



CONSERVATION
INTERNATIONAL

Conservation International
CARPE USAID Final Technical Report
Monte-Alen Segment, Equatorial Guinea,
Monte Alen – Monts de Cristal Landscape (1)
and
Maiko Tayna Kahuzi-Biega Landscape (10)
Democratic Republic of Congo

For the reporting period:
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There is also a “Pages” tab, below “Bookmarks” that will allow you to see a small view of each page, and by clicking on this, you can navigate to any page.

Table of Contents

- I. Introduction
- II. Summary of Accomplishments
- III. Partnerships and Financing
- IV. The Monte-Alen Segment (Equatorial Guinea) of the Monte Alen –
Monts de Cristal Landscape (1): Major Accomplishments and
Achievements
- V. Maiko Tayna Kahuzi-Biega Landscape (10): Major Accomplishments
and Achievements
V.a. Challenges in Landscape 10
- VI. Conclusions
- VII. Lessons Learned
- VIII. Recommendations
- IX. Annexes 1-3
- X. Appendix 1: Eight Success Stories
- XI. Appendix 2: Original Objectives Matrix, Landscape 1
- XII. Appendix 3: Original Objectives Matrix, Landscape 10

I. INTRODUCTION

This Final Report for the period of October 1, 2003 through September 30, 2006, provides a description of accomplishments achieved by Conservation International (CI) and partners as the result of a USAID three-year Associate Award Cooperative Agreement under the Leader with Associates Global Conservation Program. The accomplishments described herein supported the Strategic Objective of the Central African Regional Program for the Environment (CARPE): *Reduce the rate of forest degradation and loss of biodiversity by increasing local, national and regional natural resource management capacity*. These activities also supported the U.S. goal for the Congo Basin Forest Partnership (CBFP) to promote economic development, poverty alleviation, improved governance, and natural resource conservation.

The activities in this Final Report were conducted in two geographical areas of the Congo Basin of Central Africa: the Equatorial Guinea Segment (Monte Alen Segment) of the **Monte Alen-Mont de Cristal Inselbergs Forest Landscape**, covering both Equatorial Guinea and Gabon (also “Landscape 1”); and **Maiko Tayna Kahuzi-Biega Landscape** in the Democratic Republic of Congo (also “Landscape 10”).

Conservation International (CI) was the *Landscape Leader* for the Equatorial Guinea Segment of Landscape 1 and for the entirety of Landscape 10. Both Landscapes contain globally significant biodiversity and large areas of intact forest, but are experiencing threats to sustainable resource conservation and management as the result of: non-sustainable agricultural and pastoral activities; non-sustainable exploitation of wildlife; illegal mining; poorly regulated, non-sustainable commercial logging activities; and gaps in national governance capacity with respect to wildlife and forestry management.

As stated in CI’s original proposal, the program contributed to reducing the rate of forest degradation and the loss of biodiversity in the Congo basin by three global objectives tailored to each Landscape: *1) to help local organizations and stakeholders increase their capacity in natural resource management; 2) to strengthen natural resource governance; and 3) to institutionalize natural resource monitoring*. These objectives, and the specific CARPE Intermediate Results as they pertained to each Landscape, are recapitulated for the reader in Appendices 2 and 3.

We achieved the accomplishments described in this report by helping local organizations and stakeholders increase their capacity with respect to each of the global objectives, while working with an array of local, national and international partners to adapt our overall approach to the specific conditions for each Landscape.

A *Summary of Accomplishments* follows in the next section. Thereafter, a section describes our important *Partnering Networks* including a summary of *Funding Sources* for each Landscape, followed by four sections: *Major Achievements* (by Landscape), *Conclusions*, *Lessons Learned*, and *Recommendations*. Annexes and Appendices follow, with a special Appendix 1 that includes eight *Success Stories*. The latter are prepared for public dissemination.

II. SUMMARY OF ACCOMPLISHMENTS

1. Achievements realized in the Monte Alen Segment (Equatorial Guinea) of the Monte Alen-Mont de Cristal Inselbergs Forest Landscape for this reporting period were:

- a) Strengthened institutional and individual capacity of the National University of Equatorial Guinea (UNGE) to train biodiversity professionals through the establishment of a new *Facultad de Estudios Ambientales* (Faculty of Environmental Studies).
- b) Strengthened capacity to develop effective management and regulation of bushmeat hunting in the landscape through field research, analysis, and publication of socio-economic and biological studies of bushmeat hunting.
- c) Advances in scientific understanding of the fauna and floral of the Monte Alen segment through scientific surveys.
- d) Strengthened institutional and individual capacity of *Herbario Nacional de Guinea Ecuatorial* (National Herbarium).
- e) Improvement in the political, policy, institutional, and financial context for natural resource management through a successful strategic engagement with President Obiang and the highest levels of the Government of Equatorial Guinea.
- f) Strengthened prospects for stable, long-term financial support for conservation and natural resource management through a formal agreement signed by the Government of Equatorial Guinea and endorsed by President Obiang to create and capitalize a US\$15 million National Conservation Trust Fund.
- g) Strengthened prospects to consolidate a central forest corridor of the Monte Alen-Monts de Cristal landscape uniting Monte Alen, Altos de Nsork, Río Muní, Piedras Nzas and Monts de Cristal through a formal agreement signed by the Government of Equatorial Guinea and endorsed by President Obiang to create a Community Based Natural Resource Management area (CBNRM) National Forest with more than 500,000 hectares of timber concessions.

2. Achievements realized in the Maiko Tayna Kahuzi-Biega Forest Landscape for this reporting period were:

- a) A Landscape-wide land use planning process was convened and 30-75% progress was achieved towards developing land use plans in the individual zones that comprise the landscape.
- b) The rehabilitation process for two large and globally significant National Parks, Maiko and Kahuzi-Biega, made significant progress, with both parks emerging from “paper park” status to near-fully functioning protected areas.
- c) The creation of two new protected areas by local stakeholders as state-sanctioned Nature Reserves, employing a unique, community-based management approach.
- d) Strengthened capacity for a federation of community-based organizations working outside traditional protected areas to accomplish conservation, development, and natural resource management.
- e) The creation of a first-time program for community-based resource management and conservation in the Itombwe Massif.
- f) The completion of eight biological and socioeconomic surveys, establishing the first quantitative baselines for many areas of the Landscape.
- g) The completion of an important change detection study, providing first time *quantitative* evidence for the success of community conservation in the Congo Basin, by documenting increases in encounter rates for gorillas, chimpanzees, and elephant, and a decrease in human disturbance rates, for a four-year period in the newly developed Tayna Nature Reserve.
- h) The establishment of a *community-managed*, government-sanctioned Conservation University and the completion of three years of coursework for 67 students provided scholarships, functioning as conservation incentives for landowners who ceded rights over forests to be gazetted as reserves.
- i) The earmarking of a \$US2 million fund, through Conservation International’s Global Conservation Fund, to develop a trust fund to support sustainable financing for the northern segment of the Landscape.

III. PARTNERSHIPS AND FINANCING

3. In the Monte Alen Segment of Equatorial Guinea, CI partners who were provided USAID CARPE funding were the Universidad de Alcalá (Alcalá), Imperial College, London (Imperial), the Instituto de Desarrollo Forestal (INDEFOR), the Missouri Botanical Garden (MBG), and the Universidad Nacional de Guinea Ecuatorial (UNGE). Many other organizations contributed non-audited technical support including the Smithsonian Institution, the US Forest Service, the Center for Applied Biodiversity Science, the Zoological Society of London (ZSL), Forests, Resources, and People (Cameroon), Wildlife Conservation Society Cameroon (WCS), Limbe Botanic Garden, the Cameroon Biological Conservation Society (CBCS), the Agencia Española de Cooperación Internacional, the Ministerio de Agricultura y Bosques (MdeAyB), and the Herbario Nacional de Gabon.

4. In the Maiko Tayna Kahuzi-Biega Landscape, CI provided USAID CARPE funding to the Dian Fossey Gorilla Fund International (DFGFI), while other two other partners, the Worldwide Fund for Nature (WWF) and the Wildlife Conservation Society (WCS) received unbundled funding for the Landscape through their Cooperative Agreement under the Leader with Associates Global Conservation Program. The Jane Goodall Institute, although not receiving any USAID CARPE funding for the reporting period, entered into a partnership with DFGFI to provide development and health initiatives for a community conservation and development zone through leveraged USAID funding.

5. Summary of Funding Sources: Table 1 displays funding sources by the various partners for both Landscapes.

Table 1. Summary table of partners and funding sources for the reporting period.

PARTNERS	CARPE FUNDING	MATCH FUNDING	Totals
<i>Conservation International</i>	1,719,658	1,301,396	3,021,054
<i>Landscape 1</i>			
<i>Alcala</i>	102,008	115,994	218,002
<i>UNGE</i>	21,857	143,888	165,745
<i>INDEFOR</i>	117,328	212,142	329,470
<i>MBG</i>	112,440	32,754	145,194
<i>Imperial</i>	123,728	104,152	227,880
<i>Landscape 10</i>			
<i>World Wildlife Fund</i>	939,345	378,692	1,318,037
<i>Wildlife Conservation Society</i>	822,953	226,152	1,049,105
<i>DFGFI</i>	2,481,267	556,580	3,037,847
Totals	6,440,584	3,071,750	9,512,334

The total amount of USAID CARPE funding for Conservation International for the reporting period was \$4,678,286. Of that amount, \$2,958,628 (63.2%) was provided to CI's implementing partners in the field: all partners in Landscape 1, and DFGFI in Landscape 10. CI provided direct match funds to DFGFI in the amount of \$958,007 from CI's Global Conservation Fund; DFGFI contributed another \$131,580 as match funding, as well as a contribution valued at \$425,000 (donation of medicines from Pfizer, Inc.). These match funds, and those of the Landscape 1 partners, produce a total match of \$2,466,906 (52.7%) for this program. DFGFI also contributed leveraged funding in the amount of \$283,000 from a grant award it received from the US Congressional Gorilla Directive, administered by USAID. The Jane Goodall Institute provided leveraged funding in the amount \$634,988 from USAID and its own institutional funding.

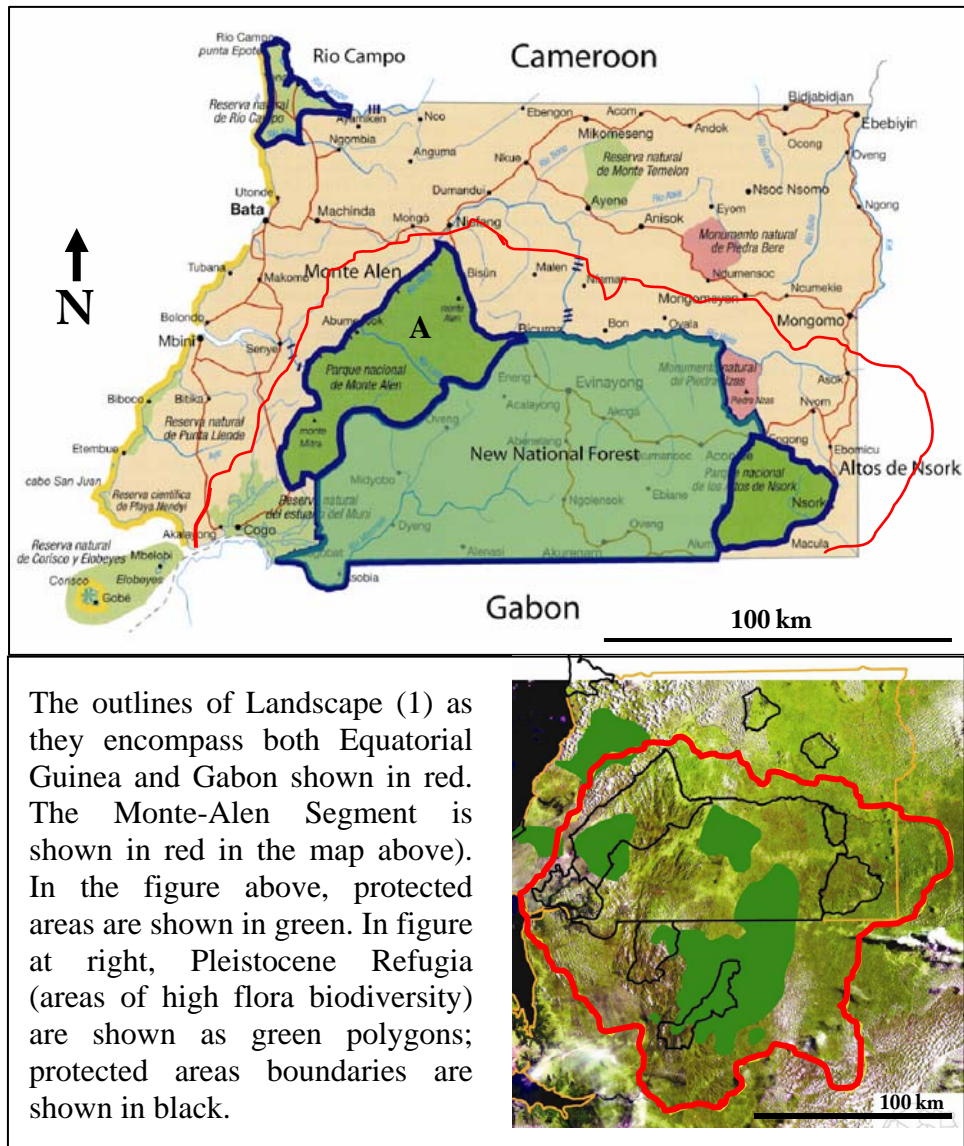
IV. THE MONTE-ALEN SEGMENT (EQUATORIAL GUINEA) OF THE MONTE ALEN – MONTS DE CRISTAL LANDSCAPE (1): MAJOR ACCOMPLISHMENTS AND ACHIEVEMENTS

6. Global Significance: This project delivered a three-year natural resource management and conservation intervention in an eco-region of approximately 1.3 million hectares in Equatorial Guinea (Figure 1). The Monte Alen Segment of Equatorial Guinea (EG) is one of the most important reservoirs for biodiversity in the Congo Basin. The segment is a Pleistocene refuge of global importance with Monte Mitra exhibiting one of the highest tree diversities as yet recorded in the Congo Basin; plant endemism within the segment is high, but many species are poorly known. The large mammal fauna is also globally significant, with one of the highest encounter rates of forest elephant for Africa recorded on the slopes of Monte Mitra. Primate diversity and endemism are also high and many large mammals, like leopard, extirpated in many comparable sites in west central Africa, are still present in the Monte Alen National Park. Avian fauna is also highly diverse although it is one of the poorest known in Africa. Up to 340 species are recorded from the Rio Muni region, which falls within the Birdlife International Cameroon and Gabon lowlands Endemic Bird Area (EBA 085) as well as within the Guinea-Congo Forest biome (A05). Monte Alen National Park is an Important Bird Area (IBA GQ004) with A1 criteria.

7. Biodiversity Threats: Hunting is a traditional and sustainable source of protein long practiced in the landscape by thinly scattered forest peoples. However, a growing commercial bushmeat trade, supplying a demand in oil-boom urban markets in EG and Gabon, has now made hunting a conservation threat (e.g., eight species on the IUCN Red List are being hunted for bushmeat in Monte-Alen NP). Timber exports were EG's principal source of foreign exchange before recent oil and gas discoveries, but concessions were unsupervised by government, and many were only vaguely mapped. Harvesting was heavy, particularly in the more accessible, okoumé-dominated coastal forests and because standards were low, many concessions were severely damaged. Agriculture occurs along road corridors that traverse the landscape, with some coffee plantations and other commercial agriculture, but very little conversion of old growth forest to agriculture is occurring. Rather, former agricultural areas are reverting to secondary forest, as rural people migrate to urban areas looking for cash-based employment. Oil discoveries in EG have created an economic boom, creating one of the fastest growing economies in the world. This is financing a wave of infrastructure development, particularly roads and urban expansion, which is now a conservation threat. Cash-rich, urban consumers of bushmeat are creating an increasing market demand, with bushmeat hunters now exploiting formerly remote forest opened up by new roads. Although national forest and conservation laws have existed for many years, they have been ignored in practice due to the government's lack of resources and interest.

8. CARPE Strategic Objective and Specific Objectives for the Project: The USAID CARPE Strategic Objective, *to reduce the rate of forest degradation and loss of biodiversity by increasing local, national and regional natural resource management capacity*, was addressed by a number of objectives for the Monte Alen segment: 1) assist

Figure 1. The Monte-Alen Segment of Equatorial Guinea in the Monte Alen – Monts de Cristal Landscape (1).



local organizations and stakeholders increase their capacity in natural resource management; 2) strengthen natural resource governance; and 3) institutionalize natural resource monitoring. CI worked with and through a consortium of local, national and international partners, to achieve these objectives. Accomplishments towards these goals are described below.

9. A New Faculty of Environmental Studies is Created with the National University of Equatorial Guinea: (see Appendix, Success Stories): With CARPE II support, a new *Facultad de Estudios Ambientales* at the National University of Equatorial Guinea (UNGE) was established. By the end of 2006, twenty-four students drawn from influential positions within EG’s environmental agencies will receive a *Licenciatura* in

Estudios Ambientales (Degree in Environmental Studies) after having completed a comprehensive two-year curriculum of formal coursework, chosen a research problem and carried out original field research, prepared a thesis to present the results of their research, and defended the thesis in a rigorous public examination. Thesis topics included park management, economic analysis, biodiversity surveys, public education, and biodiversity policy. Several students will continue their studies at foreign universities. CARPE funding also supported the construction of a separate building to house the new department, the purchase of department computer equipment, the installation of a broadband connection to the internet, and the purchase of field equipment. The graduates of the *Facultad de Estudios Ambientales* are the core of a new community of advocates for good natural resource management and biodiversity protection. Many of them already occupy influential positions in government and the private sector (one is a former minister) and their influence will grow as their careers mature and they have opportunities to formulate policy.



10. Establishing a Faculty of Environmental Studies Supports CARPE Strategic Objectives: CARPE I supported the convening of a *Mesa Redonda* (Round Table Conference) in which experts and authorities considered the state of biodiversity protection and management in Equatorial Guinea and recommended a list of priority actions, summarized in the *Declaración de Malabo*. This declaration, among other recommendations, called for increasing the capacity of UNGE to train biodiversity professionals and researchers needed by EG's system of protected areas. This CARPE II project, led by Conservation International, successfully carried out this recommendation, increasing EG's capacity to train biodiversity professionals required to manage the Monte Alen Landscape Segment. This has contributed substantially to the CARPE Strategic Objective, through Intermediate Result 3, Indicator 2.

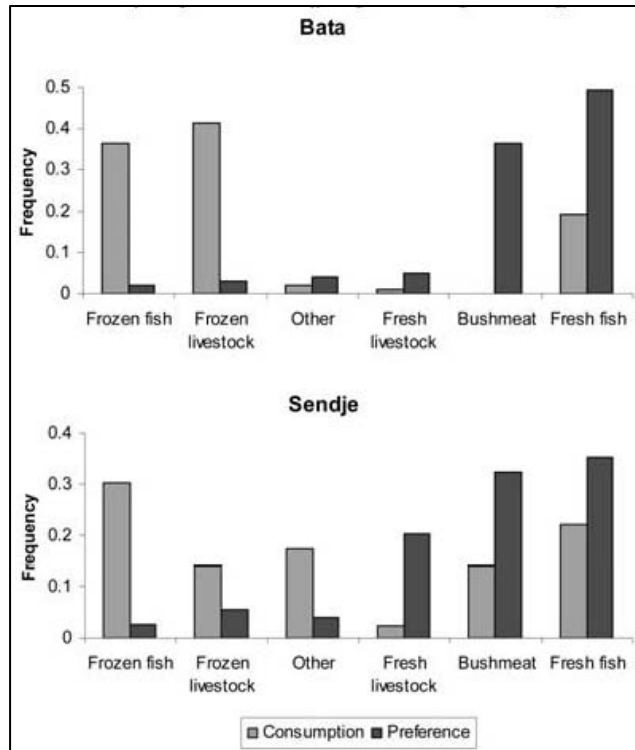
11. Socio-Economic Studies of Bushmeat Hunting Provide Baseline Data for the Landscape: Field research in Equatorial Guinea was carried out by Imperial College/ Zoological Society of London PhD students Noëlle Kümpel and Sophie Allebone-Webb. Bushmeat hunting is becoming increasingly unsustainable in west and central Africa, but management is constrained by poor understanding of the complex interactions between market, hunter and prey. Kümpel's research was focused on clarifying these interactions based on an intensive study of the village of Sendje, close to Monte Alen National Park. This cross-disciplinary study stands as one of the most complete evaluations of an entire bushmeat supply chain, tracking the route of meat from the forest to the market. This

commodity chain in Río Muni is relatively simple and short in comparison to the few comparable studies conducted in the region, such as Gabon, Ghana and the Democratic Republic of Congo. This is mainly due to Río Muni's small size and limited number of important urban centers, but also because the trade is quite open and thus meat can pass relatively unhindered from producer to consumer. The main flow of bushmeat is from the hunter via a wholesaler in Sendje (usually female traders from Bata) and a market trader in the Central Market to a Bata household consumer. There appears to be little or no bushmeat trade from Sendje to Gabon, although there are



reports of cross-border

trade from villages around Cogo in the south-west and in the sparsely inhabited south-central area of Río Muni. In both Bata and Sendje there was a negative correlation between food preference and food consumption. Frozen fish was the least preferred but most consumed food, while fresh fish and bushmeat were the most preferred, but were relatively infrequently consumed. Usually if Sendje residents had any bushmeat they would sell it to a trader for cash with which they would buy less preferred but cheaper frozen fish and use the difference to buy other necessities.



