THE LAST







OF THE WORLDS ANCIENT FORESTS

GREENPEACE

THE FUTURE OF ANCIENT FORESTS

In 1992 all but nine of the world's independent states signed an agreement in Rio to help stop the destruction of the world's remaining forests.

Ten years later, more than 10 million hectares of ancient forest are still being cleared or destroyed every year. That is an area the size of a soccer pitch every two seconds.

These forests are essential to maintain life on earth and are truly diverse. They include boreal, temperate and tropical forests; coniferous and broadleaved forests; rainforests, dry forests and mangroves. They regulate the climate, filter air, clean water and prevent erosion. They have a mitigating effect on heat, frost, drought and storms.

The ancient forests are home to millions of forest people who depend on them for their survival both physically and spiritually. These forests also house around two-thirds of the world's terrestrial species of plants and animals. That's hundreds of thousands of different plants and animals, whose future depend on the ancient forests.

Throughout the world, the ancient forests are in crisis. Almost a quarter of the world's mammals and 12 per cent of its birds are now on the edge of extinction. Countless species living in these forests have already been lost. If forest destruction rates set in the 1990s continue, half of the species living in the forests of the world, will disappear by the middle of this century. And many of the peoples and cultures who depend on these forests for their way of life are also under threat. There is a last chance to protect these forests and the life they support.

WHAT IS IT ALL ABOUT?

WHAT IS AN ANCIENT FOREST?

Ancient forests are the world's remaining forests which have been shaped largely by natural events and which are little impacted by human activities. They are one of the earth's most precious natural treasures and have developed over thousands, if not millions of years. They nurture ecological and climate processes.

WHY ARE LARGE AREAS FOCUSED ON?

Large areas provide enough habitat to support healthy populations of even our most far-ranging species, such as wolves and tigers. They are also large enough to support these species in the face of natural disturbance which have shaped forest ecosystems for millenia. Large undisturbed areas are also needed as a reference for the large majority of forests which have already been destroyed. The natural processes of forest development can then be compared and understood. Fragmentation divides areas into smaller blocks, splits animal populations and disturbs patterns of movement. Roads are also associated with human pressures which degrade forest ecosystems, such as poaching, logging and clearing.

POSSIBLE EXCEPTIONS

The chosen blocksize of mostly 50.000 hectares is only a rough guidance for mapping the last intact ancient forests. Known key ecological areas can also be taken into account. One of those key ecological areas is the Great Bear Rainforest in British Columbia. It is one of the last temperate rainforest areas in the world. To protect rare species such as the Spirit Bear smaller units of ancient forests need to be protected as well.

WHY MAPS?

To protect ancient forests effectively it is necessary to know where they are located. An assessment of the threat to them and of their commercial importance is helpful to decision-makers in politics and business. Global Forest Watch (GFW) is the first worldwide forest mapping and monitoring network created by the World Resources Institute (WRI) aiming to use comparable parameters and methods. GFW has provided the data for these maps.

WHAT IS THE WRI?

The World Resources Institute is an independent centre for policy research and technical assistance on global environmental and development issues.
WRI's mission is to move human society to live in ways hat protect the earth's environment and its capacity to provide for the needs and aspirations of current and future generations.

THE GFW APPROACH

Phase 1. Mapping potentially intact ancient forest (i.e. large tracts of low-access forest)

Delineating large tracts of forest with no known access infrastructure gives a good proxy measure of intactness, particularly in regions dominated by primary forest. In this phase mapped areas are prioritised for further analysis.

Methodology

- Existing datasets on known location of roads, railways, power lines and where appropriate, navigable waterways are integrated, and used to delineate low-access forest.
- These areas are then sorted by block size, to identify large tracts of low-access forest (The size depends on the forest type, and the region-specific human pressures which are associated with roads and other access routes.

Phase 2. Mapping intact ancient forest

Taking the natural and geographical situation into account satellite imagery is being analysed for a more accurate assessment of intactness. Second-phase analysis is good for eliminating areas that have undergone logging and other disturbance (such as oil and gas development) and is being verified by field surveys.

Methodology

- Due to the different availability of datasets the analysis of satellite imagery can vary slightly from region to region.

For example:

- Siberia: two different sets of low (phase 2a) and high (phase 2b) resolution satellite imagery were used to identify logging roads and new and old clearcuts. In a phase 2c these outcomes were verified by field surveys.
- Chile: detailed government inventory data, based on remote sensing information and field surveys were analysed to identify intact forests

WORK IN PROGRESS AND PROBLEMS

The maps shown here are not based on standardized approaches, and so are not always readily comparable. Differences in data availability, region-specific patterns in human disturbance, and ecosystem (forest type) specific criteria for identifying intact forests makes standardisation very difficult. The projects involved also began at different times in different areas, and have reached different stages of progress. There was, for example, a very good data base for Siberia, and excellent opportunities for working with this data (the GIS lab having experienced people and enough money), with the result that the maps are already finished.
Poor data quality and data gaps currently prevent accurate mapping of the central African rainforest. And in the Amazon the GFW has only just started to create the infrastructure needed to start its research. So what you see here is »work in progress« based on preliminary data still under review. But it is a beginning, and it shows how important this project is. This brochure presents what to Greenpeace are the most important results of the mapping project to date.

At least 15. 000 ha of ancient forests in europe fall victim to chainsaws every year.

THE LAST ANCIENT FORESTS OF EUROPE

WHEN THE LAST ANCIENT FORESTS OF EUROPE DISAPPEAR, SO TOO WILL THE BROWN BEAR

Deciduous forests once covered almost the whole of central and Western Europe. Today the continent's only undisturbed forests are in its extreme north. Sweden and Finland now have only three per cent of what European ancient forest remains. Only 14 per cent of the forests in european russia are still intact. They now provide the only area of refuge for many species of animals and plants. Undisturbed lakes, riversides and swamps surrounded by ancient forest. Ancient forests are the most important habitat for the brown bear, which used to have its home in all the once copiously forested areas of Europe, from Scandinavia to the Mediterranean. The destruction and dismembering of its habitat is becoming a bigger and bigger danger to what is europes strongest animal. At least 150 square kilometres of ancient forests fall victim to chainsaws every year. Plants, too, have a hard time. New vegetation can take years to grow in polar regions with short summers, and more seldom than ever does it attain the state it originally had in other climate zones.

