



3.1 Congo Basin timber certification and biodiversity conservation

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Context

The Congo Basin retains nearly 60% of its original forest, making it an important reservoir for biodiversity. Economic development and the global demand for timber, which is expected to increase in the coming years, threaten this reservoir, however. Logging concessions have been allocated for 30–45% of the area's remaining forests (60 million ha) and as much as 70% of forests in some countries (Global Forest Watch 2002), although many of these concessions are not yet active. Because timber extraction occurs over such a large area, and standard practices tend to be destructive, logging represents a serious threat to biodiversity conservation. Timber harvesting typically leaves behind a sea of residual damage, rendering forests susceptible to drought, fire and eventual deforestation. Logging operations open up the forest, which allows access into remote areas. Access encourages commercial bushmeat hunting; this depletes wildlife and often weakens the authority of local people to manage and use their traditional forests (Robinson, Redford and Bennett 1999).



PERHAPS THE GREATEST SINGLE CONTRIBUTION OF CERTIFICATION TO BIODIVERSITY

CONSERVATION IS THE REQUIREMENT THAT A MANAGEMENT PLAN BE WRITTEN AND IMPLEMENTED FOR EACH TIMBER CONCESSION.

Nevertheless, there is reason for cautious optimism that forest certification could benefit biodiversity conservation by raising management standards and improving practices. The recent certification by the Forest Stewardship Council (FSC) of two timber concessions in the northern part of the Republic of Congo created the largest tract of contiguous certified tropical forest in the world (750,000 ha). In addition to reduced-impact logging (RIL) practices implemented by the *Congolaise Industrielle des Bois* (CIB), the concessions are managed for wildlife and biodiversity.

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There is precedence for this optimism. In 1999, the Wildlife Conservation Society (WCS), CIB, and the Congolese Ministry of Sustainable Development, Forest Economy and the Environment (MDDEFE) created the Buffer Zone Project (BZP) – an unprecedented partnership to manage wildlife in logging concessions. More than ten years later, elephants and apes roam the forests at densities that rival or surpass the adjacent Nouabalé-Ndoki National Park (NNNP; Clark et al. 2009; Stokes et al. 2010).



Activities

Project background

As CIB expanded its operations in the Kabo concession in the late 1990s it came under attack from critics who accused the company of sanctioning bushmeat hunting, specifically the killing of apes (World Rainforest Movement 2003). In response, CIB established a partnership with WCS, a conservation organization, which led to the development of the BZP project. This in turn readied the company to meet certification standards. In 2003, CIB announced its intentions to seek FSC certification to position itself more competitively in the global market.

The BZP partnership aimed to mitigate the direct and indirect negative impacts of timber extraction on wildlife and forests. Its objectives included 1) sustainably managing the wildlife in the timber concessions adjacent to NNNP; 2) protecting NNNP from the negative impacts of timber extraction; and 3) collaborating with local communities on the sustainable management of their territories and wildlife resources. BZP included a wildlife management system based on several key principles and implemented through multiple on-the-ground activities (Elkan and Elkan 2005; Elkan et al. 2006; Poulsen, Clark and Mavah 2007; Poulsen, Clark and Bolker in review; Poulsen 2009).

Regulating access to resources through land-use planning

The first step in the development of a management system was land-use planning. Through a participatory mapping exercise, BZP worked with local communities to develop a zoning plan for hunting and resource use based on traditional territories (for village-based communities), resource use areas (for semi-nomadic communities), and the location of sacred areas (e.g., ceremonial grounds) or important trees (e.g., those that produce crops of caterpillars). After the initial mapping, all communities were revisited and maps were approved and adopted during a series of village meetings. These efforts resulted in land-use plans that were written into management plans for each CIB timber concession. For example, in the Kabo concession 47% of the area is included in hunting zones; 39% of the area can be logged, but not hunted; and 14% is off-limits to hunting and logging. Roadside signs demarcate the zones.

A key lesson emerged: even in logging concessions, participatory mapping is an effective method to clarify land tenure and empower local people to manage their own natural resources. Although the government did not previously acknowledge traditional land tenure, it was incorporated in official management plans.

Promoting selective hunting through law enforcement

In response to the BZP planning, CIB integrated Congolese hunting laws into its company rules. Among other things, the company prohibited the transport of hunters, bushmeat and weapons on logging vehicles. Company employees were required to comply with all national hunting laws and to respect hunting zones. The regulations were explained to newly hired employees, who agreed to them in signed contracts. Frequent outreach campaigns and village meetings built awareness of the company regulations and national hunting laws. Employees who broke the company's wildlife rules were penalized, possibly forfeiting part of their pay or losing their jobs.