12. Kümpel conducted interviews to determine the motivations maintaining hunting activity. The majority (66%) of hunters said they hunted 'because there is no other way of making money'. When asked if they wanted their sons to be hunters, 90% emphatically said no. Overwhelmingly, hunters complained that they hated hunting (as one hunter stated, 'It is an example of the misery we have here in Equatorial Guinea'). Certainly there was not much prestige associated with hunting: for example, the general reaction to the reason, 'because the women think I'm strong', was either disgust or hilarity. One woman said that, 'trappers are the paupers of the village... they sleep in the forest like meat'. Generally, if a man doesn't have to hunt, he doesn't.

13. Allebone-Webb's research evaluated indicators of dependence on bushmeat for food and income in the villages of Beayop and Teguate lying to the east of Monte Alen National Park. Preliminary results suggest that bushmeat plays an important role the

socio-economic stability and well-being of rural communities. Access to bushmeat is associated with improved household health, income, economic stability and social security. Villages differed significantly in their use of bushmeat and those which used bushmeat more were more prosperous in several measures. Unless there is a hunter in the family, or some form of cash income to buy fish or bushmeat, animal protein is scarce in the diet. Fresh fish is time-consuming to catch, with few returns, and is usually left to young boys. Households without a hunter usually eat meals of just starch (usually cassava root or leaves) or starch with a sauce.



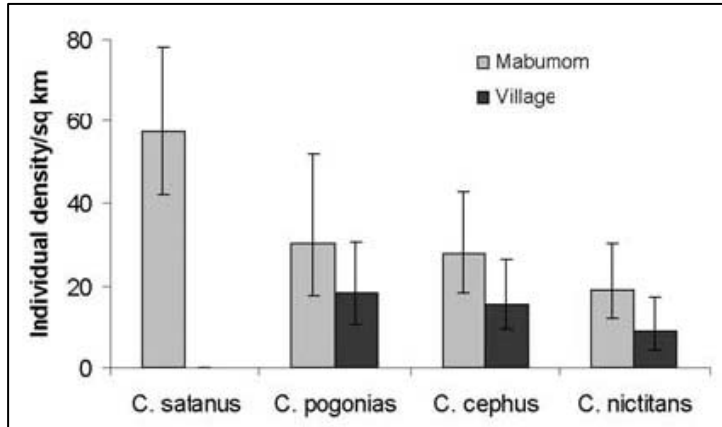
14. Biological Studies of Bushmeat Hunting Provide Baseline Data for the Landscape: CARPE IIa supported a productive program of research focused on where and how bushmeat hunting is affecting prey populations in Monte Alen National Park. A significant practical application of this research is the development of an efficient technique to estimate the biological impacts of hunting based on surveys of prey appearing in urban markets, which are far easier and cheaper than standard forest surveys. A second practical result is that the researchers involved Guineans as field assistants and also conducted formal training workshops for INDEFOR¹ staff, thereby conveying the knowledge and skills to continue the surveys as a routine part of natural resource management in the Monte Alen landscape segment.

15. Imperial College/Zoological Society of London PhD student Janna Rist analyzed data and carried out field research to measure the impact on prey populations of bushmeat hunting. Kämpel documented a dramatic decrease in primate populations with proximity to hunting villages. Near Sendje the density of the four most common primate species was far lower than near Mabumon, a hunting camp within Monte Alen National Park. This pattern was particularly striking for *Colobus satanus*, the black colobus, a slowly reproducing and slow moving species. Rist developed and calibrated a model to predict the biological impacts of bushmeat hunting based on Catch per Unit Effort (CPUE) as an index of prey population density in a bushmeat harvesting system. The development of this model allows managers to assess rapidly the impacts on prey of bushmeat activity and therefore to manage



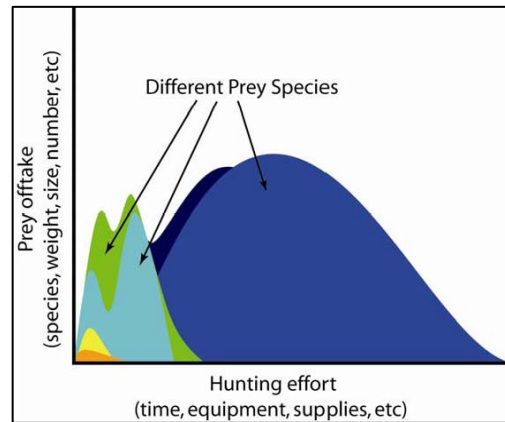
¹ INDEFOR, the Instituto de Desarrollo Forestal, wildlife authority in EG

hunting pressures. This model allows tracking the status of bushmeat species more efficiently than through relying on expensive and time-consuming forest surveys. Rist



studied the village of Midyobo Anvom to the east of the Monte Mitra National Park. Working with hunters in camps within and outside of the park, Rist collected data on the population densities of nine species of primates including gorilla and chimpanzee. These densities negatively correlated with hunting activity

documenting the impact of hunting pressure. Rist also collected data on hunting off-take – the quantity and species distribution of animals taken by hunters. Midyobo Anvom hunters killed 9,255 animals of 57 different species (including one elephant). This results in an annual bushmeat harvest of 42,127 kg (excluding the elephant). These animals came from an area of about 350- 450 km², equivalent to an annual harvest rate of 21-26 animals/km²/year or 94-120 kg/ km²/year. Ungulates, primates and rodents make up over 88% by biomass of this off-take and over 74% when measured in carcass numbers. Duikers, mostly blue and bay, and rodents, mostly porcupines, are particularly significant components of off-take, and primates also represent an important component of the off-take, at 27% by biomass.



16. Biological and Socioeconomic Bushmeat Studies Support CARPE Objectives: CARPE IIa supported a successful research program focused on the socio-economic patterns and determinant of bushmeat hunting. The results provide information critical to understand and manage this prominent threat to the animal biodiversity of the Monte Alen segment. This supports land use planning, Intermediate Result 1, Indicator II of the CARPE Performance Management Plan.

17. Capacity in Botanical Science is Strengthened: In 2004, Missouri Botanical Garden (MBG) completed a site visit and analysis of the National Herbarium of Equatorial Guinea in Bata and summarized their results and recommendations in a comprehensive report. The analysis outlined the National Herbarium’s physical infrastructure, equipment, and technical training needs in order to have the capacity to receive, prepare, care for, and manage botanical specimens. The analysis also made suggestions for how INDEFOR and Herbarium staff could improve their participation in national and regional conservation and botanical initiatives. MBG helped the National Herbarium register with

the *Index Herbariorum*, a web-based international guide to institutions, containing contact and collection information. This very basic step connects Equatorial Guinea with an international community of botanists and herbaria.

18. CARPE IIa financed the attendance of 11 Equatorial Guinean UNGE and INDEFOR students and staff at four regional workshops:

- Field Techniques Workshop, Limbe Cameroon July 2004. 20 students from six Central African countries were part of this group. Two INDEFOR staff and one UNGE student attended.
- Reseau des Botanistes d’Afrique Centrale. 25 members met to discuss regional contributions to plant conservation. This group will most likely provide the basis for a soon to be formed IUCN Central African Plant Specialist Group that will be key in red-listing projects throughout the region. Three representatives from INDEFOR attended.
- Data Analysis Workshop, Lope, Gabon. This workshop brought together 17 researchers from six Central African countries for a solid week of computer based data analysis training. Two staff from INDEFOR attended.
- Transforming data into management plans workshop, Camp Saker, Cameroon. This workshop focused on the relevance of baseline data collection to creating management plans. More than 20 representatives from Central and West Africa attended, including two INDEFOR staff and one UNGE student.

19. MBG obtained and installed new computer equipment and herbarium database management software for the National Herbarium and trained Herbarium staff in its use. MBG also trained Herbarium staff in preparing, organizing, and protecting herbarium specimens. Six INDEFOR Herbarium staff participated in a two-week field botanical and zoological expedition to Monte Mitra in Monte Alen National Park.

20. Botanical Studies at Monte Alen Provide Baseline Data for the Landscape:

The botany of Equatorial Guinea is one of the least known in Central Africa, both at a national level and within the country. During CARPE IIa, the Missouri Botanical Garden successfully carried out a program of botanical research in the Monte Alen segment. MBG collected species data along several elevation transects laid out on the eastern slope of Monte Mitra. Analysis of these data revealed that species richness is highest at mid-altitudes (500m-700m, 68 species), gradually decreasing towards lower elevations (300m, 61 species), and rapidly decreasing at higher elevation (1000m, 31 species). Species endemism is greatest at high elevations (1000m, 24 endemics), intermediate at mid-elevations (500m-700m, 38 endemics), and lowest at low elevations (300m, 28



endemics). Altitude is clearly an important factor influencing the patterns of plant diversity in the landscape. The montane character of Monte Mitra was striking, underscored by the presence of *Pseudagrostistachys africana*, a high altitude species recorded for the first time on the mainland Río Muni. Dr Miguel Leal of MBG used these data to help calibrate a GIS model of plant biogeography that also used climatic data to predict areas of concentrated plant species diversity, which Leal calls “biodiversity sanctuaries”. Two of these predicted sanctuaries lie on Equatorial Guinea’s coastal plain, outside the current limits of the Monte Alen-Monts de Cristal CARPE landscape. Another is the Monte Mitra highlands within Monte Alen National Park. The new national forest being proposed as an extension of Equatorial Guinea’s National System of Protected Areas encompasses other extensive sanctuary areas. This concept of sanctuaries provides important guidance for segment and landscape LUP.



21. **Botanical Studies and Capacity Building Contribute to CARPE Objectives:** The survey results and capacity building results have begun to build a base of knowledge about the landscape’s flora and to map that flora’s bio-geographical patterns. This information is essential for land use planners during micro-zoning. MBG involved and supported the participation of Guinean botanists in academic studies, field research, analysis, and publication, giving them opportunities for professional development. This work supports CARPE’s Intermediate Result 1, *Natural resources managed sustainably*, Indicator II target to create different use-zones within landscapes with sustainable management plans. This project also supports CARPE’s Intermediate Result 3 at the country level, *Natural resources monitoring institutionalized*, Indicator 2 target, *staff receive advanced training in some aspect of forest, biodiversity, or social impacts monitoring*.

22. **Field Survey at Monte Mitra Provides Baseline Data for the Landscape** (*see Appendix, Success Stories*): CARPE Iia completed a highly successful field expedition to Monte Mitra in the Niefang Range within Monte Alen National Park. Because of its elevation and isolation Mitra was suspected of having an unusual number of rare and endemic species. It is also relatively isolated and therefore thought to have an ecologically intact forest and animal populations. The Smithsonian Institution and MBG together organized and led the Monte Mitra expedition with logistics support from CI and INDEFOR. The results established that the Niefang Range within Monte Alen National Park, particularly its higher elevations deservedly is one of the most important biodiversity areas in the Congo Basin. Botanical data the expedition collected confirmed that Monte Mitra, an isolated area of high elevation that may have cycled through periods when it was a moist forest ecological island, is notably high in plant diversity and plant endemism. Tree diversity was one of the highest recorded in the Congo Basin. Dr. Leal of

MBG discovered a new plant species of *Scaphopetalum*, and the first record of *Korupodendron songweanum* for Equatorial Guinea. These discoveries provided additional confirmation that Monte Alen-Monts de Cristal has a higher concentration of plant diversity and plant endemism than any other CARPE landscape. The expedition recorded one of the highest densities of forest elephants in Africa. Primate diversity and endemism were also high and the expedition confirmed the presence in healthy populations of many large mammals, such as the leopard (*Panthera pardus*), that are extirpated in comparable sites elsewhere in the Congo Basin. Bird surveys showed a diverse avifauna and new records were established for the site and the country. Unfortunately, the expedition found abundant evidence of hunting, including of protected species, probably for commercial bushmeat markets in Bata and Malabo. Crop raiding by elephants and primates is frequent. The expedition included INDEFOR staff who received close mentoring and supervision while learning field survey methods. These data will form the basis of future land use planning for the Landscape as well as National Parks man management and thus contribute to Intermediate Result 1, Indicator II of the CARPE Performance Management Plan.

23. The Government of Equatorial Guinea Pledges to be a Major Conservation Actor in this Landscape (*see Appendix, Success Stories*): CARPE IIa made solid progress in convening the Monte Alen segment LUP, not only in obtaining agreement on the stakeholder groups that must be included in LUP and the planning approach, but also in establishing a proportionate and stable financial foundation to carry out the segment's LUP effectively. In the past the Government of Equatorial Guinea (GoEG) has not encouraged public participation in land use planning decisions or management. The government has entrenched habits of government control and authority, so introducing standards of public participation acceptable to CARPE and the outside world requires negotiating a fundamental change in the government's approach to biodiversity protection and natural resource management. CI has concentrated its efforts on doing this – and with success.

24. Conservation International has engaged the government of GoEG at the highest levels. In May 2005 in March 2006, and again in April 2006 CI met with President Teodoro Obiang and EG ministers. CI argued that oil wealth gave EG an opportunity to reach a high international standard in conservation if it implemented accepted best practices and established secure, long-term financial support for conservation. CI proposed five specific actions:

- 1) cancelling 500,000 ha of current timber concessions to create a CBNRM national forest;
- 2) creating a National Conservation Trust Fund capitalized with US\$15 million of GoEG funds;
- 3) developing EG's capacity in biodiversity education and research by expanding the National University's newly established Department of Environmental Studies and creating a National Biodiversity Institute;

4) improving the governance of the natural resource and environment sector by rationalizing the overlapping and conflicting jurisdictions of government ministries and agencies; and

5) signing a contract with CI to marshal technical support to accomplish these goals.

President Obiang accepted all CI's proposals and instructed the GoEG to establish a partnership with CI to achieve these objectives. This accomplishment establishes a secure and cooperative basis for convening and implementing LUP in the Monte Alen segment with GoEG endorsement and financial backing. In negotiations with the GoEG, CI has been clear that "world standards" include real public and local participation in both in planning and implementation. The GoEG has agreed and this marks a conscious break with its past practices of exclusively top-down planning and management.

25. Government of Equatorial Guinea Pledges to Support National Conservation Trust Fund. A persistent problem in the Monte Alen segment, reported in CARPE IIa annual reports, has been the lack of funding for INDEFOR, Equatorial Guinea's protected areas management agency. In Year 3 of CARPE IIa, CI succeeded in negotiating a solution to this problem. As a result of CI discussions and negotiations with Equatorial Guinea's President Obiang, GoEG ministers, and GoEG agency technical staff, President Obiang and the GoEG have signed a commitment to create a national Conservation Trust Fund dedicated to providing stable, long-term financing for the protection and management of Equatorial Guinea's biodiversity. President Obiang and the GoEG have agreed to the principle that the trust fund will meet the highest international standards of transparency and governance, with the safeguards against misuse this implies. A main deliverable of the CI contract to provide technical support to the GoEG is to design the trust fund and provide technical support for its first years of operation. In return, President Obiang and the GoEG have agreed to capitalize the fund with US\$15 million immediately on completion of the fund's design. The National Conservation Trust Fund is the first endowed conservation fund in Central Africa, the first to be entirely self-capitalized, and the first fund to meet the COMIFAC² long-term financing mechanism objective. The fund will greatly ease INDEFOR's financial difficulties, establish financial stability for UNGE's Department of Environmental Studies, and finance the establishment of a national biodiversity research program. This remarkable pledge will support CARPE's Intermediate Result 1, *Natural resources managed sustainably*.

26. Government of Equatorial Guinea Pledges to Create National Forest Corridor: An acknowledged threat to the biodiversity of Central Africa is poor woods practices and over-exploitation of the forest by timber companies. CI has negotiated with the GoEG to create a new national forest from timber concessions lying in a large tract lying between Monte Alen National Park and Altos de Nsork National Park (see Figure 1). This new protected area will be managed with and for the benefit of local communities. President Obiang and the GoEG have agreed to cancel 500,000-600,000 hectares of timber

² COMIFAC. Commission des Forêts d'Afrique Centrale, (Interministerial) Commission on Central African Forests

concessions to create a new national forest managed for the benefit and with the participation of local communities. The national forest is strategically located: it joins the existing protected areas of Monte Alen, Estuario Río Muni, Altos de Nsork, and Piedras Nzas through a central forest corridor that also includes the crucial headwaters of the Río Wele and the Río Muni catchment. The new national forest consolidates the ecological core of the Monte Alen-Monts de Cristal Landscape and creates a reinforcing mosaic of government recognized and supported management units. This accomplishment supports CARPE's Intermediate Result 1, *Natural resources managed sustainably*, Indicator II target to *create different use-zones within landscapes with sustainable management plans*, and CARPE's Intermediate Result 2 at the country level, *Natural resources governance strengthened*, Indicator I target, *at least one law or policy reform initiated per CARPE country*.

V. MAIKO TAYNA KAHUZI-BIEGA LANDSCAPE (10) MAJOR ACCOMPLISHMENTS AND ACHIEVEMENTS

27. Global Significance: This project delivered a three-year natural resource management and conservation intervention to an eco-region of more than seven million hectares in eastern Democratic Republic of Congo (DRC). This eco-region encompasses the Maiko and Kahuzi-Biega National Parks, the Tayna Nature Reserve, and the Itombwe Massif (Figure 2), and straddles the Congo Forest, a *High Biodiversity Wilderness Area* and the Albertine Rift, part of a newly designated *Global Biodiversity Hotspot*, the Eastern Afromontane Archipelago³. It is globally significant for: 1) its rich biodiversity (high species richness, high numbers of endemic species, significant numbers of globally threatened and endangered species); 2) encompassing nearly the entire range of Grauer's (eastern lowland) gorilla; and 3) its large blocks of intact forest, varying between Afromontane and transitional forests, and merging with the moist, evergreen broadleaved forests of the Congo basin.

28. Biodiversity Threats: The region is experiencing a conservation and resource management crisis due to agricultural/pastoral expansion, high levels of subsistence hunting, bushmeat extraction, exotic animal trade, extensive gold, cassiterite (tin), and coltan mining, and a severe socio-economic depression resulting from eight years of civil war. The latter has left the country's wildlife authority, the ICCN⁴, with very few resources and a low capacity for conservation action. Similarly, little capacity exists in government and civil society sectors for resource management or economic development. In terms of global conservation priorities, the region can be characterized as having a high irreplaceability and medium vulnerability; the project is thus a *high-priority conservation intervention*.¹

29. CARPE Strategic Objective and Specific Objectives for the Project: The USAID CARPE Strategic Objective, *to reduce the rate of forest degradation and loss of biodiversity by increasing local, national and regional natural resource management capacity*, was addressed by a number of specific objectives⁵: 1) the rehabilitation of Maiko and Kahuzi-Biega National Parks; 2) the expansion and continuation of a DFGFI⁶ program (begun in 2001) to establish community-managed nature reserves strategically positioned in a corridor zone between the Maiko and Kahuzi-Biega National Parks; and 3) the development of a community participatory resource management initiative in the Itombwe Massif (Figure 2). The project also aided stakeholders in non-protected areas of the Landscape to assess their land use needs and integrate their land use planning with those of protected areas in the region. The project is an integrated approach that combines conservation efforts of ICCN and community NGO staff, building the organizational and

³ Mittermeier R A, Mittermeier C G, Brooks T, Pilgrim J, Konstant W, da Fonseca G A B & Korros C (2003) Wilderness and biodiversity conservation. *PNAS* 100: 10309–10313.

Mittermeier, R, Robles Gil, P, Hoffman, M, Pilgram J, Brooks, T, Geottsch Mittermeier, C, Lamoreux, J, da Fonseca, G A B (2004) *Hotspots Revisited*. Cemex Books on Nature.

