


## Environmental aspects of forestry have economic benefits

This poster introduces a number of case studies from Central Africa, where forest concessions and businesses are working together with international NGOs and local stakeholders for greater environmental benefits. The cooperation creates win-win situations for the improvement of livelihoods and the conservation and sustainable use of biodiversity.

## Biodiversity in Tropical Production Forests – New IUCN / ITTO Guidelines

The International Union for Conservation of Nature (IUCN) and the International Tropical Timber Organization (ITTO) have developed and field-tested comprehensive “Guidelines for the conservation and sustainable use of biodiversity in tropical timber production forests”. The following points are amongst the key lessons learned from the field-testing among timber companies, forest agencies and local communities in four producer countries:

- 1. Observe national laws/plans and practices** of local communities in forest management activities, and **support** the implementation of international **biodiversity related agreements**. 
- 2. Establish a forest management plan where biodiversity conservation objectives are clearly and explicitly identified** for each area of forest under management. Actual, potential and emerging threats to biodiversity must be anticipated and contingency plans prepared. 
- 3. In preparation of harvesting plans, pay particular attention to the local occurrence of species or habitats of special conservation concern and species that perform vital ecological functions** using the expertise of biodiversity specialists during inventory. Use reduced impact logging that does not place important biodiversity features at risk. 
- 4. Plan the allocation of tropical production forests at a landscape scale** and plan harvesting blocks in ways that do not disrupt the continuity of mature forests. Protect populations of, and maintain the genetic diversity of valuable timber species and populations of seed trees. 
- 5. Raise public and political awareness on international/national laws and disseminate biodiversity information and strategies using various media.** Improve the availability of information on biodiversity and transfer of knowledge and technology in libraries, reference collections, online databases and traditional knowledge. Encourage the creation of specialized courses and training activities in tropical forest taxonomy, ecology and biodiversity management. 
- 6. Coordinate actions of forest owners, users and managers across landscapes to best ensure the maintenance of sufficient high-quality connected habitat for species.** Promote collaboration between research organizations and forest industry to develop silvicultural knowledge and practices. Develop and expand networks of field practitioners. 
- 7. Facilitate ecological research and monitoring systems** (including long-term monitoring plots) with the aim of providing useful guidance on forest dynamics, regeneration and genetic diversity of valuable tree species. Collaborate to collect, synthesize, analyse and share data on forest biodiversity based on permanent forest plots, inventories and other sources and make these accessible to forest planners, forest managers and other stakeholders. 
- 8. Minimize the risk of invasive species and eradicate those that become established.** Develop management systems that favour natural processes and preferably plant native species that enhance the productivity and resilience of the forest. 
- 9. Manage planted forests in ways that benefit biodiversity,** both within the planted forest itself and in areas of natural forest that are retained within the planted forest landscape (e.g. Establish planted forests on degraded sites retain areas of high biodiversity value protected). 
- 10. Improve ecological knowledge to ensure that forest management enhances or maintains biodiversity and ensures forest functions** such as pollination, seed dispersal and nutrient cycling. Particular sites and areas of forest and other habitats that provide important ecological functions should be identified and special measures taken to ensure their protection. 

**For further information:**  
The International Union for Conservation of Nature - IUCN ([www.iucn.org](http://www.iucn.org)) and the International Tropical Timber Association - ITTO ([www.itto.or.jp](http://www.itto.or.jp))

## REMOTE SENSING AS A TOOL TO MONITOR LOGGING EXPANSION

*The Woods Hole Research Center*

**How to maximize monitoring capacities and knowledge about timber extraction activities using remote sensing and earth observation technologies.**

**Background:**  
Selective logging is the most extensive land use in the Congo Basin, with more than 30% of the forest allocated to timber concessions. Little information is available to monitor the spatial expansion of timber extraction and its impacts on tropical forests.