Congolese law requires timber companies to financially support a law enforcement unit in their concessions, although this law is not widely implemented. CIB is one of the few companies that comply with the law. In addition to logistical support, CIB invests US\$10,000 a month towards a government managed eco-guard unit, approximately 75% of the total cost. The eco-guard unit patrols the forest and staffs roadside posts where logging vehicles are stopped and searched.

Developing economic and protein alternatives to hunting and bushmeat

CIB has also invested materials and manpower to increase the availability of domestic protein for its workers and their families. By importing frozen meat and livestock into logging towns, it potentially decreased the demand for bushmeat, and thus the intensity of hunting. To provide alternative sources of protein and revenue to bushmeat, the BZP has experimented with several types of animal husbandry and alternative livelihoods projects (Elkan et al. 2006; Poulsen 2009).

Developing management plans to formalize wildlife management

Perhaps the greatest single contribution of certification to biodiversity conservation is the requirement that a management plan be written and implemented for each timber concession. In 2006, the management plan for the Kabo concession became the first one to be approved by the Congo government. The plan specified the wildlife management rules designed and tested by BZP, including the land-use plan.

In 2007, the strength of management plans for biodiversity conservation was put to the test. A government official delivered a large game-hunting permit to a group of expatriate hunters and directed them to the Kabo logging concession. According to the hunters, the official told them it was the only timber concession in Congo with abundant animals and easy hunting. When the CIB general director heard that a group of European hunters was crossing into the concession, he called the WCS project director to warn him of the problem. With a phone call to the official and a friendly reminder that the Kabo management plan prohibits safari hunting, the mistake was recognized and corrected. The hunters were directed to a different forestry concession, where safari hunting was permitted.

Adapting management strategies to on-the-ground circumstances

Biological and socio-economic monitoring was used to assess the impact of timber extraction on people, wildlife, and forests and to evaluate the success of conservation strategies.

With real-time data, BZP adapted its law enforcement activities to the situation in the field. Observations of protected species in village markets, for example, might elicit more eco-guard patrols in the forest around those villages. Field data were also used to develop policies on the width of roads and size of buffer zones around forest clearings. Although WCS typically raises funds for monitoring activities, CIB secured funds from the *Fonds Français pour l'Environnement Mondial* (FFEM) for the first mammal survey in the concessions.

Recent results from the monitoring program suggest that the BZP management system — and, by extension, FSC certification — work to conserve biodiversity. Data from bushmeat markets and household diets in logging towns demonstrate that even though immigration has increased the human population by 64%, none of the telltale signs of unsustainable hunting (e.g., reduction in bushmeat availability, increase in price, or change in species composition) are evident (Poulsen et al. 2009).

A 2002 survey of several species of large mammal found no difference in the abundance of most species between logged and unlogged areas (Clark et al. 2009). Similarly, a survey of apes and elephants in 2006 (Stokes et al. 2010) determined that species abundance was highest where there was active management, regardless of the type of land use (logging concession, protected area). In fact, densities of elephants and gorillas tend to be higher in the CIB logging concessions than the adjacent park. Comparatively, densities of these species were significantly lower in an adjacent non-certified concession where wildlife management activities do not occur (Stokes et al. 2010).

Lessons and insights

Certification motivates companies such as CIB to invest in biodiversity conservation. Certification brings prestige to companies; it also provides access to new markets and the ability to sell products at higher prices. The lesson from BZP is that multi-organizational partnerships can be used to achieve it. Logging companies rarely have the expertise or resources to design and implement a comprehensive biodiversity management system. With WCS, CIB acquired a partner with the expertise to develop and implement a wildlife management system — an essential part of biodiversity conservation in Central African forests. With MDDEFE, CIB acquired a partner with the mandate to manage eco-guards and enforce hunting laws.

The CIB operations were among the first certified by FSC in central Africa. Despite the lack of government oversight of logging operations at the national level and the absence of rigorously enforced laws, this certification, in our opinion, was not achieved by lowering the bar. Weakening of standards remains a concern, however, in some geographic regions. Two measures can be taken to protect against this:

1. Certifying bodies need to assure the quality of the auditors and the rigour of their work. A certificate is only as good as its reputation, and certifying bodies should have every motivation to make sure that they do this. In fact, because Congo Basin countries often lack the financial and human resources to enforce forestry laws, the

auditing process, with its frequent visits and spot-checks by experts, could partially make up for the lack of enforcement.