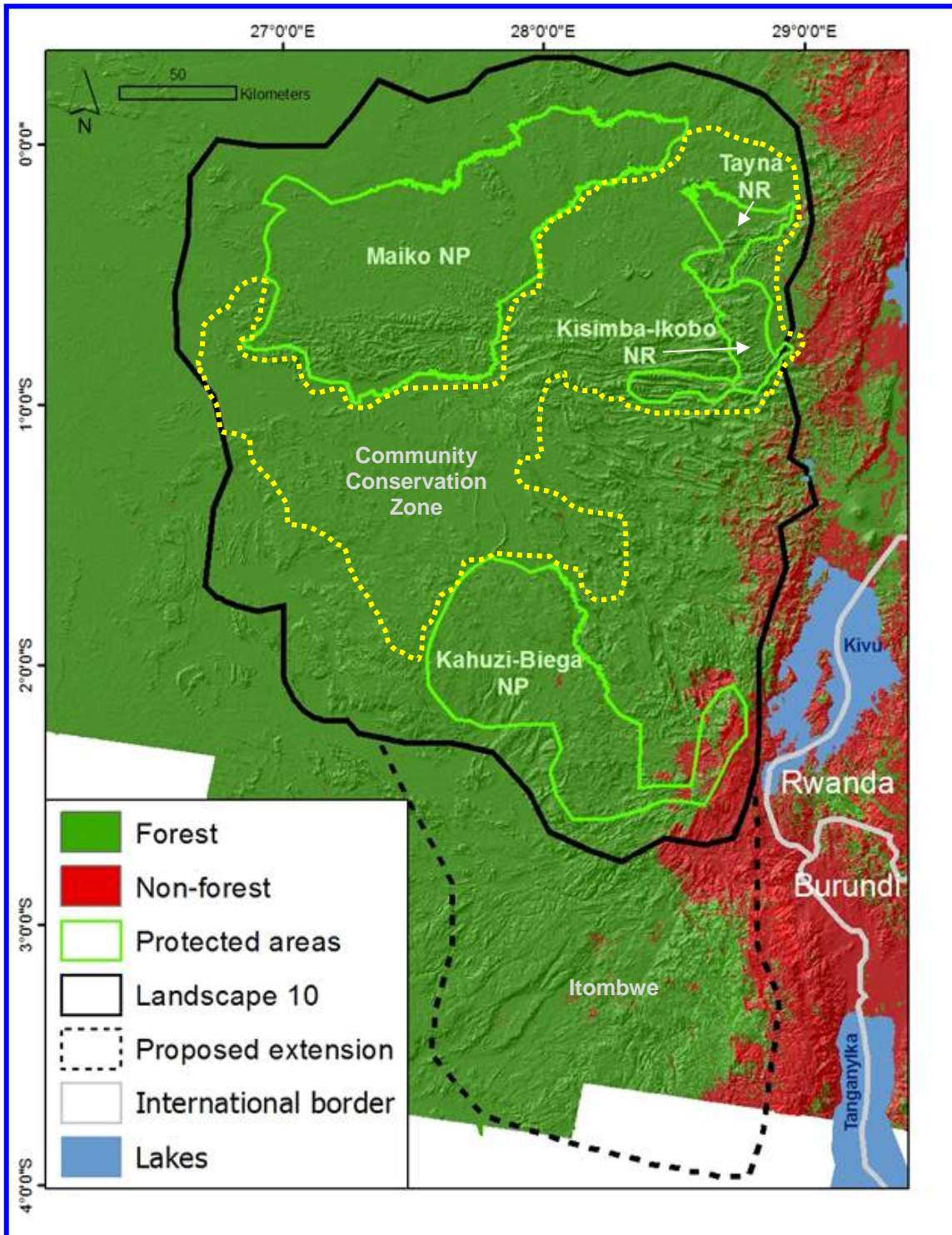
Myers N, Mittermeier R A, Mittermeier C G, da Fonseca, G A B & Kent J (2000) Biodiversity hotspots for conservation priorities. *Nature* 403: 853–858.

⁴ ICCN, Institut Congolais pour la Conservation de la Nature, the government wildlife authority in DRC

⁵ The objectives of the project as they were described in the original proposal are found in Appendix 3

⁶ DFGFI, Dian Fossey Gorilla Fund International, a CI implementing partner for the Landscape

Figure 2. Overall Map of Landscape 10.



The Itombwe extension to the Landscape is delineated by dashed line to the south. Two new protected areas, the Tayna Nature Reserve and the Kisimba Ikobo Nature Reserve, are shown to the northeast (green); these are sanctioned by the government and managed by local communities. The area in which community conservation reserves like those of Tayna are being developed is delineated by dashed yellow line. NP = National Park; NR = Nature Reserve.

management capacity of both, and preparing them for long-term, sustainable natural resource management. To sustain and incentivize stakeholder interest, the project also provided economic stimulation and rural development to local stakeholders participating in community-based resource management and conservation.

30. The major accomplishments, achievements for this project, which contributed to the CARPE Strategic Objective, are described in the sections below. This is followed by a short description of challenges encountered.

31. **The Land Use Planning Process Convened**: During this reporting period (September 2006), through several Landscape meetings and the preparation for proposal submission for CARPE IIa RFA No. 623-A-060026, the partners (with all stakeholders) prepared an *Integrated Land Use Planning Strategic Document*. This document is an inventory of progress achieved towards a final Land Use Plan and provides a way forward to complete the plan. It reaches the USAID target for Intermediate Result 1, Indicator I of the CARPE Performance Management Plan.

32. **A Sustainable Financing Plan Developed**: Good progress was made towards creating sustainable financing mechanisms for this Landscape, notably, the earmarking of \$2 million dollars from CI's Global Conservation Fund for endowment funding (with an equal amount of matching funding that DFGFI will need to secure). This will produce a \$4 million dollar trust fund to support the Maiko National Park (NP) and community conservation zone (UGADEC⁷) between Maiko and Kahuzi-Biega NPs, and is targeted to begin in calendar year 2008. This will help support sustainable management for two zones in the Landscape, supporting Intermediate Result 1, Indicator II of the CARPE Performance Management Plan.

33. **Benchmark Progress towards Sustainable Management Planning for Kahuzi-Biega and Maiko National Parks**: Interim management plans for calendar years 2005 and 2006 were developed in regular ICCN CoCoSi⁸ meetings/workshops for both Kahuzi-Biega and Maiko NPs. Long-term management planning and monitoring approaches were discussed by partners and ICCN staff in two Landscape meetings held in FY 06. The ICCN organized a stakeholder meeting/workshop in Goma in September, 2006 to generate a standardized approach to National Park management planning. Progress towards generating sustainable management plans for these two national parks will inform the process of long-term land use planning for the Landscape in general, and supports Intermediate Result 1, Indicator II of the CARPE Performance Management Plan.

34. **Maiko National Park No Longer a "Paper Park"**: When the CARPE-supported program began in October 2003, Maiko had never really functioned as a protected area despite having been identified as a Hunting Reserve by the Belgian colonial authorities in

⁷ UGADEC, *Union des Associations de Conservation des Gorilles pour le Développement Communautaire à l'Est de la République Démocratique de Congo*.

⁸ CoCoSi, a *Committee for Site Coordination* established for each National Park and sponsored by the ICCN (*Institut Congolais pour la Conservation de la Nature*), the DRC Wildlife Authority

1938, and then later gazetted as a National Park by the previous government of Zaire in 1970. This status, however, did not afford it any real protection, since it never received any international support, was largely neglected by national authorities to the extent that a conservation management plan was never developed, and since 1996, the civil wars in DRC had prevented the few staff who had not fled the area from entering the park except on rare occasions. When this program began, there was only one ICCN Warden (working out of Butembo), with only a handful of unpaid, untrained, and unequipped guards. CI and our CARPE partners were able to:

35. - Put more than 140 Maiko staff in place: Maiko National Park has hired 40 guards each for three sectors (120 total), a Chief Warden, two other sector Wardens and three assistant Wardens, and opened an office in Butembo. Field staff have moved to temporary stations near the park and are working with local authorities and the ongoing unification process. During the reporting period, Maiko staff received salary primes from DFGFI and WCS⁹ through non-governmental matching funds. They now have uniforms and equipment, and all guards have received paramilitary and biodiversity training. They are provided basic health care; this keeps them healthy and motivated and also prevents cross-transmission of disease to local fauna.



Maiko Now Functioning as Protected Area:
Maiko Guards on Patrol

36. - Cover 35% of Maiko Park with Patrols: In two sectors (Northeast and South Sectors) Maiko guards have begun anti-poaching patrols into the Park, and are now patrolling more than 35% of the surface area of the park. Since March, 2004, Maiko NP has reopened six patrol stations, conducted 170 patrols (555 patrol days in the park) have arrested 33 illegal poachers, seized five arms, dismantled more than 100 cable snares, seized 11 ivory tusks and two okapi skins, and confiscated four chimpanzees that have been sent to various sanctuaries. ICCN scientific staff participated in several training sessions on techniques for bio-inventorying, monitoring, GIS science, and database management. They have completed DFGFI- and WCS-sponsored biological inventories for large mammals in the southern and northeast sectors of the Park.



Bridge built as part of road rehabilitation in northeast sector of Maiko National Park. This bridge, built by temporary labor hired from local communities, functions to provide access to the park for ICCN staff, and also provides local farmers access to market.

⁹ Wildlife Conservation Society, a technical partner for Maiko NP during this reporting period

Before the surveys, Maiko staff participated in aerial reconnaissance and remote sensing surveys to prepare for these on-the-ground interventions. They currently use GIS-based maps and a latitude-longitude quadrant system to collect data on biodiversity and anthropogenic threats.

37. - **Improve Maiko Infrastructure:** More than 49 km of road and 25 bridges have improved access to the park for rangers and market access for the local population in two sectors. Construction has begun on two patrol posts as well.

38. - **Implement Maiko National Park Operations and the CARPE Management Plan:** The development of an interim management plan and implementation activities for Maiko NP has addressed the initial critical conservation needs for this protected area, while supporting the process of long-term land use planning and implementation, Intermediate Result 1, Indicator II of the CARPE Performance Management Plan.

39. **Kahuzi-Biega Park Operations Strengthened: Lowland Sector Moves from a “Paper Park” towards Protected Area Controlled by ICCN:** When the CARPE-supported program began in October 2003, Kahuzi-Biega NP had become a casualty of the DRC’s two civil wars; the 600 km² highland area was marginally under control of the ICCN (through long-term support of the German GTZ), while the 6,000 km² lowland area had become a no-man’s land of uncontrolled poaching and coltan mining, balkanized into areas controlled by various armed rebel groups, primarily the Mai-Mai and Interahamwe. CARPE support enabled CI and our partners to:

40. - **Provide Kahuzi Training, Equipment, and Patrol Stations:** First, 34 guards received training on GPS techniques, data collection, and community conservation. The project also facilitated paramilitary and law enforcement training for 40 guards, provided by the DRC government army in Bukavu, and in Year 3, WWF¹⁰ continued training by modules on anti-poaching techniques and gorilla monitoring. Second, through the provision of computer and communications equipment, as well as off-site training for some staff, Kahuzi-Biega staff were provided important GIS¹¹ and database analytical tools for their conservation work. Third, the staff were provided much-needed field equipment (tents, backpacks, bicycles, radios, raincoats, boats). Finally, the program supported the rehabilitation of seven park and patrol stations, (four in the lowland sector, three in the highland sector), as well as two research stations in the corridor between the highland and lowland sectors.



Kahuzi-Biega ICCN field staff and ten student volunteers collect data on ecology in the highland sector.

¹⁰ WWF, Worldwide Fund for Nature, CI’s implementing partner the southern half of the Landscape

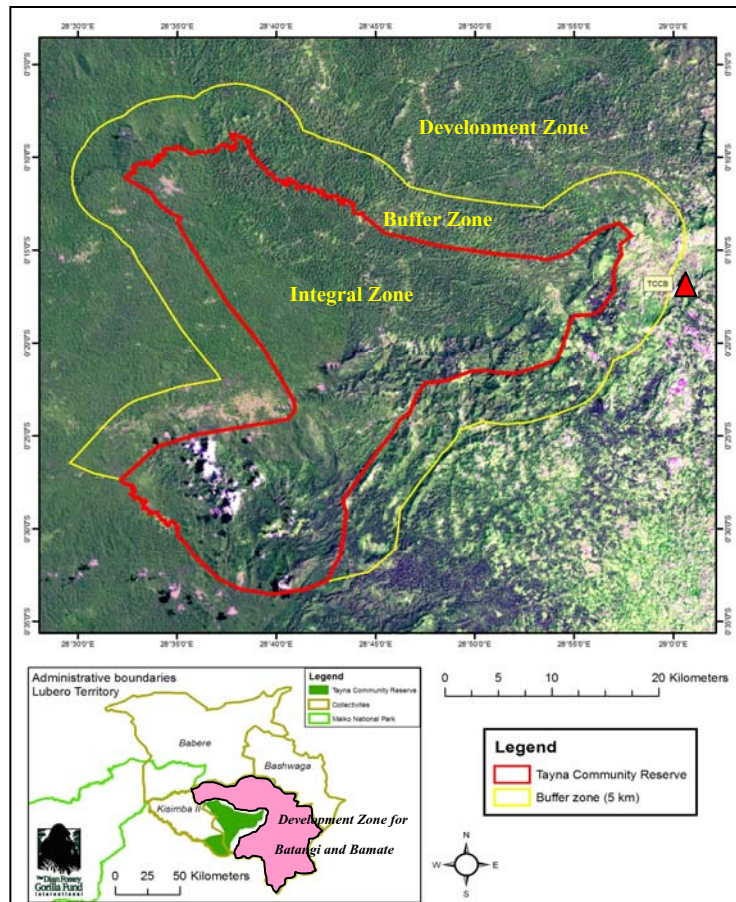
¹¹ GIS, Geographic Information Systems

41. - **Reach 40% of Kahuzi Park with Patrols:** The surface area of the park controlled by ICCN increased from 10% (over the past 8 years) to beyond 40% by September, 2006 (but see paragraph 64). Importantly, ICCN presence was increased in the lowland sector, which previously was not under ICCN control. Anti-poaching patrols in the north lowland sector (originating from Itebero) led to the discovery and eviction of more than 100 illegal miners. In the southwest of the lowland sector, ICCN staff began a monitoring program for three gorilla groups, bringing to 11 the number of gorilla groups that are regularly monitored in Kahuzi-Biega (8 in the highland sector). At present, Kahuzi ICCN staff have collected more than 2000 GPS waypoints describing gorilla and chimpanzee group movements, habitat, human-based threats, and park boundary demarcation.

42. **Two New Protected Areas are Created by a Unique Community Conservation Approach Based on the Tayna Gorilla Reserve Model** (see Appendix, Success Stories): In April, 2006, the “Tayna Nature Reserve”, a community-managed reserve with a 900km² integral zone, was created by an Arrêté signed by the Minister of Environment, thereby officially entering into the DRC network of protected areas. Importantly, however, the management of the Reserve remained with the Tayna Gorilla Reserve NGO (RGT) via a long-term management contract with the ICCN.

43. A second NGO, ReCoPriBa (Réserve Communautaire des Primates de Bakambule) had also sufficiently advanced with its project that it also received a Ministerial Arrêté declaring the creation of the Kisimba-Ikobo Nature Reserve (1,300 km² integral zone, see Figure 3) and a management contract with the ICCN subcontracted the management of the reserve to ReCoPriBa. Thus, in this reporting period, through CARPE support, two new protected areas were created with a total integral zone area (completely protected, no extraction) of 2,300 km². This novel approach, which combines community conservation with a national plan for creating protected areas, is now being modeled throughout the UGADEC community conservation zone (Figure 2, and described below), as well as

Figure 3. Zoning for the Tayna Nature Reserve and Surrounding Community



in other areas of DRC, such as Equateur Province.

44. At the site level, the creation of these two new protected areas support CARPE's Intermediate Result 1, *Natural resources managed sustainably*, Indicator II target to *create different use-zones within landscapes with sustainable management plans*. The effective conversion of a portion of a CBNRM zone into a protected area legally codifies land use at the national level. This achievement also supports CARPE's Intermediate Result 2 at the country level, *Natural resources governance strengthened*, Indicator I target, *at least one law or policy reform initiated per CARPE country*. The two Arrêtés legally creating the Nature Reserves effectively create new policy for resource management, i.e., a unique community conservation approach, using the revised version of the DRC Forestry Code implemented in August, 2002.

45. Capacity Increased for Local NGOs Conducting Community Conservation through the Creation of the UGADEC Federation (*see Appendix, Success Stories*): As a result of the success of the Tayna Gorilla Reserve, the Mwamis, traditional sector and village Chiefs, and landowners for other traditional governance areas in this landscape also organized community-based conservation projects modeled after Tayna in which they wish to create biodiversity reserves and stimulate rural development. They formed UGADEC, a federation of eight community-based local NGOs, to organize their conservation and development activities following the model of the Tayna Gorilla Reserve. These projects are located in a corridor zone between Maiko and Kahuzi-Biega NPs (Figure 2). UGADEC provides a forum for political and technical exchange and has proven to be an excellent tool for combating ethnocentrism, tribalism, and xenophobic tendencies between ethnic groups within the landscape. UGADEC has thus provided an organizational structure that functions to standardize and coordinate the management approach and conservation activities of these projects. During this reporting period, CI and DFGFI, with CARPE support:

46. - **Strengthened Field Capacity for UGADEC**: UGADEC field staff (approximately 150) were provided salaries, equipment, supplies, and training. Field activities for the UGADEC staff were organized around a *protection* component (with staff provisioned according to surface area size) and a *scientific and socioeconomic monitoring* component. The UGADEC projects are presently in various stages of data collection on biodiversity and ecology (mapping distribution of primary forests and large mammals), and the distribution of human populations and land use. While collecting these data, field teams simultaneously conduct education and awareness-raising campaigns in the field, focusing on: educating locals about the value of preserving biodiversity; the goals and objectives of community-based conservation projects to establish nature reserves; and informing isolated locals about species already protected by Congolese law, customary law, as well as those species identified as endangered and vulnerable on the IUCN¹² Red List. Staff from all projects have undergone DFGFI-sponsored training seminars and workshops in which they: learn and/or strengthen their skills in GPS¹³-based, standardized data collection; develop standardized messages for conservation education (UN Earth Charter,

¹² IUCN, International Union for the Conservation of Nature

¹³ GPS, Global Positioning System

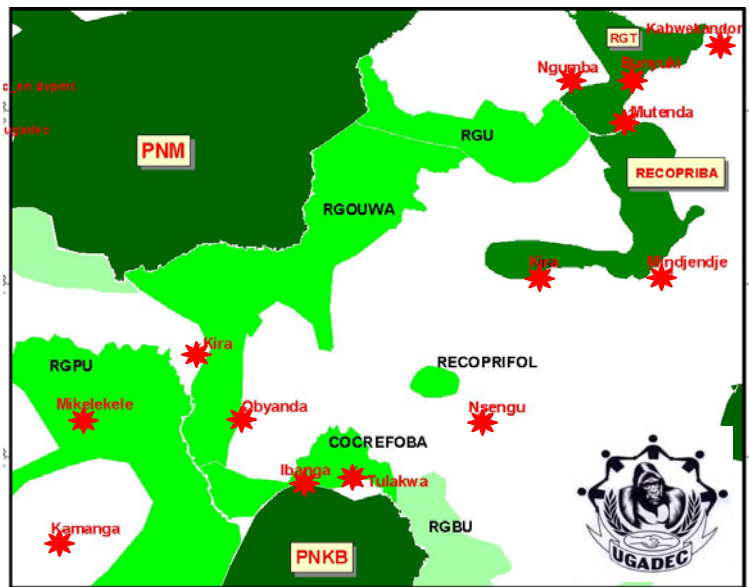
IUCN Red List, etc.); and by training and role-playing skits, standardize their techniques and approaches for contacting isolated villages in their project areas. Further, these seminars provide an excellent forum for training staff about one UGADEC's primary goals: the linkage of integral zones for all proposed reserves to create a biological corridor zone between Maiko and Kahuzi-Biega NPs.

47. - Strengthened Scientific Capacity of UGADEC (see Appendix, Success Stories):

The scientific teams of UGADEC and the Tayna Gorilla Reserve have made important discoveries concerning the distribution of Grauer's gorilla in Eastern DRC¹⁴. At the Torino, Italy conference for the International Primatological Society in August, 2004, David Sivalinga (Tayna Director) and colleagues reported on a large meta-population of these gorillas (Figure 6, Tayna Sector), which had been previously omitted by western scientists in reviews during the 1990's.

Because of their research, this population, estimated to contain between 400-600 gorillas, is now considered one of the priority populations for conservation in the region. Similarly, in the south of Maiko, where UGADEC staff worked alongside Maiko staff, they described another population, previously thought to number only about 30 gorillas by western scientists; it is now estimated to contain at least 400 gorillas¹⁵. During these surveys, it is important to note that data are also collected on all medium and large mammals, anthropogenic disturbance, and bushmeat consumption in local markets (Figure 7).

Figure 4. Location of 10 UGADEC Field Stations



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48. During this reporting period, UGADEC developed a database with more than 6,000 GPS waypoints describing location of biodiversity, villages, habitat characteristics, and anthropogenic disturbances. A Hand Guide was also published by DFGFI for collecting field data using a quadrat system that ensures as much surface coverage as is possible (Figure 5). During the last year of the reporting period (FY 06), the UGADEC GIS scientific team completed unsupervised analyses for habitat classification throughout the UGADEC zones (Table 2); this information is then provided to the field teams as they conduct participatory mapping with local communities.