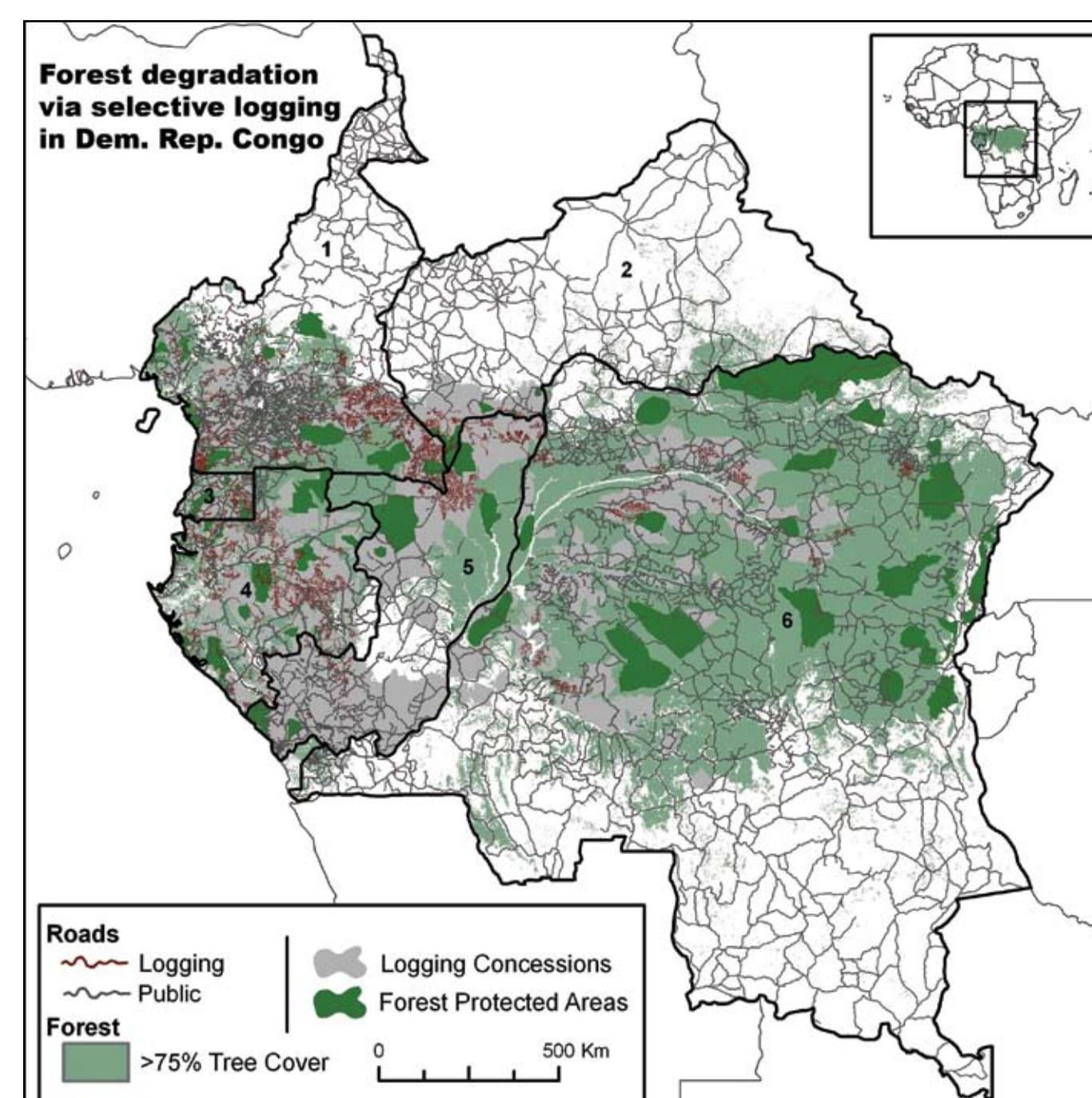
**Activities and Results:**  
As part of the INFORMS project, “An Integrated Forest Monitoring System for Central Africa”, the Woods Hole Research Center has developed a simple system to monitor the extension of logging roads using multi-temporal Landsat imagery. The Center has also tested the utility of Landsat imagery in estimating logging intensity. This system is being used within the national forest services of the Republic of Congo and Cameroon to monitor logging expansion.

**Further Information:** Forest carbon credits could help development in Congo: [http://news.mongabay.com/2008/0529-interview\\_laporte.html](http://news.mongabay.com/2008/0529-interview_laporte.html)

**The Woods Hole Research Center:** <http://whrc.org/>

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## PYGMY COMMUNITIES, LOGGERS IN CONGO USE GPS, COMMUNITY RADIO TO PROTECT CULTURAL SITES

*Tropical Forest Trust*

**State of the art technology helps Mbendjele Pygmies protect their land and culture.**

**Background:**  
Standards set by the Forest Stewardship Council (FSC), required la Congolaise Industrielle des Bois (CIB) to protect ‘sites of special cultural, ecological, economic or religious significance to indigenous peoples’. CIB manages a 1.3 million hectare area of Congolese forest home to 9,000 Mbendjele Pygmies. Compliance with FSC regulations prompted CIB to work closely with the Tropical Forest Trust and concerned Pygmy communities, in developing and using new means of communication to help exchange information about sensitive locations in the forest.



