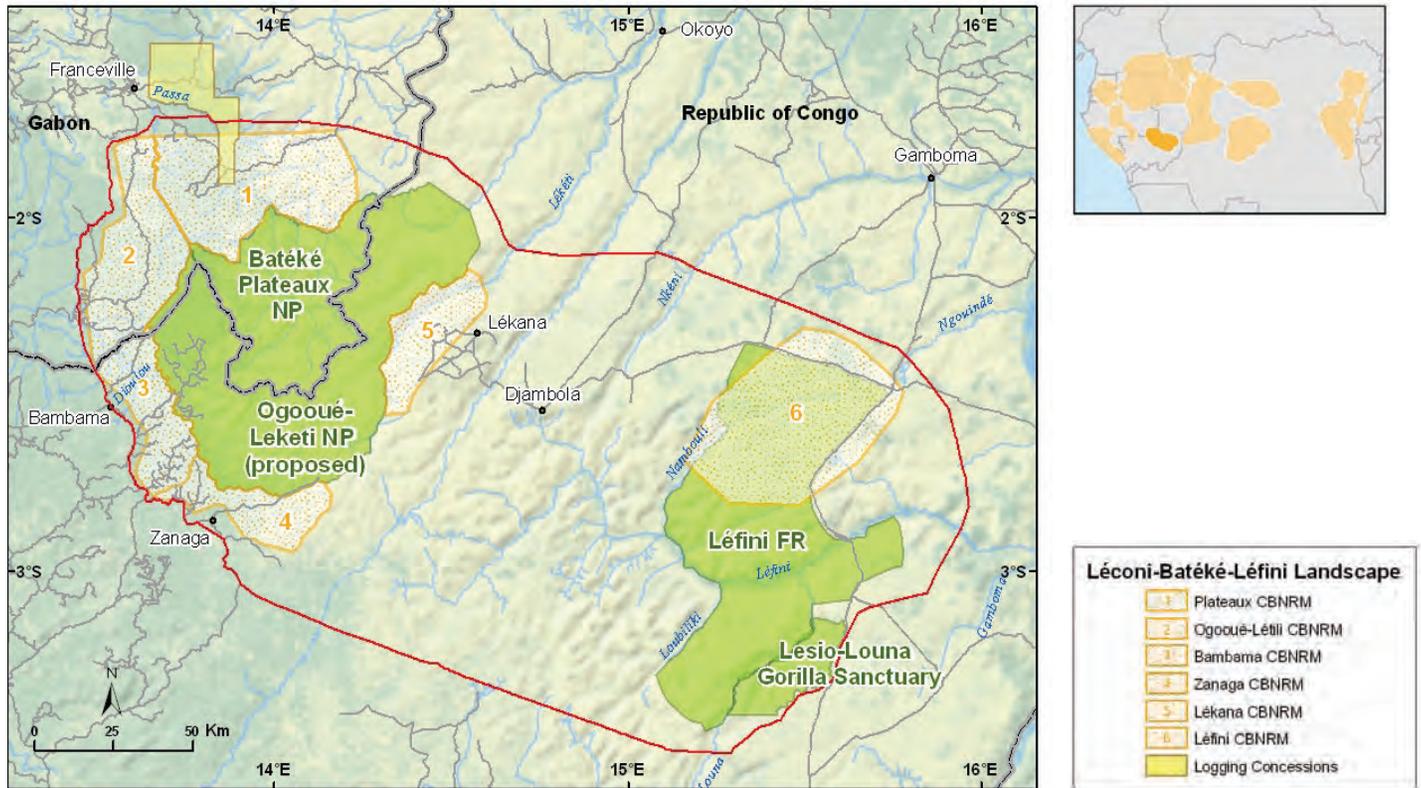


CHAPTER 20

LÉCONI-BATÉKÉ-LÉFINI LANDSCAPE

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Land Use Planning



Sources: WCS, UMD-CARPE, OSFAC, FORAF, IUCN, Tom Patterson US National Park Service.