¹⁴ Nixon S C, Ngwe E E, Mufabule K, Nixon F, Bolamba D, Mehlman P T (2005). The Status of Grauer's gorilla in the Maiko South Region: A Preliminary Report. *Berggorilla*, November. Supported by CARPE funding.

¹⁵ Mehlman P T (in press). Status of wild gorilla populations. Chapter 1 in *Conservation in the 21st Century: Gorillas as a Case Study*, eds., Stoinski T, Steklis D, Mehlman P. Springer Press, New York.

Figure 5. Data mapping for one of the UGADEC projects situated on the north border of Kahuzi-Biega National Park.

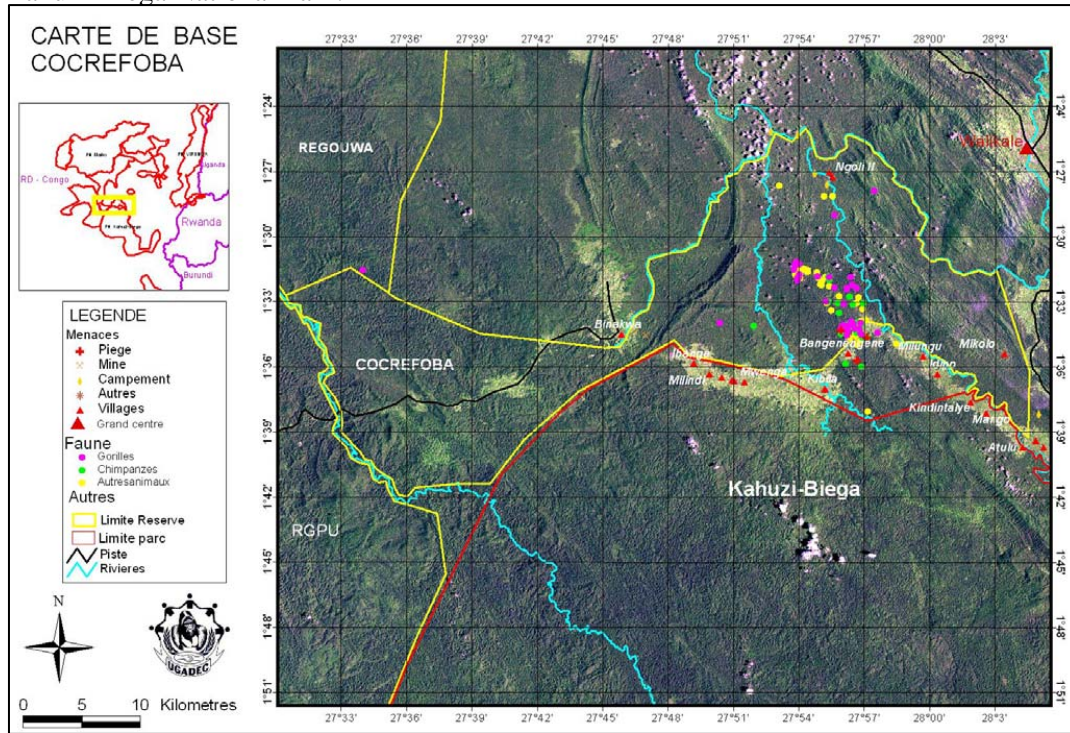


Table 2. Habitat classification by UGADEC GIS team for the integral zones of Tayna and Kisimba-Ikobo NR, for another 7 proposed integral zones by UGADEC projects, and for Maiko NP (unsupervised analysis). Note that if the UGADEC projects gazette these integral zones (dependent on ongoing community mapping), the total size for protected areas of the UGADEC zone will be 13,015 km². Also note that the average percentage of intact forest for these areas is 92.9%.

RESERVE	FORET INTACTE		FORET DEGRADEE		ABSENCE DE FORET		NUAGE / NON DETERMINE		OMBRE / NON DETERMINE		TOTALS
	Km2	%	Km2	%	Km2	%	Km2	%	Km2	%	
TAYNA	764	86,43%	43	4,90%	8	2,45%	5	0,35%	64	5,94%	884
ILSN	146	51,05%	115	40,21%	7	2,35%	1	0,35%	17	5,94%	286
KISIMBA IKOBO	966	76,00%	195	15,33%	11	0,87%	3	0,24%	96	7,55%	1,271
RGU	1135	98,52%	3	0,32%	1	0,09%	1	0,09%	12	1,04%	1,152
COCREFOBA	652	92,75%	20	2,81%	0	0,00%	1	0,14%	30	4,27%	703
RGPU	3799	96,57%	91	2,30%	0	0,00%	0	0,00%	44	1,12%	3,934
REGOUWA	3193	95,17%	87	2,60%	0	0,00%	3	0,09%	72	2,15%	3,355
RECOPFOL	966	83,20%	195	16,81%	11	0,95%	3	0,26%	96	8,27%	1,271
REGOLU	1394	87,56%	198	12,49%	0	0,00%	11	0,69%	13	0,82%	1,616
MAIKO	10,596	96,85%	165	1,52%	0	0,00%	50	0,46%	130	1,20%	10,941
TOTALS	23,611	92,9%	1,112	4,71%	38	0,27%	68	0,37%	574	2,40%	25,413

Figure 6. Current known distribution of Grauer's gorillas in eastern DRC. UGADEC scientific staff have been instrumental in locating new and under-estimated priority populations of this endangered subspecies. UGADEC field data (GPS points of nests and trail) are indicated in orange.

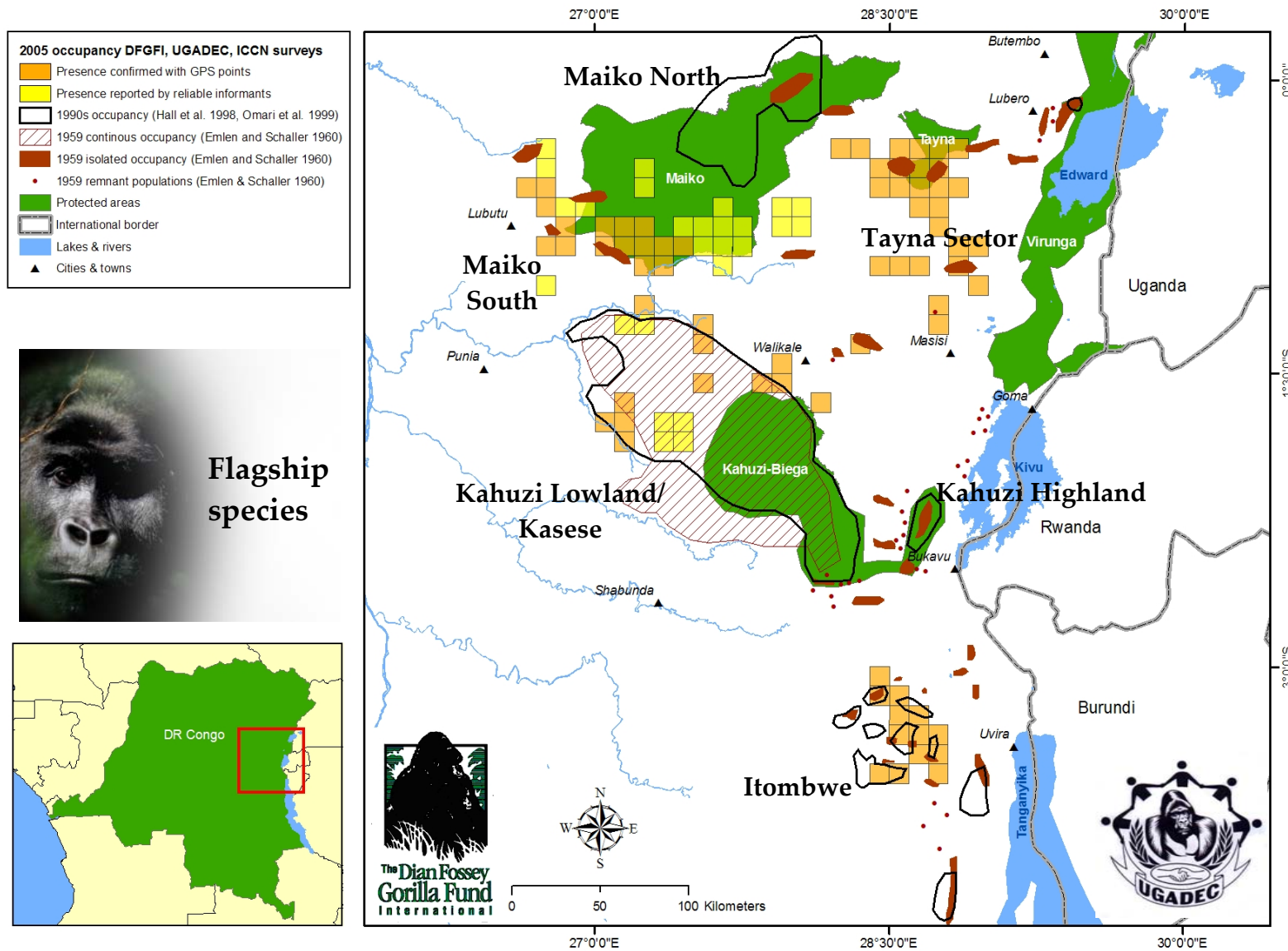
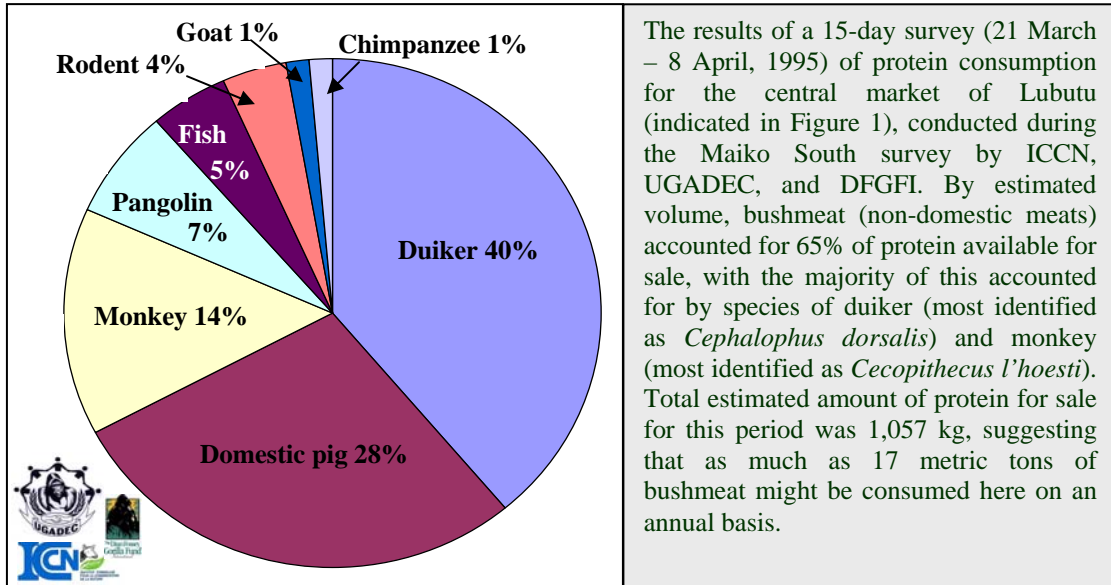


Figure 7. Results of short bushmeat study conducted by ICCN and UGADEC staff.



49. - **Enabled UGADEC to Meet CARPE Management Plan Benchmarks:** The target benchmark for this reporting period was to complete 25% of a Land Use Plan Design for the UGADEC CBNRM¹⁶. In general, this Federation of projects has achieved excellent progress towards accomplishing the tasks assigned it in the original CARPE planning process UGADEC completed more than 75% of each of 10 of 12 task level activities for an overall “progress index” of 83.3%. One of the projects, ReCoPriBa, will now join Tayna in having a legal mandate at the national level, and it will be under contract with ICCN to provide management for the Kisimba-Ikobo Nature Reserve. All UGADEC projects have received NGO status from the government, and UGADEC itself has received its “personnalité juridique” status at the national level. As part of UGADEC’s interim land use planning process, several of the projects were able to complete their participatory mapping with stakeholders in the field during this reporting period, while three submitted their dossiers to the Provincial Authorities, the first step in the process towards receiving national recognition as nature reserves. The development of an interim management plan, the implementation activities begun in the UGADEC federation, and the land use planning activities (zoning) in these projects are addressing the critical conservation needs for this area and strengthening civil society as the country emerges from civil war. This supports the process of long-term land use planning, Intermediate Result 1, Indicator II of the CARPE Performance Management Plan.

50. **A Community-Managed University for Conservation Biology is Created** (see Appendix Success Stories): During this reporting period, the CARPE program supported the development of a unique institution in North Kivu Province in eastern DRC: a government-recognized institution of higher learning, completely managed by local stakeholders. This university, the Tayna Center for Conservation Biology (TCCB), is

¹⁶ CBNRM, Community Based National Resource Management Zone as per CARPE

located near the Tayna Nature Reserve (Figure 3, red triangle) and focuses its curriculum on conservation biology. The core of the TCCB is three primary buildings: 1) a classroom complex with three large classrooms and a computer laboratory facility; 2) a dormitory and library complex, capable of providing lodging for more than 100 students; and 3) a



TCCB University facilities from a distance

multipurpose building including a large kitchen and dining area. The students were provided scholarships that paid for their room and board, school fees, and school materials. The majority of students come from UGADEC projects as the children of stakeholders who ceded their hereditary stewardship rights over certain forests that were converted to integral zones of the reserves.

51. Of the original cohort of more than 100 students, by September, 2006, 67 of them had completed their coursework and taken their final exams. Forty of these students passed their exams, and by the end of calendar year 2006, will have gone through the formality of defending their theses (based on field projects they conducted in the UGADEC zones), in order to receive their three-year degrees (equivalent to a Bachelor's Degree). The remaining 27 students need remedial work for 1-2 courses and will complete the same process in early 2007, going on to receive their degrees as well. Students with degrees, in exchange for their scholarships, are required to work in their UGADEC projects for a two-year period, starting in 2007.

52. The TCCB university both functions as an incentive program providing concessions to stakeholders ceding their traditional rights over areas converted into Nature Reserves, and a capacity building program, providing skill sets to students who will then form the next generation of conservationists for this region.. Professors for the TCCB have been drawn from universities throughout the country: Kinshasa, Kisingani, Bukavu, and Butembo. In addition to the students on scholarship, the TCCB also functions as a day school, and there are another 180 students from the surrounding area who are attending the university (some pay minimal fees). At the site level, this higher education program for conservation biology and management supports CARPE's Intermediate Result 1, *Natural resources managed sustainably*, Indicator II target to create different use-zones within landscapes with sustainable management plans. This project also supports CARPE's Intermediate Result 3 at the country level, *Natural resources monitoring institutionalized*, Indicator 2 target, *staff receive advanced training in some aspect of forest, biodiversity, or social impacts monitoring*.

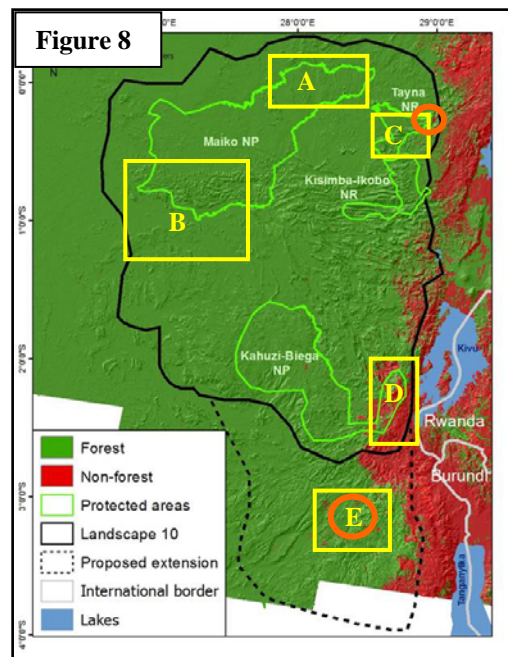
53. **Participatory Conservation/Resource Management Underway in the Itombwe Region:** During this reporting period, the most significant achievement for the Itombwe CBNRM was the signing of the stakeholder agreement in June, 2006 to create a new protected area for this region. The agreement was signed by 43 stakeholder

representatives from the region and submitted as part of the dossier to the Ministry of Environment seeking the creation of a Nature Reserve, composed of a protected area and mixed usage zones in the Itombwe Massif. The dossier also included a proposed Ministerial Decree that was vetted with stakeholders and a biological and socioeconomic survey detailing the spatial distribution of stakeholder usage of the forests in this region. The dossier was submitted to the Ministry in August, 2006, and at the time of this report is awaiting a signature from the Minister of Environment. The creation of this protected area plan for Itombwe supports the process of long-term, land use planning, Intermediate Result 1, Indicator II of the CARPE Performance Management Plan.

54. Biological and Socioeconomic Surveys Provide First Baseline Data for the Landscape:

During the reporting period, six biological and threats inventories were conducted throughout the Landscape (Fig. 8, yellow rectangles A-WCS-ICCN, B-DFGFI-ICCN-UGADEC, B-WCS-ICCN, C-UGADEC-DFGFI, D-WCS-ICCN, E-WCS). These are the first quantitative surveys of large mammals for this area since the early 1990's

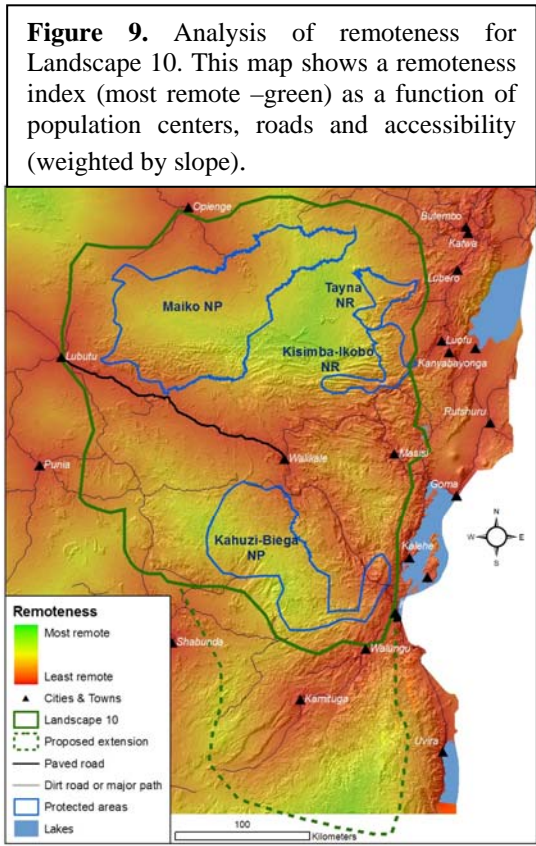
and as such provide important baselines for further conservation and resource management planning. Further, since National Park and community field staff participated in five of the six, they provided important capacity building for Congolese partners. In general, the surveys indicated significant declines in elephant populations, with other large mammal populations being significantly impacted by hunting and bushmeat trade (often local), but with abundances at levels suggesting that in many areas, they could repopulate with a diminution of current anthropogenic threats. Gorilla populations, although losing habitat (25% estimated since Schaller's surveys in 1959¹) and declining and showing fragmentation in some areas (E – Itombwe), are larger in some areas than previously estimated in the early 1990's (B – South Maiko C- Tayna)¹⁷.



A recent book chapter also summarizes the current state of gorilla populations in this Landscape¹⁴. Two socio-quantitative economic surveys were also conducted in this reporting period (orange circles in Figure 8), one in Itombwe by WWF and WCS (E in Figure 8), and a smaller pilot study in the northeast of the Tayna area by DFGFI, the Jane Goodall Institute, and UGADEC staff (C in Figure 8). These data, combined with ongoing opportunistic socioeconomic data collection by UGADEC (location of villages, size and demographic estimations of villages, primary crops, location of illegal or artisinal mines, etc) will form the basis of future land use planning for the Landscape and contribute to long-term, land use planning, Intermediate Result 1, Indicator II of the CARPE Performance Management Plan.