**Activities and Results:**  
Mbendjele Pygmy communities of northern Republic of Congo are working together with CIB using GPS (global positioning system) technology and radio to keep each other informed about areas to be protected and areas to be logged. CIB’s investments into this initiative helped the company gain FSC certification for its Kabo concession. The project itself was recognized in November 2007 by the Tech Museum of Innovation in the social equality category of their Laureate awards scheme.



**Further information:**  
• Pygmy communities, loggers in Congo use GPS, community radio to protect cultural sites: <http://hopebuilding.pbwiki.com/>  
• ICT update, Issue 42: Indigenous knowledge - Adapting technology to tradition: <http://ictupdate.cta.int/en/Regulars/Editorial/%28Issue%29/42>  
• Podcast by Jerome LEWIS – Anthropologist - University College London: <http://www.tftpodcast.mypodcast.com/>  
• Tropical Forest Trust: [www.tropicalforesttrust.com](http://www.tropicalforesttrust.com)

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## MANAGING PRODUCTION FORESTS FOR BIODIVERSITY

*The International Union for Conservation of Nature-IUCN*

**The value of managed production forests for the survival of many species of fauna and flora.**

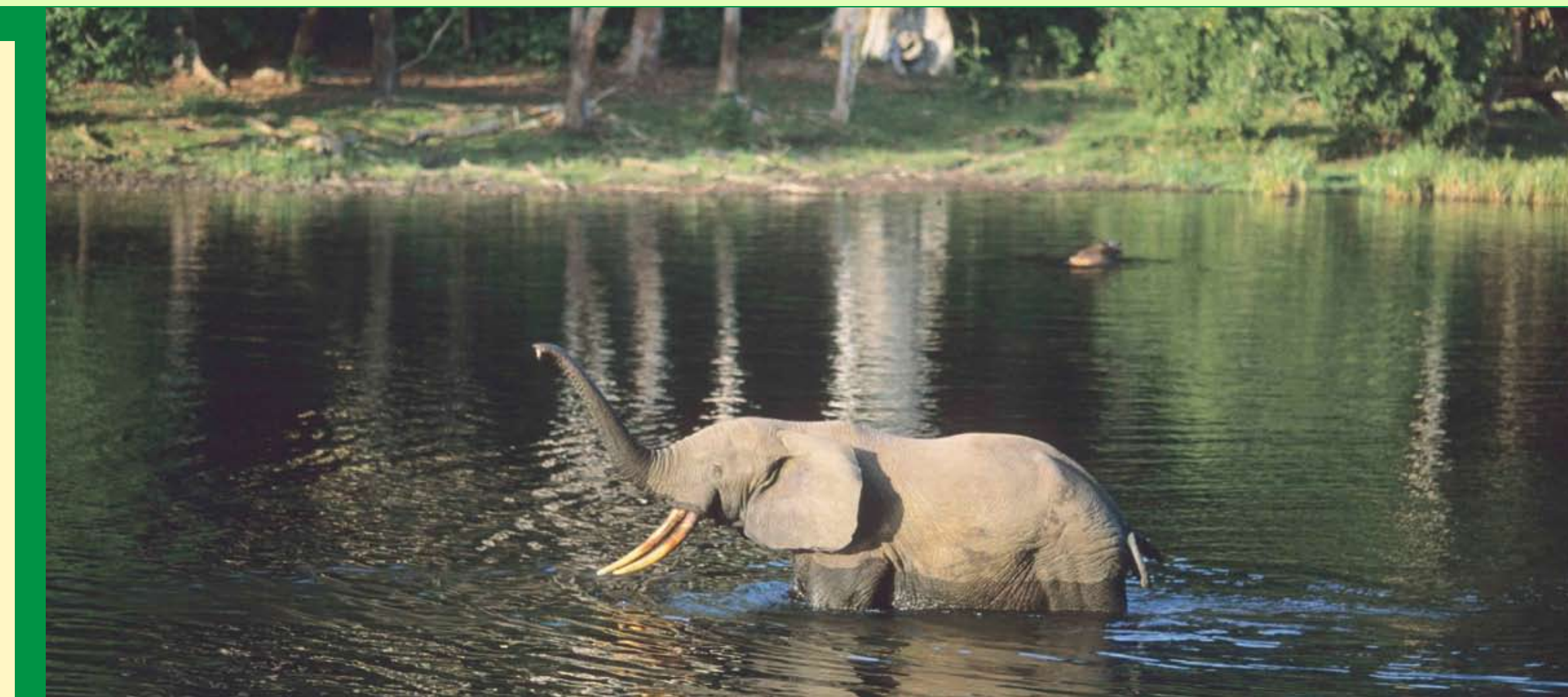
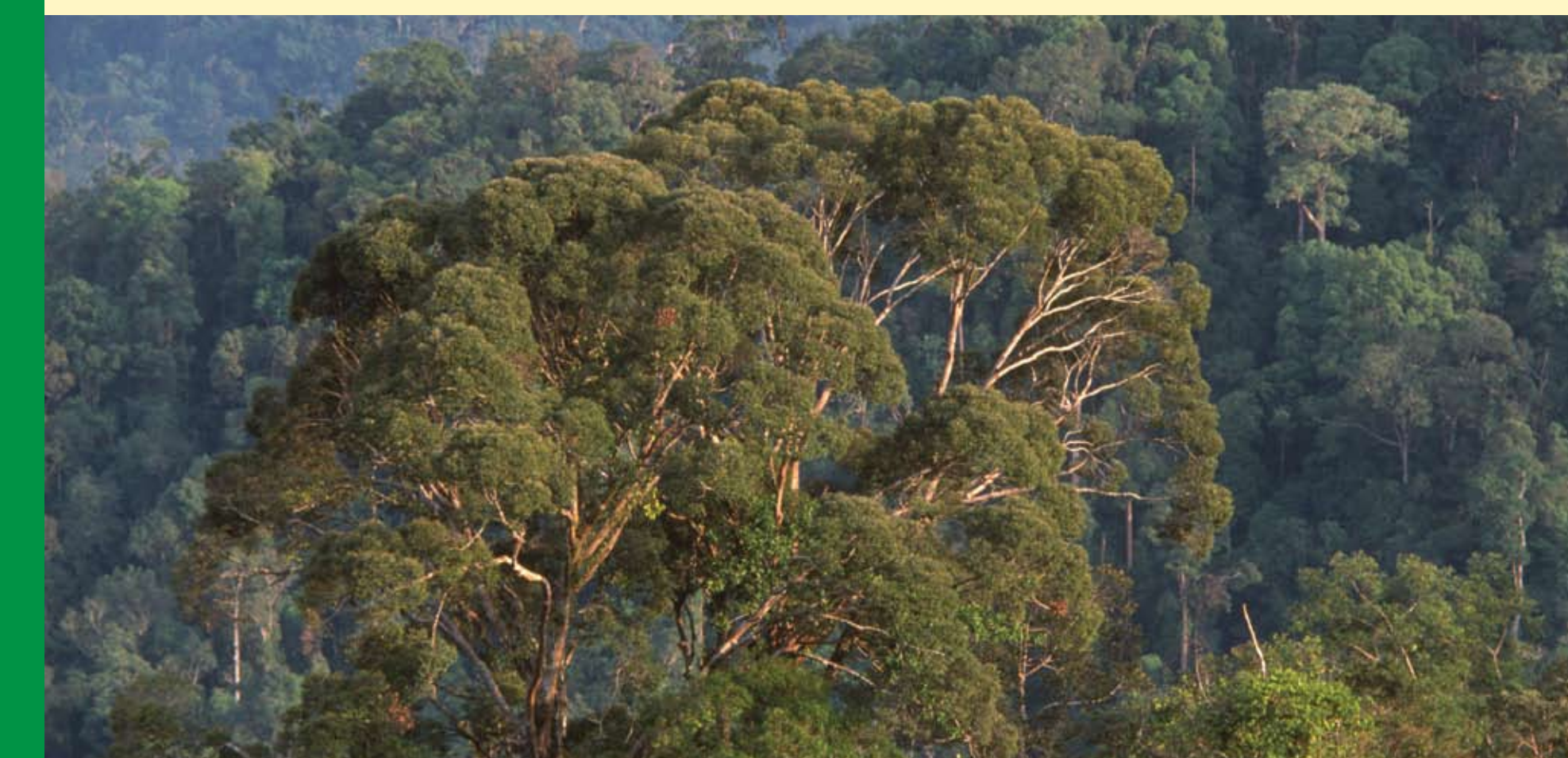
**Background:**  
Conservationists working in the field in Cameroon were quick to realize that for many species of wildlife the managed production forests were at least as important as the parks and reserves.

