main problem is contamination, for instance, oil spillage and trash, which all go into rivers that flow to the sea, air pollution, and ocean pollution. The word contamination (pollution) means – the action or state of making or being made impure by polluting or poisoning.

The presence or introduction into the environment of a substance that has harmful or poisonous effects (Oxford Languages) or pollution is the introduction of toxic materials into the environment. Landfills collect garbage and other land pollution in a central location, and many places are running out of space for landfills¹; for instance, air pollution is a mix of hazardous substances from both human-made and natural sources.



<https://pixabay.com/photos/waters-swim-sea-nature-ocean-3065288/>

Vehicle emissions, fuel oils, natural gas to heat homes, by-products of manufacturing, power generation, particularly coal-fueled power plants, and fumes from chemical products are the primary sources of human-made air pollution ².



There is also land pollution – the deposition of solid or liquid waste materials on land or underground that contaminates the soil and groundwater, threatens public health, and causes unsightly conditions and nuisances ³. Nevertheless, on our planet Earth, there is light pollution caused by artificial light, causing significant problems for humans, wildlife, and the environment.

<https://pixabay.com/photos/bottles-dump-floating-garbage-87342/>

Furthermore, there is a global movement to reduce light pollution, and everyone can help. Most of the environmental pollution on Earth comes from humans and their inventions. For example, the electric light bulb is considered one of the greatest human inventions.

Electric light can be beautiful, guiding us home when the sun goes down, keeping us safe, and making our home cozy and bright.

However, like carbon dioxide emissions and plastic, too much of a good thing has started negatively affecting the environment.

Light pollution, the excessive or inappropriate use of outdoor artificial light, affects human health, wildlife behavior, and our ability to see stars and other celestial objects ⁴.

(Shantanu Kashyap) „Light pollution”
(John nature photos) „No light pollution”

When all these problems arise, all measures can reduce the main problem – pollution.



From Justė Ambrulevičiūtė

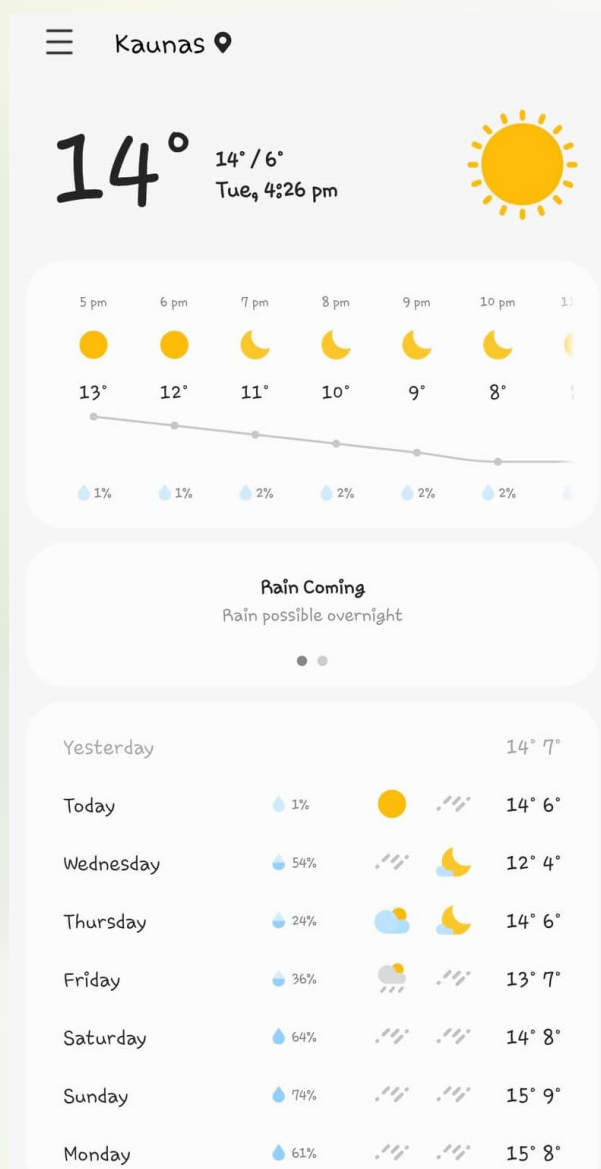
Pollution is the contamination of the environment by introducing harmful or toxic substances into the environment.