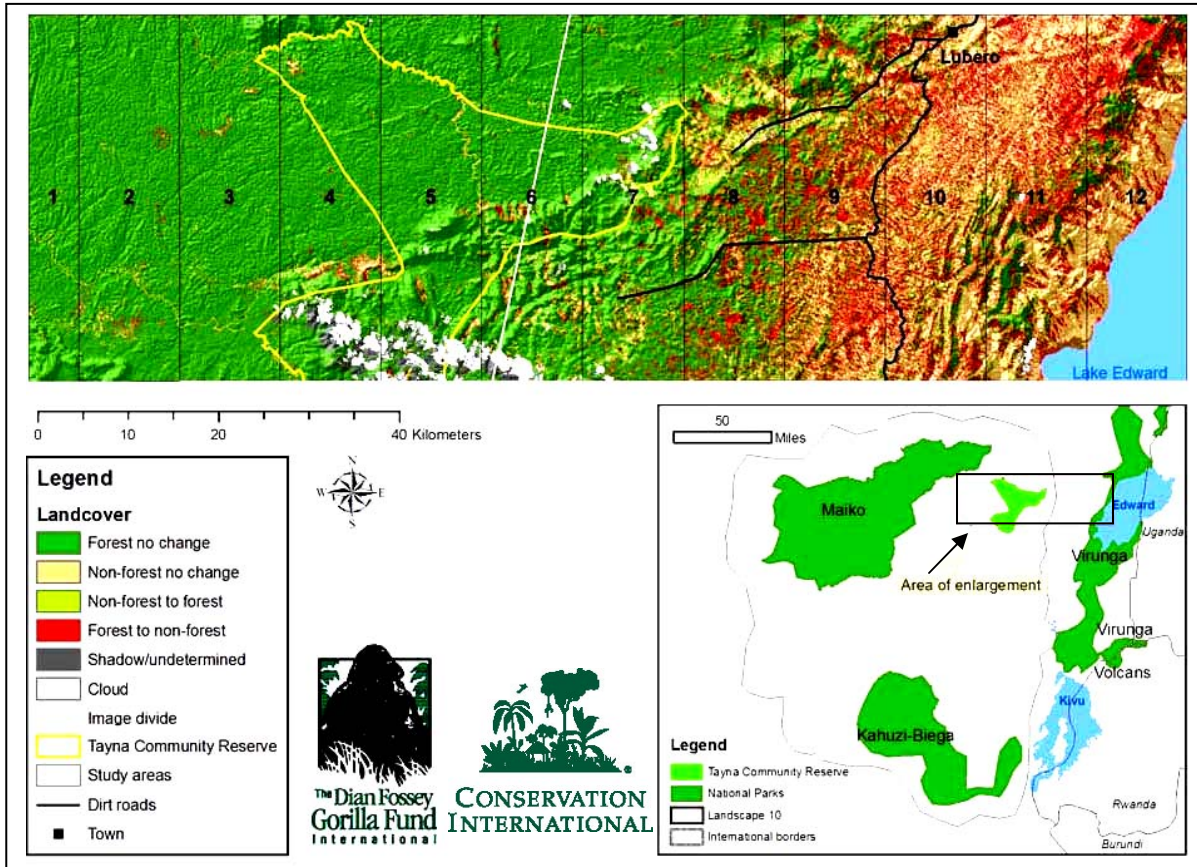
¹⁷ These reports are available from DFGFI and WCS, and are included in the CI CARPE Annual Report (FY 06) as Means of Verification.

55. Remote Sensing Analyses Contribute to Land Use Planning Process: A series of remote sensing analyses during the reporting period contributed to understanding the spatial patterns of location of intact forest, habitat loss, and anthropogenic impact throughout the Landscape. Unsupervised analyses of the entire Landscape indicate the presence of large intact forest blocks, with 81% forest coverage for the original limits of Landscape 10. In the protected areas and developing protected areas of UGADEC, forest cover reaches 89-93% (Table 2). Remote sensing provided many clarifications for locations of rivers, villages, boundaries of protected areas and administrative limits, and improved greatly the original mapping baselines, which in many cases dated from the Belgian Colonial period. Both ICCN and UGADEC staff were trained on the use of geo-referenced satellite maps and were provided GPS units, field maps and manuals, thus aiding them to navigate and work in the field with high levels of precision. As a result, all land use planning activities in this Landscape were GIS-based, contributing to accurate planning and field activities, supporting Intermediate Result 1, Indicator II of the CARPE Performance Management Plan.



56. Remote Sensing Change Detection Analysis Quantifies Forest Loss in Northeast of Landscape: A supervised GIS change detection analysis was conducted by DFGFI for the northeast sector of the Landscape (and continuing out of the Landscape boundary to Lake Edward), indicating that over 10 years (circa 1990-2000) approximately 52% of forest was lost in the sample area (black rectangle in Figure 10) from the boundary of the landscape east to Lake Edward, while inside the Landscape, from its boundary east almost to the Maiko NP, only 3.4% of forest was lost⁶. This underscores the process and location of agricultural and pastoral conversion for this region. People living at high densities in the Albertine Rift Escarpment (estimated to often exceed 300 people per km²) are moving west into the adjacent forests. The Tayna Gorilla Reserve, just adjacent to the areas of high degradation in the east, will effectively form a barrier for further degradation to the west and into the interior of the Landscape. This study supports Intermediate Result 1, Indicator II of the CARPE Performance Management Plan.

Figure 10. Change detection of satellite images from circa 1990 to 2000 indicates 52% forest loss just east of the landscape in the Albertine Rift (sample blocks 9-12, including Virunga National Park). Red indicates change from forest in 1990 to non-forest by 2000-2001).



57. Change Detection Study of Encounter Rates in the Tayna Reserve Provide first Quantitative Evidence for Success of Community Conservation:

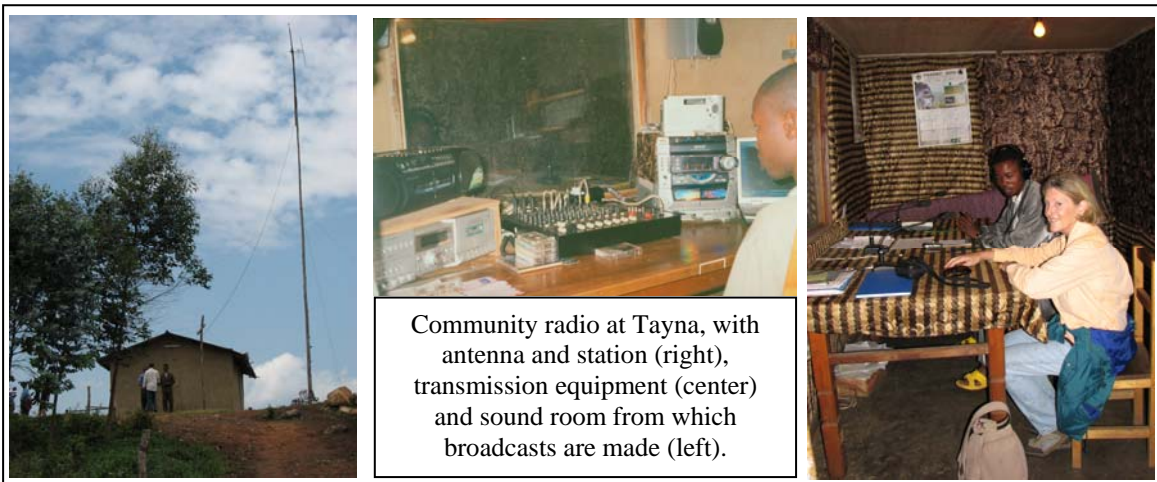
In 2001, Tayna field staff conducted a first census of areas of their intended community reserve; in this census, they completed 68 km of formal line transects for which they could calculate the encounter rates per transect km for elephant trail, gorilla and chimpanzee nest/trail, and anthropogenic disturbance. These same areas were resurveyed again using line and reconnaissance transects (89 km) in March and April, 2006, providing a basis for a five-year change detection comparison. They found a ten-fold significant increase in elephant encounter rate (from 0.22 to 2.10 sign per transect km, t-test, $p < 0.05$), a three-fold significant increase in chimpanzee encounter rate (0.22 – 0.72, $p < 0.05$), and a two-fold increase in gorilla encounter rate (0.26-0.42, $p < 0.10$). During the same period, the rate of human sign showed a significant seven-fold decrease (0.75 – 0.11 per transect km, $p < 0.001$). Although these findings are preliminary¹⁸, they do indicate that substantial changes in both human use patterns and large mammals have occurred in the Tayna Reserve during the last five years since its inception, exactly the period of time of support from DFGFI via the USAID Gorilla Directive and USAID CARPE, when protection

¹⁸ See full report as CI MOV 23 for CI Annual CARPE Report FY 06

patrols were implemented, when educational and sensitization campaigns were instituted, and while UGADEC and Tayna scientific staff were present following gorilla groups. This is certainly the first quantitative evidence of a conservation impact in DRC protected areas, and is important for reflecting both the success of community conservation and for demonstrating the scientific capacity for Tayna field staff. At the site level, this important new study supports CARPE’s Intermediate Result 1, *Natural resources managed sustainably*, Indicator II target *to create different use-zones within landscapes with sustainable management plans*. This achievement also supports CARPE’s Intermediate Result 3 at the country level, *Natural resources monitoring institutionalized*, Indicator 2 target, *staff receive advanced training in some aspect of forest, biodiversity, or social impacts monitoring*.

58. People-Centered Interventions Support the CARPE Landscape Approach to Conservation and Resource Management.

On-the-ground implementation partners for this Landscape, DFGFI and WWF, have initiated a number of development, “social action”, and health-related initiatives over the course of the three-year reporting report. DFGFI development initiatives were also supplemented and amplified by a partnership they created with the Jane Goodall Institute (JGI) in early 2005 in which leveraged funds from USAID via EngenderHealth Inc. were utilized by JGI to provide health and family planning interventions in UGADEC areas of the Landscape. The Tayna NGO also contributed donations from staff members to create a hospital, an orphanage, and the community radio station at the Tayna Center for Conservation Biology, a testimony to the commitment of certain staff who donated significant portions of their salaries. Although difficult to measure or quantify, we believe that these initiatives create a climate of goodwill, improve the psychological well-being and health needs of stakeholders, and at the same time, address the core issues of non-sustainable resource use. Combined with an



an awareness-raising and education program, these development and health interventions create a stakeholder constituency for conservation and are critical to a successful landscape approach. They thus support Intermediate Result 1, Indicator II of the CARPE Performance Management Plan targeted at creating sustainable land use and management plans. There were a number of thematic interventions:

59. **Critical Needs:** Since the inception of the DFGFI Community Conservation Program in eastern DRC, it has supported a Critical Needs program for its flagship project, the Tayna Reserve. For example, during this reporting period, the DFGFI program provided basic care for the Bingi¹⁹ orphanage (food, clothes, health care, education, and building repair), basic care and small micro-projects for a Bingi Widow's Group (initially food care, but transitioned to improved seed stock for small plots provided by the community, a pig and guinea pig livestock project, and a soap/oil production project) and for a Kasua Widow's Group (brick-making project). Funding for the Critical Needs program is derived from special DFGFI donors who wish to contribute to humanitarian efforts. For the three years of the reporting period, this support has averaged approximately \$20,000 per year (included as match in Table 1). In 2006, the UGADEC program, through generous donations from their Congolese staff, was also able to fund the construction of and begin regular support for an orphans' school in Kasua.

60. **Health Care:** Providing health care interventions where possible provided incentives for conservation stakeholders. WWF, for example, with CARPE and matching funds, rehabilitated a clinic adjacent to the lowland sector of Kahuzi. ICCN Maiko staff, with the limited funds at its disposal (through CARPE and DFGFI), provides health care to local people in villages adjacent to its northeast sector. DFFGI, in its partnership with JGI and UGADEC, has developed the *Health Equals Conservation Project*, which intends to provide a field health clinic (in partnership with the Ministry of Health) for each of the UGADEC projects to be located near their integral zones (to be selected by stakeholders). These clinics will then serve as focal points for the JGI Family Planning project (below), the DFGFI Ecosystem Health Program (below), and for the delivery of critical health care needs. During the reporting period, two of these clinics (Mbuhe near the Tayna Reserve, and Pinga near the Kisimba-Ikobo Reserve) were completed. JGI contributed costs related to construction and transportation of medicines, while DFGFI supported the salary primes for a registered nurse for each of the UGADEC projects (supported by CARPE and matching funds) and contributed the basic medicines to stock these clinics. In FY 05, DFGFI received a donation of medicines from Pfizer, Inc. (valued at \$450,000, match, Table 1). In early FY 06, these medicines arrived, passed customs, and were secured in Goma; in FY 06, about one third of these were disbursed to the new clinics and a new hospital facility constructed near the TCCB, built by donations from UGADEC staff, with salaries supported by DFGFI CARPE and match funding. The DFGFI program provides basic health care for UGADEC and Maiko Field staff.

61. **Family Planning and Reproductive Health:** Through 100% leveraged and matched funding (i.e., no CARPE funding), JGI and EngenderHealth, Inc. provided family planning and reproductive health training, and family reproductive kits in the DRC Health Zones of Lubero, Pinga and Walikale (near the Tayna and Kisimba- Ikobo Nature Reserves, and the CoCreFoBa and ReCoPriFol projects within the UGADEC zone.

62. **Education and Micro-Projects:** DFGFI, through its Critical Needs Program, has refurbished four primary schools near the Tayna Gorilla Reserve and paid ongoing secondary school fees for children of UGADEC stakeholders living in Goma. WWF has

¹⁹ Bingi is the capital of the Batangi nation, and is located about 30 km east of the Tayna Reserve

also refurbished two primary schools near the highland sector of Kahuzi-Biega National Park. In addition to DFGFI development micro-projects provided to orphans and widows, JGI piloted several development projects near the TCCB: a demonstration fish-farming project; improved seed stock for agriculture, and a chicken-farming project. They also supported the development of a small hydroelectric station that will provide power to the TCCB and an adjacent village.

63. *Ecosystem Health Program*: This DFGFI health initiative has provided incentives for stakeholders, while reducing the risk of cross transmission of disease. This program seeks to reduce the threat of disease cross-transmission between humans and at-risk fauna (great apes) by analyzing the levels of intestinal parasitism in fauna and humans near protected areas, and providing free-treatment to people infected²⁰. It contains an educational component targeted on hygiene, avoiding parasitism, and enabling the local populace to understand cross-transmission threats. During this reporting period, funding for this project (CARPE and Matching Funds) provided a salary for a medical doctor, salaries for four laboratory workers and their training on microscopic analytical methods, and the installation of a bench laboratory in Goma), educational supplies (metal signs, pamphlets, etc), and the medicines necessary for treating intestinal parasitism in people participating in the program. The project collected and completed fecal analyses for 158 gorilla samples and 2,258 people from the Tayna Reserve and Itombwe; more than 3000 people were treated, and more than 7,000 were trained in an educational program. Tayna Reserve villages were re-sampled (~ 600 repeat samples) 18 months after initial treatment to determine the efficacy of the treatment and education program. Two salient findings have emerged from these projects. One, gorilla groups with the highest contact rates with local people have the highest prevalence of intestinal parasitism that can be attributed to human-gorilla routes of transmission, clear evidence for cross-transmission of intestinal parasitism between people and gorillas living in close proximity, identical to findings from the Central Africa Republic¹⁹. Two, in Tayna, local people had a high rate of re-infestation (more than 90%), puzzling in light of the fact that results from the same DFGFI program from nearby Virunga NP, DRC and Volcanoes NP, Rwanda indicate much lower rates of re-infestation (about 40%). The team is examining several reasons that might explain the low success rate for Tayna compared to their neighbors: unhygienic water sources, lower levels of education, and higher numbers of domestic pigs and dogs. Notwithstanding these results and the search to keep re-infestation rates low, intestinal parasites do tax the immune system, can result in serious secondary infections, and with some parasites, can be lethal. Providing free treatment clearance can improve quality of life and reduce cross-transmission to great apes, and provides a forum for awareness raising for conservation and health related issues.

²⁰ Lilly A, Mehlman P, Doran D (2002) Intestinal parasites in Gorillas, Chimpanzees, and Humans at Mondika Research Site, Dzanga-Nkoki National Park, Central African Republic. *International Journal of Primatology*. 23(3): 555-573.

Muyisa A., Steklis H., Mehlman P., Lilly A. The ecosystem health approach: gorillas, humans and conservation. *Folia Primatologica* 310 S1 04: 334, 2004.

V.a. CHALLENGES IN LANDSCAPE 10

64. Armed Conflict and “No-Go Zones”: The Sun City Accords were signed on April 2, 2003, finalizing the Lusaka Agreement, restoring peace and national sovereignty to DRC and establishing a transitional government. This, in theory, ended a period of civil war dating back nearly eight years, in which 2-4 million people died, mostly from disease and famine, the most costly conflict in human lives since World War II. The vast majority of the violence and concomitant deaths were confined to eastern DRC, with North and South Kivu provinces in Landscape 10 occupying the center of the maelstrom. Unfortunately, armed conflicts did not cease in April, 2003, but have continued sporadically throughout the Landscape during the entire reporting period, as various Mai-Mai units refusing to unify with the national DRC army and Rwanda Interehamwe groups control fairly large areas of the Landscape by armed force. In and around Maiko NP, two areas have become “no-go zones”: the central Loya sector; and the south central “Simba” area (Figure 11). In Kahuzi-Biega NP, areas of the lowland sector are still dominated by armed Interehamwe groups, preventing ICCN from conducting patrols and monitoring certain areas (Figure 12). Because of various incursions of Rwandan troops, or their Congolese proxies (e.g., “General” Laurent Nkunda), the road between Goma and Butembo has often been impassable during the reporting period, preventing staff and vehicles from making trips and carrying out project activities, and creating unavoidable delays.

Figure 11. Significant militia locations near Maiko National Park.

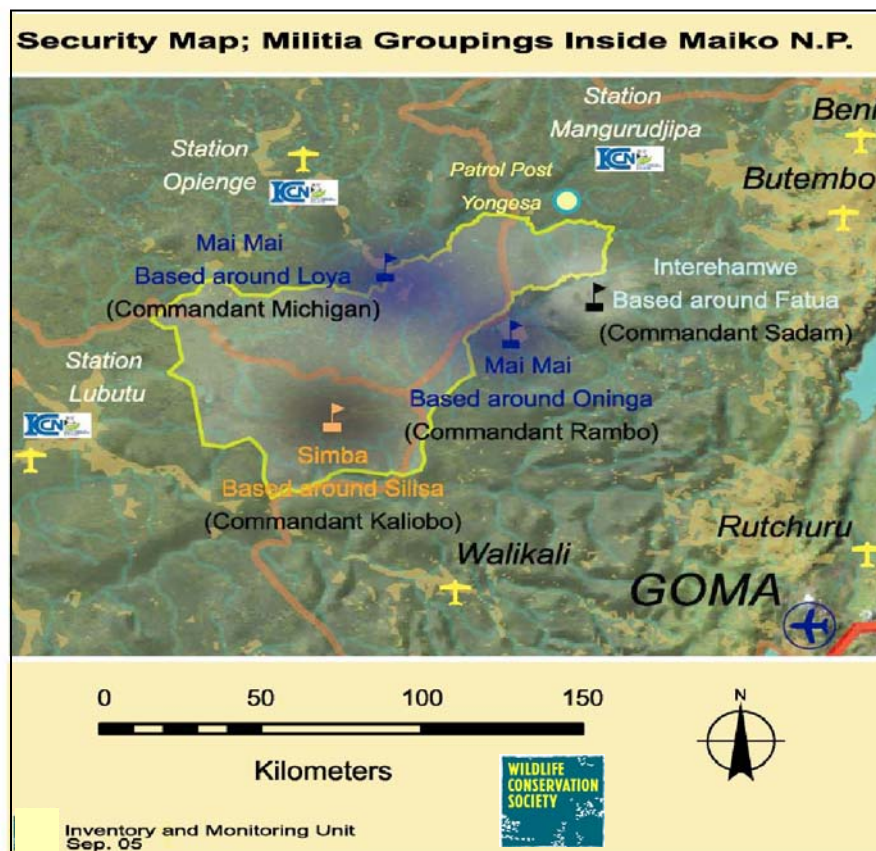
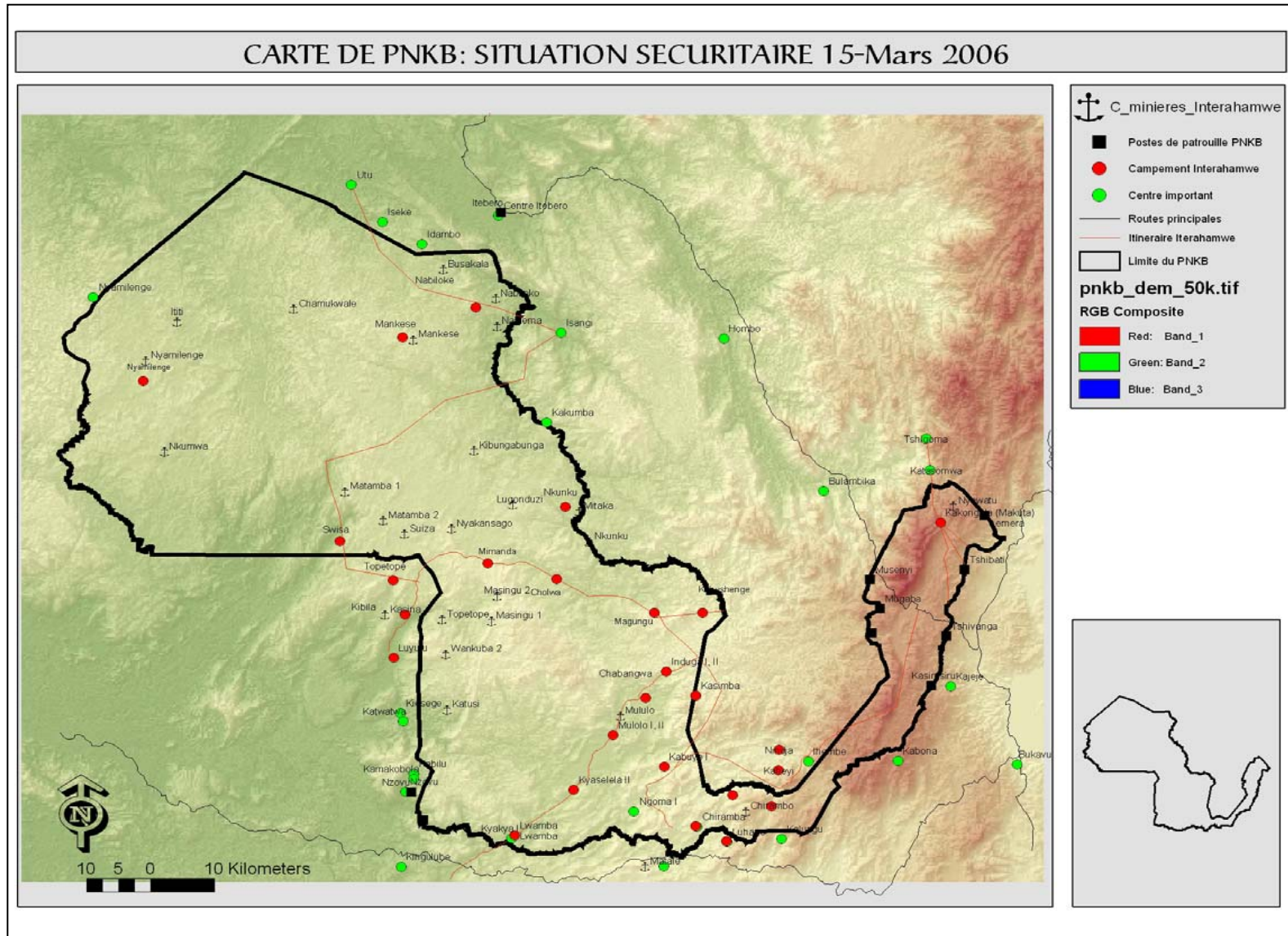


Figure 12. Significant militia locations and routes in and around Kahuzi-Biega National Park.