Figure 20.1: Macro-zones in the Léconi-Batéké-Léfini Landscape

The Léconi-Batéké-Léfini Landscape land use planning process is well underway. Baseline socio-economic studies, biological surveys and ecological monitoring have been completed throughout the Landscape and follow up information continues to be gathered and integrated into these databases. These data have allowed the Landscape Consortium partners and other prominent stakeholders to establish the priority macro-zones where land use plans are to be elaborated, adopted and partially implemented over the course of the next three years.

In the Léconi-Batéké-Léfini Landscape, three protected area macro-zones have been identified: the Plateaux Batéké National Park (PBNP), the proposed Ogooué-Lékéti National Park (OLNP) and the Léfini and the Lesio-Loua reserves.

Around each protected area a set of community-based natural resource management (CBNRM) zones have been identified with two to the north of the PBNP in Gabon, three around the south of the proposed OLNP and one to the north east of Léfini. Work carried out by The Aspinal Foundation - *Projet protection des gorilles* (TAF-PPG) to the east of Lesio-Loua is advancing and may lead to the development of an additional CBNRM in this region. Only one extractive resource zone (ERZ) exists in the Landscape, that of the Rougier-Gabon Léké forestry concession. Rougier is seeking Forest Stewardship Council (FSC) certification and is developing a management plan that will allow them to sustainably manage this ERZ.

With the priority macro-zones identified, the Landscape Consortium and partners have created a steering committee to develop the Landscape-wide land use plan strategy and to oversee the implementation of short-term and medium-term (3 years) activities to be carried out throughout the Landscape. The committee includes a representative from each Landscape Consortium member (WCS and Pact), a protected area governmental administrator from each country in the Landscape, and a representative from each major partner in the Landscape (TAF-PPG, CIRMF and MBG). The steering committee is also charged with ensuring that all stakeholders are identified and engaged, and to oversee the development of land use plans for each macro-zone.

Progress to date in the land use plan process includes the development of a landscape land use plan strategy to be implemented over the next three years. In addition, the land use plan process has begun in several CBNRMs as well as in the protected areas. Each macro-zone has land use plan strategies adapted to the social, cultural, political and biological particularities of the zone.

The management plan for Plateaux Batéké National Park (PBNP) in Gabon is in its final stages. The draft of the PBNP management plan was created during a 10-day workshop organized by the National Parks Agency (ANPN) and WCS in Léconi, Gabon. This workshop brought together important stakeholders, park administrators (ANPN), international NGO's (WCS and PPG), and representatives from all of the local communities in adjoining areas (villages from the departments of the Plateaux and Ogooué-Létili

and from the towns of Bongoville, Boumango and Léconi) to discuss and develop a consensus for land use within the park limits, elaborate park regulations, determine and prioritize future park activities, and identify the priorities for future research. The draft plan has been ratified by the major partners and stakeholders and will likely be adopted in early 2009.

Although the proposed OLNPN in Congo has not yet been officially gazetted, progress has been made to establish a transboundary protected area with the adjoining PBNP in Gabon. Recent meetings between park managers, local Gabonese and Congolese government representatives and conservation NGOs have established local agreements that will facilitate the harmonization of park management plans and free circulation of park and project personnel between parks.

In the Léfini and Lesio-Louna reserves, land use plan strategies have been developed that include redefining the limits of the two reserves, i.e., combining the southern Léfini reserve and Lesio-Louna into a single administrative unit while restructuring northern Léfini to accommodate the CBNRM zones to the northeast.

An important component of the Landscape strategy is to develop a technical platform through which local and regional land use plans are accepted and respected by national government authorities. The Landscape partners have worked extensively with local communities, local authorities and other stakeholders to establish the legal recognition of community associations and their land use plans. To this end, the Léfini CBNRM in Congo has been successful in developing and ratifying at the local government level a simplified management plan that defines the roles and responsibilities of the community associations, civil society and government in a signed "Charter of Responsibilities". This central document gives the community associations within the CBNRM legal status which acknowledges their right to sustainably manage natural resources to which they have had traditional access and it spells out the rights and responsibilities of all partners.

