Seeing the Forest

Conservation on a Continental Scale

Eugene Linden, Thomas Lovejoy, and J. Daniel Phillips

The Ndoki rainforest is nestled in the northeastern corner of the Democratic Republic of the Congo, bordered on three sides by vast swamps. The Ndoki was long so inaccessible that its animals were naive of humans. In recent years, though, it has come under threat from logging, political upheaval, and civil war in the Congo Basin. Fortunately, the forest has also received protection, since the area, covering 4,000 square kilometers, was designated the Nuabale-Ndoki National Park in 1993. Given the tumultuous politics and endemic corruption of the region, the protection of the Ndoki would seem a conservation triumph.

There's just one problem: the forest appears to be drying out. Rainfall records are spotty, but other worrisome developments—changes in flora and the more frequent appearance of harmattan dust—point to a serious decline in moisture levels. And with logging consortia continuing to cut other unprotected forests throughout the Congo Basin, reducing the system's capacity to store and recycle moisture, regional rainfall may drop and stay below the threshold needed to sustain a wet tropical forest.

The message from the Ndoki experience is that protecting only parts of an ecosystem is not sufficient. Conservationists must find ways to preserve the vitality of the systems that protect a forest, not just the forest itself, lest factors such as regional climate change trump even the most effective legal protection. Moreover, the pace of deforestation is such that conservationists will have to implement large-scale measures without perfect knowledge of what it is they are trying to save. What is needed, then, is a plan that is comprehensive enough to provide wall-to-wall coverage of an entire rainforest system, simple enough to bypass the usual rounds of endless study and negotiation, and

Eugene Linden writes widely on global environmental issues and is the author of *The Future in Plain Sight*. Thomas Lovejoy, a tropical biologist, is President of the H. John Heinz III Center for Science, Economics, and the Environment. J. Daniel Phillips is a former U.S. Ambassador to the Democratic Republic of the Congo, where he worked on tropical forest conservation projects, including the creation of the Nuabale-Ndoki National Park. Linden first presented this idea at a June 2002 conference hosted by Brazil's president.

CORBIS

The future of the forests? Harvested logs in Gabon, 2002

attractive enough to draw in new kinds of donors to areas currently starved of funds.

DISECONOMIES OF SCALE

Since the early 1990s, the problem of scale in conservation has risen into bold relief. Presently, only about five percent of the world's tropical forests have effective protection. And in recent years, the annual rate of wet tropical forest loss and degradation has actually accelerated. Meanwhile, new discoveries have underscored the interdependency of the earth's ecosystems. Deforestation in Sumatra and Kalimantan, in Indonesia, has contributed to regional drought and wildfires; in Brazil's Mato Grasso, the rainy season has diminished, some believe as a result of the retreat of the Amazon.

The international response to accelerating deforestation, however, has been anemic, even as the disparity between the scale of the problem and the scale of the efforts has become clear. A lack of follow-through has plagued almost all conservation efforts in recent years. The so-called Earth Summit, the UN Conference on Environment and Development held in Rio de Janeiro in 1992, brought together heads of state to address global environmental problems; by the time the fleet of presidential jets left the runway, the commitments made at the conference had already been forgotten. Of the $1.2 billion that the G-7 group of advanced industrialized nations promised for the preservation of the Amazon in the PPG-7 Agreement (the Pilot Programme for the Protection of Tropical Forests of Brazil), only $350 million has been committed and only $120 million disbursed in the intervening ten years. As James Gustave Speth argues in *Red Sky at Morning*, the only international agreement ratified during the past 30 years that has had any major positive effect is the Montreal Protocol on Substances that

Deplete the Ozone. As a result, yesterday's nightmare scenarios are becoming today's reality. In Indonesia, according to a recent study led by Lisa Curran of the Yale School of Forestry and Environmental Studies, 60 percent of protected areas have been logged in the past 15 years. Sumatra might have no undisturbed forest by 2005, and Borneo by 2008—with dire consequences for the orangutan, the pygmy elephant, and countless other species.