ANALYTIC METHODS

In the first phase of the study topographical maps were used to exclude areas which have a highly developed infrastructure and high populations. In the phase 2a medium-resolution satellite pictures (150 metres per pixel) taken in two consecutive years were used in order to exclude tundra areas, agricultural areas and areas with visible clearcuts. The phase 2b employed only high-resolution Landsat satellite pictures or analogue satellite pictures (15-35 metres per pixel) in order to identify and map the exact boundaries of intact ancient forest areas. Sixty-seven field surveys (phase 2c) aimed at checking the information from the analyses of the satellite pictures.
Intact forest landscape (IFL), for the purposes of this study, is an area with the following characteristics:

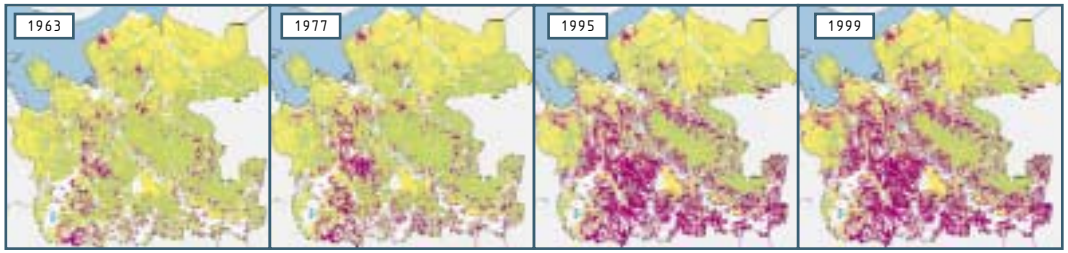
- it is situated within the forest zone;
- it is sufficiently large (smallest are 50.000 hectares and minimum breadth ten kilometres);
- it contains a contiguous mosaic of natural ecosystems which may or may not be of different types;
- it is not broken or fragmented by infrastructure; and
- it does not display signs of significant transformation caused by human activity.

NATURE'S TREASURE VAULTS?

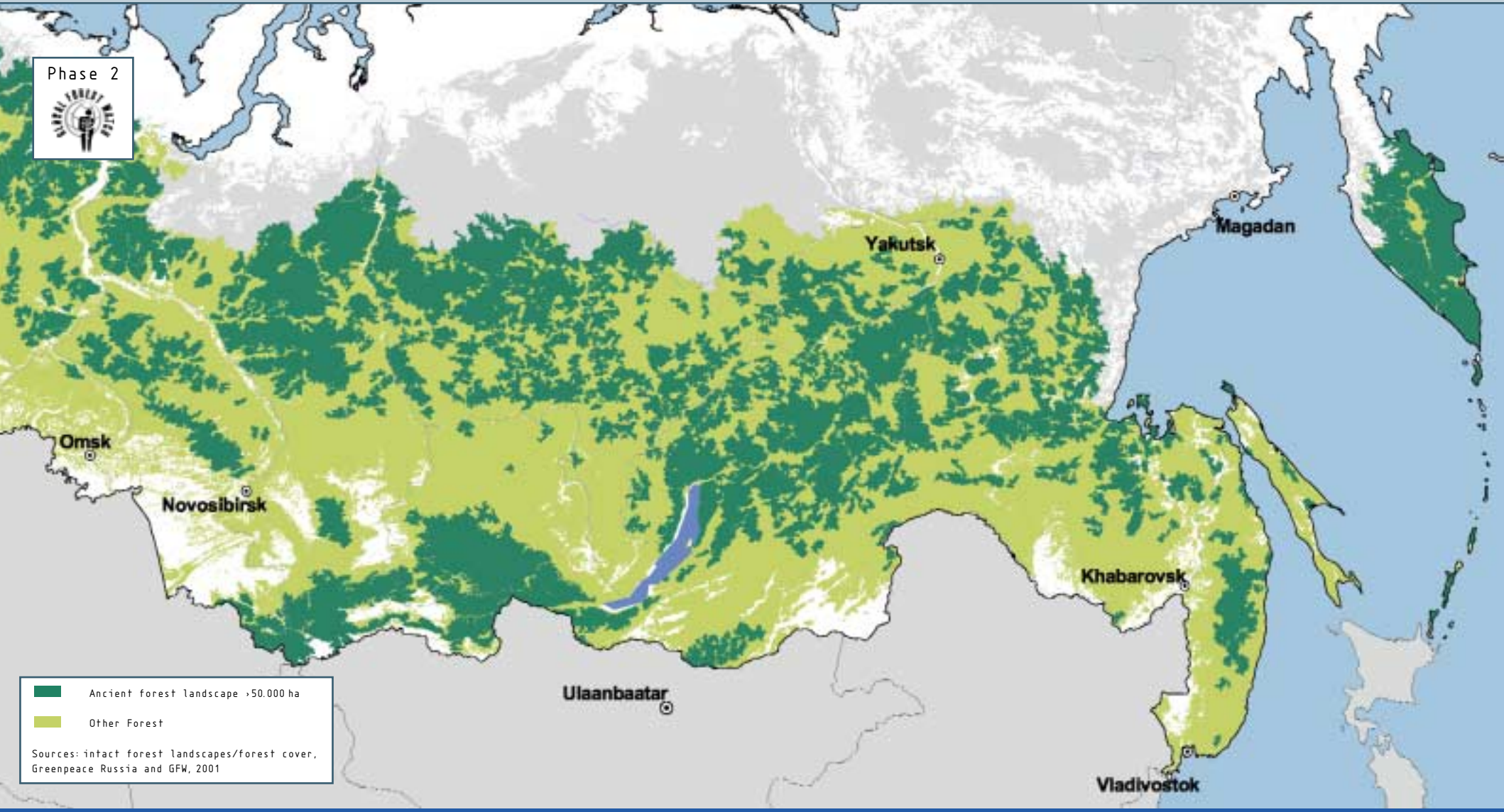
The common perception of Russia as a country with an unlimited wild natural environment is a myth. In reality its undisturbed areas, and particularly the last big intact ancient forests, are shrinking rapidly. Exploitation for wood and timber, road building, mining, pipelines and railways are cutting up the ancient forests into small fragments. The forest industry here uses mainly the destructive »cut and run« practice of logging and vanishing.

