



Fires burn, Release CO₂, Make more fires

Forest fires have had devastating consequences in countries like Indonesia, United States, or Spain over the last few years. Alongside other human activity — like unsustainable land use — warmer temperatures and drier land due to climate change increase the risk and scale of forest fires.

Various studies found that large forest fires in the western United States have become five times more frequent since the 1970s and 80s, scorching over six times as much land, and lasting almost five times as long.

Burning all that wood and other organic matter, forest fires release massive amounts of carbon dioxide back into the atmosphere, helping push the global temperature and further dying out the land...

Read more: https://www.dw.com/en/when-nature-harms-itself-five-scary-climate-feedback-loops/a-43649814





Arctic Methane and Carbon: The Time Bomb in the Soil

In the Arctic, methane and carbon can be found in permafrost, as well as in frozen peat bogs and under sediment on the sea floor. As these bogs and permafrost thaw thanks to climate change, the methane and carbon within are released into the atmosphere, adding yet more greenhouse gases (GHGs) that can lead to further global warming.

More warming results in more permafrost loss, adding yet more GHGs to the atmosphere to create even more warming and more melting permafrost, and on and on.

Given that frozen Arctic soil holds an estimated 1,460 to 1,600 billion tons of trapped carbon – almost twice the amount of GHGs currently in the atmosphere – scientists are deeply concerned about the unprecedented warming in the region and what it could mean for global efforts to halt rising temperatures.

Read more: https://www.climaterealityproject.org/blog/how-feedback-loops-are-making-climate-crisis-worse





Plants grow better as CO₂ increases

When there are higher concentrations of CO_2 in atmosphere, plants have more material to photosynthesize. This causes them to grow faster — so they convert *more* CO_2 to oxygen. That carbon then gets stored in the ground and the plant itself. This is a virtuous cycle for the climate crisis.

Though this will help us on climate change — plants can't grow indefinitely with rising CO_2 . This is because plants require other factors like nitrogen in the nutrient cycle. And if temperature rises, this can negatively influence plant growth.

In the short term, this process will be helpful — but unfortunately minor in relationship to the other feedback loops.

Read more: https://earthhow.com/climate-feedback-loops/





More freshwater life, more methane...

Freshwater bodies are responsible for more than 15 percent of the Earth's natural emissions of methane, a greenhouse gas 25 times more potent than carbon dioxide.

Up to 77 percent of a lake's methane emissions come from the decomposition of aquatic plants. Microbes break down organic matter and generate methane that bubbles up to the surface.

Warming temperatures encourage the growth of aquatic plants, meaning there is more of this carbon-rich matter to break down, releasing still more climate-harmful methane into the atmosphere.

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Disappearing Ice, Warmer World

Arctic Ocean ice cover is integral to regulating global land and sea temperatures. Sea ice creates a large white surface that reflects solar radiation away from Earth. This is known as "albedo," and compared to other earth surfaces, sea ice is very good at it.

Unfortunately, sea-ice cover in the Arctic is shrinking. "Since 1979, ice extent has shrunk by 40 percent," NOAA reports.

This lack of sea ice also contributes to further global warming and climate change, resulting in even more ice loss. This is because the absence of sea ice exposes the much, much darker ocean surface below. And open water absorbs the sun's radiation rather than reflecting it back into space the way ice does.

Just how much solar radiation are we talking about here? The open ocean reflects just 6 percent of incoming solar radiation back to space, absorbing the rest and warming the water and the surrounding atmosphere. Sea ice, however, reflects 50-70 percent of incoming solar energy.

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Activism

As climate activism becomes more popular, more people do it. This is a social feedback loop. The more people who purchase solar, the cheaper it gets. The more people who install geothermal and ride public transportation and other efficient ways to heat their homes and travel, the more support these get.

The more people who go into the streets and demand actions, the more action we get.

Organise!

Get involved: <u>350.org</u> or any number of other climate organisations