

How does ongoing climate change affect the planet's water resources?



You may be wondering what climate change actually is. It is related to the concept of climate and therefore the long-term mode of atmospheric events - weather in a certain area.

The climate is influenced by many factors such as solar radiation, air temperature, precipitation and cloudiness. Climate change itself can also be defined as human-caused climate change on a global scale, mainly caused by emissions. It affects the current state of the country's system. It would be naive to think that we can avoid this change. It's impossible because it's already happening and we can't completely reverse it. It manifests itself significantly in the context of water. For example, such oceans are sinks of carbon dioxide and under normal circumstances moderate temperature fluctuations on Earth. This is precisely because water has significant thermoregulatory abilities. Bodies of water affect the temperature of the atmosphere itself and also cause settlements in their vicinity to experience milder winters and less hot summers. Water as such also plays an irreplaceable role in connection with its evaporation. It serves as a means of storing energy for the climate system.

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The increasing temperature of the Earth brings a set of changes that affect not only humans, but also all ecosystems on Earth. How do these changes in climate play out in the context of water? For example, the precipitation regime is changing. This often results in a change in the abundance of water resources. Ice surfaces and snow are melting faster and faster. The level of the world's seas and oceans will rise more and more. The same applies to the temperature of water sources in general. It gradually increases and thus affects the quality of these resources. A good example is also the increase in the proportion of greenhouse gases in the atmosphere. These gases also include water vapor as an aqueous phase, which is a natural greenhouse gas. Climatic manifestations are becoming more extreme and stronger. For example, extreme droughts alternate with extreme floods. In the case of water, we are not only talking about its quantity, but also about its quality and availability. Nowadays, water is such a natural part of our functioning that we may not even be able to imagine that we might not have access to it one day. As some of us may have already noticed, many once abundant water sources are now half-empty or completely dried up. This consequence of global warming is very dangerous for ecosystems living near these sources. Not to mention that such drying of areas also affects us humans. Many areas are dependent on local water sources, but what happens when they dry up? And what if the opposite situation occurs? What if there are too many precipitations? As we have already written, we - the people - must expect that extreme weather events will increase and become stronger. Heavy rainfall can cause flooding that damages not only our homes but also ecosystems, not to mention polluting drinking water sources. All of this can disrupt food production.

In connection with water as such, warming probably affects our oceans the most, which are acidified due to the ever-increasing concentration of carbon dioxide. We professionally call this phenomenon acidification. As a result, entire ecosystems change, and many plant and animal species living in the oceans literally have existential problems. You may have heard about the condition of coral reefs in tropical areas. An overly acidic environment is not ideal for molluscs, crustaceans or echinoderms. The problem in this case is not only the threat of individual species. A so-called food chain works in nature. Both in water and on land. But as soon as one link falls out of this chain, it affects all the others. And overall, for a large part of the human population, the ocean and water itself is a source of food. However, this may

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also be a thing of the past in time. In addition to extinction, aquatic animals are also threatened by the fact that, due to environmental changes, they will have to change their migration routes (and this is already a reality for many species today). For example, such fish.

A separate chapter within the topic is the melting of mountain glaciers. For many people, especially in mountainous areas - for example in Asia or Latin America, this will be a problem as it is often their primary source of water. The problem of melting glaciers is that due to the increased temperature, the glaciers melt faster in the summer months, on the other hand, due to the decrease in precipitation in the winter, the area of the glaciers decreases. They are literally retreating from their original positions. A similar situation is current today in the Andes Mountains. Not to mention that the glacial regions are home to animal and plant species. And speaking of glaciers, they are also located in the coastal area, where their melting will cause the water level to rise, which will cause flooding and disruption of ecosystems. A big issue in the case of floods is the disturbance of the wetland environment, which is also home to many animals and plants. And what about, for example, the intrusion of salt water into fresh water during floods? Such a source of water is no longer considered full-value.

All of these examples of water-related climate change are already happening today. In different areas in different intensity and quantity. In the past, when the world went through various crises, even a small fluctuation in temperature meant problems such as lack of crops or riots. I firmly believe that the warnings of scientists, which are justified, will be heard, we will finally move from words to actions and try to save our planet.