The findings of the study show that only 14 per cent (32 million hectares) of the forest area in the European part of Russia is still intact, large, undisturbed ancient forest.

Degradation of ancient forests in Archangelsk Region (Russia)



Greenpeace Russia, Sources: Satellite Images, Federal Forest Service, Vegetation Map Russia



In some parts all forests are transformed, in others the remaining intact forest is broken into fragments.

THE SNOW FORESTS OF ASIAN RUSSIA

The lines seen in the satellite picture are piplines fragmenting the forest. What looks like a chessboard are clearcuts.

RUSSIA IS THE MOST FORESTED COUNTRY IN THE WORLD

Even at temperatures of minus 50 degrees Celsius, boreal coniferous forests flourish in Russia. And despite the extreme conditions countless species of fungi, fern, lichen and moss are found here. In the over 5.000 kilometres of forested area, the landscape changes from sparse tundra covered with stunted willows and birch in the North to dense coniferous and deciduous forests in the southern region.
The great expanse of the forest means that even large mammals can find sufficient food here – elk, brown bears, the lynx and, at the south-eastern edge of the taiga, even the Siberian tiger still exists.
This tiger originally roamed huge areas of Asia. Today it only lives in a small area of ancient forest along the Sea of Japan north of Vladivostok. There are now twice as many of these animals in the world's zoos as in the wild, where only 400 Siberian tigers are found.
The minerals and reserves of timber in eastern Siberia today still arouse greed throughout the world. The dilapidated Russian economy is highly dependent on foreign exchange, and is therefore engaged in a sell-out of nature on an indescribable scale.

CHARACTERISTICS

Intact forest landscapes in this case are defined as in europe. Remaining intact forests are poorly stocked. The vast majority of these forests have a low production potential.

METHOD FOR DELINEATION OF INTACT FOREST LANDSCAPES

Phase 1: Reduction of the initial candidate area (the total area of the forest zone) by elimination of areas in the vicinity (i.e. within buffer zones) of infrastructure as well as landscape fragments smaller than 50.000 hectares
Phase2a: Reduction of the remaining candidate area (roadless landscapes greater than 50.000 hectares) by elimination of areas with larger surface disturbances, visible in satellite images with a resolution of 150-300 meters
Phase2b: Reduction of the remaining area (candidate intact forest landscapes) by elimination of smaller linear and surface disturbances, visible in satellite images of high resolution (15-35 meters)

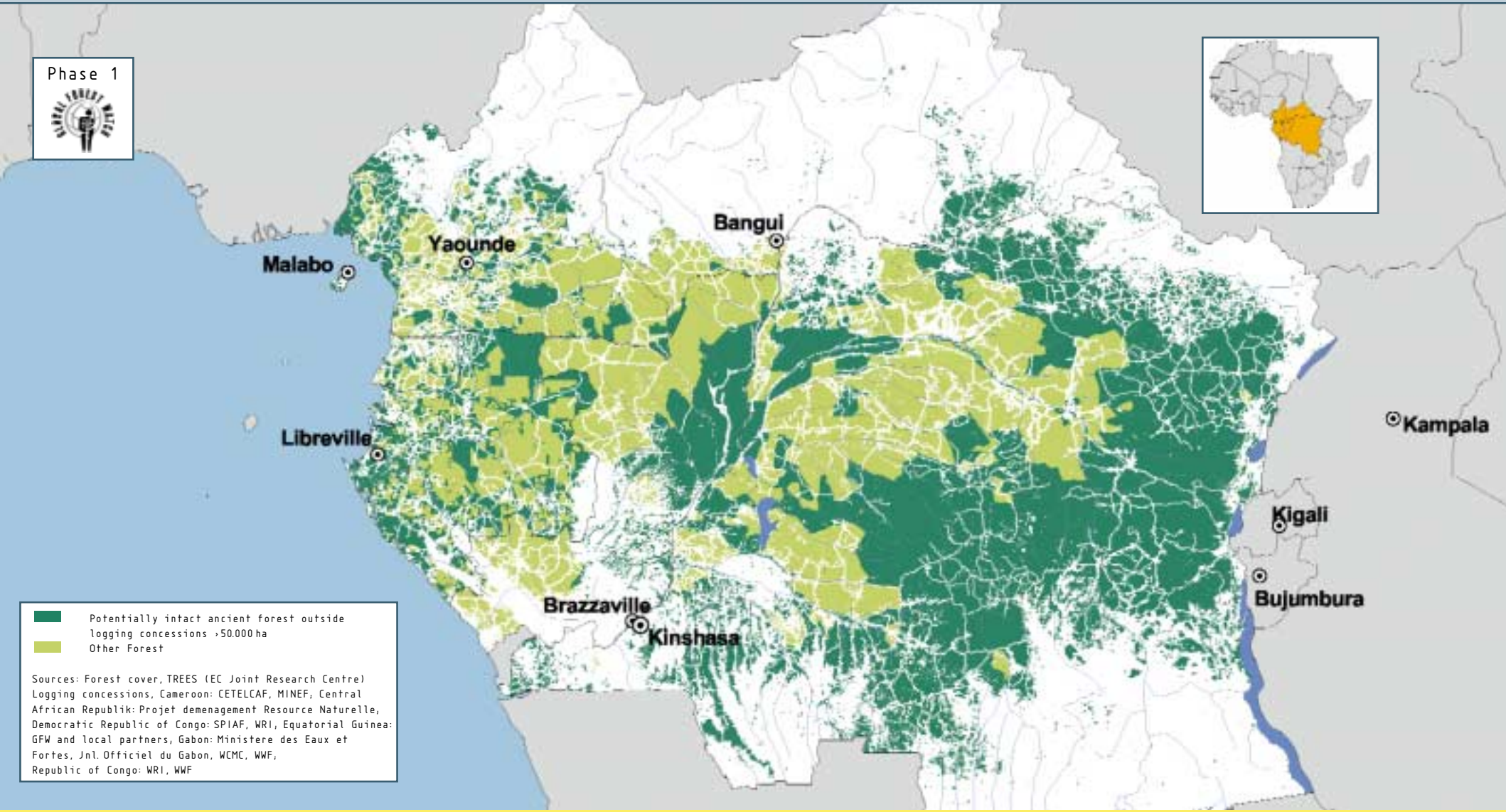
DATA PROBLEMS

The available information is of different quality for different parts of Russia. In the naturally highly fragmented tundra forests in the northernmost regions of Siberia and the Russian Far East, the accuracy of the available information was not high enough to assess the degree of human transformation of the landscape. These forests are shown as forested areas outside of the studied territory.