65. Insecurity Issues Pose the Greatest Challenge for Conservation and Resource Management in this Landscape: Not only has the security situation endangered project staff, created project delays, and created unforeseen costs, it poses a far greater challenge for conservation and resource management in this landscape: the armed militias control illegal mining sites, the bushmeat trade, and the illegal trafficking of animals (mostly gorillas and chimpanzees). In Maiko, the Simba rebel group located inside the park deals in elephant bushmeat, the ivory trade, and diamond trafficking. Surveys supported by CARPE indicate that in this zone, the elephant population has been decimated. In Kahuzi-Biega, Interehamwe and Mai-Mai militia groups control illegal mining sites, where cassiterite, coltan, and other ores are being illegally extracted. At these sites, the rebels and miners are doing severe damage to local freshwater systems, and are defaunalizing swaths of forest as they survive primarily on bushmeat hunting. The task of convincing these groups to lay down their arms, leave the protected areas, and forego their current lucrative livelihoods is beyond the scope of conservation NGOs and their partners. They can continue to lobby the national government and their military forces as well as MONUC, as has been done in this Landscape without great success to date. But, ultimately, the history and resource competition in this region has probably made these groups totally unresponsive to anything but an armed counterforce. This will take both political will on the part of the government, and the National army (perhaps with MONUC), a troublesome formula for a newly elected government emerging from civil war, not yet capable of providing full salaries for its military personnel. The CARPE partners in this region remain hopeful and will continue to lobby at national and international levels.

66. Political Preoccupations: The last year (FY 06) of this reporting period was particularly challenging since elections were held twice, once for the constitutional referendum (Dec 18-19, 2005), and again for political offices including the presidency (July 30, 2006). In some areas, this increased insecurity, and in every area throughout the landscape, many stakeholders involved in politics had less time to devote to project activities. In one case, the UGADEC stakeholders themselves recommended a delay in holding their Congress, to ensure that local populations did not confuse this with the ongoing political campaigning. This should not pose a problem in the future, as the newly elected government takes power in 2007 and gets on with the business of governing the country.

67. Challenges with ICCN Partnership: During the reporting period, there was a remarkable increase in ICCN capacity to lead partnerships in the DRC protected areas. The CoCoSi meetings for Maiko and Kahuzi - Biega National Parks provided good progress towards developing and implementing interim plans for each park, while at the same incorporating and harmonizing the NGO partner inputs. Although ICCN held a conference/workshop in late September, 2006 in an effort to standardize management planning for all protected areas across DRC, partner NGOs had expected this much earlier in the year, and this institutional delay held up the LUP process, as it pertains to the creation of long-term management plans for Maiko NP, Kahuzi-Biega NP, and the Nature Reserves of Tayna and Kisimba-Ikobo. Partners adjusted their project timelines accordingly. Two other aspects of the ICCN partnership were also particularly

challenging. First, there were a number of staff rotations, in which wardens and assistant wardens were asked to leave their posts and transfer to other protected areas. In many cases, it was not clear why some staff members were transferred. This not only led to a loss of continuity, as well-trained staff involved in the ongoing project left and new staff had to be re-trained, but this also increased unanticipated costs, as ICCN, not having the budget to pay for these expensive transfers, called upon partners to defray the costs. In other cases, staff members were accused of work violations; instead of being fired, they were simply transferred to other parks, where presumably they took their bad habits with them. Second, ICCN also made a number of unscheduled requests to support rather expensive trips to the landscape to conduct “inquests” on staff problems. It was not clear why these management inquests were not left in the hands of the resident Chief Wardens of the Parks, and had to be conducted by ICCN executive staff from Kinshasa. Again, partners were requested to pay for these unscheduled trips.

68. Salary Primes for National Park Staff: U.S. Government regulations prohibit the use of CARPE funds to support salary payments for employees of foreign governments. At present, the government of DRC does not have the financial capacity to pay National Park guards. Given the necessity of providing salary to these guards for ongoing conservation activities, this has created difficulties for CI and partners in securing match funds that need to be heavily targeted towards providing National Park salaries.

VI. CONCLUSIONS

69. CARPE II Funding has Dramatically Improved Conservation and Resource Management in Equatorial Guinea (Monte Alen Segment of Landscape 1): Excellent progress for conservation has been made in this Landscape Segment. Equatorial Guinea (EG) lacked human capacity in natural resource management; CARPE funding helped to create a department and degree program at the National University that is now training Guinean professionals. EG lacked basic biodiversity information; CARPE funding supported field research that is producing information for a national biodiversity database. The National Herbarium was derelict; it is now refurbished, re-equipped, and its staff trained. Erratic and inadequate funding plagued EG's natural resource agencies; with CARPE support, CI took crucial steps to establish a national biodiversity trust fund and an environmental fund. Political support in EG for biodiversity and natural resource management was uncertain; with CARPE funding, CI successfully made the case to the President and his closest advisors that the natural resource and environment sector needed and deserved political and policy support; CARPE funding helped move 500,000 ha of timber concessions to a new National Forest to be managed for and with local communities.

70. CARPE Funding has Supported Two National Parks and Reduced the Loss of Biodiversity in Landscape 10 in Eastern DRC: In three years, the infusion of CARPE funding (and match funding from partners) has significantly improved conservation and resource management in this Landscape. In this short time, both Maiko and Kahuzi-Biega National Parks have moved from "paper park" status to parks with a full complement of staff better equipped and trained to deal with biodiversity protection, scientific monitoring, and community relations. Through funding of salaries, management processes, and basic infrastructural needs such as office equipment, communications equipment, transportation needs, the supervisory cadre of both parks now has an improved capacity to deal with a host of personnel, administrative, and financial issues. In each park, guards are now patrolling more than a third of their surface areas and conducting law enforcement activities in areas that have not seen any conservation protection for more than a decade. With international partners, four extensive monitoring surveys were conducted, providing valuable baseline biological data, useful for future change detection studies to measure progress towards reducing the loss of biodiversity in these areas.

71. CARPE Funding has Supported an Extensive Community Conservation Program and Reduced the Loss of Biodiversity in Landscape 10 in Eastern DRC: CARPE and match funding support have produced a remarkable impact on community involvement in conservation and resource management in this Landscape. Two new community-managed, government-sanctioned nature reserves were created during this reporting period, and community zoning initiatives gazetted more than 2,100 km² as completely protected integral zones. Importantly, these are not paper-planning exercises created in workshops in Kinshasa or Goma. They are grass-roots movements, supported by local people who see these activities as an investment in their future. Most importantly, quantitative field surveys conducted by Congolese partners clearly suggest the program is

a success. Data for one of them, the Tayna Nature Reserve, indicates for the first time in DRC, a significant and quantitatively demonstrated increase in large mammal populations with a concomitant decrease in anthropogenic disturbance. Knowing that these trends have been negative in other areas (e.g., gorillas in Itombwe, elephants in Maiko), the positive trends in Tayna must be attributed to the community conservation program initiated there by local people more than five years ago. The NGOs managing these two new Nature Reserves also belong to the UGADEC Federation of eight local NGOS, supported by customary powers, which is conducting community resource management in an area of 10,000 km² between Maiko and Kahuzi-Biega National Parks. CARPE and partner matching fund support have increased the capacity of this federation such that it continues its mission to create a network of protected areas and multiple-use zones, which will form the basis for a biological corridor between the National Parks. In the Itombwe zone, an important area for global biodiversity, local communities have signed a landmark agreement to go forward with a similar process to create a Nature Reserve surrounded by mixed-use zones. This positions an additional 6,000 km² under a Land Use Planning Process, and will ultimately create another Nature Reserve with a completely protected integral zone likely to exceed 1,500 km².

72. The CARPE Landscape Approach: A Paradigm Shift in Central African Conservation: The Landscape approach is best defined as:

“...the promotion of economic development, poverty alleviation, improved governance, and natural resources conservation through support for a network of national parks and protected areas, well-managed forestry concessions, and assistance to communities who depend upon the conservation of the outstanding forest and wildlife resources....” (<http://carpe.umd.edu>).

This process has been well-led by CARPE, and through the emphasis on people-centered solutions to resource use management, combined with support of traditional protected areas, the program aims at wider landscape-scale interventions, involving multi-sectorial planning that encourages the heavy participation of, and consensus with, local stakeholders. The support of programs that work outside of traditional national parks, and innovative solutions, such as community reserves that can empower local communities, have become a significant component of the program, and has led, we believe, to a reevaluation of basic philosophies by the large conservation NGOs. For example, some conservation philosophy in the period before CARPE II was decidedly top-down and biased in favor of *only* supporting formally protected areas, seeking to use the limited conservation funding for protection, law enforcement, and the capacity building of host country governments to execute these activities. For example,

“Assuming that local level environmental management is uniformly better than anything organized at a national or regional scale is romantic and not a useful perspective.” (Naughton Treves, 2001:138)

“The solution to the hunting crisis will not result in investment in poverty alleviation or sustainable development. Rural poverty is too intractable to be solved before hunting further demolishes ape populations.... The bulk of conservation investment should, instead, be focused on formally protected areas

that still have enough apes to be viable in the long run. The immediate priority is a massive investment in law enforcement, which has long been under funded...
(Walsh et al, 1999: 613)

The CARPE-led process appears to have changed these approaches dramatically, until by the end of CARPE IIa, one can perceive in retrospect that conservation in the Congo Basin has undergone nothing short of a paradigm shift. The term “community conservation” or “co-management with local communities” has replaced “participatory conservation”, signaling a shift in perspective signaling that communities themselves are now seen as principle drivers and actors for conservation and sustainable resource management. Under CARPE II, NGO responsibilities evolved to where each landscape program had to target at least 50% of funding and activities to people-centered initiatives outside of traditional protected areas, and conservation partners, in so doing, discovered new grass-roots solutions that addressed the underlying causes of unsustainable resource use. By the end of CARPE IIa, we believe that partners had abandoned the perspective in which human populations were seen simply as threats to protected areas; rather, they are now seen as an integral part of the ecological systems we hope to preserve.

73. CARPE Partnering Approach: The Landscape-based approach of CARPE necessitated the creation of multi-team, multi-disciplinary partnerships, and although the partnering process met with some difficulties related to unbundled funding and the nature of leadership roles when partners clashed over potentially duplicative tasks, it has proven overall to be an unparalleled success. Although difficult to measure, the amount of cooperation within and between Landscape teams has markedly increased over the first three years of CARPE II. We believe this is also part of a paradigm shift in conservation in the Congo Basin, and in many cases, was the direct result of a CARPE mandate to build teams at the inception of the program.

VII. LESSONS LEARNED

74. Build strong partnership networks and capitalize on partner experience on the ground. CI's institutional strategy is to work with implementing partners with demonstrated capacity, competence, and field experience that matches specific objectives. Because technical field competence is not always matched by administrative, managerial, or financial capacity, we monitor progress and help manage any weaknesses or gaps through backstopping. In this process, we also seek opportunities to learn from our partners.

75. The key to successful conservation initiatives in complex, high-risk conflict areas is the commitment and engagement of local stakeholders -- they have solutions. We have learned that conservation can be accomplished successfully when local people are empowered. When local people themselves create and design most elements for the program, they are willing and capable of continuing fieldwork under the most difficult of conditions. It is their specialized local knowledge and network of communications that allow them to enter into zones quite dangerous for foreigners, such as the Eastern DRC.

76. We have learned that local groups bring enormous contributions to the conservation efforts as long as they feel their role is respected and their aspirations and belief systems are considered. We have learned to take the time to communicate clearly, to avoid miscommunication and misunderstanding. Sometimes the simplest, most ancient rules apply: respect the infirm, respect the aged, respect the elders, and spoil the children.

77. CI has been careful to empower local groups to implement indigenous solutions to pressing conservation issues. For example, the concept of a community conservation reserve in the Eastern DRC, and to scale it up into a corridor using the Tayna reserve as a model was conceived by our local partners. The same happened with the idea to create a community-managed conservation university and to train Maiko ICCN staff alongside Tayna staff to learn community conservation. In Equatorial Guinea, the concept of the new University school for environmental studies and the creation of the National Forest originated within our EG local partners.

78. Local partners know the terrain, biological, socio-economical, and political. We have learned to listen to them, because they have solutions. When assisted in developing their ideas and translating them to national, regional, and international scales, they are empowered and will make extraordinary efforts to achieve results. They will walk miles in the cold rain, wait patiently for much needed resources, and face enormous risks with dignity. They will even contribute from their own limited resources to the project. In Tayna, local partners contributed from their salaries to build a hospital, a community radio station and an orphan's school.

79. Invest in higher education and training. A common denominator of both landscapes is the limited number of local conservation professionals, paired with a strong desire of local stakeholders to have access to higher education. CI supported the development of two local initiatives that established opportunities for developing a new generation of African conservationists committed to the landscapes. Building individual and

institutional technical capacity is cost effective, engages local stakeholders' priorities and therefore achieves program acceptance and cooperation.

80. In DRC, by supporting a community-managed conservation university, originally conceived of by local stakeholders, we were able to address these aspirations, provide scholarships as incentives for stakeholders who “ceded” their land use rights, and simultaneously train a new generation of conservationists. This initiative has been perceived by local and national level stakeholders as the single most important intervention for their future natural resource management.

81. In Equatorial Guinea, the establishment of a university department at UNGE is an achievement that is also likely to provide lasting, long-term results that will become part of the structure of Guinean society. The students that have gone through the Licenciatura program were recruited from positions of current influence within the government and the private sector. They have returned to those positions with a new grounding in modern practices of natural resource management and prospects of greater authority. For a relatively small investment, the small community of Guinean conservationists has grown in numbers, influence, and an independent ability to manage natural resources well.

82. CARPE IIa has also supported more than a dozen instances in which individuals received professional advancement through short courses, workshops, symposia, and academic exchanges. These have built the local natural resource management capacity by developing individual technical skills and professional maturity.

83. Provide social incentives at as many levels and scales as is feasible – they build good will, a strong conservation constituency and can also function as conservation concessions. In impoverished areas as eastern DRC, it is difficult to conduct workshops with stakeholders and discuss potential solutions for the future of their resources when many participants are simply hungry and ill. *Critical needs* such as basic health care and shelter for orphans and widows are a moral responsibility, not an abstraction. Conservation organizations must find humanitarian and development partners who can assist. In the most isolated and hard-to-reach cases for which conservation organizations are the only international presence, develop a special restricted fund for people-centered programs; many donors are quite responsive to this approach. Leaving these issues for another day creates a true schism between the moral beliefs of potential conservation constituencies and their perception of our values.

84. Specialized partners are able to implement development micro-projects, educational initiatives, more formalized health programs, or at a larger scale, road and infrastructure rehabilitation. Although conservation programs protect environmental services such as carbon sequestration and the global biodiversity heritage, local stakeholders giving up hunting, agricultural or pastoral “rights” see social investment projects as a more tangible fair trade. Our experience has been that most stakeholders “get it”, but their short-term needs to gain a survival-level livelihood over-ride longer-term abstractions.

85. In the DRC, emerging from eight years of war, famine, gruesome torture and killings, rape, and escaping into the forest for survival, produce a psychological state that is not particularly conducive to long-term planning. Alternative livelihoods projects are a prerequisite to halting the unsustainable cycle of slash and burn agriculture, hunting, or mining. Employment in conservation projects can be an attractive alternative, but only if compensates for the inherent risk and is competitive with practices such as bushmeat hunting and illegal mining. However, in a cash-poor economy, where barter is the normal mode of transaction, an infusion of a few hundred or thousand dollars in cash salaries does stimulate local village economies.

86. It is critical to adapt program objectives and models of planning and implementation to the priorities of national and local political authorities and to the local social context. For example, COMIFAC is a particularly important reference for signatory governments. CI's experience in Equatorial Guinea is that government individuals and agencies were not clear on how CARPE would be of help to meet their country's obligations in the COMIFAC treaty, and failed to see the articulation between CARPE and COMIFAC objectives. COMIFAC remains the reference and framework that guides Equatorial Guinea's environmental sector ministries and the standard by which they measure progress. It was until CI cross-walked CARPE IRs to COMIFAC's *Plan de Convergence* and its strategic objectives that the benefits of CARPE were a bit clearer and their interest became stronger. CI's proposal to the GoEG was presented as a project to help fulfill Equatorial Guinea's COMIFAC obligations, and was received with great interest at all levels and has resulted in agreement, support, and eager cooperation.

87. In DRC, the political support of traditional customary authorities has been instrumental in the development of the community reserves.

88. Follow the plan, but be adaptive and flexible and seize opportunities. In a volatile and ever-changing social and political environment like eastern DRC, there are many challenges; many can be opportunities. If the Minister of Environment or an ICCN delegation arrives unannounced and is suddenly available to discuss gazettelement, zoning, or any number of topics, we need to be prepared to drop everything and seize this chance. The logical order of progression for task activities per the plan will rarely unfold as such; there is just too much uncertainty in a country such as this.

89. Scale up success. In the MTKB Landscape, local stakeholders from Tayna successfully launched a community conservation program and had the determination and perseverance to see the project mature. When other local people came to the program team and expressed a desire to model this project in their communities, the opportunity was not neglected. Through support by Tayna itself, as well as DFGFI and CI, these fledgling projects were provided the support to enable and empower them.

88. Perform due diligence and refuse corrupt practices. There are a large number of opportunist individuals and groups that will seek to become associated to conservation initiatives for personal gain. Corruption is pervasive in Central Africa, and a major obstacle to implementation of any kind of project. However, we have found that it is

possible to act to the highest standards and to challenge officials to perform their duties appealing to their sense of national pride and personal honor. A simple technique is to explain upfront that international organizations expect each of their staff to abide by strict standards and would be subject to severe punishments if engaged in any corrupt practice. Even the most venal officers relate well to the concept of long jail sentences and are sympathetic to a foreigner's "plight" of being imprisoned for corruption.

89. Fight apathy and depression. Staff members and partners are facing extremely difficult working conditions. In particular, with local partners and staff coming from impoverished areas, where there are extended family responsibilities and a myriad of health challenges, we have learned to be attentive for signs of depression. Although often pervasive, it is a neglected and often misunderstood aspect of day-to-day work, and any staff member can suffer its consequences. Where there are few professional counselors, elders, church members, and family members can assist in an intervention.