2. The private-sector partnership for conservation, as found in the BZP model, provides an additional layer of oversight to biodiversity conservation and logging practices (Poulsen 2009). Although WCS is an integrated partner in the wildlife management component of the certificate (and therefore not an unbiased observer), it simultaneously serves as an independent observer to ensure that CIB upholds agreed-upon forestry and social standards. For example, WCS field staff have reported infractions (e.g., cables left in the forest, felling of trees sacred to indigenous peoples, improper road construction, transport of bushmeat and hunters) to the company and pressured it to remedy these problems. WCS also has invited independent research groups to study changes in animal abundance and forest structure, diversity, and above-ground biomass associated with logging and conservation activities.

Recommendations

Perhaps the greatest challenge for certification is defining standards for wildlife management and biodiversity conservation; these remain at an early stage of development (Bennett 2001). Although most certification bodies address wildlife conservation to some extent, their principles and guidelines typically focus on endangered species and protection of critical sites and habitats. However, the protection of endangered species is an insufficient goal for biodiversity conservation. For example, although the combined effects of logging and hunting in forests around the village of Kabo did not reduce densities of elephants, densities of duiker, pig, and monkey were reduced by 53, 61 and 66% respectively (Poulsen, Clark and Bolker, in press). While populations of endangered species in certified forest may be sustained, game species still face declines — at least near villages and towns.



Surveys of endangered species do not provide adequate information about the population status of most vertebrates. Non-endangered species are often important sources of protein for rural people and provide ecosystem services critical to forest regeneration. At a minimum, certification standards should have provisions for maintaining functional populations of species that provide valuable services to forests and forest-dependent peoples.

One way to reduce threats to biodiversity is to minimize the number of people drawn into frontier forests by the lure of employment and the development of logging towns (Poulsen et al. 2009). Certification standards need to tackle the population problem by setting standards that limit the number of logging towns in timber concessions. By encouraging companies to house workers and build sawmills in existing towns outside of concessions, timber extraction can still make a substantial contribution to development and poverty alleviation while having a lesser impact on frontier forests.

For more information

Please go to www.wcs-congo.org.

References

- Bennett, E.L. 2001. "Timber certification: Where is the voice of the biologist?" *Conservation Biology* 15: 308–310.
- Clark, C.J., J.R. Poulsen, R. Malonga and P.W. Elkan. 2009. "Can wildlife management in logging concessions extend the conservation estate for tropical forests?" *Conservation Biology* 23: 1281–1293.
- Elkan P. and S. Elkan 2005. Mainstreaming wildlife conservation in multiple-use forests of northern Republic of Congo. In C. Peterson and B. Huntley (eds.). *Mainstreaming conservation in Multiple-Use Landscapes*. GEFSEC Working paper No. 20. GEFSEC Publications.
- Elkan, P.W., S.W. Elkan, A. Moukassa, R. Malonga, M. Ngangoué and J.L.D. Smith. 2006. Managing threats from bushmeat hunting in a timber concession in the Republic of Congo. In C. Peres and W. Laurence (eds.). *Emerging Threats to Tropical Forests*. Chicago: University of Chicago Press.
- Global Forest Watch. 2002. *An Analysis of Access into Central Africa's Rainforests*. Washington D.C: World Resources Institute.
- Poulsen, J.R. 2009. Building private-sector partnerships for conservation (PSPCs): Lessons learned from the collaboration between WCS, CIB, and the Republic of Congo in forestry concessions. Report to USAID and WCS.
- Poulsen, J.R., C.J. Clark and B.M. Bolker. In review. Decoupling the effects of logging and hunting on an Afrotropical animal community.
- Poulsen, J.R., C.J. Clark and G. Mavah. 2007. Wildlife management in a logging concession in Northern Congo: Can livelihoods be maintained through sustainable hunting? In G. Davies and D. Brown (eds.). *Bushmeat and Livelihoods*. Blackwell Publishing, pp 140–157.
- Poulsen, J.R., C.J. Clark, G. Mavah and P.W. Elkan. 2009. "Bushmeat supply and consumption in a tropical logging concession in northern Congo." *Conservation Biology* 23: 1597–1608.
- Robinson, J.G., K.H. Redford and E.L. Bennett. 1999. "Wildlife harvest in logged tropical forests." *Science* 284: 595–596.
- Stokes, E.J., S. Strindberg, P.C. Bakabana, P.W. Elkan, F.C. Iyenguet, B. Madzoke, G. Aime, F. Malanda, B.S. Mowawa, C. Moukoubou, K.F.K. Ouakabadio and H.J. Rainey. 2010. "Monitoring great ape and elephant abundance at large spatial scales: measuring of a conservation landscape." *PLoS One* 5: e10294.
- World Rainforest Movement. 2003. *Apes suffer from marriage between loggers and conservationists*. www.wrm.org.uy/bulletin/73/Congo. October 2003.