

DEFORESTATION



*Primates
pay a heavy
price for the
disappearance of
their ecosystem.
L'Hoest's monkey
(Cercopithecus
lhoesti), Rwanda.*



*10 million
hectares
of forests
disappear
each year in
tropical areas.*

13 million hectares: that is the area of forest that disappears each year around the world, an area the size of England.

The rate of destruction is such that it equals one football field every four seconds!

Deforestation particularly affects tropical areas (10 million hectares a year), where half the forests on the planet are found. According to the FAO (the United Nations Food and Agricultural Organisation), which provides the main reports on the phenomenon, their state is "very alarming". Asia is the continent that is the most affected, since it has lost half its forests since 1960. Latin America



The toco toucan is a common resident of humid tropical forests. Toco toucan (Ramphastos toco), Brazil.

and feeds the largest number of living beings. Tropical forests are particularly rich, thanks to a climate that favours exuberant life: they contain over 70% of plant and animal species on the planet! Scientists continue to find new species in them each year. The trees are not exception to the abundance. There are 50 000 different varieties on Earth, of which only 150 grow in France. By way of comparison, nearly 15 000 species have been listed in Guyana.

and Africa have each lost 20% of their area. However, we must be careful with those estimates; situations change quickly, and remain poorly understood in some countries. The expression "tropical forest" covers a range of very different realities. In the wider sense, it includes all wooded areas found between the Tropic of Cancer in the North and the Tropic of Capricorn in the South. Those wooded areas account for 10% of land area, i.e. 1 700 million hectares. They range from the humid equatorial forest (e.g. Amazonia) to dryer tropical forest (Australia). There are also the rarer mountain forests, also called cloud forests (Himalaya), and mangroves, a particular form of plant life that grows on flooded banks (Florida). Forests form the terrestrial habitat that houses

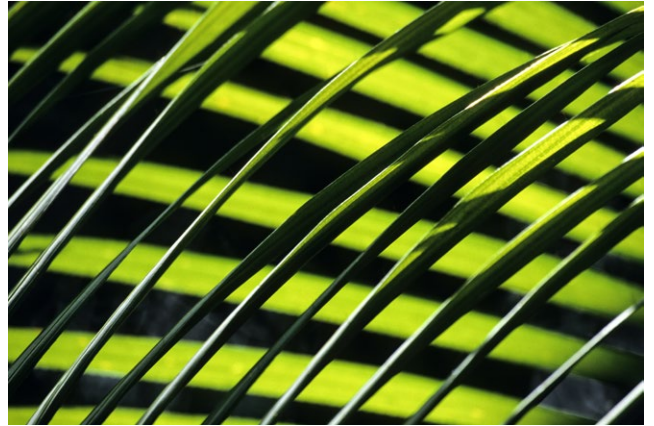
LAND CONVERSION

Those areas have been exploited for centuries but the damage only worsened from the 20th century onwards. Deforestation start with forest clearance, during which trees are felled. Then comes vegetation clearance, i.e. bringing under cultivation areas that were formerly virgin. Converting



Suffering the disappearance of its habitat, the lion tamarin is in danger of extinction. Lion tamarin (Leontopithecus chrysomelas), Brazil.

Deforestation particularly affects tropical areas, where we find over 50% of biodiversity. Irian Jaya region, Papua New Guinea.



tropical forests into agricultural lands is the main cause of deforestation around the world. The need grows endlessly, since the forests are mainly found in emerging or developing countries (except French Guyana and Australia). Having joined a production economy, those countries have need of increasing amounts of space to support their growth. Commercial agriculture, essentially aimed at the agro-food industry, is the largest consumer. Even when it is trees that are cultivated, the ecosystem is always degraded. That is what is happening in Malaysia, where 80% of deforestation has led to intensive cultivation of oil palms. Millions of hectares of tropical forest have been felled to be replaced by immense palm groves. The choice is

a profitable one, for palm oil is the second most consumed oil in the world after soya oil. However, those two crops are also the ones that have the most negative impacts on the environment. When only one variety is planted, it is the entire operation that is contaminated. That is in addition to pollution by pesticides, chemical fertilisers, and the fact that monocrop cultivation only allows a very poor ecosystem. Small landworkers continue to practise traditional agriculture, in particular slash-and-burn agriculture, in which trees

Tropical forests shelter over half the world's biodiversity on less than 6% of the land surface.





Tropical forests on islands shelter flora and fauna that are often endemic (Island of Guadeloupe).

are felled on site and the plot is set on fire so that the ashes can act as nutrients. However, the demand for profitability requires them to intensify the use of the land - for example by leaving the land fallow for less time between two harvests, As a result, the soil cannot recover, it becomes less fertile, and it can be cultivated for less time. That forces farmers to seek out fresh land to clear... Stockbreeding also has a growing need for space: buffalo, zebu, etc. Farms are enormous, ranging up to 10 000 hectares, but with a low level of productivity. That leads to a new threat: over-grazing, when livestock trample on soils and vegetation, preventing their regeneration.

FOREST EXPLOITATION

Another obvious cause of forest destruction is its exploitation. Wood is the main resource that is sought, and 80% of it is used for fuel. However,



13 million hectares of forest disappear each year around the world. Masuria Forest, Poland.