Lucia Eštočinová

Resource: <https://daphne.sk/wp-content/uploads/2013/12/na-kazdej-kvapke.pdf>

FILO, J. 2021. *Naša klimatická zmena*. Bratislava: Petit Press. 175 s. ISBN 978 – 80 – 559 – 0723 – 9.

Foto: cz.depositphotos.com

So, what is global warming?

Global warming is defined by the fact that over the last 50 years of our recorded history, the average global temperature has increased at a tremendous rate. Since 2000, there have been 16 of the hottest years on record, with 2018 being the fourth hottest year on record.

Earth's climate is governed by slow cycles of glacier growth and retreat, mostly depending on the amount of solar energy received in our orbit.

Nevertheless, this warming trend is particularly important today because it is the result of human activity and is proceeding very quickly. The soil temperature is already 1°C warmer than the 20th century average, meaning that we are already facing the global consequences of global warming and that we are only 3°C away from reversing the worst predictions.

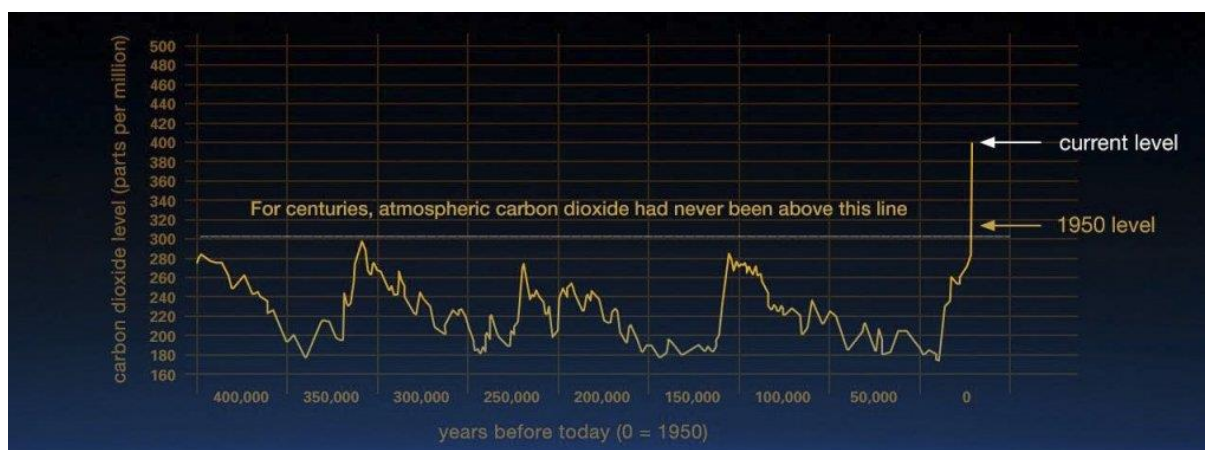
If you are curious about how big problems we are in, then ... very big ones. Due to the increase in climate temperature over the next 25 years, predictions of the possible consequences are devastating: melting of polar ice caps, flooding of coastal cities with sea levels rising by more than 1 meter (by 2050), mass extinction of plants and animals, and finally destabilization of our society.

The New York Times has created an interactive tool where you can find out how much your hometown (or any other place in the world) has gotten warmer since the day you were born.

The scientific community agrees: global warming is real and almost certainly caused by human activity.

Why and how did it start?

When we talk about our planet, it is quite logical to think that global warming could be related to the activity of the sun. In past climate changes (slow and natural) the Sun definitely played a role along with volcanic eruptions. However, some evidence shows that current global warming cannot be explained by solar activity. In fact, the Sun has not increased its average activity and the amount of energy we receive from it since 1750. And that alone is not enough to explain the rise in temperature. The sun and volcanoes contribute minimally to warming, only two percent.



Resource: climate.nasa.gov/evidence

However, the world, on the other hand, is releasing carbon dioxide into the atmosphere much faster than nature could ever manage. In just a few decades, human activities have brought about changes that would naturally take thousands of years to create in nature. This is mainly the use of coal, which damages our atmosphere and releases 70% more carbon dioxide than natural gases. Globally, electricity generation is responsible for approximately 23 billion tons of carbon dioxide emissions per year, which is 700 tons per second.