Similar progress has been made in Gabon in that the legal status of the community associations within both the Plateaux and Ogooué-Létili CBNRM macro-zones has been recognized by the local authorities (the *Préfecture*) and dossiers have been assembled and submitted to the Ministry of the Interior for legal recognition at a national level.

To the southeast of the Léfini reserve in Congo, lies the Lesio-Louna Gorilla Sanctuary where



Photo 20.1: A few miles north of Batéké Plateau National Park, erosion has exposed the hard sandstone cores. This process predates the arrival of human populations, neolithics or metallurgists, in the region, 2,000 to 3,000 years ago.

Landscape partners TAF-PPG have performed extensive socio-economic surveys and have begun to develop community associations to provide alternative livelihoods to illegal hunting and charcoal-making in the reserve. As part of this process, they have applied standardized methodologies provided by one of the Landscape Consortium member, Pact, and there is a possibility of developing a new CBNRM in this area.

Progress is also being made in the Lékana CBNRM as work toward a legal framework continues and alternative livelihood activities are being evaluated. Within the Impini community association, discussions have been taking place to increase corn production to supply community members in the Mpoh community association, 200 km to the southeast, where pork husbandry is being considered as an alternative to hunting. While these dialogues are preliminary and the activities await feasibility studies, they show promise as complementary and interlinked livelihood alternatives within the Landscape.

Human Activities

The ethnic and cultural composition of the Léconi-Batéké-Léfini Landscape remains dominated by the Téké people, however in villages along the main roads and in the urban centers, the number of migrants from DRC and other African countries is increasing.

While the density of the population in the Landscape has not changed significantly, the trend is toward an increased human presence. New villages of one or two families are appearing along the major trunk roads in the Landscape between Djambala and Ngo, and between Ngo and Brazzaville. This is due mainly to people seeking new agricultural opportunities to develop small scale farms to furnish the markets of Djambala and Brazzaville. This increased agricultural intensity along the roads has reduced the productivity of the soils in immediate proximity to many villages, requiring longer fallow periods between planting and pushing people into new areas farther from the villages. Participative mapping around Lékana and Ngo indicates that compared to 20 years ago, villagers must travel on average 6 km farther from their villages to find areas with sufficient natural resources to support their current activities.

Work is just starting in the Zanaga and Bambama CBNRM zones due to logistic difficulties and limited human and financial resources. However, the lessons learned while implementing CBNRM activities in the other macro-zones are expected to help the Landscape Consortium partners successfully develop land use plans in these remaining zones.

Rougier-Gabon is one of the larger forestry companies operating in Gabon. They possess the only active logging concession (Léké) located in the north of the Landscape. This is also the only ERZ in the Landscape. The Gabonese government requires that all forestry companies establish a sustainable management plan for each logging concession but Rougier is taking this one step further by applying for Forest Stewardship Council (FSC) certification in their Léké concession. WCS has assisted the auditors in this process (Bureau Veritas) and has been working to establish an agreement with Rougier to insure that they comply with the highest standards possible in terms of their social, technical and environmental practices.



Photo 20.2: Acraea cepheus is one of several species in this genus that inhabit the shrubby savanna and gallery forest edges of the Batéké Plateau.

The current direct threats posed by the human element in the Landscape are from commercial hunting to supply food to the larger towns of Djambala, Lékana, Franceville and Brazzaville and the frequent occurrence of anthropogenic brush fires concomitant with this illegal hunting. However, future iron ore and forestry exploitation in the area around Zanaga will increase pressure on natural resources caused by the influx of people seeking employment in these sectors. Three one-year studies of bushmeat markets in the Congolese districts of Lékana, Zanaga and Bambama in the north of the Landscape have shown unsustainable levels of commercial off-take of protected and keystone species including chimpanzees, leopards, buffalo, aardvarks, water chevrotains, Grimm's duiker and giant pangolins.

Although there is very little industrial logging occurring at the moment, both Congo and Gabon have awarded forestry concessions in the northwest. In Gabon, the logging company working in the Landscape is seeking FSC certification and is developing a management plan to minimize the negative impact of their activities. In Congo, although no logging has taken place,

three concessions have been awarded in the area adjacent to the Plateaux Batéké National Park in Gabon (Decree N°8520/MEFE/CAB) in an ecologically sensitive area that shows the highest density of elephants and great apes in the landscape.