It has become a relatively common yet fundamental problem in the current world.

Pollution can be caused by naturally occurring events; however, the word pollution generally implies that human activities have created the contamination source.

In 2015, pollution killed 9 million people (about half the population of New York) worldwide (1 in 6 deaths).

The fact stays unchanged as in 2019, there has still been extraordinarily little tangible progress against pollution being identifiable. The most common forms of pollution include air pollution, light pollution, litter, noise pollution, plastic pollution, soil contamination, radioactive contamination, thermal pollution, and water pollution. The World Health Organization says that polluted water is water whose composition has been changed to the extent that it is unusable.



From Justė Ambrulevičiūtė

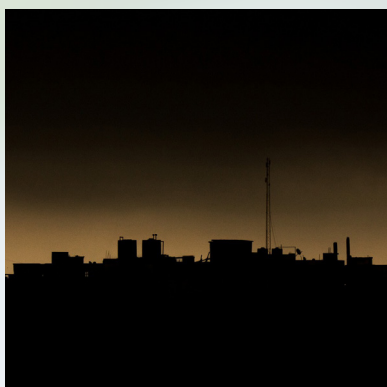


In other words, toxic water cannot be drunk or used for essential purposes like agriculture. It also causes diseases like diarrhea, cholera, dysentery, typhoid, and poliomyelitis that kill more than 500,000 people (about half the population of Montana) worldwide every year and its economic value is about 86 trillion euros.

The primary water pollutants include bacteria, viruses, parasites, fertilizers, pesticides, pharmaceutical products, nitrates, phosphates, plastics, fecal waste, and even radioactive substances. These substances do not always change the water's color, meaning they are often invisible pollutants. Pollutants are why insignificant amounts of water and aquatic organisms are tested to figure out the main water pollution problems: Global warming: Rising global temperatures caused by CO₂ emissions heat the water, reducing its oxygen content.

Deforestation: Felling forests can exhaust water resources and generate organic residue, which becomes a breeding ground for harmful bacteria. **Climate change** refers to long-term shifts in temperatures and weather patterns. These shifts may be natural, such as tight variations in the solar cycle. But since the 1800s, human activities have been the main driver of climate change, primarily due to burning fossil fuels like coal, oil, and gas. Burnings fossil fuels generate greenhouse gas emissions that act like a blanket wrapped around the Earth, trapping the sun's heat and raising temperatures (Climate change).

Industry, livestock farming: Chemical dumping from these sectors is one of the leading causes of the eutrophication of water. **Rubbish:** The UN says that more than 80% of the world's sewage finds its way into seas and rivers untreated., etc. Deteriorating water quality damages, the environment, health conditions, and the global economy.



The president of the World Bank, David Malpass, warns of the economic impact: “Deteriorating water quality is stalling economic growth and exacerbating poverty in many countries.”⁵ The explanation is that, when biological oxygen demand — the indicator that measures the organic pollution found in water — exceeds a certain threshold, the growth in the Gross Domestic Product (GDP) of the regions within the associated water basins falls by a third. In addition, the other consequences are Destruction of biodiversity.

<https://pixabay.com/photos/cityscape-dark-night-in-day-city-2394753/>

Water pollution depletes aquatic ecosystems and triggers unbridled proliferation of phytoplankton in lakes — eutrophication —. Contamination of the food chain. Fishing in polluted waters and using wastewater for livestock farming and agriculture can introduce toxins into foods that are harmful to our health when eaten. Lack of potable water.

The UN says that billions of people worldwide have no access to clean water to drink or sanitation, particularly in rural areas. Disease. The WHO estimates that about 2 billion people have no choice but to drink water contaminated by excrement, exposing them to diseases such as cholera, hepatitis A, and dysentery. Half of the world's inhabitants will live in water-scarce areas by 2025, so every drop of polluted water today is an irreparable loss for tomorrow.

„In this two picture you can see the part of climate change – unpredictable wheather”.

(Pictures from Justes Ambrulevičiūtės phone).

Tuesday (2022-10-11) Monday (2022-10-10)

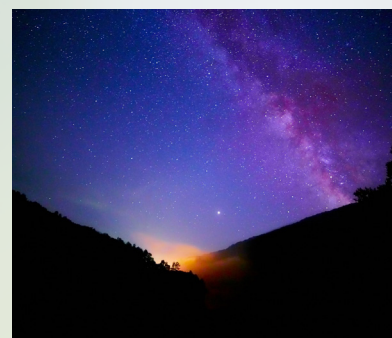
To prevent climate change or in other words global warming, mortals had to recall possible trash like plastic, paper, metal, glass, fabrics, etc.