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Forests can help us protect the planet, because they can absorb the oxide in large quantities. Unfortunately, we are currently destroying them for agriculture and livestock breeding. It is estimated that up to 13% of global carbon emissions come from deforestation, a higher percentage than the total amount of emissions from every car, truck and airplane on Earth.

More about deforestation: <https://ecohero.sk/odlesnovanie/>



Resource: *worldwidelifelife.org*

The main cause of the current global warming is the increase of the "greenhouse effect". This effect occurs when gases we call "greenhouse gases" found in our atmosphere trap heat coming from the Earth and block the heat from escaping into space.

Carbon dioxide is one of the greenhouse gases that has increased by more than a third since the Industrial Revolution. Others are methane, nitrous oxide, and chlorofluorocarbons (CFCs). Methane is a more active greenhouse gas and has multiple sources. The main sources of methane include animal manure. Nitrous oxide is produced during soil cultivation and the use of fertilizers. CFCs are used in many products, but are now more regulated by international agreements.

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Consequences of global warming

Even a small increase in the Earth's temperature has serious consequences. Our glaciers are receding and wild animals have a hard time surviving in the destroyed forests. Here are other consequences that are already happening around us:

- The oceans absorb much of the increased heat and become warmer. In addition, the acidity of the surface oceans has increased by about 30% due to the high amount of absorbed carbon dioxide. This has put our marine ecosystem at great risk, especially shellfish, crabs and corals.
- Greenland and Antarctic ice has decreased significantly. Antarctica has lost about 119 billion tons of ice over the past 20 years, while Greenland has lost 281 billion tons.
- With the loss of ice, there is a rapid and dangerous rise in sea level, which is accelerating every year.



Resource: Ian Hitchcock / Getty Images

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- Rising temperatures also worsen air pollution by increasing ground-level ozone, a major component of smog. The higher the temperature, the more ozone is produced.
- The weather is starting to become more extreme, we are recording new high and low temperature records, intense heat and fires. On the other hand, we also face long-lasting droughts, stronger storms and hurricanes, long rains and floods. As a result, wet areas on our planet are becoming wetter and dry areas are becoming drier.
- Many species of animals move to colder or higher altitudes to avoid warming. Even so, many vertebrates are disappearing 114 times faster than they should.

If current trends continue, worsening environmental, economic and health consequences will likely occur.

NASA has prepared beautiful interactive images about the consequences of climate change on different parts of the world - if you want to know more, [click on this link](#).

Global warming is considered the greatest global health threat of the 21st century, particularly for children, the elderly and low-income communities. We are talking about fatigue due to heatstroke, asthma, heart attacks, cardiovascular, lung and kidney diseases.

The greenhouse effect is not something we have only recently learned about. Already in the 19th century, scientists discovered the greenhouse effect and made the first prediction that the Earth will warm in the future as a result of human activity. Greenhouse gases act like a blanket. The thicker it is, the warmer our planet is. Of course, these gases help keep the Earth from becoming too cold for us to live on. However, through the burning of fossil fuels and other human activities, we have released a large amount of them, which has significantly warmed the Earth.

Future implications: prediction

Global warming and climate change are part of everyday life. We can already see various dangerous consequences and the future forecast is not reassuring at all. We will have to face extreme consequences depending on how seriously we take care of this problem right now. Scientists predict that if we continue to behave as we have until now, these are the problems we will have to face in the near future:



Resource: Wenqing Yan Yuumei - Deviantart.com

- Melting glaciers, early snowmelt and severe droughts will cause **dramatic water shortages** and increase the risk of wildfires. **The Arctic Ocean is expected to turn to ice** in the summer already before 2050.

- Rising sea levels will lead to coastal flooding. Storms and high tides could combine with sea level rise to increase flooding even in non-coastal areas. **Sea levels will continue to rise** because the oceans take a very long time to respond to warmer conditions on Earth's surface. Experts believe that

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even if we stopped all our emissions tomorrow, a sea level rise of around 4 to 5 meters is inevitable.
And that's enough to flood many cities around the world.

- There will be **changes in the seasons**, an extension of the frost-free season and more and longer rains. Summer temperatures are predicted to continue to rise, leading to reduced soil moisture and thus fertility.

