Earthtalk

Peatbogsareimportant"carbonsinks",storingonaverage10timesmoreCO2thanotherecosystems.Assuch,thewidespread conversionofpeatbogsintocommercialusesaroundtheworldisseriouscauseforalarm.Picturedhere:Peatproduction,forusein domestic fireplaces, underway in the Irish Midlands. Image by Wikipedia.

From the Editors of E/ The Environmental Magazine

Dear EarthTalk: Is it true that the loss of the world's peatlands is a major factor in the build-up of greenhouse gases in the atmosphere. If so, what can be done about it?

-- Larissa S., Las Vegas, NV

Peatlands are wetland ecosystems that accumulate plant material to form layers of peat soil up to 60 feet thick. They can store, on average, 10 times more carbon dioxide (CO2), the leading greenhouse gas, than other ecosystems. As such, the world's peat bogs represent an important "carbon sink"—a place where CO2 is stored below ground and can't escape into the atmosphere and exacerbate global warming. When drained or burned, however, peat decomposes and the stored carbon gets released into the atmosphere.

A 2007 United Nations Environment Programme (UNEP) study of the role peatlands play in human-induced climate change found that the world's estimated 988 million acres of peatland (which represent about three percent of the world's land and freshwater surface) are capable of storing some two trillion tons of CO2—equivalent to about 100 years worth of fossil fuel emissions.

As such, the widespread conversion of peat bogs into commercial uses around the world is serious cause for alarm. In Finland, Scotland and Ireland, peat is harvested on an industrial scale for use in power stations and for heating, cooking and use in domestic fireplaces.

But the problem is most urgent in countries like Indonesia and Malaysia, where economic hardships force people to drain peatlands to create farms and plantations. Marcel Silvius of the Dutch non-profit Wetlands International says that "annual peatland emissions from Southeast Asia far exceed fossil fuel contributions from major polluting countries." He adds that Indonesia, now ranked 21st in the world in greenhouse gas emissions, would move to third place (behind the U.S. and China) if peatland losses were factored in.

Wetlands International estimates that CO2 emissions from drained or burnt Indonesian peatlands alone total some two billion tons annually, equal to about 10 percent of the emissions resulting from burning coal, oil and natural gas. Similar amounts of CO2 are likely coming out of Malaysian peatlands as well.

The problem has worsened in recent years as surging global demand for timber, pulp and biofuel speeds up the conversion of otherwise-ignored peatlands to intensively managed tree farms and palm oil plantations. Silvius says that a ton of palm oil—Indonesia's top export and the key ingredient in biodiesel fuel—grown on drained peatlands emits 20 times more CO2 than a ton of gasoline. Yet, he says, protection of peatlands may actually be one of the least costly ways to mitigate global warming, as it would cost less than seven cents ($US) per ton of avoided CO2.

"Just like a global phase out of old, energy guzzling light bulbs or a switch to hybrid cars," says UNEP head Achim Steiner, "protecting and restoring peatlands is perhaps another key 'low hanging fruit' and among the most cost-effective options for climate change mitigation." For its part, UNEP is stressing that countries should be allowed to count protecting peatlands as among their creditable efforts to reduce their carbon footprints as the world braces for global warming.

Contacts: UNEP, www.unep.org; Wetlands International, www.wetlands.org.

Dear EarthTalk: Has anyone been tracking whether climate change is causing more loss of human life as it gets more pronounced?

-- Gordon Gould, Compton, CA

Researchers believe that global warming is already responsible for some 150,000 deaths each year around the world, and fear that the number may well double by 2030 even if we start getting serious about emissions reductions today.

A team of health and climate scientists from the World Health Organization (WHO) and the University of Wisconsin at Madison published these findings last year in the prestigious, peer-reviewed science journal *Nature*. Besides killing people, global warming also contributes to some five million human illnesses every year, the researchers found. Some of the ways global warming negatively affects human health—especially in developing nations—include: speeding the spread of infectious diseases such as malaria and dengue fever; creating conditions that lead to potentially fatal malnutrition and diarrhea; and increasing the frequency and severity of heat waves, floods and other weather-related disasters.

Backing up WHO's findings is a study by Stanford civil and environmental engineer, Mark Jacobson, showing a direct link between rising levels of carbon dioxide (CO2) in the atmosphere and increased human mortality. He found that the added air pollution caused by each degree Celsius increase in temperature caused by CO2 leads to about 1,000 additional deaths in the U.S. and many more cases of respiratory illness and asthma. Jacobson estimates as many as 20,000 air-pollution related deaths may occur worldwide each year with each one degree Celsius increase.

"This is a cause and effect relationship, not just a correlation," relates Jacobson. "The study was the first to specifically isolate CO2's effect from that of other global-warming agents and to find quantitatively that chemical and meteorological changes due to CO2 itself increase mortality due to increased ozone, particles and carcinogens in the air."

For their part, though, global warming skeptics such as atmospheric physicist Fred Singer maintain that cold weather snaps are

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