THE MYTH

The situation is particularly critical for intact natural landscapes. In the absence of decisive action within the next few years, such landscapes may disappear within whole ecological regions and even vegetation zones.
Intact areas remain only in the most inaccessible mountainous locations, while the unique far-eastern broad-leaved and mixed conifer-broad-leafed forests have been almost totally transformed by industrial logging during the last decade.
Exposing it as a myth, these findings refute the common opinion that ancient forests still dominate Russia. Such forests dominate only in the northern parts of Eastern Siberia and the Russian Far East.

In most parts of Russia the forest vegetation has been fundamentally transformed by human activity.



Data gaps and the range in data quality prevent an accurate and comprehensive documentation of forest condition.

THE AFRICAN FOREST OF THE GREAT APES

ENDANGERED HABITAT OF THE FOREST ELEPHANT AND THE GREAT APES

The Central African Rainforest is the second largest tropical ancient forest area in the world and home to an immeasurable diversity of plant and animal species. About one thousand species of birds and four hundred species of mammals live in the forests of the Democratic Republic of Congo alone.
The forest elephant has its home here. Partly due to its secluded life, it is one of the last animals on the continent which has not been researched.
In five to ten years, experts estimate that the apes – gorillas, chimpanzees and bonobos – will have disappeared together with the last undisturbed forest areas.
Protected areas are mostly ignored. Nature protection efforts are thwarted because of a lack of political will, money and personnel, and because of poverty and corruption.
Africa has lost two thirds of its ancient forests in the last thirty years. The industrial timber industry is responsible for destroying huge areas of ancient forest. »Selective extraction« is what the international timber corporations call the method by which they – purportedly protectively – saw down only one or two of the most expensive giant trees per hectare. What they omit to say is that up to 70 per cent of the remaining vegetation in the logging area also falls victim to roads, sawing machines or bulldozers, or is crushed by falling trees.

RESULTS

This coarse scale fragmentation analysis concludes that Central Africa contains some of the world's largest tracts of potentially intact ancient forests. However the future of these rainforests is unclear due to the rapid spread of commercial extraction activities at unsustainable rates. Of the remaining potentially intact ancient forest tracts, 40 per cent are within commercial logging concessions. In areas of concessions, significantly more access is revealed than the regional analysis shows. In addition, illegal logging is rampant in many areas of the region.

DATA PROBLEMS

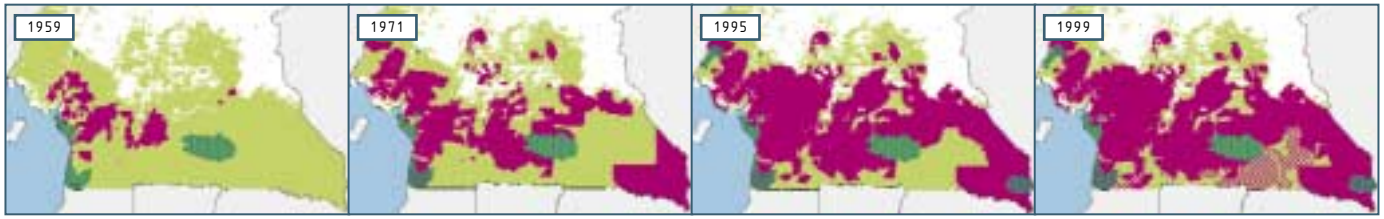
Most geographic data available for Africa is coarse, inaccurate, and based on outdated maps over twenty years old. In the Republic of Congo, for example, the majority of data is over 40 years old. There is no publicly available data of logging roads for any of the countries in the region, and road data misses most roads constructed in the last twenty years.