- Heat waves, desertification, increased flooding and intense storms will damage or destroy agriculture and fisheries. By 2025, 1.8 billion people will live in countries or regions with absolute water scarcity, and two-thirds of the world's population could live in conditions with limited access to water.

- Many plant and animal species will face extinction.

- Climate change will force 250 million people to be evicted from their homes by 2050.

- Allergies, asthma and infections will become more common due to higher levels of air pollution.

How to stop climate change

The scenario we just described sounds quite apocalyptic. Are there any solutions to this problem? The answer is - yes, although change is currently coming too slowly.

The good news is that emissions are falling in many countries due to the introduction of new laws and policies, such as fuel standards, stricter building codes and emission limits for power plants. Many countries signed the Paris Agreement in December 2015 and committed to better policies in the fight against climate change. The change will be seen by investing in cleaner sources of energy, such as wind turbines, solar panels, hydroelectric plants and power plants that burn natural gas instead of coal.

Countries are also setting carbon taxes on emissions, which could have a profound impact on industries, persuading them to switch to cleaner energy sources more quickly.

What can we do?

Is global warming a too big problem for us to play a part in solving it?

Don't forget that every little deed counts. The solution to climate change requires collective action. The most beneficial activity is certainly to talk about the issue and demand change. You can start with your friends and family. You can do it personally, through social media or even at a higher level of organizations or politics.

You can also take direct steps to reduce your carbon footprint:

- Try to save energy when making consumer decisions and during your daily routine. Seal your home's insulation, install a smart thermostat, choose more energy-efficient light bulbs, turn off unused lights and unplug unused devices. Buy new appliances with higher energy efficiency. Since

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they were first implemented, efficiency standards for appliances have prevented 2.3 billion tons of carbon dioxide from entering the air. That's about the same amount as the annual carbon pollution of 440 million cars.

NON-RENEWABLE RESOURCES: „DIRTY“ ENERGY

ARE YOU INTERESTED IN DETAILS? FIND OUT MORE.

[More about energy](#)

- Use public transport or share a ride instead of driving yourself.
- Don't waste food and eat less meat. It saves water, because a lot of energy is used to transport and heat it.

FOOD: AN UNDERESTIMATED THREAT

DO YOU WANT TO KNOW MORE? READ MORE IN OUR ARTICLE.

[More about food](#)

- Try to limit flights, by one or two flights a year. This will save you a large part of the emissions.
- Support companies that strive for sustainable production by purchasing their products and sharing their ideas.
- Are you planning to buy a new house in the future? Consider installing solar panels on its roof and powering it with renewable energy. Are you going to buy a car? Consider electric or hybrid. Electric vehicles are more efficient than gasoline vehicles and they move around without air pollution during the day. And they may become even more efficient when electricity for their consumption begins to be produced from renewable energy. If you have a classic car, check that the tires are properly inflated. This can save a lot of liters of gasoline or diesel per year, around 4%.

If you think that most of these steps would cost you a lot of money, try to calculate whether in the long term saving energy will not lead to the opposite result. Although it will be an investment today, you will save money in the years to come.

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Hope for a better future

Global warming is an urgent threat that we have caused and must now be taken care of. We will not be able to turn back time and will have to face some of the consequences of climate change regardless of what we do now. But there is still hope. If we all work together to reduce global emissions, we can avoid the most serious consequences that global warming would otherwise bring. Our society has set a concrete collective goal - not to exceed the temperature by more than 1.5°C in the coming years. If we succeed, we will save our planet and ourselves.

Resource: NASA, The New York Times, National Geographic, WWF, Take part, National Geographic, WWF, nrdc.org

The meaning of greenery

A green environment is not only urban forests, but also in general – urban greenery. It is a green area open to the public without restrictions, located on the land of the city districts. It is an irreplaceable part of the urban organism. It includes all permanent, but also short-term vegetation elements - trees, thickets, perennials, annuals and bulbs, lawns, mobile greenery or roof gardens.

Functions of the greenery

Microclimatic function

The environment in cities is currently significantly different from the surrounding countryside in several microclimatic characteristics - in temperature, humidity, air quality, and others. The greenery of public spaces plays a major role in the optimization of these parameters. It increases air humidity, provides shade, reduces fluctuations in temperature and wind speed, etc.