The government and Landscape partners are in discussions about how best to protect both the ecological and economic interests of the area that is within the proposed limits of the soon to be created Ogooué-Lékéti National Park of Congo.

Table 20.1: Important agricultural products in the Léconi-Batéké-Léfini Landscape

Agricultural product	Unit	Purchase price/unit* (\$)	Primary destinations		Date	Data collection	Source
			Inside Landscape	Outside Landscape			
Information on agricultural trade of Lékana							
Fufu	Sack (<i>sac de farine</i>)	22	Lékana, Léconi	Franceville, Brazzaville	2005-2008	Surveys of cultivators and market sales	WCS-Plateaux Batéké Project
	Bowl (8-9 kg) (<i>cuvette</i>)	6					
Beans	Tin can (1 kg) (<i>Quaker</i>)	1	Djambala, Lékana	Brazzaville			
Potatoes	Bowl (8-9 kg) (<i>cuvette</i>)	12	Lékana	Brazzaville			
Groundnuts	Sack (<i>sac de farine</i>)	32	Lékana	Brazzaville			
Maize	Bowl (8-9 kg) (<i>cuvette</i>)	7	Lékana	Brazzaville			
Information on agricultural trade of Zanaga							
Cassava	Stick (<i>baton</i>)	0.4	Zanaga		2005-2008	Surveys of cultivators and market sales	WCS-Plateaux Batéké Project
Groundnut	Sack (<i>sac de farine</i>)	20	Zanaga				
Plantain	Bunch (<i>régime</i>)	3	Zanaga	Sibiti, Franceville, Pointe-Noire, Dolisie			
Banana (sweet)	Bunch (<i>régime</i>)	2	Zanaga	Sibiti, Franceville, Pointe-Noire, Dolisie			
Palm oil	Liter	0.9	Zanaga, Bam-bama	Sibiti, Franceville.			

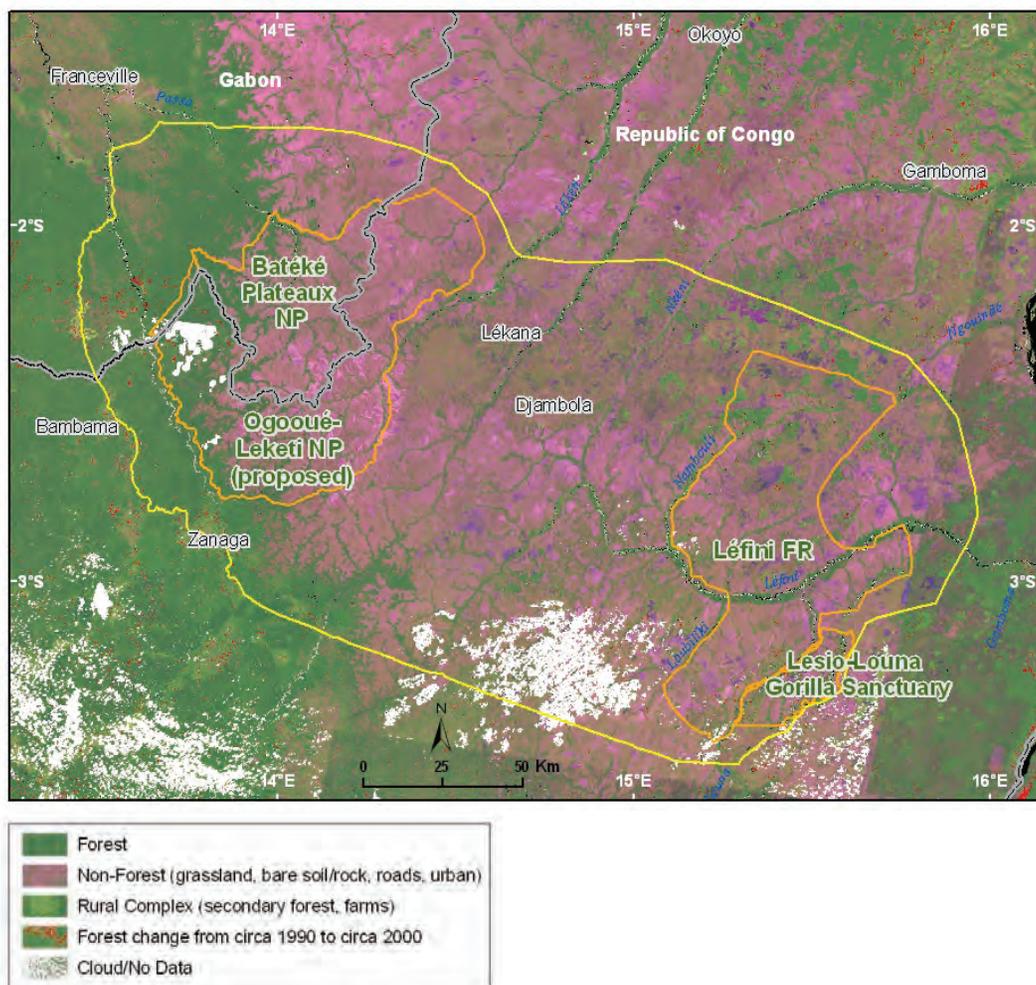
*Based on an exchange rate of \$ 1 = CFA 500. The prices may vary by season. The prices indicated are an average of seasonal prices.