THIS IS NOT THE WHOLE STORY

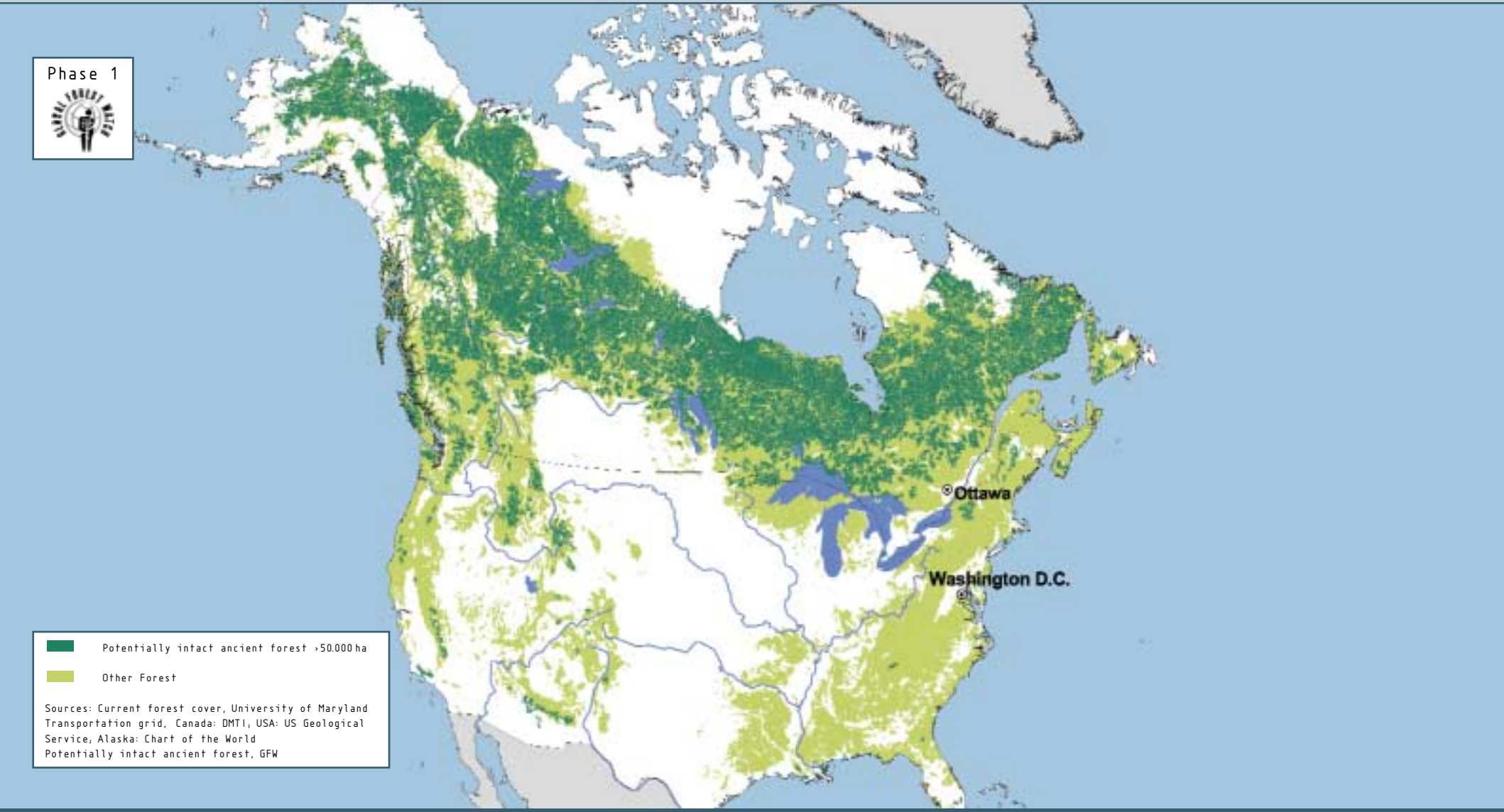
The limited regional analysis does not take the logging roads that pass through concessions throughout Central Africa into account. So it provides only a rough picture of forest fragmentation. While the coarse scale map shows extensive areas of potentially intact ancient forests, new logging road data for Cameroon, mapped from 1999-2001 satellite imagery, reveals that significant portions of areas mapped as low access forests are actually fragmented by commercial logging operations. It can be assumed that in many other parts of Central Africa the situation is not very different making the coarse scale map overly optimistic.

GFW is committed to working with other interested partners to promote data collection, update this analysis, and make data publicly available.

Growing of concessions in ancient forests of Cameroon



GFW, Sources: WCMC, CETELCAF, IUSN



The analysis fails to pick up fragmentation from nonlinear features and smaller access routes (for example logging roads).

THE LAST ANCIENT FORESTS OF NORTH AMERICA

WOLVES DISAPPEAR WITH THE ANCIENT FORESTS

Coniferous forests without end meet the treeless tundra in the North of the American continent. This is a landscape of scarce resources, hard winters and short summers. The trees here are among the biggest tallest and oldest in the world.
One of the last intact temperate rainforests is to be found further south, on the west coast of Canada, in British Columbia. Here the moist sea air is forced upwards to the summits of the coastal mountains, where clouds turn into rain. Only here does the white kermode or spirit bear, a rare subspecies of black bear, exist.
Timber corporations clearcut whole areas of land to obtain pulp to make paper. As a result, soils erode and rivers silt up.
The habitats of about two thirds of the 140.000 species of plants, animals and micro-organisms found in Canada are tied to the ancient forest.
The plundering of nature has gone still further in the USA than it has in Canada. Here 94 per cent of the original forest has already been cut down.
North America is also the home of the wolf, once one of the most widespread mammals on earth. Its population in North America today is estimated at no more than 63.000. There is a lack of forest corridors for wolves to roam in, and of large intact areas of ancient forest available to them as a refuge.
From 1990 to 2000 timber corporations destroyed at least 123.000 square kilometres of ancient forest on the North American continent. This is equivalent to an area three times the size of Switzerland.

THE APPROACH ENTAILS

- Developing a 1 km^2 grid over a regional transportation dataset, depicting access routes.
- Overlaying gridded access routes on a 1 km^2 resolution spatial land cover dataset for 1992-93.
- dentifying all forests which fell outside of these transport route grid as potentially intact ancient forests.
- Delineating large tracts (> 50.000 hectares) of potentially intact ancient forests.

DATA PROBLEMS AND STATE OF MAP

Being a coarse scale assessment, this map attempts to provide only a regional picture of areas that are potentially intact. This analysis fails to pick up fragmentation from non-linear features, such as clearcuts and mines. Also, the analysis does not evaluate disturbance from small roads, and seismic lines, which significantly increase fragmentation. For example: Current preliminary analysis in New England at a finer scale shows an average increase of 40 per cent in transportation lines from mapping from relatively medium scale (1:1.000.000) to finer scale (1:24.000). In some cases up to an 80 per cent increase in transportation lines has occurred.