That is why we must prevent water pollution with measures like the following: Reduce CO₂ emissions to prevent global warming and acidification of the oceans. To reduce CO₂, try driving electric cars, and flying less in aeroplanes.

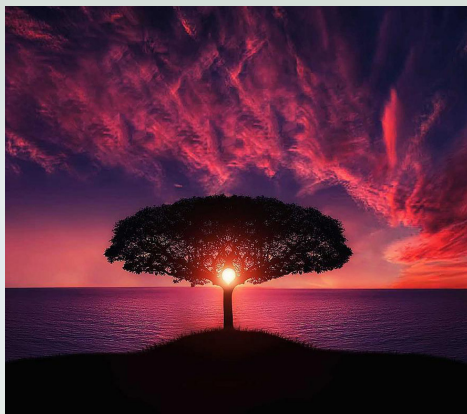
Turn off all electronics that are not being used. Do not set our thermostat too high or too low. Install a programmable model to turn off the heat and air conditioning when you are not in the home. Use chemical pesticides and nutrients on crops. Reduce and safely treat wastewater so that, as well as not polluting, it can be reused for irrigation and energy production. Restrict the use of single-use plastics that end up floating in rivers, lakes, and oceans, many as microplastics cs.

Finally, encourage sustainable fishing to ensure species' survival and avoid depletion of the seas. Collect trash in the streets that flow around the str, in the parks, and in historical places. Use wind power, solar power, and sea power. Walk more and enjoy the beautiful nature and it is beautiful. Do not throw trash in rivers, lakes, and oceans, because it would lie there for a long time. If you do not want your belonging to be found by treasure thunders.



<https://pixabay.com/photos/stars-astro-milkyway-star-sky-3591280/>

If you want to do more, you could join a group where people go to the sea to collect trash that were washed out on the coast. For example, in Lithuania, every year there is a “Darom” share, where humankind drives to the Nida or Palanga to collect rubbish that were left by the person.



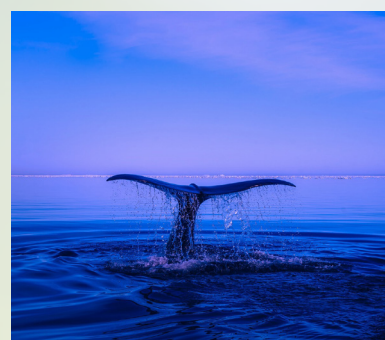
<https://pixabay.com/photos/tree-sunset-clouds-sky-silhouette-736885/>

There is also a share in schools that students go to the parks, cemeteries, and lakes to clean the place to make it more unique. There are also ocean cleaners “The Ocean Cleanup” is a non –profit organization developing and scaling technologies to rid the oceans of plastic. To achieve this goal, they must work on a combination of closing the sources of plastic pollution and cleans up what has already accumulated in the ocean and does not go away by itself.

There are also ocean cleanups that our cleaning oil spillage that were spilled from the ship or sinking ship. They do not clean only the surface, they go deeper: clean up the corals, animals, and other small creatures that live other the rock. This company’s or doing this for the greater good – that in the futter, humankind does not haw to fight for water and the future kids know how the ocean looks.

In conclusion, water pollution is the contamination of water sources which gives the water unusable for consuming, cooking, cleaning, swimming in, and animals living underwater. Water pollution branches from many diverse sources and causes, it majorly results from oil spills, and industrial and human waste disposals.

Pollutants include harmful chemicals, trash, various bacteria’s and parasites. This gravely affects our environment and eventually living beings, however, there is still hope of stopping it. The main measures are the cleaning of the ocean with special devices, the replacement of plastic with cardboard, the rustling of the seamstress, and the responsible ruffling. These measures are supported by all kinds of projects and companies.



<https://pixabay.com/photos/sea-humpback-whale-tail-ocean-2052650/>

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⁴<https://education.nationalgeographic.org/resource/light-pollution>

⁵<https://www.worldbank.org/en/news/press-release/2019/08/20/worsening-water-quality-reducing-economic-growth-by-a-third-in-some-countries>

GROUP

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