Canada's degradation of pristine, intact forests leads world

Researchers suggest oil and gas industry plays a big role

Emily Chung, CBC News, September 5, 2014

The world's precious few remaining large forests are fragmenting at an alarming rate, and the degradation in Canada leads the world, a new analysis shows.

The degradation of such pristine "intact" forests threatens species such as Canada's woodland caribou and Asia's tigers that rely on huge unbroken expanses of natural ecosystems in order to survive, said Nigel Sizer, global director of forest programs with the World Resources Institute, a Washington, D.C.-based research institute focused on resource sustainability.

This week, the group, along with its collaborators, released a new global map of intact forest landscapes, along with an analysis of how those landscapes have changed since the year 2000. The maps are available as part of the institute's Global Forest Watch online forest monitoring and alert system.

The satellite mapping analysis led by Peter Potapov, an associate professor of geographical sciences at the University of Maryland, showed that over 104 million hectares of the world's remaining intact forests — an area about the size of Ontario — were degraded between 2000 and 2013. Such forests are considered degraded when they are broken up or fragmented into smaller pieces that are no longer the same kind of ecosystem. Sizer called the amount of degradation a "shocking number."

Species at risk

"What is lost is the intactness… This is a process which results in biodiversity loss — particularly, far-ranging species will no longer be able to survive," said Christoph Thies, senior forest campaigner for Greenpeace International, which contributed to the research through its Greenpeace GIS (geographic information systems) Laboratory.

The research partnership also included the conservation group WWF-Russia and Transparent World, a Moscow-based non-profit that helps other groups use space imagery for research and education. In this case, free public satellite images provided by the U.S. Geological Survey Landsat program in partnership with NASA were analyzed.

The area degraded during the study period represents about eight per cent of remaining intact forests.

"These intact forest landscapes are some of the most important landscapes on Earth," Sizer said at an online news conference.

Woodland caribou, like these in B.C.'s Selkirk mountain range, need large, unbroken expanses of natural landscapes such as intact forests in order to survive. (U.S. Fish and Wildlife Service/Reuters)

In addition to playing a critical role in maintaining biodiversity, such forests also regulate air and water cycles and store carbon to slow and prevent climate change, Sizer said. That means their degradation could disrupt those functions, intensifying problems such as climate change.

The researchers also said that it is very difficult to restore intact forests that have been degraded. Potapov estimated it would take 30 years for such forests to be restored in the tropics and more than 100 in boreal regions, such as Canada's north.

The analysis found that Canada had 24 per cent of the world's intact forest landscapes in 2013. Nearly two-thirds of the world's intact forests are found in Canada, Russia and Brazil, but they are rapidly being degraded in those places.

Canada accounts for 21% of global degradation

"Canada is the country with the largest share of intact forest degradation in the world. It's No. 1 on the list," Sizer said.

In fact, the fragmentation of intact forests in Canada represents about 21 per cent of the global total, the analysis shows.

Potapov said the oil and gas industry is largely responsible, directly and indirectly, in both Canada and the Russian region of West Siberia.

"There's huge areas affected by this fragmentation, by pipelines, seismic lines, industrial places, temporary settlements and so on," he said.

He added that infrastructure put in by the oil and gas industry, such as roads, subsequently makes the forests accessible for logging.

Fires that start from human infrastructure are also a major cause of degradation in northern Canada, where they are usually left to burn, he said.

"We couldn't be sure in all the cases that these fires are human caused," Potapov added, but he noted that previous studies have shown that most fires originating from human infrastructure are caused by humans.

Meanwhile, other countries with fewer remaining large forests saw huge proportions degraded during the study period:

- Paraguay had more than 78 per cent of its intact forests degraded, mostly because of land being cleared for agriculture.

- In Russia, an intact forest believed to be the largest in Europe saw about 25 per cent of its area fragmented.
- The Democratic Republic of Congo, which has the largest tropical rainforest outside the Amazon, lost more than 17 per cent of its intact forest.

Roads and logging blamed

In general, new roads and logging appear to drive the fragmentation of intact forests around the world, Thiens said. In tropical regions, fires used to clear land for agriculture and pasturing are also a major cause of forest degradation.

However, Thies said more research and analysis needs to be done on the factors that lead to the degradation and fragmentation of intact forests.

He recommended that in order to protect large forests from further degradation, governments should:

- Establish more protected areas.
- Take measures to prevent new roads from being pushed into pristine forests.
- Strengthen the rights of traditional forest users such as indigenous communities.

In the meantime, the team hopes their new maps will help companies concerned about sustainability determine which areas to avoid when sourcing both forest products such as timber and agricultural products such as palm oil, beef and soy, which are often produced on land being cleared of trees at the edges of forests.

Potapov said the research team has already published its methodology and some regional monitoring results in the scientific literature, but is working on an peer-review publication about the analysis, to be submitted before the end of the year.

WRI's Global Forest Watch tool was named this week as one of two winners of the United Nations Big Data Climate Challenge.