



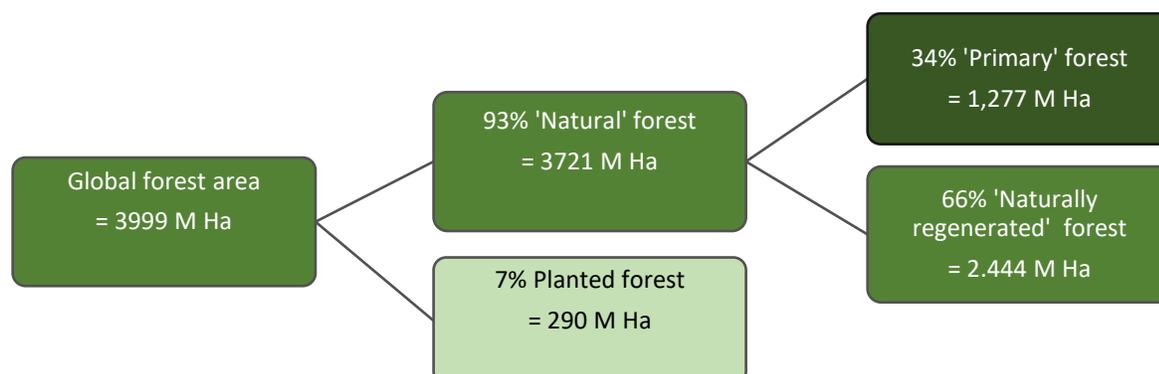
Fact Sheet no. 2

Primary Forests: Global Extent and Loss

How much primary forest remains?

- We have already lost about one third of the pre-agriculture extent of the world's forests (about 20,000,000 km² or 2 billion hectares). At the end of the last ice age (approximately 8,000 years ago), global forest cover is estimated to have been 62,000,000 km² 6.2 billion hectares, almost half of Earth's land surface (Shvidenko 2005, Mackey et al. 2014).
- Most of this forest loss occurred in the last two centuries, though the rate and scale of loss since the end of World War II is unprecedented.
- The planet's remaining forest estate is just under 40,000,000 km² or 4 billion hectares (Keenan et al. 2015) of which about 7% is in plantations.
- About one third (12,700,000 km² or 1.27 billion hectares) is primary forest according to the UN FAO's 2015 Forest Resource Assessment (FRA 2015).
- Primary forests are distributed roughly evenly between developed and developing countries (Mackey et al. 2014)
- Only about 22% of primary forest is in IUCN protected areas i.e. approximately 5% of Earth's pre-industrial natural forest cover (Mackey et al 2014).

Figure 1: Global forest cover in 2015



Where are the remaining primary forests?

Almost all (98%) remaining primary forests are found in 25 countries, with almost three-quarters (72%) in just 10 countries (Table 1). A large proportion of Earth's remaining primary forest occurs in Intact Forest Landscapes, i.e. primary forest in contiguous blocks >50,000 ha (Mackey *et al.* 2014). Of these, 50% occur in polar regions, 46% in equatorial areas and 3% in warm temperate climatic zones. 10 - 25% of Earth's remaining primary forest occurs in blocks that are <50,000 ha. These smaller areas of primary forest assume particular conservation significance in landscapes that are extensively cleared and fragmented. They potentially function as refuges, reference ecosystems and sources of propagules for restoration.

Table 1: Countries with >10 M ha of primary forest

Country	Remaining forest cover (M ha)	Primary forest (M ha)	Primary forest as % of remaining forest cover
Russian Federation	814.9	272.7	33.5
Canada	347.1	205.9	59.3
Brazil	493.5	202.7	41.1
Democratic Republic of the Congo	152.6	102.7	67.3
USA	310.1	75.3	24.3
Peru	73.9	65.8	88.9
Indonesia	91.0	46.0	50.6
Venezuela	46.7	45.7	98
Bolivia	54.8	36.2	66
Mexico	66.0	33.1	50.1
Papua New Guinea	33.6	17.6	52.4
India	70.7	15.7	22.2
Suriname	15.3	14.0	91.4
Gabon	23.0	12.8	55.7
Mongolia	12.5	12.5	100
Ecuador	12.5	12.4	88.9
China	208.3	11.6	5.6

Source (FAO 2015)

How much are we losing?

The FAO's 2015 FRA found a loss of 620,000 km² or 62 million hectares of primary tropical forest since 1990, suggesting an average loss of about 2.5 million hectares of primary tropical forests per year over the last 25 years. However, this represents a significant underestimate as Indonesia and Venezuela did not report in the 2015 FRA, and the Democratic Republic of Congo did not report in 2010 (Morales-Hidalgo et al. 2015). The 2015 FRA reports a gain in temperate and boreal primary forests, though this is because several countries reclassified existing forests as primary and is not due to an actual gain.

There are also data quality issues inherent in FRAs: countries define "primary forests" differently, choose not to report on this category, or do not report consistently across FRAs (Keenan et al. 2015, DellaSala et al. 2012).

Recent assessments suggest that losses of primary forest are much higher and that the global forest estate is rapidly being degraded and fragmented. For example:

- **Potapov et al. (2017):** only 20% of the planet's forests are in Intact Forest Landscapes (IFLs) (contiguous areas of at least 500 km² or 50,000 hectares), only 12% of IFLs are protected and IFLs have been reduced by 7.2% since 2000 (i.e. by about 900,000 km² or 90 million hectares, an area the size of Venezuela), with three times greater losses between 2011-2013 compared to 2000-2003.
- **Tyukavina et al. (2016):** loss of 18% of "hinterland forests" (or "minimally disturbed forests") between 2007-2013, and 20%, or 1,320,000 km² or 132 million hectares in the tropics.
- **Riitters et al. (2016):** Loss of 3,760,000 km² or 376 million hectares of core or "interior" forests globally from 2000 -2012.
- **Kim et al. (2015):** net forest loss in the tropics in 34 countries from 1990-2010 accelerated by 62% rather than decreasing by 25% as claimed by the 2015 FRA.
- **Haddad et al. (2015):** 70% of the world's forests are now within 1 km of a forest edge.
- **Hansen et al. (2013):** gross forest loss (not just primary forests) in the tropics between 2000-2012 estimated at over 1,000,000 km² or 100 million hectares.
- **Ibisch et al. (2017):** ~80% of Earth's surface is roadless, but fragmented into ~600,000 patches, over half of which are <1km² and only 7% of which are larger than 100 km² or 10,000 hectares.
- **Brinck et al. (2017):** tropical forests consist of ~50 million forest fragments. The length of the world's tropical forest edges is nearly 50 million km. 19% of tropical forests are within 100 meters of an edge.

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