

1. INTACT FOREST LANDSCAPES

An Intact Forest Landscape (IFL) is an unbroken expanse of natural ecosystems within the current forest extent, with no remotely detected signs of human activity, and large enough that all native biodiversity, including viable populations of wide-ranging species, could be maintained (Potapov et al. 2017).

1. Specifically, these forests are defined as larger than 500km², wider than 10km and must be free of settlements or infrastructure and unaffected by industrial activity, agricultural clearing or other anthropogenic disturbance in the last 70 years. Treeless areas within forests such as lakes, ice or patches of grassland are included.

2. Identification of intact forest landscapes is substantially manual. Starting with a map of global forests, all the forest patches that do *not* meet the criteria above are excluded through visual identification of disturbance using satellite images and other sources of information like thematic maps (roads, settlements etc.).

3. The project was started by the World Resources Institute and Greenpeace, and is now produced collaboratively by a consortium of NGOs and remote sensing experts from the University of Maryland. An online map of intact forest landscapes (<http://www.intactforests.org/world.webmap.html>) includes changes in intact forests for the periods 2000-13 and 2013-16. The underlying vector data is intersected with political and administrative boundaries to summarise results for countries and regions.

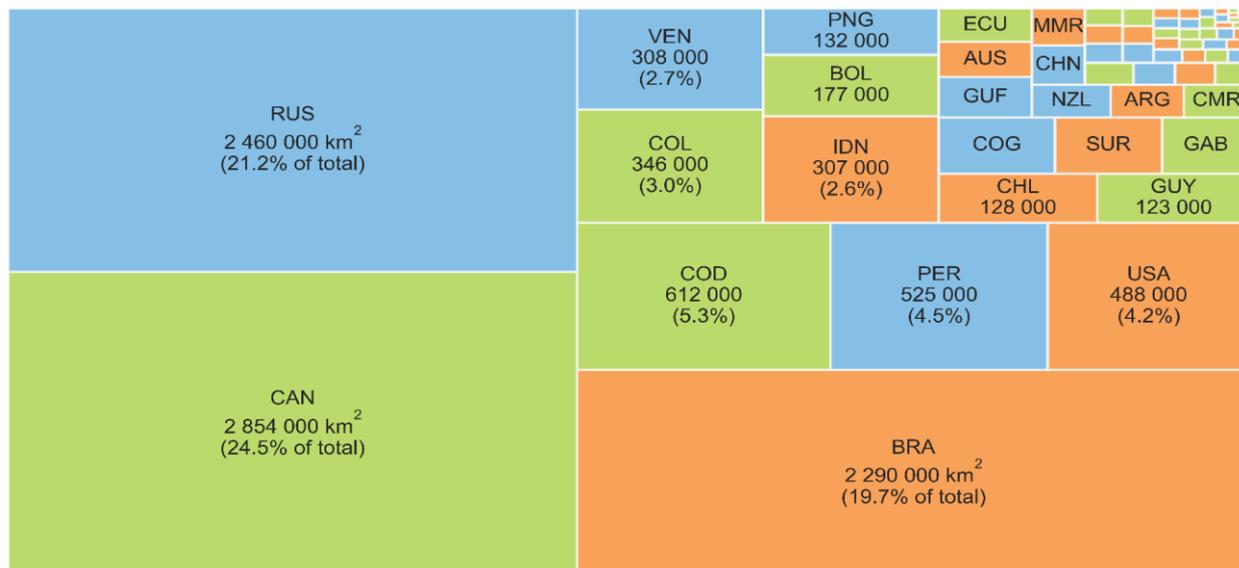
4. Ten countries account for almost 90% of intact forest globally (Figure 1). Of the 20 OECD and G20 countries and territories presented in Figure 2, generally countries with large areas of intact forest such as Australia, the People's Republic of China (hereafter China), Indonesia, the United States, the Russian Federation and Brazil have seen the greatest degradation over the past 20 years in relative (and absolute) terms. All of the intact forest landscapes in Romania and the regions of Bahia in Brazil and Kalimantan Selatan in Indonesia (and virtually all in Heilongjiang Sheng in China) were degraded by non-fire causes between 2000 and 2013. Many other regions have seen very high degradation rates of 10-30% per decade in recent years.

5. In some countries including Chile, Colombia, Costa Rica, Japan and Norway, little or no degradation of intact forest has been observed in recent years. With the exception of Romania, countries with relatively small areas of intact forest generally see comparatively little degradation (possibly because these landscapes are more valued and more strictly protected where they are scarcer).

6. With the exception of degradation due to fire, the specific cause of degradation is not explicitly recorded however a sample-based analysis of intact forests degradation was conducted. The analysis reveals that logging is the greatest human driver of intact forest degradation globally and by far the greatest cause of degradation in Africa, Southern Eurasia, Southeast Asia and temperate and southern North America. Agriculture (followed by logging) is the primary driver of degradation in South America. Fire is dominant in North American and Eurasian Boreal forests. Energy, mining and transportation are the remaining major drivers, accounting for a share of degradation almost everywhere. Logging is observed