90. Landscape Coordination Meetings should be held at least on a biannual basis, and preferably on a quarterly basis: Due to several causes, CI had no designated staff person regularly in the field as Landscape 10 leader for approximately 11 months. This led to a reduction of landscape meetings, and a concomitant lack of communication between the on-the-ground implementing partners. This led to a balkanization of partners, who continued successfully with their programs by segment, but missed important opportunities to work together on coordinated, landscape-wide initiatives, such as illegal mining throughout the landscape, standardization of data collection methods throughout the landscape, monitoring and reducing the impact of bushmeat hunting throughout the landscape; addressing the illegal animal traffic trade, especially great apes; sensitizing the military, local law enforcement, and customs personnel about conservation and law enforcement; and a potential initiative to conduct lobbying with MONUC and the DRC unified army with respect to armed insurgents throughout the landscape.

91. The Landscape Leader had no means of effective control over partner activities or how they related to the CARPE Performance Management Plan. In this reporting period, because grant awards to partners were unbundled, CI had no effective mandate for leadership of Landscapes. This produced some unhealthy competitive situations and irregular responses from some partners on occasion. This will no longer pose a problem for CARPE IIb, given that awards will be bundled and centralized through the Landscape Leader.

VIII. RECOMMENDATIONS

92. Streamline and revise reporting requirements for CARPE Program Management Plan: As CARPE II evolved, a number of significant changes were made to the CARPE PMP. The initial CARPE IIa guidelines and work plan matrix included a pyramid of three IRs, ten sub-IRs, and many indicators to support the CARPE SO. Although it was complex, it was adaptable to local context, needs, and priorities, and had been developed in consultation with partners. In 2005, to simplify the reporting requirements, to reduce the sheer volume of reporting materials, and to make reports more understandable for Congress, the State Department, and within USAID itself, CARPE announced that it would eliminate all sub-IRs, two of the three IRs and all but two of the indicators. This created some real challenges in the field, and reduced the overall program's successful output. These changes necessitated some major changes in budgets and work plans, and increased the program's management burden. It was particularly difficult to match several of the ongoing implementation activities to the required changes in the planning matrix; in the end left this left many successful and clearly beneficial initiatives ill-matched with IRs because the original IR or sub-IR had simply disappeared.

93. For example, the partnership between CI and DFGFI to support the TCCB and between CI, UNGE and Alcalá to increase Equatorial Guinea's capacity to train biodiversity professionals – a goal prominent in the CARPE I -supported “Declaración de Malabo” –originally fell under Sub-IR 2.5: “Human resources for improved natural resources governance are developed”. This Sub-IR was eliminated, and CI placed these projects under IR3: “Natural resources monitoring institutionalized”, but only later discovered that no funding would be made available for the country-wide indicators IR 2 and 3.

94. Discovering this, while having already successfully begun implementation of these projects, necessitated placing them in IR 1: “Natural resources managed sustainably”. Although this may have been a best-fit solution, it now bears little resemblance to the other indicators for this IR. Many similar, ongoing implementation tasks, begun as part of the first planning matrix, were also difficult to retrofit into tasks that were heavily re-oriented towards a planning process.

95. The CARPE mid-term review identified capacity-building and activities outside of PAs as CARPE IIa weaknesses. Both the UNGE Facultad de Estudios Ambientales and the TCCB were rare examples of these activities, yet when their IRs and indicators were eliminated, CI had to fit them within IR1 to maintain support for these people-centered priorities.

96. Better integrate CARPE into the ongoing planning and implementation of COMIFAC's Plan de Convergence. In our experience, Ministries and other national agencies are well attuned to the commitments acquired by their governments when the Plan de Convergence was adopted. Although the CARPE does contribute to several of the Plan's strategic components, it is usually presented as a standalone project and those

linkages are not explicit. Because Ministry budgets and annual work plans are developed according to the Plan's objectives, we have found their cooperation is forthcoming when they perceive those linkages and realize how supporting CARPE funded activities advances the objectives and commitments they have been mandated to complete. The effort to clarify these linkages needs to be coordinated by CARPE and facilitated by the Focal Points.

97. Better integrate the activities of the GIS cross-cutting activities into Landscape activities. For this reporting period, there was only marginal interaction between the CARPE GIS team (University of Maryland and NASA) and partner members from Landscape 10. Some essential information was exchanged between the two parties during the grant award, such as the baseline satellite image and several shape files, but exchange was limited at best.

98. Create a more comprehensive and unified media campaign for CARPE basin-wide activities. Some progress was made on this in FY 06, and it appears that media and sensitization will figure more prominently amongst the CARPE Iib leadership activities.

99. Develop a web-based, coordinated CARPE calendar for all partners so that they can more efficiently plan their time and travel budgets. An e-room with various levels of access would be ideal for group input on decision making, such as for example, the next theme for the State of the Forest Report.

100. Link Landscape performance and achievements to future funding levels. The process by which CARPE evaluates all Landscape Reporting should be made more transparent. Although we sometimes received scores for our reports, it was without scale, and it was never totally clear what the range of scores might have been for all Landscapes throughout the basin. A clearer, more objective, and more transparent ranking and scoring system, as well as a formal feedback system from CARPE to partners, would motivate consortia to reach stated performance deliverables and to communicate more clearly their results. Most importantly, the relationship between performance and funding levels during the three years of CARPE IIa were obscure at best. To the degree that funding was indeed linked to performance, partners would have benefited from understanding how their funding levels were determined in a more open and transparent system.

IX. ANNEXES 1 – 3

ANNEX 1: Non-expendable property

- Landscape 1:**
1. Trimble GPS survey equipment \$7,818 US
 2. Toyota 4WD Hilux pickup \$30,126 US

Landscape 10: None

ANNEX 2: Disposal Plan for Non-expendable property

Landscape 1

1. Trimble GPS survey equipment: CI recommends that this equipment remain with CI's Equatorial Guinea Program. It was purchased to help INDEFOR demarcate the boundaries of the protected areas within the landscape, including determining the location of the national forest. These tasks ran into delays with CARPE IIa. Plans for CARPE IIb include completing the demarcation of all macro-zone boundaries. CARPE IIb also includes community-based natural resource use mapping as the foundation of micro-zone LUP within the national forest. The Trimble GPS equipment includes a data collector that uploads directly into ArcGIS. It is useful in all tasks that require collecting spatially referenced field data.

2. Toyota 4WD Hilux pickup: CI recommends that the Toyota 4WD Hilux pickup remain with CI's Equatorial Guinea Program. This vehicle was purchased late in CARPE IIa in anticipation of use during CARPE IIb. A persistent and difficult problem facing all field implementation during CARPE IIa has been the lack of reliable transportation. INDEFOR expected to contribute to CARPE IIa the vehicles included in its government-approved investment budget. Though approved, however, INDEFOR never received the funds to buy field transportation, tremendously hampering all the INDEFOR-dependent field activities both CI and INDEFOR expected would be accomplished. Towards the end of CARPE IIa, CI identified funds that were not going to be spent on field activities because of the lack of transportation and, with USAID permission, reallocated them to the purchase of this Bata-based field vehicle.

ANNEX 3: Landscape and Zone polygons in ESRI shape files

All ESRI shape files have been sent in zipped format to jmdoremus@yahoo.com.

X. APPENDICES

Appendix 1: Eight Success Stories from CARPE IIa.

Because of size constraints, these are sent with the Final Report in a second email, both as one complete appendix, but as well, as eight separate Adobe© PDF files that may be distributed publicly, individually or as a grouped PDF file.

Appendix 2: Table of objectives, intermediate results, indicators, etc. from original proposal to CARPE USAID for Landscape 1 (included in this PDF file following this page).

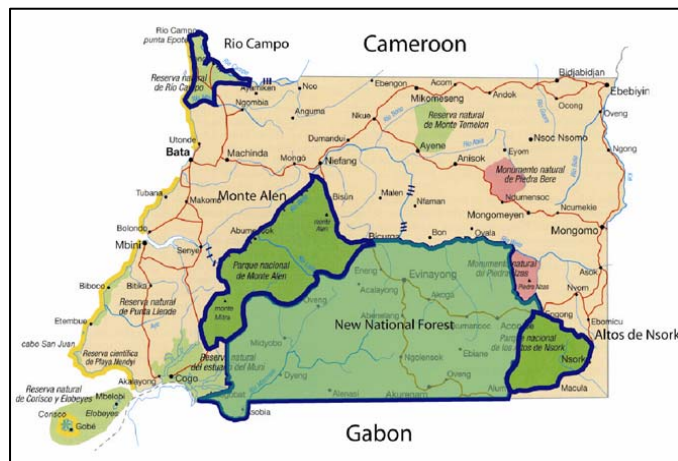
Appendix 3: Table of objectives, intermediate results, indicators, etc. from original proposal to CARPE USAID for Landscape 1 (included in this PDF file following this page).

Oil changes timber concessions to community forests. The logging of Equatorial Guinea's ancient forests has provided the country very little in terms of foreign exchange, and has instead left behind a legacy of damage to fragile ecosystems, lost wildlife, and disrupted forest cultures. Then oil gushed in the Gulf of Guinea; timber exports became trivial in an economy booming like the Big Bang; foreign reserves were suddenly abundant as dark matter. At a Brazzaville CBFP¹ meeting Obiang had an inspiration.: EG² no longer needed timber exports. He could convert timber concessions to a forest reserve for local use, create a sterling personal legacy, and lead CBFP in conservation. "Let the forest rest," he thought. Nothing could have pleased Guinean forester Ramón Mituy more: he had long argued for better management of his country's abused but still magnificent forests. Obiang issued orders to put his idea in place, but despite good intentions, government agencies were challenged to do so. Ramón asked CI³ for help.



The US Embassy in EG arranged for CI to meet President Obiang in Washington. CI offered Obiang a straightforward deal: he would decree a forest reserve from timber concessions and fund the reserve with oil revenues. CI would marshal technical and financial management support. The combination would achieve Obiang's insight and Ramón's ambition. Biodiversity and EG's reputation would both win. Obiang agreed.

With CARPE⁴ funds, CI now works with Ramón Mituy and his colleagues to map the new forest reserve: a 500,000 hectare corridor linking four protected areas in a forest block of more than a million hectares bringing 37% of national territory into protected areas.



Forty timber concessions are revoked, eliminating the worst timbering practices. UNGE⁵ field research is documenting and mapping the reserve's rich plant and faunal biodiversity. Socio-economic studies are clarifying the role of the forest in village and household economies, health, and cultural traditions. For the first time in EG, local communities are helping to develop the reserve's management plan, which will allow artisanal logging, traditional harvesting of non-timber forest products, and compatible agriculture.

EG's oil fortune has changed its biodiversity's value. Okumé trees still stand in the woods.

Their reddish-barked, cylindrical boles make fabulous plywood veneer, but now they are worth more in the forest than as stacked, branded logs bound for Asia. EG's self-image is shifting: with abundant wealth and rich biodiversity, EG could lead Central Africa and even the world in conservation. This is an exhilarating vision for a small country, so recently mocked for its isolation, poverty, and government. The lure of this vision has loosened the state's grip on the forest and made world opinion, forestry practices, and conservation standards matter. In Brazzaville Obiang linked oil and biodiversity; the unexpected implications are changing EG's society and government. The world has many reasons to support and applaud these consequences.

¹ Congo Basin Forest Partnership

² Equatorial Guinea

³ Conservation International

⁴ Central African Regional Program for the Environment (US Agency for International Development)

⁵ Universidad Nacional de Guinea Ecuatorial



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London



A National Conservation Trust Fund for Equatorial Guinea - Crisantos Obama knows the difference between intent and reality. EG¹ leads the world in percentage of national territory within protected areas, far ahead of accepted leaders like Costa Rica, Brazil, and Madagascar, but the accomplishment has been more rhetorical than real. Crisantos directs INDEFOR², the government agency created in 2002 to manage these protected areas, but INDEFOR has no funds. Gulf of Guinea oil brings abundant government revenues, but Crisantos gets little. For five years jealous government rivals have blocked INDEFOR's operations and capital investment budgets. Crisantos begged vehicles and borrowed equipment to send his staff to the field. A tree branch and vines grew through the broken window of the disused GIS³ lab, where mildewed computer equipment sat covered in grimy plastic. INDEFOR staff hustled second jobs to supplement the subsistence salaries that leaked past the bureaucratic barrier. INDEFOR is a key partner in the CARPE⁴ Monte Alen landscape, but could not fulfill its commitments to the collaboration. Crisantos knew that without sufficient and stable funding EG's protected areas system would remain an abstraction, dispiriting conservationists who recognized its potential and comforting cynical African skeptics. He pleaded for CI⁵ to intercede with his government.

With help from the US Embassy, a CI delegation led by its President, Russ Mittermier, met with EG's President Teodoro Obiang and his closest advisors. CI described INDEFOR's difficulties and pointed out that a potentially world-class conservation achievement was needlessly at risk. Mittermier proposed a trust fund dedicated to biodiversity conservation and the management of protected areas, a fund that, following the examples of CI's work in Madagascar and Mexico, could be capitalized incrementally with government and external donations. Obiang was quickly convinced. "De acuerdo," he said. The Minister of Finance added, "Why capitalize gradually? Design the fund for us and we have US\$15 million to put in it now." With only a slight pause Mittermier replied, "We've never used that model before, but let's try!"



CI and the Government of EG have now signed an agreement to create the first conservation trust fund in Central Africa and COMIFAC⁶. CI will design the fund to meet world standards and best practices. For its part, the government has committed to the Minister of Finance's suggestion to use oil revenues to capitalize the fund and will accept strict governance to ensure its conservation purpose. The result will benefit people, plants, and animals living far from the room where the deal was done.

The entire world has a stake in how EG manages its share of Gulf of Guinea and Congo Basin biodiversity. Ocean dynamics, global climate, and the direct welfare of millions of humans are all affected. By creating a trust that will free Crisantos and his staff to spend their energy and skills protecting biodiversity instead of hard-scrabbling funds, EG has legitimately earned leadership of Central African conservation and the world's support.

¹ Equatorial Guinea

² Instituto de Desarrollo Forestal

³ Geographical Information System

⁴ Central African Regional Program for the Environment (US Agency for International Development)

⁵ Conservation International

⁶ Comisión Forestal de África Central (Commission for the Forests of Central Africa)



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ZSL



Expedition to Monte Mitra finds Biodiversity Riches. Good field data are stock-in-trade of biodiversity management. Few exist for Equatorial Guinea. Rumors and stories circulate instead, particularly about Monte Mitra deep in the Niefang Range – the highest summit between Mount Cameroon and the Rift Valley, a place rugged, remote, and a bit spooky. Nobody knew for sure what was there so CI¹ and INDEFOR², Equatorial Guinea's protected areas agency, organized a field expedition to unwrap some of its mystery.

“Ah, Monte Mitra's spirits are always moody and uncertain,” said Diosdado Obiang, Equatorial Guinea's best up-and-coming botanist, as he lugged field equipment up Monte Mitra's muddy slope in another tropical downpour;



behind him Miguel Leal hauled bags stuffed with plants. About one thing there was no uncertainty: Mitra's spirits had been in a sodden mood for three weeks. Miguel, from the Missouri Botanical Garden, was leading the CI/INDEFOR field expedition. He had come to Mitra to measure plant diversity and endemism³, data bearing on the speculation that the mountain summit once had been an isolated rain forest island standing high above open savannas and woodlands, a nursery for new plant species. From data collected so far, Miguel knew that he and Diosdado were climbing through the Congo Basin's most remarkable concentration of botanical diversity, so all in all he was happy to live in mud.

Down slope, Francis Motombe of the Cameroon Biological Conservation Society gripped a rare Black Sparrow Hawk by its feet, soothing the fierce-eyed bird while Terry Sunderland of the Smithsonian Institution photographed it. Francis had already seen or heard nearly all the 265 birds expected from Monte Mitra and he had three new species to add to the list. The previous day he had found two breeding pairs of the Fernando Po Swift wheeling about Monte Mitra's summit, only the fourth time the species had ever been recorded anywhere. The expedition's zoologists, Anthony Chifu of the Cameroon Wildlife Conservation Society, and Gabriel Ngua and Pablo Esono of INDEFOR and UNGE⁴, were astonished at the number of forest elephants – or at least the number of their dung piles. In their report they would estimate that Monte Mitra has the highest density of forest elephants in all of Africa, along with abundant monkeys, great apes, and even healthy populations of leopards. Ominously, there were also plenty of spent shotgun shells and wire snares.



This expedition unwrapped a couple turns of mystery from Monte Mitra. Here was one of Africa's most diverse and intact forests, still teeming with animals. Monte Mitra has been a sanctuary for rain forest plants, sheltering them from climatic fluctuations going back to Pleistocene droughts. Monte Mitra was a place the world needed to treasure and the shotgun scat of bushmeat hunters was evidence that it needed protection soon - Monte Mitra's spirits have good reason to be moody.

¹ Conservation International
² Instituto de Desarrollo Forestal
³ Species not found anywhere else.
⁴ Universidad Nacional de Guinea Ecuatorial

photo credits: TCH Sunderland



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A New Department of Environmental Studies at Equatorial Guinea's National University

If a country the size of Maryland with 500,000 people and a tense history of poverty and political turmoil suddenly finds itself with a massive oil strike and the world's highest economic growth rate, all ambitions seem within reach. Such is the experience of EG¹. To its credit, early in its new wealth Equatorial Guinea chose to create a system of protected areas that now includes 37% of the country. But José Manuel Esara, Dean of Agriculture at UNGE², knew that protected areas need trained people and EG had desperately few. Esara dreamed of a University Institute of Biodiversity to educate a generation of biodiversity scientists able to realize the full potential of his country's protected areas. Esara needed help and he sought it from CI³.

In 2002 Esara, with the help of CI's Juan Carlos Bonilla and CARPE⁴ funding, assembled an international group of experts in Malabo⁵ to consider the state of biodiversity in EG and choose priority actions. This group issued the "Malabo Declaration" that captured Esara's ideas in a call for an International Center for Biodiversity and the Environment. CI subgranted CARPE funding to a collaboration between Esara and Miguel Ángel Rodríguez of Spain's University of Alcalá. The result is a new university department, a modern degree program in environmental studies, and a new department building fully equipped.

Esara now is Dean of the Department of Environmental Studies with a faculty of four. Twenty-eight students drawn from environment sector agencies have finished a two-year sequence of coursework and individual research. This summer nine students successfully defended their theses in a rigorous public examination and received their Licenciatura⁶; fifteen more will defend in December. Thesis topics included park management, economic analysis, biodiversity surveys, public education, and biodiversity policy. Several students will continue their studies at foreign universities.



With help again from CI and CARPE, Esara has established a national program of biodiversity research. The program involves the Missouri Botanical Garden, the Smithsonian Institution, the Zoological Society of London, the University of Alcalá, Arcadia University, CI, and Esara and his UNGE colleagues. The research includes the first comprehensive biodiversity survey of the country and fundamental socio-economic studies of the role of the forest in the lives of local people. Esara has established a department research station at Moka, on the high slopes of Bioko's Caldera de Luba, where bands of endemic drills⁷, Africa's most endangered primate, still omnivorously rummage the forest litter and canopy.

EG is fortunate in its abundant oil wealth, but its greater fortune is people like Esara, with imagination to conjure bold ideas and determination to make them real. As humanity has an urgent stake that biodiversity survives everywhere, so we specifically have an interest that Esara succeeds in EG, for Esara's students are the best hope that EG's system of protected areas will protect the biodiversity we treasure.

- 1 La República de Guinea Ecuatorial
- 2 Universidad Nacional de Guinea Ecuatorial
- 3 Conservation International
- 4 Central African Regional Program for the Environment (US Agency for International Development)
- 5 Malabo is Equatorial Guinea's capital.
- 6 Approximately equal to an Associate degree.
- 7 A species of baboon.