*Curl-crested araçari.
Manu National Park, Peru.*

desires are also aroused by softwood lumber, which is precious. Mahogany, ebony, and rosewood, for example, are sought after for woodworking. The problem is that those rare trees are mixed in with the others. To reach them, it is necessary dig trenches in the undergrowth, destroying other

plants in the process. Those tropical areas conceal other riches that place them in danger: the riches of their subsoil. The stakes are enormous, for example, in Amazonia, which is overflowing with gold, diamonds, cobalt, etc. Mines and factories demand large amounts of energy, which needs to be sent to the site or which must be produced on site. They produce a lot of waste: up to 300 000 tonnes per day for a single company, with lead, mercury, etc. They are not the only ones to need significant levels of infrastructures leading to the forest being fragmented. Cities grow ceaselessly and devour the forest. They involve large-scale infrastructure work (roads, bridges, dams, power stations, waste discharge stations, etc.). Six countries account for over half the destruction in

***A new threat:
over-grazing
leads to over-
exploitation of
plant resources
for feeding
livestock.
African buffalo
(Syncerus
caffer),
Botswana.***





Cities grow ceaselessly and devour the forest. Mexico City, Mexico.

tropical areas: Brazil, Indonesia, the Democratic Republic of Congo, Mexico, Bolivia, and Venezuela. In addition to economic activities, the situation in which the local population finds itself is often a difficult one, and it is a factor in deforestation. Poverty prevails in the countryside, where the population explosion combined with unemployment forces inhabitants to make ever-greater use of natural resources just to survive. Legislation in those developing countries is rarely sufficient or it is poorly applied, due to a lack of means and to

corruption. It is always difficult to take the environment into account when the economic and social conditions of the country give cause for concern.

***1/3 of amphibian species are
threatened with extinction.
Madagascar mantella.***



In Australia, the rarefaction of eucalyptus forests leads to the gradual extinction of avifauna. Western Australia.

IRREVERSIBLE DAMAGE

The damage caused by deforestation affects all the components of the habitat – including, biodiversity, both plant and animal. According to estimates, 10% of tree species are threatened in the short or medium term, i.e. almost 7 000 species, most of which are in tropical areas. There are almost no primary forests left, i.e. forests that have not been modified by humans. France still has a few in New Caledonia that are under heavy threat, for there are just 50 km² of original forest left, i.e. barely 1% or 2% of the original area. However, they shelter unique fauna and flora: of 3 380 species, 80% are endemic, i.e.



The success of anti-deforestation projects involves the participation of the population, and their involvement in creating local development. Indian Ocean.

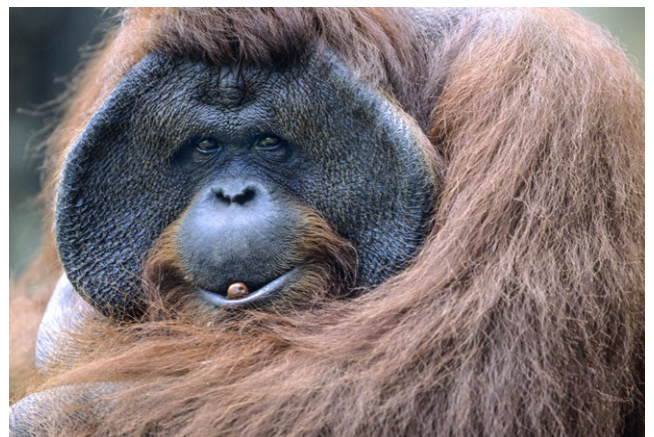
Poland has some of the last primary forests in Europe. Masuria Forest, Poland.



they are not found anywhere else. Damaging the forest is tantamount to modifying, sometimes irreversibly, the habitat and nutrition of several animals that are dependent on it. Some of them have become highly symbolic, like orang utans. Each year, 5 000 of them die, along with their forests. Even the indigenous peoples who still populate those habitats are threatened, such as the Bushmen. With them disappears an entire portion of the tropical forest's nature capital: medicinal plants, natural pesticides and colourings, etc. In normal times, plant cover protects soils and nourishes them. When plant cover disappears, soils are weakened. They erode

more easily because of rain, grazing, gullyng, etc. Degradation is faster in tropical areas than elsewhere; it is sometimes the emergence of savanna, or the start of desertification in the driest areas. Some soils that are no longer retained become dangerous: landslides, rock-falls, floods, etc.

Forest destruction causes the deaths of 5 000 orang utans each year. Orang utan, (Pongo pygmæus), Malaysia.



CLIMATE CHANGE

Another threat is currently making the news: global warming, caused by an increase in the emission so of greenhouse gases (mainly carbon dioxide (CO₂), methane, etc.), which retain a part of solar radiation. Forests are gigantic carbon sinks, because trees accumulate CO₂ during their growth. When trees are burnt, they release carbon dioxide into the atmosphere; in that way, deforestation is the cause of between 18% and 20% of emissions. Replanting is only slightly effective, because for the same area, a forest retains 100 times more carbon than cultivated land. Because the area they cover is constantly being reduced, forests no longer play their role in climate control. Nonetheless, they are fundamental in the water cycle, since they release water vapour into the atmosphere



Tropical forests shelter an impressive amount of animal and plant diversity. Scientists continue to discover new species every year. Mouse lemur (Microcebus), Madagascar.

through evapo-transpiration. That process provides half the precipitation in Amazonia. With vegetation clearance, Brazil – which had never known drought – now has to use irrigation.

When plant cover disappears, soils are weakened. That is the start of desertification in the driest area. Namib Desert, Africa.





The humid tropical forest has an 80% level of endemism. Ithomiidæ family, Surinam.

Forests have been exploited without consideration being given to the long term. In the case of Haiti, almost all the forest cover has been destroyed. Raising awareness is a slow process, but it would seem that the efforts made over the last ten years by NGOs with countries have begun to bear fruit. Protected areas have been created, deforestation has been slowed down in some areas, and reforestation plans have

been put in place (even though it is impossible to re-create the complexity of the original ecosystem). In any case, the success of those projects is based on participation by populations, for example by creating local development: a mark for their forest-sourced products, fair trade, etc. That calls for a sustainable compromise between economy and environment.

Text by Céline Mounié - Photographs by Gilles Martin