Regulation of the hydrological cycle

Well-designed public spaces (with plenty of greenery) can have a positive impact on the hydrological cycle in urban areas. With its surface, greenery captures significant amounts of precipitation, which can subsequently evaporate into the atmosphere, which increases atmospheric humidity and slowly soaks part of the precipitation into the soil.

Preservation of biodiversity

The amount of greenery and spatial relationships between individual green areas have a direct impact on the state of biodiversity in the urban environment. The concept of biodiversity in cities can refer to plants and animals that occur in the built environment (facades, roofs, balconies), or to the remaining elements of biodiversity in natural green areas (for example in the form of urban forests),

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or it can be biodiversity in public urban areas. The fragmentation of natural elements in the city requires the connection of green areas into a local system at the city-wide level.

Air purification

Trees and almost all plants remove gaseous air pollution through its penetration into the leaves, but some gases are neutralized already on the surface of the leaves. The leaves also capture a huge amount of dust particles from the air. Lawns and climbing plants, such as ivy on the sides of buildings and walls, are also very effective dust collectors. During the growth process, greens also remove carbon dioxide from the air, or store carbon in plant bodies, in biomass. The most effective cleaners are large deciduous trees.

Noise reduction

Greenery is an effective noise barrier. The noise produced by road traffic and production areas can make the environment of the city's inhabitants very uncomfortable. In the case of vegetation noise barriers, the species composition of the stand, its power - thickness and storey structure (herb floor, thickets, small trees, large trees) are decisive. A 50 meter thick strip of greenery can reduce noise by up to 30 dB.

Social benefit

Greenery has a direct impact on the mental and physical well-being of residents. It provides space for rest, recreation and education. In many cities, it has a significant and non-negligible historical and cultural value.

Aesthetic and architectural benefits

The main task of greenery from this point of view is to improve the urbanized space of the city in terms of its structure, shapes and colors. Aesthetically appropriately arranged green elements have a positive effect on a person's work commitment, but mainly harmoniously on his mental and physical well-being.

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Management and maintenance of greenery in residences - maintenance of greenery close to nature

Management and maintenance of public greenery is one of the basic duties of municipalities. The principle close to nature, the so-called differentiated green maintenance, the basic idea of which is based on the philosophy of sustainable development, has an extraordinary ecological, economic and aesthetic significance. The ecological importance lies in the creation of different types of environment for different species, as well as the provision of enough flowering and honey-bearing plants for pollinators, the economic importance lies in savings on individual maintenance tasks, and the aesthetic importance lies in underlining the diversity through colors and scents that express a bond with nature.

The close-to-nature maintenance of greenery in residences brings even more concrete advantages, as:

- protects water resources and their quality in the village,
- protects the health of residents,
- supports biodiversity,
- protects the quality of the environment,
- saves the general budget.

Green maintenance close to nature begins with good records of all areas and their correct classification into intensive maintenance classes. It comprehensively discusses all maintenance operations, from natural procedures for plant protection without the use of chemical preparations, to mowing with regard to the protection of insects and other animal species. Great attention is paid to the appropriate selection of types of vegetation elements (woods and herbs), for example in the form of using perennial beds that do not require irrigation and tolerate the conditions of residential areas well. Care close to nature is also applied to the care of trees, especially with regard to the protection of species, cavity nesters and insects.

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The influence of climate and weather changes in individual seasons on the vital signs of plants

Phenology deals with the influence of climate and weather changes in individual seasons on the life manifestations of plants and animals. Within Europe, forests are considered the most diverse ecosystems. Trees are an indicator of the health of forests and provide key information on whether we live in balance with the natural environment, in other words, whether we live sustainably.

Phenological observations in Slovakia are carried out in the network of phenological stations of the Slovak Hydrometeorological Institute, where the dates of onset, duration and end of individual phenological phases (e.g. emergence, flowering and leafing of plants, fruit maturity, yellowing and leaf fall) are monitored in individual years.

Recording of phenological phases

During the year, you can observe 6 phenological phases on the trees.