Table 20.2: Bushmeat trade in the Léconi-Batéké-Léfni Landscape

Bushmeat Species	Unit	Purchase price/unit* (\$)	Primary destinations		Date	Data collection	Source
			Inside of Landscape	Outside of Landscape			
Information on bushmeat trade of Lékana							
Grimm's duiker (<i>Sylvicapra grimmia</i>)	Whole fresh adult	12.9	Lékana	Franceville	Feb 2006- Jan 2008	Surveys of hunters as they left for the forest and of traders and sellers in Mpini.	WCS-Plateaux Batéké Project
Sitatunga (<i>Tragelaphus spekei</i>)	Smoked without bowels	12	Lékana	Franceville			
	Whole fresh adult	0.9	Lékana				
	Smoked without bowels	1.2	Lékana				
Moustached monkey (<i>Ceropithecus cephus cephus</i>)	Whole fresh adult	3.9	Lékana			Hunters were interviewed every day except Sundays and holidays.	
	Smoked without bowels	3.3	Lékana				
Red river hog (<i>Potamochoerus porcus</i>)	Fresh quarters/kg	0.8	Lékana				
	Fresh quarters/kg	1.8	Lékana				
Information on bushmeat trade of Zanaga							
Blue duiker (<i>Cephalophus monticola</i>)	Whole fresh adult	4.3	Zanaga, Lékana	Sibiti, Nkayi	Feb 2006- Jan 2007	Surveys of hunters as they left for the forest and of traders and sellers in Ogooué.	WCS-Plateaux Batéké Project
	Smoked without bowels	3.8	Zanaga, Lékana	Sibiti, Nkayi, Brazzaville, Franceville			
	Fresh meat of 200g	0.4	Zanaga (Ogooué)				
	Smoked meat 180g	0.4	Zanaga (Ogooué)				
Brush-tailed porcupine (<i>Atherurus africanus</i>)	Whole fresh adult	3.9	Zanaga, Lékana			Hunters were interviewed every day except Sundays and holidays.	
	Smoked without bowels	3.7	Zanaga, Lékana	Sibiti, Nkayi, Brazzaville, Franceville			
	Fresh meat of 200g	0.4	Zanaga (Ogooué)				
	Smoked meat 180g	0.4	Zanaga (Ogooué)				
Moustached monkey (<i>Ceropithecus cephus cephus</i>)	Whole fresh adult	4.1	Zanaga	Sibiti, Nkayi			
	Smoked without bowels	3.5	Zanaga	Sibiti, Nkayi, Brazzaville, Franceville			
	Fresh meat of 200g	0.4	Zanaga (Ogooué)				
	Smoked meat 180g	0.4	Zanaga (Ogooué)				
Red river hog (<i>Potamochoerus porcus</i>)	Whole fresh adult	1.1	Zanaga	Sibiti, Nkayi			
	Smoked without bowels	1.3	Zanaga	Sibiti, Nkayi, Brazzaville, Franceville			
	Fresh meat of 200g	0.4	Zanaga (Ogooué)				
	Smoked meat 180g	0.4	Zanaga (Ogooué)				

Based on an exchange rate of \$ 1 = CFA500, prices of larger animals are estimations based on price per kilogram.

