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Key role of forests 'may be lost'

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Conifers (Image: Erkki Oksanen)

Coniferous forests are particularly susceptible to climatic changes

Forests' role as massive carbon sinks is "at risk of being lost entirely", top forestry scientists have warned.

The International Union of Forest Research Organizations (IUFRO) says forests are under increasing degrees of stress as a result of climate change.

Forests could release vast amounts of carbon if temperatures rise 2.5C (4.5F) above pre-industrial levels, it adds.

The findings will be presented at the UN Forum on Forests, which begins on Monday in New York.

Compiled by 35 leading forestry scientists, the report provides what is described as the first global assessment of the ability of forests to adapt to climate change.

The fact remains that the only way to ensure that forests do not suffer unprecedented harm is to achieve large reductions in greenhouse gas emissions
Professor Andreas Fischlin,
Assessment co-author

"We normally think of forests as putting the brakes on global warming," observed Professor Risto Seppala from the Finnish Forest Research Institute, who chaired the report's expert panel.

"But over the next few decades, damage induced by climate change could cause forests to release huge quantities of carbon and create a situation in which they do more to accelerate warming than to slow it down."

Debate defining

The scientists hope that the report, called *Adaption of Forests and People to Climate Change - A Global Assessment*, will help inform climate negotiators.



Dead spruce forest (Image: John Innes)

Warm winters have allowed spruce beetles to cause widespread damage

The international climate debate has focused primarily on emissions from deforestation, but the researchers say their analysis shows that attention must also be paid to the impacts of climate change on forests.

While deforestation is responsible for about 20% of greenhouse gas emissions from human activities, forests currently absorb more carbon than they emit.

But the problem is that the balance could shift as the planet warms, the report concludes, and the sequestration service provided by the forest biomes "could be lost entirely if the Earth heats up by 2.5C or more".

The assessment says higher temperatures - along with prolonged droughts, more pest invasions, and other environmental stresses - would trigger considerable forest destruction and degradation.

This could create a dangerous feedback loop, it adds, in which damage to forests from climate change would increase global carbon emissions that then exacerbate global warming.

The report's key findings include:

- Droughts are projected to become more intense and frequent in subtropical and southern temperate forests
- Commercial timber plantations are set to become unviable in some areas, but more productive in others
- Climate change could result in "deepening poverty, deteriorating public health, and social conflict" among African forest-dependent communities

The IUFRO assessment will be considered by delegates at the eighth session of the UN Forum on Forests, which has the objective of promoting the "management, conservation and sustainable development of all types of forest".

Co-author Professor Andreas Fischlin from the Swiss Federal Institute of Technology commented: "Even if adaption measures are fully implemented, unmitigated climate change would - during the course of the current century - exceed the adaptive capacity of many forests.

"The fact remains that the only way to ensure that forests do not suffer unprecedented harm is to achieve large reductions in greenhouse gas emissions."