RESULTS

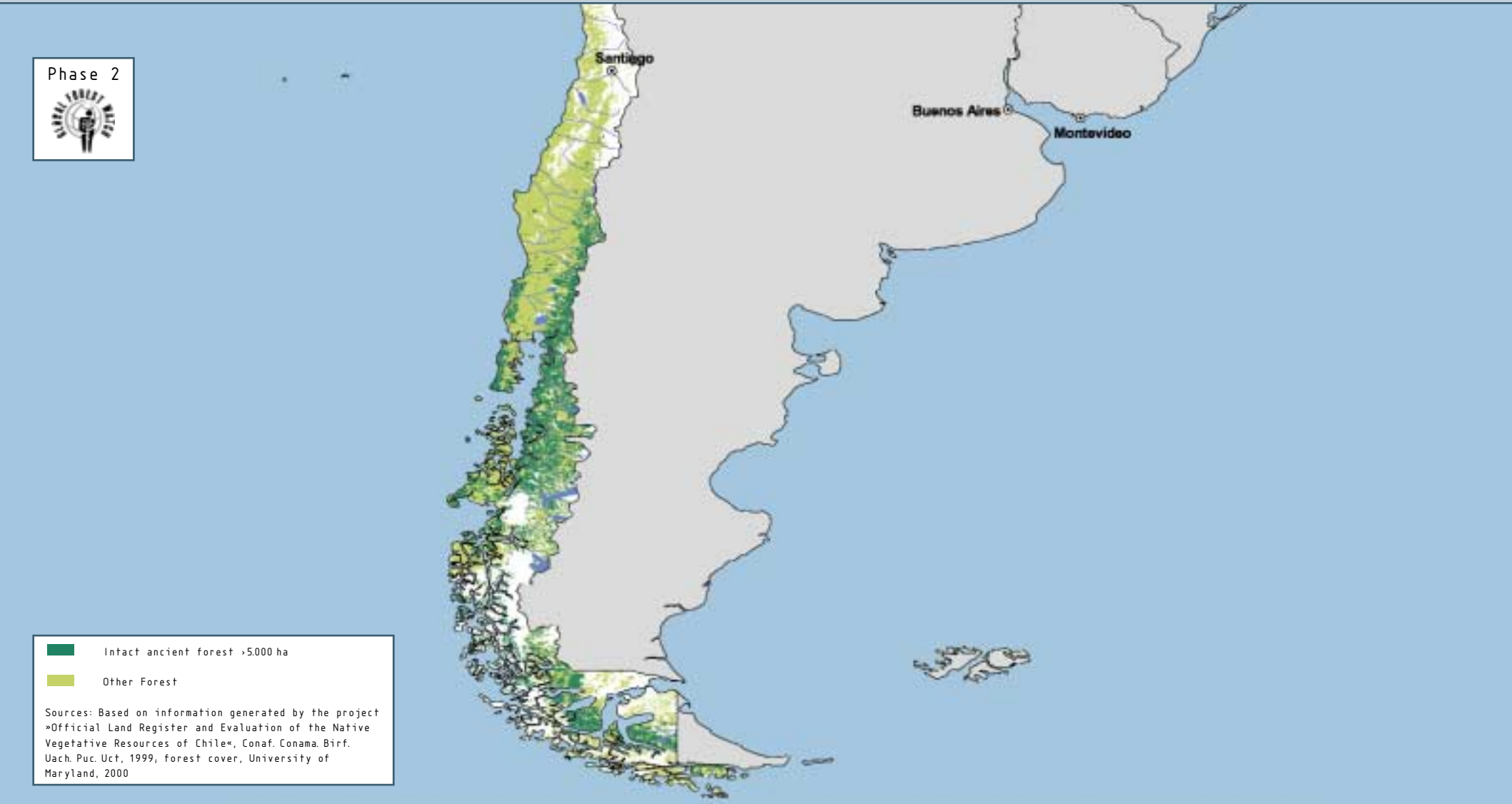
Results indicate that two-thirds of the regions forests and woodlands are large tracts (> 20.000 ha) of potentially intact ancient forests. The majority of these are located in the northernmost regions of the continent, in Canada and Alaska. They consist of a mix of forest and tundra. Forests of the lower 48 States (of the USA) are relatively fragmented, with only 20 per cent of forest cover remaining in large, potentially intact blocks. Most of them are located in the Rocky Mountains and the coastal range of the pacific Northwest.

Building on this coarse, regional-scale analysis GFW is now in the process of delineating undisturbed forests at a finer scale.

Forest cover | Roaded areas excluded from forests | Forest areas larger than 20.000 ha

Example for Key Ecological Area British Columbia:
The Area of unfragmented potentially intact ancient forests is relatively small compared to total forest cover. These forests are of major importance for the survival of the Spirit Bear.

Phase 2



Intact ancient forest >5.000 ha

Other Forest

Sources: Based on information generated by the project »Official Land Register and Evaluation of the Native Vegetative Resources of Chile«, Conaf. Conama. Birf. Uach. Puc. Uct, 1999; forest cover, University of Maryland, 2000

Almost all of Chile`s ancient forests are found in and around the Andean Mountain Range.

THE TEMPERATE JUNGLE OF SOUTH AMERICA

TEMPERATE RAINFORESTS OF THE ANDES – NO MORE REFUGE FOR RARE DEER

Outside the tropics, rainforests are a rarity in the world. The Valdivia ancient forest in Chile is the second largest temperate rainforest on earth. Despite being isolated, the Chilean jungle is, however, not far enough away from the rest of the world to be safe from destruction. At the same time, its bio-geographical isolation prevents plants and animals migrating there.
As a result, a unique spectrum of species, with unusually high biodiversity for such a climate zone, has developed in Chile. Some alerce trees (conifers) have been found to be more than 3.600 years old.
Most of this forest has already been cut down or damaged, and the last intact areas are threatened by the timber industry. In the 1990s Chile did almost nothing to protect its ancient forests. On the contrary, from 1996 to 1998 the production of industrial roundwood increased by 83 per cent compared to the previous decade.
The huemel, the deer on the Chilean coat of arms, used to be found from the flat coastal regions of Chile and the Argentinian Patagonia to the Andes. Today it lives in just a fraction of its original range, at heights between 3.300 and 5.000 metres. Its population is estimated to be a few thousand.
A glimpse at the map of the country shows that Chile really does, as travel agents claim, lie at the »end of the world«. With the Pacific Ocean on one side and the snow-covered 6.000-metres peaks of the Andes on the other, it is, in effect, a bio-geographical island.

METHOD

The study is based on the digital information generated by a project carried out for the Chilean government agency responsible for forest management. This database contains the most recent and complete information (1995) on the forest resources of Chile and has been technically and politically validated. This project used aerial photographs, principally at a scale of 1:20.000, and satellite images for the northern and southern boundaries of Chile. In combination with the aerial photographs, 3.600 days of fieldwork were spent.