Conservationists have long recognized the problem of scale. Indeed, the big conservation groups have focused on working on larger scales through such programs as the Wildlife Conservation Society's "Living Landscapes" and the World Wildlife Fund's ecoregional planning. George Woodwell, of the Woods Hole Research Center, has called for action to protect the "functional integrity of landscapes," emphasizing the obvious but often ignored fact that human economic activity benefits from self-sustaining ecosystems that provide services indefinitely. Human systems must be embedded in a natural matrix, the argument goes, because embedding natural systems in a human matrix benefits neither humans nor nature.

In recent years, a number of ambitious initiatives have aimed to protect larger stretches of forest to preserve biologically functional units. The Ecological Corridor Project, for instance, links 1,000 reserves between Bahia and Paraná in Brazil's Atlantic Forest. The Cordillera del Condor Peace Park in Ecuador and Peru shows that even nations with long histories of conflict can forge joint conservation efforts. An even more ambitious undertaking is underway in the Amazon Region Protected Area. That program, once added to existing reserves, will protect roughly 40 percent of the Brazilian Amazon, at least on paper. In Africa, the Congo Basin Initiative has been officially endorsed by the region's seven governments, and Washington has committed its prestige and $36 million to bring the initiative to life; if the plan is realized, 23 percent of the Congo Basin forest will have some form of protection.

Such initiatives represent unprecedented steps toward protecting moist tropical forests at the system level. They also provide evidence that governments and nongovernmental organizations (NGOs) can jointly launch ambitious conservation efforts absent strong international agreements. But the question remains whether these efforts will provide sufficient protection to safeguard the integrity of forest systems, especially the two most crucial ones, the Amazon and the Congo Basin.

At present, no one knows for certain how much of a giant system must remain intact in order to avert a self-reinforcing drying cycle. Much depends on how and where the forest is cut, and on what happens to the land afterwards. Absent any certainty about the tipping point for the world's great forest systems, prudence demands preserving as much of the system as possible. And this means that environmentalists must look beyond parks and indigenous zones, beyond biosphere reserves and wildlife refuges, to find ways to preserve forest covers in areas with lower biodiversity, less ecological interest, and large proportions of land held privately or being converted to other uses. There is, at present, widespread recognition of the urgency of landscape-scale initiatives. There remains, however, the need for a plan that would extend to areas not yet a priority for conservation organizations, that could be rolled out

rapidly, and that would excite both donors and host countries.

A SIMPLE PLAN

The most ambitious prior effort to address tropical deforestation—the Tropical Forest Action Plan (TFAP), sponsored by the World Bank and the UN Food and Agriculture Organization—became mired in bureaucratic haggling and actually intensified deforestation in Cameroon and some other tropical nations. Participants in the Kyoto Protocol, meanwhile, still cannot decide whether to include a particular "carbon sink" provision that would allow industries to offset their greenhouse gas emissions by paying forest owners to keep trees standing. In the case of Kyoto, official action has been mired in decades of dithering, and there is no possibility of "avoided deforestation" having much impact as a result of the treaty for at least another ten years.

The lesson of TFAP and Kyoto is that the more players there are and the more there is to negotiate, the more likely it is that negotiation will go on endlessly. Noble intentions quickly give way to a game in which each player seeks to gain access to resources while preserving his own competitive position. A more effective approach to continental-scale rainforest conservation would be to implement a simple, market-like plan that would minimize the possibility for negotiation while funneling resources into every part of a forest system.

Consider a system much like the Congo Basin rainforest: a continental-scale tropical forest of roughly 800,000 square miles that stretches over seven countries. This rainforest has been shrinking steadily in the face of timber operations, agricultural conversion, urbanization, illegal cutting, land invasions, and out-of-control burning seasons. Various countries have established parks and reserves, enacted logging codes, and taken other steps to control deforestation. But corruption, a lack of resources, and other external factors have overwhelmed these efforts.

Judging from failed past efforts, a successful conservation plan should include several basic provisions. First, it should involve every country that is home to a portion of the forest; the forest is an interdependent system, so no nation can "go it alone." Second, it should attract outside funding; nations that are home to large tropical rainforests are generally poor, so it is unrealistic to expect them to fund a plan on their own. Third, it should be grand enough to draw a new cohort of donors at a time when past failures and the sheer number of competing projects and international tensions have produced donor fatigue. Fourth, it should be simple and transparent, both to reduce the possibility for misunderstanding in host countries and to minimize the potential for endless negotiation and bureaucratic inertia. Finally, given the accelerating pace of deforestation, it should be deployed rapidly.