**Activities and Results:**  
Studies have shown that the disturbance caused by selective logging favours a rich understory of gingers and *Marantaceae* that are a favourite food of both gorillas and elephants. Bongos and other forest antelopes also thrive in the areas where logging has opened up the canopy and allowed the development of the rich undergrowth that provides them with shelter and food. Of course not all disturbances were beneficial. Forests managed by companies who were striving for certification of their concessions and who took active measures to protect their forests during and after logging had more abundant and more diverse wildlife than those who did not take any conservation measures.

**Further Information:** Meijaard and Sheil, “A logged forest in Borneo is better than none at all”, Nature, 2007  
[www.nature.com/nature/journal/v446/n7139/full/446974a.html](http://www.nature.com/nature/journal/v446/n7139/full/446974a.html)

**International Union for Conservation of Nature – IUCN, Forest Programme:** [www.iucn.org/forest/](http://www.iucn.org/forest/)

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## ANTI-POACHING AND WILDLIFE MANAGEMENT MANDJI FOREST CONCESSION

*Compagnie des Bois du Gabon - Gabon*

**The value of partnerships with other conservation organizations, public agencies and local communities to provide win-win opportunities.**

**Background:**  
The Mandji forest concession (about 550,000 ha), together with its neighbouring protected areas, forms a 1,500,000 ha forest block with important populations of flagship species such as elephants and great apes. The concession, which is owned by the Compagnie des Bois du Gabon, is under sustainable management, certified for legality and traceability of its wood products, and in the process to obtain FSC certification. The wildlife management program is based on a win-win partnership between the government of Gabon, CBG and the World Wide Fund for Nature-WWF to achieve long term fauna conservation in the Gamba protected areas complex.

**Activities and Results:**

- 11 hunting studies completed;
- 6 guarded access barriers installed;
- Posters and flyers distributed;
- Poaching warning system in place;
- Wildlife management office inside concession;
- Frozen food chain for alternative animal protein;
- Many awareness sessions and anti-poaching campaigns;
- A wildlife management plan to be finalised in 2008;
- Additional public-private partnerships to be developed to guarantee long term implementation and financial sustainability of the wildlife management plan.

**Further information:** *Compagnie des Bois du Gabon* : <http://cbgpog.com/>;  
WWF: [www.panda.org/gabon/gamba](http://www.panda.org/gabon/gamba)

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## SUSTAINABLE LOGGING PRACTICES

*International Tropical Timber Organization*

**Reduced Impact Logging (RIL) provides environmental and economic benefits.**

**Reduced Impact Logging:**  
Studies have found that reduced-impact logging can be used to reduce carbon emissions by up to 40 tons per hectare of forest compared to conventional logging. This, combined with the preservation of higher levels in biodiversity in selectively logged forests, lends a strong case to sustainable forest management over standard timber-harvesting techniques. Apart from the environmental benefits, RIL has been shown to reduce the percentage of ‘lost’ logs (those trees that are felled in the forest but not extracted because they aren’t seen by tractor operators), thereby reducing timber wastage.

Damage to the forest ecosystem can be tremendously reduced by adopting certain reduced-impact logging practices including:

- cutting climbers and lianas well before felling;
- directional tree felling to inflict the smallest impact on the surrounding forest;
- establishing stream buffer zones and watershed protection areas;
- using improved technologies to reduce damage to the soil caused by log extraction;
- careful planning to prevent excess roads which give access to transient settlers;
- reducing wood waste for cut areas (anywhere from 25-50 percent of the wood from a given cleared patch is wasted);
- limiting the gradient of roads to prevent excess erosion. These steps can limit damage to the surrounding forest, cut erosion of topsoil, enable faster recovery of the forest, and reduce the risk of fire.

**Further Information:** Reduced-Impact Logging-Sustainable Logging and Improved Forest Management: <http://rainforests.mongabay.com/1011.htm>

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Photos courtesy of the Tropical Forest Trust and GIS map of the WHRC