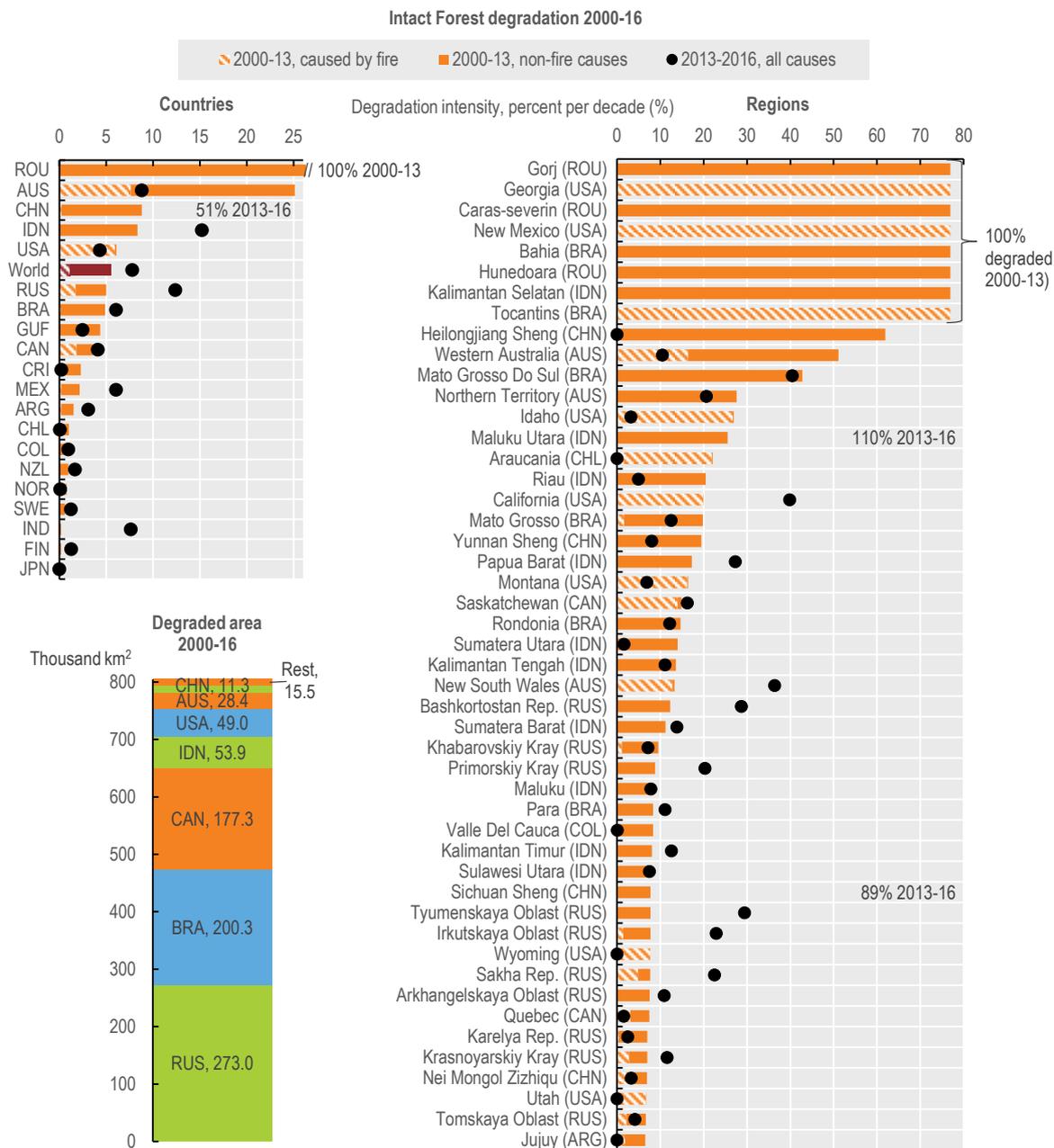
to often be the first major human use that leads to a ‘cascade’ of other uses. A little over half of global forest *loss* (by area) (but less than 10% of tropical forest loss) from 2000-13 is estimated to have occurred naturally from wildfire, pests and wind damage and would be expected to regenerate naturally. See Potapov et al. (2017) for more details.

Figure 1. Global distribution of Intact Forest Landscapes, 2016



Note: The integers are the total area of intact forest landscape in square kilometres rounded to the nearest thousand. The percentage is that countries’ share of all intact forest landscapes.
Source: OECD calculation using data from Potapov et al. (2017)

Figure 2. Intact forest landscape degradation, OECD & G20



Note: Showing the 20 OECD, partner, and remaining G20 countries and territories with intact forest landscapes per the IFL definition. Intact forest landscapes are transboundary therefore degradation in a neighbouring country or region can leave forest fragments on the other side of a border too small to meet the IFL definition (500 km²). This would be recorded as a degradation even if there has been no disturbance directly in that region. Dating fragmentation (i.e. identifying *when* certain infrastructure was built) is difficult – it is possible that fragmentation identified in 2013-16 actually occurred prior to 2013 but was not detected until later. Data distinguishing between fire and non-fire drivers for 2013-16 is not currently available.

Source: OECD calculations using data from Potapov et al. (2017)

2. REFERENCES

Potapov P., Yaroshenko A., Turubanova S., Dubinin M., Laestadius L., Thies C., Aksenov D., Egorov A., Yesipova Y., Glushkov I., Karpachevskiy M., Kostikova A., Manisha A., Tsybikova E., Zhuravleva I. 2008. Mapping the World's Intact Forest Landscapes by Remote Sensing. Ecology and Society, 13 (2). <http://dx.doi.org/10.1126/sciadv.1600821>