A market-like conservation plan would divide the 800,000 square miles of forest into 100 contiguous blocks. The blocks would cross national boundaries and ethnic divides. Although many conservation biologists would have a visceral reaction against arbitrary boundaries that ignore biogeographic realities, that is precisely the point: the grid's uniformity would eliminate the need for studies and negotiations that could bog down the project, allowing it to be easily understood by both donors and host countries.

The plan would match a bidder with every one of the 100 blocks on the grid. The notion of bidders might raise hackles in an area where politicians and residents have vivid memories of past exploitation by rich nations, but in this case, a successful bidder would not win the right to drain resources but accept an obligation to put resources in. A secretariat, approved by the seven nations and composed of trusted locals and respected members of the international community, would oversee the market.

The universe of potential bidders includes a broad spectrum of NGOs, corporations, multilateral and bilateral aid organizations, and other credible entities. The market could be a simple lottery, or it could be a complex structure that demands different things of different bidders. The secretariat would certify the bona fides of those bidding for blocks, monitoring performance and acting as a clearinghouse where approaches could be compared and special problems addressed. Successful bidders would have no supervisory authority over their blocks; they would be there as a resource. They would have to win over local people, governments, and NGOs through offers of assistance and resources. Clearly, such a market would attract some bidders with motivations other than saving the rainforest. A corporation might want to spruce up its environmental image, while others might be attracted by the visibility of a continental-scale undertaking. Again, that is the point: the goal is to unlock new resources and channel them to previously ignored areas and opportunities for conservation. Those bidders lacking in expertise would have to seek it out or pour new resources into existing projects; meanwhile, monitoring and peer-

group pressure in a high-visibility project would act as a control against mischief.

A bidder that ended up with a block could pursue any preservation strategy, so long as the secretariat approved it. A periodic review of forest cover and forest viability would be the only measure of success. Those bidders deemed successful could beef up enforcement, spur ecotourism, develop markets for environmental services, or pursue urban development projects.

Such an approach could be deployed rapidly and show immediate results. It would seed the area with champions and improve reporting on the state of the forest. By displaying dozens of different approaches side by side, it would also offer a testing ground for conservation and development ideas. If a group's strategy started to falter, the group could switch gears and try something that had proved effective in another block. Bidders could cooperate, share expertise, and even subcontract conservation functions to other bidders, possibly through an after-market in rainforest blocks.

The plan could also solve the problem of how to conserve "orphan" forest areas—those that lack the prominence to attract major donors—by providing a credible body to certify carbon credits or other ecosystem service credits. A corporation seeking an offset would pay either the government or the concession holder a market price for the tons of carbon that would be sequestered by keeping the forest standing. For host governments, these payments would represent a financial windfall—far more than they currently receive for timber fees. A U.S. electric company, for example, might pledge to spend $5 million a year over 20 years on an "avoided deforestation" credit in an orphan block to meet a voluntary commitment to reduce its carbon dioxide emissions by two million tons a year.

Environmental groups already working in the forest would surely welcome the initiative as a source of new funding and publicity. Meanwhile, the scale and high profile of the plan would give outside donors a way to pursue "green branding" and market differentiation and could provide them environmental credits that they could later use to satisfy legal obligations in their home countries. An oil company under fire for its environmental practices, for instance, might want to adopt several blocks and then subcontract its commitment to NGOs already working in the area.

IN THE BALANCE

Could such an approach really work? It is cheap, lean at the top, and, so long as host governments prove receptive, easy to deploy. Donors would have various incentives to join, ranging from carbon offsets for corporations to the purely philanthropic. For host nations, meanwhile, the plan offers new resources, new relationships with powerful institutions, development funds, and international credibility on a high-profile environmental issue. It requires no studies or surveys, only effective marketing to host governments and donors; thus, it promises real resources and action without the endless haggling that has torpedoed most past initiatives as the world's tropical forests have disappeared. Most important, there is simply no other strategy on the table for ensuring conservation on a large scale. And unless one is put in place soon, all the small-scale efforts in areas such as the Congo Basin may turn out to be for naught.