FINDINGS

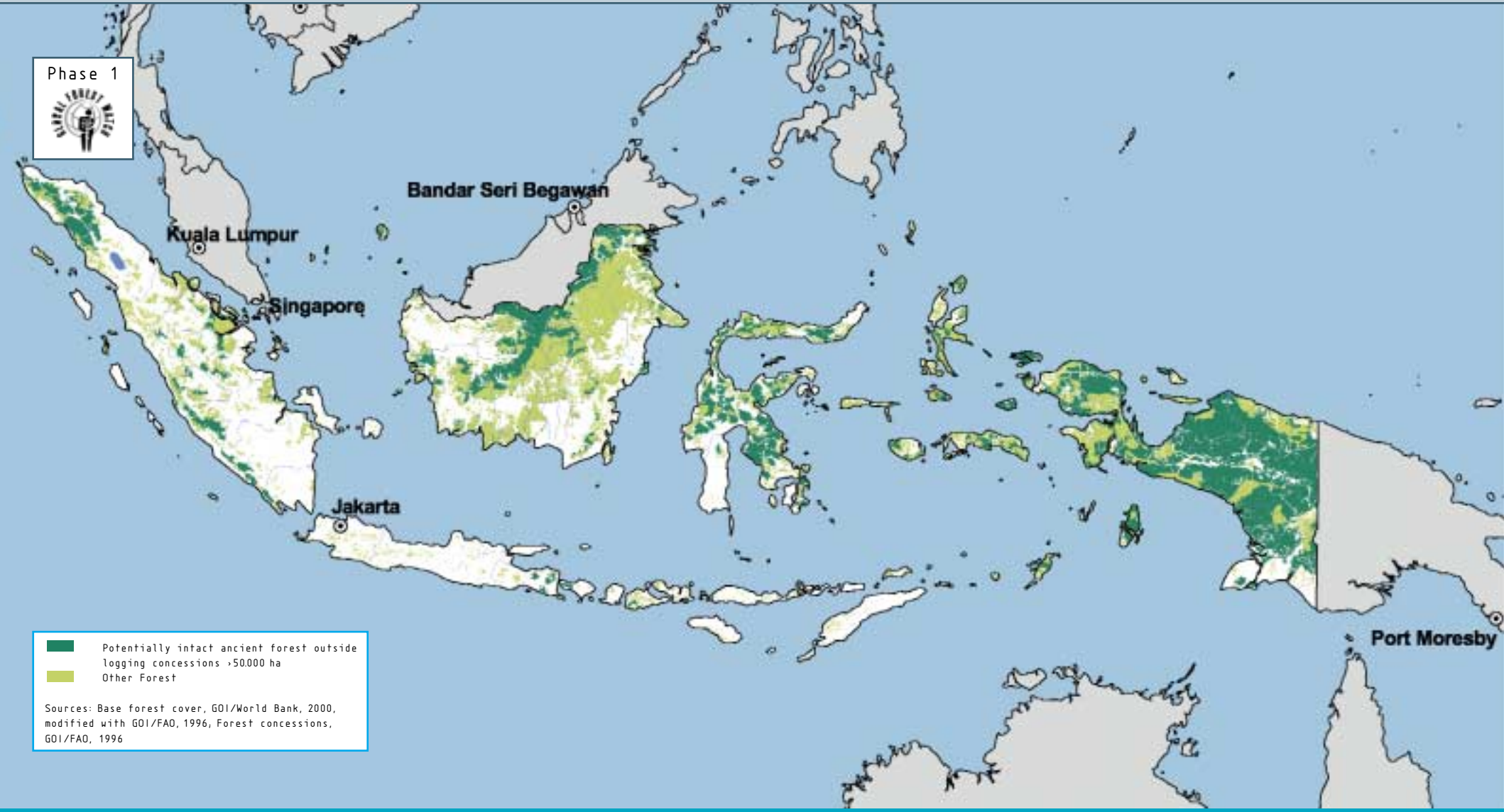
The report describes for the first time the extent and distribution of the countries ancient forests. Ancient forests in Chile are defined as mature forests or dense timberline forests, that are made up of native species, and are intact or have been only slightly altered.
Only a quarter of all forest is in relatively undisturbed tracts of at least 10.000 ha. Almost all of Chile's ancient forests are found in and around the Andean Mountain Range. At the regional level, the extent of frontier forests increases as one moves southward through the country.

Ancient forests are at greatest risk in:

- Coastal mountain range forests, which house 7.5 per cent of Chile's remaining ancient forests. They house a rich and diverse range of species. The major threats to these forests are non-native plantation developments, inadequate enforcement of regulations, and plans for a new coastal highway.
- In the northern regions, where only few of the native forests remain as ancient forest, mostly unprotected. Most of the countries forest industries are concentrated in this region.

Selective logging is the most frequent cause of native forest degradation, accounting for 75 per cent of degraded forest area.
Over a tenth of Chile's forest has been converted to plantations, most of which are dominated by exotic species.
Because the information used for this study covers the period 1994-1997, an update is urgently needed to obtain a more accurate picture of what is happening on the ground.

Many ancient forests are in areas with steep slopes or located at high altitudes. As such, they are particularly sensitive to human disturbance.



The exact extent and distribution of Indonesias forests still cannot be mapped.

THE PARADISE FORESTS OF ASIA PACIFIC

THE JUNGLE OF SOUTHEAST ASIA, WHERE ORANG-UTANS ARE DYING WITH THE TREES

The island chains of Indonesia and Papua New Guinea stretch between the mainland of Asia and Australia. The spectrum of spectacular ancient forests there ranges from bays surrounded by mangroves through tropical jungle to rhododendron forests on the mountain-sides. The Indonesian ancient forest is also where the last orang-utans, the ape which already has a history of 15 million years on earth, has its place of refuge. Orang-utans (the name means forest people) grow to five feet tall and weigh 100 kilos and are fully adapted to a life in the trees. In the last decade, the wild population shrunk by half. There are probably fewer than 30.000 orang-utans today climbing hand over hand through the last rainforests in Indonesia.
Logging and large-scale resettlement programmes have destroyed large parts of the rainforest. In the last three decades of rule by the Suharto clan, the forest has been systematically plundered. Tensions between the new settlers and the groups of peoples already living there regularly lead to confrontations. On Irian Jaya, protests by indigenous peoples against the destruction of nature have been crushed by the military. Even after the old guard in power in Indonesia had been replaced, economic problems and outbreaks of violence have put environmental issues right to the bottom of the new politicians' agenda.
Indonesia loses many thousands of square kilometres of forest every year. Illegal and destructive practices and corruption are the norm. Over two-thirds of the timber processed in Indonesian saw-mills has been illegally logged. World Bank advisors have confirmed that the timber industry in these areas is in an »anarchic« state.