Forest Cover



Sources: SDSU, UMD-CARPE, NASA, SRTM, IUCN, FORAF

Figure 20.2: Composite Landsat satellite image of the Léconi-Batéké-Léfini Landscape overlain with 1990 to 2000 forest loss (in red)

Table 20.3: Forest cover and forest loss in the Léconi-Batéké-Léfini Landscape from 1990 to 2000

Landscape area	Forest area			Forest loss			
	1990 (km ²)	2000 (km ²)	2005 (km ²)	1990-2000 (km ²)	1990-2000 (%)	2000-2005 (km ²)	2000-2005 (%)
35,917	7,073	6,968	N/A	105	1.48	N/A	N/A

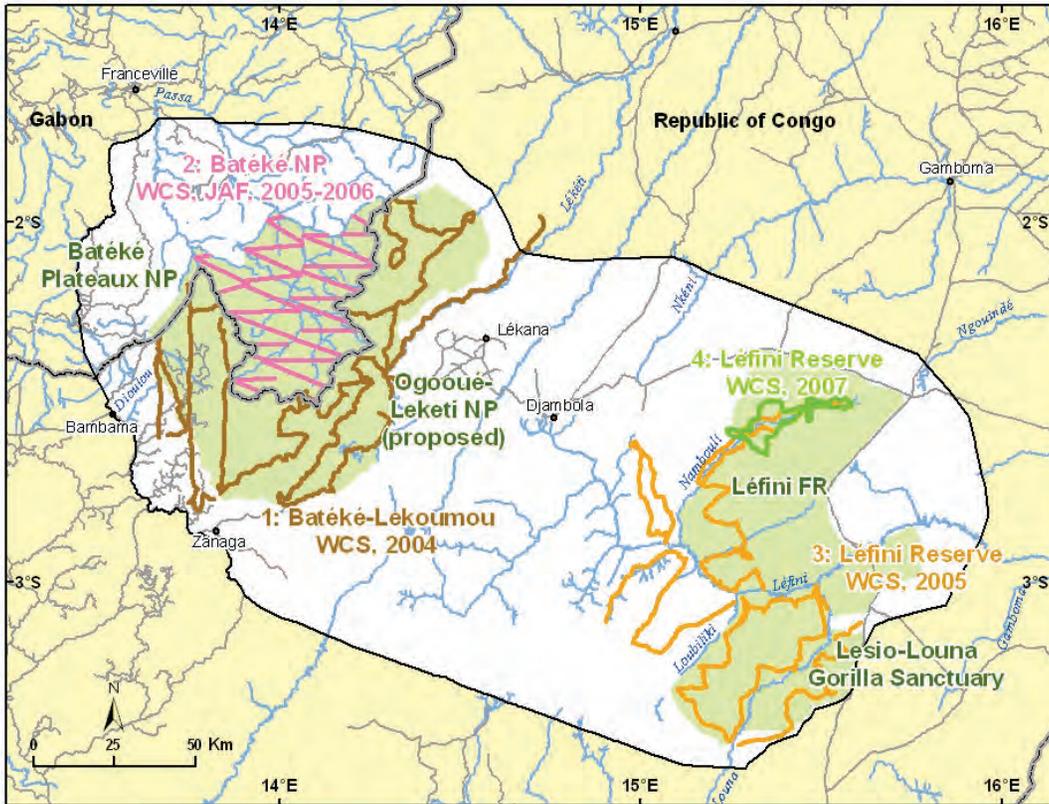
Forest cover and forest cover loss are derived from Landsat and MODIS satellite data.

Sources: SDSU, UMD-CARPE, NASA.