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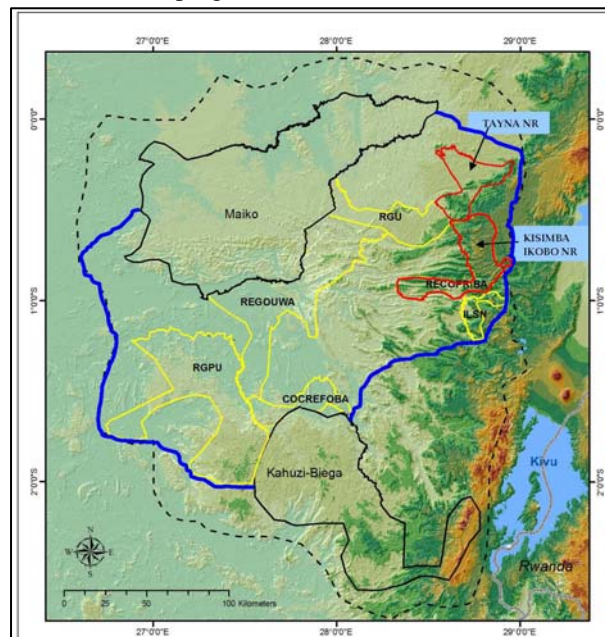


ZSL



The Tayna Nature Reserve – A Novel Approach to Protected Areas: Two nations in North Kivu, DRC, the Batangi and Bamate peoples, with the support of their customary powers, made a decision in 1998 to create a community-based conservation program to preserve their biological heritage and to foster social development. Through support of the Dian Fossey Gorilla Fund International, beginning in 2001 they created a local NGO, the Tayna Gorilla Reserve Project (RGT), while they conducted participatory mapping and created a zoning plan that included an integral zone of 900 km², a 5 km buffer zone surrounding the integral zone, and a development zone for the remainder of their two combined collectivités. After a five-year period of education and awareness-raising with the local population, and the development of a scientific program for monitoring and protection, they entered into discussions with the Ministry of Environment and the ICCN in late 2005. These discussions as well as ongoing vetting with local stakeholders resulted in a novel approach to community conservation that responds to both local and national needs. In April 2006, the “Tayna Nature Reserve” was created via an Arrêté by the Ministry of Environment, and the completely protected integral zone was officially integrated into the DRC network of protected areas. Importantly, however, the management of the Reserve remained with the local community through a long-term contract in which the ICCN subcontracted supervision of the Reserve to the RGT. As this program evolved from 2001-2005, another

five collectivités between Maiko and Kahuzi-Biega National Parks modeled it and formed their own NGOs to create additional nature reserves (proposed integral zones in yellow) while linking them together in an umbrella federation called UGADEC that encompassed all their collectivités (blue outline). A second NGO member of UGADEC, ReCoPriBa, also received a Ministerial Arrêté creating the Kisimba-Ikobo Nature Reserve in April, 2006 (1,200 km² integral zone), with management subcontracted to ReCoPriBa, representing the local community. In both cases, grass-roots NGOs, supported by customary governance, created conducive conditions for the creation of new protected areas at the local level through education and participatory mapping, and then finally with the National Government, they created a win-win outcome: new Reserves enter into the DRC network protected areas, and local communities maintain management over areas that local landowners “ceded” for the development of reserves.



Does Community Conservation Work? A recent change detection analysis of encounter rates for gorilla, chimpanzee, and elephant sign between 2002 and 2006 was completed by scientific staff from Tayna. These rates significantly increased during this period, while human disturbance rates declined to almost negligible levels. This first quantitative evidence clearly suggests that when community conservation is linked with development initiatives, this may be a formula for conservation success.

DRC – Democratic Republic of Congo

Customary powers – traditional tribal governance and councils

ICCN – Institut Congolais pour la conservation de la Nature (DRC Wildlife Authority)

Arrêté – declaration, signing a proclamation into law

UGADEC – Union of Associations for Gorilla Conservation and Development in eastern DRC

ReCoPriBa – Community Primate Reserve of Bakambule

Collectivités – Administrative units akin to large counties but based on tribal boundaries



Congolese Community Conservation Scientists Make New Gorilla Discoveries: In 1998, during the devastating civil war in the eastern Democratic Republic of Congo, a unique approach to conservation was conceived within two local communities, the Batangi and Bamate peoples. Through support from the Dian Fossey Gorilla Fund International (DFGFI), beginning in 2001 they created the Tayna Gorilla Reserve Project, which resulted in the creation of an official DRC protected area in April 2006, after new infusions of funding in 2003 by Conservation International (CI) and USAID's CARPE program. Along with protection patrols, an education and development program, one of the central pillars for their community-based project is a scientific monitoring and survey team led by a Congolese botanist, D. Mufabule, native to the region. Trained by DFGFI staff in the Tayna Reserve and at the Karisoke Research Center in Rwanda (Dian Fossey's original station in 1967), this team rapidly acquired important field skills: the use of GPS units and satellite imagery, computerized data management and analytical methods, and techniques to conduct quantitative field surveys of large mammals and human threats. Focused on the conservation crisis for their iconic emblem, Grauer's gorilla (also known as the eastern lowland gorilla, a relative of the mountain gorillas made famous by Dr. Fossey), they wasted little time

determining baseline values for its distribution and abundance in and around their reserve. By 2004, at a primate conference in Italy, D. Sivalinga and colleagues reported on the existence of a large population of these gorillas that had been virtually missed by western scientists. This population, estimated to contain between 400-600 gorillas, is now considered one of the priority populations for gorilla conservation in the region. Armed with only their scientific experience and basic tools, and dodging hostile insurgent groups, members of the team then went on to work alongside staff and guards from the Maiko National Park, a large, but mostly neglected park nearby to the Tayna Reserve



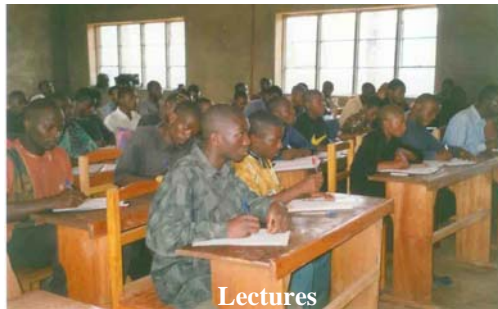
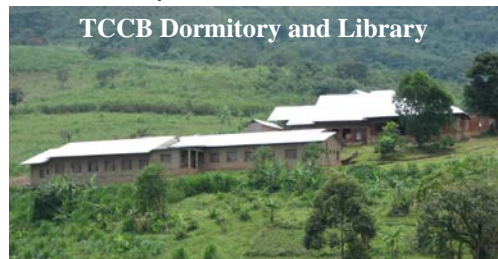
Mr. Mufabule, team leader and botanist, collects gorilla dung from an area in Maiko National Park for later DNA analyses.

(support for this park arrived in 2003 from CI and USAID CARPE). They completed surveys in the south of the park (but were briefly held hostage by an insurgent group, the "Simba"), conducted their analyses, and aided by Stuart and Francine Nixon, DFGFI researchers who accompanied them, made another astonishing discovery: a gorilla population in south Maiko, previously thought to number about 30 individuals by western scientists, was found to contain at least 400 individuals. Their surveys also provide data on other mammals (such as chimpanzee and okapi), human disturbance, and bushmeat consumption in local markets. Their study in Maiko also discovered a conservation tragedy: elephant populations had been decimated by the Simba for their ivory. Nevertheless, another gorilla population was designated high priority for conservation. By 2006, the Tayna scientific team was back in their reserve, doing what are called "change detection studies" of large mammals and human threats, comparing the results of their 2001-2002 study with repeat surveys in 2006. In this study, they found that over the five years while Tayna community rangers had been providing protection and educating the local people, elephant, chimpanzee and gorilla populations had substantially increased in numbers. At the same time, human disturbance (trail, traps, camps, mines) had virtually disappeared. This first quantitative evidence from a community reserve in DRC clearly suggests that when community conservation is linked with education and development initiatives, this may be a formula for conservation success.



A Congolese Community-Managed University Prepares New Generation of Conservationists

The Tayna Center for Conservation Biology (TCCB) was conceived by local people and traditional leaders and created to train the next generation of conservationists in eastern Democratic Republic of Congo (DRC). Today, 67 students have completed coursework and final exams in conservation biology and community conservation on the Tayna campus, located seven km from the Tayna Gorilla Reserve, a government-sanctioned 900 km² Reserve managed by the local community. The students, who receive the equivalent of a state-sanctioned Bachelor's Degree after three years of study (including fieldwork in the nearby Tayna Reserve) will soon complete the defense of their theses and return to their communities to begin new jobs in conservation management, education, and biodiversity studies. The students, who began this program in 2003 and were provided full scholarships, were chosen from member NGOs of a federation of community-based nature reserve projects in Eastern DRC. This investment in higher education both functions as an incentive program providing concessions to stakeholders ceding their traditional rights over areas converted to Reserves, and a capacity building program, providing skill sets to students who will then form the next generation of conservationists for the UGADEC Federation. Professors for the TCCB have been drawn from universities throughout the country: Kinshasa, Kisingani, Bukavu, and Butembo. In addition to the students on scholarship, the TCCB also functions as a day school, and there are another 180 students from the surrounding area who are attending the university. The site is ideal for conservation and biology students, who can do their practical studies in the forest, and study with the staff of the Tayna Gorilla Reserve. The TCCB is strategically located near a sacred forest, a waterfall, and a cave system. Since this site is the northern entryway to the Tayna Gorilla Reserve by vehicle, it has excellent potential for cultural tourism and the future plans for ecotourism for the Tayna Reserve. At present, the university can host international professors who teach specialized classes and workshops. The complex includes a building housing three large classrooms, a computer laboratory with satellite internet access, and a small library. There is also a dormitory building that can house >100 students. There are additional buildings used for visiting guests, and nearby, a hospital and community radio station were constructed with funds from Tayna staff members. TCCB students in media use the radio station on a daily basis, perfecting communications skills.



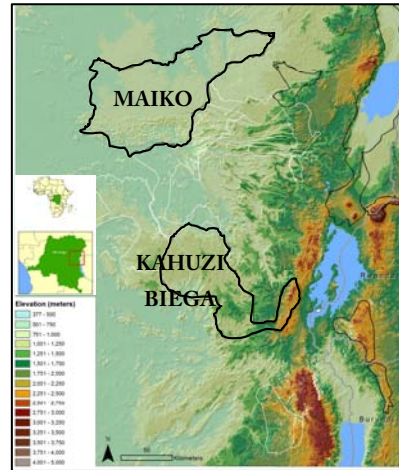
Radio station broadcast (sound room) right and control booth (left)



Cynthia Moses, President of an NGO that trains local stakeholders in film production, trains TCCB students in communications.



Reinvigorated Conservation Efforts for Kahuzi-Beiga and Maiko National Parks: When the CARPE USAID¹ program began in October, 2003, two National Parks in eastern Democratic Republic of Congo had been decimated by civil war and had become effectively, “paper parks”. The staff of Maiko NP (10,000 km²) fearing for the lives, had fled, leaving only one Warden and a handful of unpaid, untrained, and unequipped guards. In Kahuzi-Biega NP (6,600 km²), remaining staff had lost control of the entire lowland sector, comprising 90% of the park, and home to an large priority population of Grauer's gorilla² and other important fauna and flora. In 2003, both parks were suffering a number of severe threats: illegal mining for gold, cassiterite, coltan, and diamonds controlled by armed militias; incursions of illegal settlers practicing slash and burn agriculture and pastoral activities; bushmeat hunting and trading; ivory hunting that had decimated forest elephant populations, and the illegal capture of great ape infants for the black market (with entire families being killed during the capture). By the end of 2006, CARPE support delivered by a Conservation International-led partnership of international NGOs³, had reinvigorated the wildlife authority, ICCN⁴, and now, these two globally significant protected areas are truly making a comeback. More than 250 staff are conducting anti-poaching patrols, having been provided training, equipment, and supplies. The staff of both parks have received bio-monitoring training, including the use of GPS⁴ units, satellite imagery, and aerial over-flights to assess forest threats. Infrastructural needs are slowly being met: the parks have received vehicles, offices have computer equipment, radio equipment links remote stations, new patrol stations have been constructed, and more than 50 km of roads that provide access to the parks (and local farmers' access to markets) have been rehabilitated. A number of social actions also build community goodwill for those stakeholders living near the parks, who, for lack of livelihoods, might pose threats to their biodiversity: these include dialogue committees to address boundary conflicts, micro-credit projects, written agreements with local villages that they will respect park regulations, temporary wages to local farmers through the rehabilitation of local roads, and health-care interventions. In conjunction with international partners³, both parks have completed five biological surveys on large mammals, such as gorilla, chimpanzee, forest elephant and buffalo, as well as on a variety of medium sized mammal species (duikers, monkeys, etc.). These surveys, which also assess biodiversity threats, are providing important baseline information for parks management, enabling staff to target their interventions to critical areas. Incredibly, in three short years, despite the continuing presence of insecurity and areas still controlled by illegal armed militias, Maiko has now provided patrol coverage for 35% of its surface area (an increase from 0% in 2003); Kahuzi-Biega now provides coverage for more than 40% of the area of the park (up from 10% in 2003). In the latter, eleven gorilla groups are being regularly monitored by park staff; Maiko has plans to begin a similar program. Staff in both parks are now motivated to turn these sites into premiere



examples of protected area management in Democratic Republic of Congo.

¹ United States Agency for International Development, Central African Regional Program for the Environment

² Grauer's gorilla is also known as the eastern lowland gorilla *Gorilla beringei grauri*

³ WWF: the Worldwide Fund for Nature, WCS: Wildlife Conservation Society, DFGFI: Dian Fossey Gorilla Fund International



Appendix 2. Original Objectives and Indicators of CARPE IIa Landscape 1

Narrative Summary	Indicators and targets	Means of Verification
<i>Reduce the rate of forest degradation and loss of biodiversity through increased local, national and regional natural resource management capacity</i>		
1. Objective 1: Local organizations apply improved natural resource management practices.	Area protected with (a) legal recognition or binding contractual protection and (b) biodiversity conservation as an official goal	Logging concession contracts, land management agreements, legal declaration of protected area cover.
1.1 Support local stakeholders develop, through a participatory approach, an integrated landscape-level strategy to promote a matrix of mixed land uses conducive to both economic development and long-term persistence of biodiversity.	Landscape plan completed and published	Plan document, meeting proceedings, reports
1.2 Develop the capacity of relevant agencies to manage national parks in landscape for conservation of biodiversity and to guarantee their long-term sustainability.	Field management maintained in Monte Alen NP and deployed in Altos de Nsork NP. Management plans for both parks completed and published.	Plan document, minutes; operational reports, equipment inventories, staff register
1.3 Support and encourage government and private sector partners to improve practices in forestry concessions in accordance with conservation principles to reduce forest fragmentation and bushmeat hunting.	Guidelines for forestry concessions published and disseminated	Guidelines document, meeting minutes, reports
1.4 Foster tourism and other sustainable economic activities that provide livelihoods and support biodiversity conservation	Visitor use plan and business plan for Monte Alen NP completed; tourism potential evaluation for Altos de Nsork NP completed; At least 3 livelihoods projects for bushmeat hunters and marketers formulated and funded	Planning documents, meeting proceedings, project proposal documents, small grant agreements, reports
Objective 2: Natural resources governance is strengthened	Policies and legislative frameworks that support biodiversity conservation	National laws and regulations
2.1 Help improve coordination and cooperation of relevant agencies to develop, monitor, and enforce integrated land use plans.	Formal land use plans, land use legislation, and land zoning plans.	National and local laws and regulations
2.2 Support efforts by local institutions to develop and review policies and laws favoring the conservation of protected areas, biodiversity corridors, and natural resources to facilitate their implementation and enforcement	Legal analysis document completed and disseminated	Analysis document, minutes, reports
2.3 Foster the involvement of civil society and NGOs in natural resource management issues to increase awareness and participation and improve decision-making and accountability.	Participation of local NGOs in natural resource management planning for a	Evaluation document, trip reports, meeting proceedings reports
2.4 Help local institutions participate in regional multi-national networks to increase collaboration and coordination on policies and practices.	Participation of INDEFOR in 3 international meetings	Evaluation document, trip reports, meeting proceedings, reports
2.5 Help local partners develop self-sustaining programs to train conservation professionals that increase the capacity of local institutions and guarantee long-term sustainability of natural resource management	IUBioma institutional development plan completed; Biodiversity degree program in operation, short courses completed.	Institutional development plan document, inventory, curriculum documents, student lists, reports
3. Local organizations institutionalize natural resources monitoring to improve management and decision-making	Forest cover and participative selected species are monitored Key pressure and response parameters (selected in a participatory forum) are monitored Public access to landscape and local scale data from monitoring network	Maps and reports Monitoring reports Database and monitoring reports
3.1 Build the capacity of local and national institutions to monitor biodiversity resources in the field and analyze data.	CyberTracker in use by INDEFOR, database in UNGE functional	Training report and trainee list, hardware inventory, reports
3.2 Collaborate with local and international partners to compile, acquire and analyze baseline information	Baseline data incorporated into database	Data sheets
3.3 Support local partner efforts to establish a regional monitoring network	Exchanges with CARPE partners	Reports
3.4 Help local partners prepare and disseminate reports on the status and changes in resources for improved local and national management and decision making	Annual reports published and disseminated.	Reports

Appendix 3. Original Objectives and Indicators of CARPE IIa Landscape 10

Narrative Summary	Indicators and targets	Means of Verification
STRATEGIC OBJECTIVE: Reduce the rate of forest degradation and loss of biodiversity by increasing local, national and regional natural resource management capacity.		
1. Facilitate the ICCN, established CBOs, other NGOs, local stakeholders, and national governmental agencies to implement sustainable forest and biodiversity management policies and practices.	Conservation areas protected with legal recognition and biodiversity conservation as one official goal. CBO development zones demarcated with appropriate regulations.	Legal declaration of protected areas; land management agreements; meet scheduled deliverables with respect to protection, training, capacity building, biological and socio-economic monitoring, etc.
1.1 Facilitate the development of an <i>integrated land use planning process</i> for this landscape with stakeholder participation, to include a <i>protected area corridor concept</i> and provisions for <i>sustainable biodiversity conservation</i> .	Publish first land use plan in conjunction with Ministries of Environment, Agriculture and ICCN; publish site-management plans including geo-referenced maps; complete tourism evaluation studies for NPs and CBO zones.	Governmentally and locally authorized land use plan document; meeting proceedings and reports; at least one proposal submitted for endowment fund for recurrent expenditures.
1.2 Ensure biodiversity and ecological integrity of Landscape by (a) providing capacity building for ICCN and UGADEC to <i>manage and protect protected areas</i> and (b) <i>reducing threat of cross-disease transmission</i> to at-risk fauna across Landscape.	ICCN and CBO management established and maintained in protected areas; medically screen employees and educate them on cross-transmission; screen and treat target villages for specific diseases.	Management plans published, minutes, operational reports, equipment inventories, staff register, GIS maps, scientific reports and publications; training certifications; ICCN and UGADEC meet their own internal indicators and timelines.
1.3 Develop and <i>strengthen CBOs practicing local community management</i> of forests to increase benefits for local livelihoods.	CBO development plans negotiated and ratified by local stakeholders, then published and disseminated; 5 or more small NGO grants projects operational.; seek other rural development support.	Development plans ratified by General Assemblies and published; projects supported by small grants meet deliverables; submit 2 or more proposals to acquire other support and awards targeted on rural development.
2. Increase capacity of environmental governance through strengthening national and local institutions, policies and laws.		
2.1 At local and national levels, work with law enforcement agencies and judicial authorities to strengthen <i>enforcement and prosecution</i> .	Establish working relationships with local authorities, and through workshops provide them training on current law and identifying species.	Quantifiable increases in confiscation and prosecuted cases at landscape level; published reports from workshops with local authorities.
2.2 Ensure that the community managed <i>Nature Reserve concept</i> , supported by existing law, is supported by local and national level policies.	Six CBOs to submit documentation to Ministry of Environment for authorization as CBNRM Nature Reserves; though this process, provide Ministry a model for minimum requirements for this status.	Ministerial declarations of Nature Reserve Status for some or all six CBOs.
2.3 Increase capacity of CBOs and local NGOs to engage in <i>conservation and CBNRM advocacy</i> at local, national, and regional levels.	Via field educational campaigns, Web site and exchange programs, and trips to Kinshasa, UGADEC implements and maintains advocacy campaign.	Web publications, advocacy publications, trip reports, meeting proceedings, and reports.
2.4 Support the process of <i>codifying and disseminating local (Customary) land tenure law</i> and CBNRM.	Study group of traditional chiefs and lawyer produce report on customary law and its relationship to National law. Representatives conduct meetings with Ministries of Environment, Agriculture.	Meetings/conferences proceedings, reports, trip reports.
2.6 Provide capacity building and training to <i>strengthen ICCN and CBNRM NR governance</i> .	All training and exchange programs operational, including Kasua Training Center.	Kasua Training Center curriculum documents, student lists, diplomas and certificates from all training programs; exchange workshop proceedings; reports.
3. Increase capacity of environmental monitoring by institutionalizing monitoring activities at local landscape levels, and facilitate the integration of these results with national government and regional agencies.		
3.1 Strengthen the capacity of local, national and regional organizations to monitor biodiversity resources.	Train ICCN and UGADEC in biological and socio-economic monitoring techniques, employing GIS science and aerial surveillance.	Training and certification, hardware inventories, reports, production of GIS maps, habitat and bio-inventory maps.
3.2 Acquire, compile, manage and disseminate baseline information.	Baseline data acquired /verified, then incorporated into database and used in all aspects of targeting and planning.	Raw data, database, site-specific GIS maps.
3.3 Support local partners to participate in regional monitoring network.	Exchanges and transparent data transfer with government agencies, ICCN HQs, other National Wildlife Authorities in the region, , and other CARPE partners.	ICCN and UGADEC Reports disseminated and integrated into regional monitoring reports and initiatives.