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## Top Scientists Warn of Water Shortages and Disease Linked to Global Warming

The harmful effects of global warming on daily life are already showing up, and within a couple of decades hundreds of millions of people will not have enough water, top scientists are likely to say next month at a meeting in Belgium.

At the same time, tens of millions of others will be flooded out of their homes each year as the earth reels from rising temperatures and sea levels, according to portions of a draft of an international scientific report by the authoritative Intergovernmental Panel on Climate Change.

Tropical diseases like malaria will spread, the draft says. By 2050, polar bears will mostly be found in zoos, their habitats gone. Pests like fire ants will thrive.

For a time, food will be plentiful because of the longer growing season in northern regions. But by 2080, hundreds of millions of people could face starvation, according to the report, which is still being revised.

The draft document, the second of a series of four being issued this year, focuses on global warming's effects. Written and reviewed by more than 1,000 scientists from dozens of countries, it still must be edited by government officials.

But some scientists said the overall message is not likely to change when it is issued in early April in Brussels, where European Union leaders agreed Friday to work to cut greenhouse gas emissions substantially by 2020. Their plan will be presented to President Bush and other world leaders at a summit meeting in June.

The draft report offers some hope if nations slow and then reduce their greenhouse gas emissions, but it says what has been happening has not been encouraging.

"Changes in climate are now affecting physical and biological systems on every continent," the report says, in marked contrast to a 2001 report by the same international group that said the effects of global warming were coming. But that report mentioned only scattered regional effects.

"Things are happening and happening faster than we expected," said Patricia Romero Lankao of the National Center for Atmospheric Research in Boulder, Colo., one of the many co-authors of the new report.

The draft document says scientists are highly confident that many current problems -- change in species' habits and habitats, more acidified oceans, loss of wetlands, bleaching of coral reefs and increases in allergy-inducing pollen -- can be attributed to global warming.

For example, the report says North America "has already experienced substantial ecosystem, social and cultural disruption from recent climate extremes," like hurricanes and wildfires.

But Ms. Romero Lankao said that global warming soon would "affect everyone's life," and added that "it's the poor sectors that will be most affected."

Another co-author, Terry Root of Stanford University, said, "We truly are standing at the edge of mass extinction" of species.

The United Nations-organized network of 2,000 scientists was established in 1988 to give regular assessments of the earth's environment.

The draft report says that hundreds of millions of Africans and tens of millions of Latin Americans who now have water will be short of it in less than 20 years. By 2050, more than a billion people in Asia could face water shortages. By 2080, water shortages could threaten 1.1 billion to 3.2 billion people, depending on the level of greenhouse gases that cars and industry spew into the air.

It says that death rates for the world's poor from conditions worsened by the changes global warming brings, like malnutrition and diarrhea, will rise by 2030. By 2080, 200 million to 600 million people could be hungry because of global warming's effects, it says.

It also says that Europe's small glaciers will disappear, with many of the continent's large glaciers shrinking sharply by 2050. And half of Europe's plant species could be vulnerable, endangered or extinct by 2100.

The hardest-hit continents are likely to be Africa and Asia, with major harm also coming to small islands and some aspects of ecosystems near the poles. North America, Europe and Australia are predicted to suffer the fewest of the harmful effects.

"In most parts of the world and most segments of populations, lifestyles are likely to change as a result of climate change," the draft report said. "Net valuations of benefits vs. costs will vary, but they are more likely to be negative if climate change is substantial and rapid, rather than if it is moderate and gradual."

Many, though not all, of those effects can be prevented, the report says, if within a generation the world slows down its emissions of carbon dioxide and if the level of greenhouse gases sticking around in the atmosphere stabilizes. If that is the case, the report says, "most major impacts on human welfare would be avoided; but some major impacts on ecosystems are likely to occur."