SOURCES OF DATA AND DIFFICULTIES

The report suffers from all the imperfections of the information sources: missing data, often outdated, sometimes conflicting. The exact extent and distribution of Indonesia's forests still cannot be mapped. No integrated record of forest area has been kept in Indonesia, so any analysis must be based on a variety of national and subnational scale sources. A major problem in dealing with these datasets is their lack of direct comparability. But that is not all. Until recently, researchers had to deal with government secrecy, bureaucratic confusion, and intimidation by industry. And last but not least, private citizens who attempt to monitor illegal corporate activity still face considerable risks.

FINDINGS

The analysis indicates that a total of just over 52 million hectares may be defined as potentially intact ancient forest. A further 33 million hectares meet the criteria for potentially intact ancient forest but are within logging concessions. It may be assumed that much of this forest area is far from intact.
Indonesia is experiencing one of the highest rates of tropical forest loss in the world: Fourty per cent of the forests existing in 1950 were cleared in the following 50 years. About one million hectares per year were cleared in the 1980s. Since 1996, deforestation appears to have increased to an average of two million hectares per year. Only one century ago forest cover was estimated at being about 170 million hectares. Today it is approximately 98 million hectares, at least half of which is believed to be degraded by human activity.
Deforestation in Indonesia is largely the result of a corrupt political and economic system that regarded forests as a source of revenue to be exploited for political ends and personal gain. Logging concessions covering more than half the country's total forest area were awarded by ex-president Suharto, many of them to his relatives and political allies.
Illegal logging has reached epidemic proportions. Aggressive expansion of Indonesia's pulp and paper industries over the past decade has created an enormous level of demand for wood fibre that cannot currently be met by sustainable domestic forest management. The gap is filled by illegally cut wood, which accounted for approximately 65 per cent of total supply in 2000.

More than 20 million hectares of forest have been cleared since 1985, but the majority of this land has not been put to productive alternative uses.

THE AMAZON RAINFOREST

For the amazon no maps are available at date. GFW has just started to build up a infrastructure to do the mapping work.

The Amazon is the earth's biggest area of tropical ancient forest and home of the jaguar

With an area as big as the United States, the Amazon rainforest is the biggest area of tropical ancient forest in the world. Roughly half of all the world's species of animals and plants living on land, scientists estimate, live here. Giant trees wrapped around by lianas, overgrown areas of water and incessant chirping, fluttering, screeching and meandering movement of life make the Amazon forest the paradigm example of luxuriant rainforest.
The Amazon region is also the last big reserve of the jaguar, which lives in the ancient forests of South and Central America. This wild cat, which needs a territorial area of as much as 40 square kilometres (15 square miles), is under threat, and is listed as threatened species in the Washington convention on wild fauna and flora. The greatest threat to the jaguar is the irreversible destruction of the forests.
But despite its natural treasures this area is more endangered as ever before. 128.000 square kilometres of South American rainforest fell victim to chainsaws between 1990 and 1995 – an area equivalent to that of Austria and Switzerland together.

Situation in the forests

And to be able to get at the valuable trees scattered about in the rainforest, corridors into the forest have been cut and roads built. This means that for every valuable tree many other giant trees fall victim to logging and removal. In addition, mining companies are dredging whole river deltas, and the mercury used in gold-washing is polluting water and soils. The Brazilian environment authorities have too small resources in personnel and are too poorly equipped to be able to move against internationally active timber corporations in this huge area. As a result 80 per cent of timber is felled illegally, without a logging concession. Despite the publication of this figure by the Brazilian authorities, demand for cheap plywood from Brazil has remained undiminished. The governments of the main importing countries, the USA, Italy, France and Japan, have made no significant efforts to stop the illegal destruction of the rainforest or to see the Brazilian government obligated to making the timber industry more environmentally friendly.

CONCLUSIONS

Fifteen percent of the Amazon Rainforest has already been destroyed. A significant part of what remains is under direct threat.

Fourty per cent of the remaining potentially intact ancient forests in Central Africa are within commercial logging concessions. The future is uncertain for the creatures and peoples who depend on these forests.

In North America, at least 12.3 million hectares of natural ancient forest have been lost between 1990 and 2000. The United States has refused to make a formal commitment to the CBD and by doing so is refusing to commit to saving its remaining biological and cultural diversity.

Some 30 countries throughout eastern and western Europe have no intact ancient forests left. Only European Russia retains extensive intact ancient forests and even these are under serious threat from industrial logging.

Some regions of the Snow Forests of Asian Russia have already been logged out. Mining and other resource extraction pose serious threats to these forests.

Only a quarter of all chilian forest is in relatively undisturbed tracts of at least 10.000 ha.

Indonesia is experiencing one of the highest rates of tropical forest loss in the world: fourty per cent of the forests existing in 1950 where cleared in the following 50 years.

About 80% of the world's original forests are gone.

That we know and we cannot change.

The world's ancient forests are facing a crisis.

There is an urgent need to protect the ecological integrity of the remaining ancient forests for this and future generations.

If humankind is to protect ancient forest biodiversity and traditional cultures, ancient forest loss must be stopped during the coming decade.

World governments must choose now to save the world's remaining ancient forests

Thank to GFW for providing the data for these maps.

The full reports are available at:
Global Forest Watch
10 G Street, NE
Washington, DC 20002 USA
Phone +1 202 729 76 94
Facsimile +1 202 729 76 86
www.globalforestwatch.org

GREENPEACE

Greenpeace International
Keizersgracht 176
1016 DW Amsterdam
The Netherlands
Phone +31 20 523 62 22
www.greenpeace.org
www.greenpeace.org/saveordelete

Maps: GFW
Photos: Dorreboom, Morgan, Dorst, Beltra, Kaiser, Baleia, (Cover); EOS Data Gateway, (space images); Aikman (p. 11); Baleia (16); Beltra (p. 5, 7, 13); Cannalonga (18); Dorst (p. 11, 18); Kaiser (p. 9); Morgan (p. 2, 15); Nimtsch (p. 7); Novis (p. 3); Papavoine (p. 13); Plowden (p. 9); Sims (p. 17); Weckenmann (p. 5); Wendler (p. 16, 17); Zankl (p. 18); all photos © Greenpeace

Graphic design: simon_spiegel_zimmermann; printed on recycled processed chlorine-free paper by Classen, Germany, April 2002

»If forest clearing continues at 1990s rates, the forests will lose many of their remaining species by the middle of the 21st Century.«

Jeffrey McNeely, Chief Scientist, IUCN

GREENPEACE