For the most part the Léconi-Batéké-Léfini Landscape forest cover remains stable. The slight reductions seen from 1990-2000 are due to small scale agriculture and fuel wood extraction around small towns, rather than from industrial logging. As the towns grow there will be increased pressure

on the forests but the rate of deforestation will remain low. Additionally, the logging activities proposed by Rougier under the FSC certification will insure reduced impact extraction in the northeast of the Landscape.

Large Mammal and Human Impact Monitoring



Sources: WCS, JAF, MEF, UMD-CARPE, OSFAC, FORAF

Figure 20.3: Biological surveys conducted in the Léconi-Batéké-Léfini Landscape

Table 20.4: Biological survey results from the Léconi-Batéké-Léfini Landscape

Survey	Site name	Survey date	Lead organization(s)	Total km of recces	Elephant presence	Elephant dung pile encounter rate (N/km)	Elephant dung pile density (N/km ²)	Ape presence	Ape nest group encounter rate (N/km)	Ape nest group density (N/km ²)	Human sign (N/km)
1	Baréké-Lekoumou area, Congo	Jul-Nov 2004	WCS	840	Yes	0.9	N/A	Yes	0.22	N/A	1.48
2	Baréké NP, Gabon	Apr 2005-Feb 2006	WCS/ JAF	586	Yes	0.83 ± 0.53	N/A	Yes	0.005	N/A	8.05 ± 11.65
3	Léfini Reserve, Congo	Jul-Aug 2005	WCS	713	Yes	0.3	N/A	Yes	0	N/A	0.16
4	Léfini Reserve, Congo, small patch around 2 bais in northern area only	Feb-Mar 2007	WCS	132 (non random foot searches around two bais in the north of the Reserve)	Yes	N/A	N/A	No	N/A	N/A	Many
5	Lesio-Louna, Congo	Jan-Dec 2006	JAF/ MEF	1815	Yes	0.003	N/A	No	N/A	N/A	0.27

1) Inkamba-Nkulu and Diabouakou, 2005; 2) Bout, 2006; 3) Nganga et al., 2006; 4) Inkamba-Nkulu and Tsoumou, 2008; 5) Mathot et al., 2006.

The Léconi-Batéké-Léfini Landscape is mostly savanna with large patches of lowland forest on its northwestern limits. It has a number of endemic plant and bird species, but wildlife in general has been heavily hunted, and occurs at very low densities. Wildlife and human impact surveys were conducted using recce surveys in the Landscape in both Gabon and Congo from 2004 to 2007.

The area that had been proposed as the new Ogooué-Lékéti National Park (OLNP) by the Government of Congo just across the border from, and contiguous with, the Batéké Plateaux National Park (BPNP) in Gabon was surveyed in 2004. A second survey in the forested northwest section of the proposed new park has just been completed (June 2008) with data analyses to be completed shortly. The two other protected areas in the Landscape (BPNP in Gabon, and the Léfini Reserve in Congo) were surveyed in 2005 through 2006, with a second survey in Léfini taking place late in 2007. As for all surveys of this type, all large mammal and human sign were recorded and geo-referenced.

Based on the data gathered from these recent surveys across the Landscape, it is doubtful that any lions (*Panthera leo*) remain, however, hippopotamus (*Hippopotamus amphibious*) can still be found in the Léfini reserve and are reported to still be present in the Leketi and Ogooué rivers in Congo. Savanna species such as Grimm's duiker (*Sylvicapra grimmia*), the side-striped jackal

(*Canis adustus*) and the aardvark (*Orycteropus afer*) are scarce but present throughout the northern portion of the Landscape in the transboundary protected area. Additionally, the surveys revealed that the DeBrazza monkey (*Cercopithecus neglectus*) was shown to occur about 140 km farther south in Gabon, and about 80 km farther west in Congo than was previously known. The only place where both wild chimpanzees (*Pan troglodytes*) and gorillas (*Gorilla gorilla*) are reported together is the forested area in the northwest of the Landscape. Chimpanzees also occur in the BPNP along the Mpassa River.