1. Budding - when the buds of new leaves can be seen on an open bud.
2. The first flowers - when the petals are open so that you can see the inside of the flower (only with chestnut, mountain ash and linden).
3. First leaves - when the first fully developed leaf appears and its shape can be recognized (it does not have to be an adult leaf).
4. Ripe fruits - of the observed species, only rowan has fleshy berries, which are red when ripe, the other trees have seeds stored in hard (dry) fruits, which gradually fall off.
5. Beginning of leaf fall - when the leaves begin to fall and the first bare branches appear. The leaves may start to drop before they start to change color.

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6. Full coloring - when all the leaves acquire full autumn color. If you are not sure of the phenological phase of the tree, check whether the given phase also occurs on other trees of the same species.

The effect of climate change on the phenological phases of plants

Changes in temperature, precipitation totals, but also other environmental factors change the time course of the life manifestations of plants, i.e. onsets of phenophases, and thus also the length of phenophase intervals and entire growing seasons of individual crops.

The continuous warming of the Earth is manifested by a slight downward trend in the onset of the monitored phenological phases, which indicates their shift to an earlier period. Greater differences in the onset of phenophases can be observed when comparing current (2009-2018) and historical (1930-1960) phenological data. Compared to historical data, the onset of the phenological phase of budding of leaf buds was shifted by 32 to 39 days to an earlier period for individual trees. The shift to an earlier period in the phenological phase of flowering is less significant and represents 3 to 11 days.

According to global climate models, the average annual air temperature will increase by 2.9 °C compared to the period 1986-2005, this change can have dramatic effects on ecosystems.

Soil

The soil covers only about 30% of our planet and more than 7 billion people live on it. Up to 85% of our energy sources, i.e. fossil fuels, comes from the soil.

It is the place we use to grow our food, yet we usually tend to focus our attention more on water and air pollution. We do this because we can see water and air pollution with our own eyes better than soil pollution. But is it correct?

OUR SOIL

Soil is a complex growing habitat that has the ability to be productive if well cared for. It is a mixture of different components: gravel, sand, clay and fragments of rocks and minerals. Among these components, permeable gravel and sand in particular pose a greater risk of contamination. Another, now inseparable component of the soil are various types of dirt. We can see piles of discarded garbage on the ground, in rivers, ponds, and we are not even talking about illegal dumping without any regulation.

A LEAP INTO THE PAST

New technology has brought good and not so good things to our countries. On the one hand, until the middle of the 20th century, solid waste was usually placed in open dumps, contaminating the soil and having an adverse effect on the environment and ultimately on our health. People left garbage on the streets, roadsides, and in remote places, where piles of disease-spreading garbage began to grow.

On the other hand, before the twentieth century, most of the materials we used were exclusively natural. Even when someone threw them away, the resulting waste was biodegradable and harmless.

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Recent developments in chemical materials (such as plastics) have created a more difficult puzzle to solve for waste disposal and its ultimate impact on soil pollution. This puzzle is still not solved today.

SOIL POLLUTION

Land pollution is caused by placing liquid or solid waste on the ground or underground. This waste pollutes the soil and groundwater and leads to further changes in the soil (e.g. erosion). It is the degradation of land by human activities, which comes primarily with increasing urbanization and industrialization. Since the beginning of our modern history, we have modified and changed up to 50% of all land on Earth.



Resource: *Zeljkosantrac*

To get an idea of how fundamental this change is, we need to understand one thing. It takes about 500 years to naturally produce 2.5 cm of soil under ideal conditions without ecological change.

Contaminated soil is a great threat to us and to the environment.

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DEFORESTATION

Every second, an area the size of a football pitch is cut down in the Amazon rainforest in Brazil for timber production and agriculture. Cutting down trees and burning land not only kills wildlife, but also irreversibly affects the soil. This makes it vulnerable to erosion, leaving the plants barren and without roots to hold them in place.

AGRICULTURE

Our population is constantly growing and so is our demand for food. Forests and meadows are therefore transformed into agricultural land. While natural vegetation has deep roots, cultivated plants such as cotton, coffee, wheat, and soybeans do not have deep roots and lead to **soil erosion and flooding**. In addition, **highly toxic fertilizers, pesticides, fungicides, herbicides, and insecticides** are used to achieve the highest possible level of cultivation.

These sprays are further absorbed through plant roots and dead insects into the soil, contaminating it. In this way, the soil [can be polluted up to 1000 km from the source](#). The sprays therefore spread further and contaminate the groundwater as well. **Cities have to remove these toxic substances from water in water treatment plants**, which costs them a lot of money. You can find more detailed information about the effects of fertilizers in the article [on water pollution](#).



Resource: *lIfede - dreamstime.com*

INDUSTRY

Industry has a decisive impact on the environment. Although emissions and landfills are regulated in developed countries, industry often releases toxic or material waste into the soil or atmosphere. Radioactive substances, the most dangerous type of waste, must be very carefully stored underground.

On the contrary, many developing countries have no (or only few) legislation on emissions or landfills. The effects of industrial waste on the soil are thus harmful and cause negative changes in its microbiological and mineral composition.

MINING

Mines contribute to erosion by removing soil. Approximately 40% of all world mines are surface mines. This means that fertile land is either cut down or burned to extract minerals. Other traditional mines are built by excavating the earth and creating long tunnels. After the miners finish mining underground, the abandoned mines collapse spontaneously over time.

If it is decided to terminate a mining project, land reclamation is required in developed countries. But in China, for example, only 12% of land is reclaimed because the land is so degraded that it often cannot support newly established vegetation.

Other negative consequences of mining are coal fires. Underground coal fires can burn for centuries, producing toxic gases and ash. In addition, other chemical and electrical processes are used to extract minerals, which also contribute to soil degradation.



Resource: *Stephen Codrington*

LANDFILLS AND WASTE

Landfills comply with regulations and are a common way to dispose of non-recyclable and municipal waste in developed countries. But they tend to be overcrowded and the structure from which the dump is made can collapse over time. This leads to the release of toxic liquid and gaseous wastes that contaminate the soil. Despite this, we still contribute to soil damage by littering, especially in the case of oil, paint and other hazardous household waste, which we should be [recycling properly instead](#).

URBANIZATION

Urban expansion due to increasing population leads to further land use due to the demand for housing, food, water and municipal waste disposal. Imagine that the area of land needed to feed the people of London and re-absorb their CO₂ emissions is [125 times larger than the area of the city itself](#).

In fact, we only live on about 3% of the total surface of the planet, but we need up to a third of the total surface of the Earth for agriculture.

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It is very important to realize that soil damage leads to life-threatening situations.

If the soil becomes infertile, the life of people and animals becomes critical.

WHAT ARE THE CONSEQUENCES OF ALL THIS?

The consequences of soil pollution are different:

- **Degradation of groundwater:** contaminants from farms, industrial areas and landfills end up in groundwater.

- **Loss of topsoil:** the use of fertilizers and pesticides changes the composition of topsoil. It becomes more susceptible to erosion, to reduced fertility and productivity.

- **Environmental impact:** due to deforestation and erosion, animals move elsewhere in order to find a new home and food. This can be dangerous for many species and increases the risk of their extinction. The loss of trees affects the rainfall cycle, leading to erratic rainfall, flooding, unseasonal weather changes and [global warming](#).

- **Climate change and the occurrence of fires:** with the risk of losing ecosystems with polluted soil, climate models are affected. Pollutants in the soil and everything else we've described so far create dry conditions and the perfect environment for fires that can quickly grow much faster on contaminated soil.

We live on Earth, so it should be in our best interest to take care of it. The effects of soil pollution are sometimes underestimated because they are the result of long-term processes, but they still have a great impact on the environment and our lives. Fortunately, **the negative results of soil pollution can be greatly reduced if we work together**. If we realize that our planet is a limited and precious resource for life, we will have more hope for a better future in which we value our environment more and destroy the land less.

And if you want to know more about the local state of our soil, you can watch [this report from the Czech Republic by A enough!](#)

Project: ACC03P30 „Awareness raising on climate change mitigation and adaptation among school pupils and the public“. The project has been co-financed from the Norway Grants and from the State Budget of the Slovak Republic
Applicant: Spojená škola, Námestie sv. Martina 5, 908 51 Holíč

Programme: „Climate Change Mitigation and Adaptation“ ACC

Resources: Britannica, Conservation institute, Conserve energy future, New world encyclopedia, Explain that stuff, Greentumble, www.klimaspaja.sk, www.uzemneplany.sk, www.svkbb.eu, www.stromzivota.sk., vedanadosah.sk,

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