Our data also show that although many large mammal species (including elephants, chimpanzees, and buffalo) occur in all of the sectors surveyed so far, their numbers have been greatly reduced. Elephant sign in the Léfini area has decreased considerably (0.3/km to 0.003/km) and only a small population remains in the northern part of the reserve. Elephant sign is highest in the northwest of the Landscape in the border area of the BPNP where a number of mineral-rich clearings attract forest elephants and other wildlife (0.9/km in Congo and 0.83 ± 0.53 in Gabon). In this area, human sign was lowest on the Gabon side of the border due to its remoteness but future logging activities across the border in Congo will create new roads and potential access to hunters. It is clear from our survey work that enforcement of current legislation needs to be increased.



Photo 20.3: Yellow-mantled Widowbirds (*Euplectes macrourus*) are very common to the tall grass savannas of the Batéké Plateau.

Special Interest

The Successful Start-up of the “Plateaux Batéké Elephant Project”

Among the CARPE-led successes in the Léconi-Batéké-Léfini Landscape, one stands out above the rest. The WCS Batéké Plateaux Project in collaboration with our landscape partners CIRMF, CIRAD and PPG successfully launched the “Plateaux Batéké Elephant Project”. This project combines activities taking place in CBNRM zones and protected areas by combining monitoring of key elephant habitats, anti-poaching patrols, research, infrastructure development, and community based eco-tourism initiatives. This project establishes a synergy between conservation and the sustainable use of natural resources in and around the future transboundary protected area in the north west of the Landscape by integrating the study and protection of elephants while involving local populations in resource management and protection as part of community based development activities.

In order to focus project activities, two key elephant sites were chosen as priority areas. The first site is Bai Jobo in the southwest of the Batéké Plateaux National Park and the second is a series of mineral rich beaches 50 km north of the bai on the Mpassa River, near the communities of the Kessala Regroupement. At these two sites we will combine elephant conservation, research and community-based eco-tourism development.

Two different approaches are being employed simultaneously to protect the elephants in the focus areas. For Bai Jobo and two newly identified nearby bays across the border in Congo, a comprehensive monitoring and research program is being established while at the Kessala Elephant Beaches, we are developing a community-based natural resource management zone (CBNRM) in which the villagers and other stakeholders work together



Photo 20.4: Harvesting forest products is a daily activity for many people.

to identify solutions that will benefit both people and wildlife. To this end, the project developed two complementary proposals, one for the bai and monitoring activities and the other for empowering the communities and engaging them in activities that will promote conservation while addressing their development needs. Financing recently received from USFWS and CIRMF has permitted project personnel to conduct monitoring, research and anti-poaching patrols in the transboundary area around the bai. The funding and subsequent initiation of this project has led to commitments from Total Gabon to fund the construction of an operations base. This base will be the Plateaux Batéké Ecological Research station which will become the base of the elephant monitoring and research endeavors.

Simultaneously, with the implementation of the research efforts, the project began community activities in the communities around the Kessala Elephant beaches. Stakeholder meetings and participative methodologies were employed, culminating in the creation of a community association. This association called “Ondhigi,” which means “friendship,” has identified activities to help community members better manage their natural resources. These activities include the development of ecotourism based on elephant viewing in their traditional territory, incorporating protection of wildlife and the promotion of equitable distribution of eco-tourism revenues.

As the research activities continue, five new bais used by the Batéké elephants have been identified near the village grouping of Mopia. Mopia is located west of the Kessala Regroupement home of the Ondhigi community association and news of its success had already reached Mopia by the time the survey teams verified the existence of the bais. The citizens of Mopia contacted project administrators and asked for assistance in creating their own village association based on the model of Kessala. The project has since included this new area, and has expanded the scope of activities and partners by inviting CIRMF to participate through the construction of an elephant monitoring platform at one of the bais. The platform serves a dual purpose of hosting researchers while at the same time being available to the community to accommodate tourists.

Recently three European zoos recognized the unique value of this integrated project and have offered to finance the placing of satellite-tracking collars on 10 elephants. These collars will benefit research and more importantly will provide information about the elephants ranging behavior that will help us reduce human-elephant conflicts and guide natural resource management and the community eco-tourism project.