

**The United States Department of Agriculture, Forest Service and the
United States Department of Interior, Fish and Wildlife Service
Technical Assistance Trip Report to Gabon, Africa
June 15-July 2, 2003**

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I. BACKGROUND

President Omar Bongo established Gabon's National Park System with the declaration of thirteen national parks in August of 2002. A visit by the United States Secretary of State, Colin Powell, and a later visit by top US Department of Interior (DOI) and Department of Agriculture (USDA) officials laid the political groundwork for future United States financial support and technical assistance to Gabon. While much of this funding will be funneled through the United States Agency for International Development (USAID) Central Africa Regional Program for the Environment (CARPE) in support of the Congo Basin Forest Partnership, some will be passed through DOI and USDA International Programs in the form of technical assistance missions.

A Technical Assistance Team from the United States visited Gabon from June 15 to July 2, 2003. The purpose of the trip was to better understand the context of recent establishment of National Parks in Gabon and assess and identify potential opportunities for providing US technical assistance in managing the national park system. The assessment focused specifically on the areas of land management and landscape level planning, tourism and recreation development, geographic information systems (GIS), and training needs.

Overall coordination of the trip was provided by the United States Embassy. The trip itinerary and principle logistical support was provided by the Wildlife Conservation Society (WCS), one of the primary nongovernmental organizations working with the Gabonese Government on the National Park System and related conservation programs.

II. KEY FINDINGS

General Observations

Since the Gabon National Parks are a relatively new concept, there is no formally identified administrative organization to manage the parks within the Gabonese government. The National Parks Council provides a governmental forum to discuss park issues but its role as the management authority is still evolving. For US technical assistance to be practical, meaningful, and provide needed continuity, we recommend the Gabonese government clarify and confirm the administrative infrastructure intended to manage the new National Park System, which would include the identification of conservators for each National Park along with key staff. This will direct technical assistance to the appropriate management officials as well as ensure the sustainability of such assistance. We recommend the Gabonese government formally request specific technical assistance from the US government. Such a request would represent a mandate

for providing US technical assistance as well as represent a stated commitment by the Gabonese government to utilize and implement concepts resulting from the technical assistance to manage the Gabon National Park System.

A key principle is that National Park planning and management in Gabon is only a component of landscape conservation planning. National Parks provide a critical landscape anchor of key protected areas around which sustainable landscape management plans are developed. However, additional and more challenging broader landscape planning is necessary outside of National Parks, particularly in forest concessions, to address larger landscape biodiversity conservation. The US could also provide technical assistance in this arena. Furthermore, Gabon landscape planning is only a component of the larger Congo Basin ecosystem involved in the Congo Basin Forest Partnership.

LANDSCAPE PLANNING

USDA Forest Service has a legislative mandate for the management of national forests and grasslands in the United States which requires that these public lands be managed for multiple uses to ensure their sustainability and to guarantee that future generations will continue to benefit from their many values. Sustainability includes ecological, social, and economic components and has evolved to be the guiding management principle for the Agency and has influenced planning developments over time.

In the past, planning areas were generally based on political and administrative boundaries such as individual national forests, wilderness areas or timber-sale areas. During the past 20 years, it has become increasingly clear that these spatial scales were too small and larger ecological boundaries were needed to assess and plan for ecological sustainability. These ecological boundaries -- often defined by major watersheds, mountain ranges, vegetative types, or areas used by wide-ranging wildlife species -- improves our ability to more adequately address key conservation and ecosystem function issues.

These spatial scales permit the development of comprehensive plans and our ability to assess the cumulative effects of current and future management actions. This ecologically-based planning is often referred to as 'landscape planning' because ecological considerations do not confine themselves to geopolitical boundaries and often encompass larger areas (landscapes or 'eco-regions') than previous political or administrative boundaries. The landscape is defined by specific ecological characteristics of an area or important sustainability issues that will help define management intensities and objectives within a specific management unit of that landscape.

Landscape planning is not restricted or equated to protected area planning; it is a broader integration of protected areas into multiple -use landscapes that produce goods and services, such as timber production and tourism. Thus, landscape planning integrates conservation strategies to achieve ecological sustainability as well as resource use opportunities to contribute to economic and social sustainability.

The following points represent important summary observations and recommendations of the US Technical Assistance Team.

National Park Planning

- The US Team facilitated a 5-day management planning work session in Iguela.
- The Gamba Complex draft management plan was reviewed. It contained many elements of a park management plan, but additional needed elements were identified.
- The framework for US federal land management plans was reviewed to present principles of land management planning in the US. The Tongass National Forest Management Plan (Alaska) was used as an example and working outline.
- A draft model park management plan framework was developed in a work session involving officials of the Ministry of Water and Forestry, the Iguela Brigade staff, and NGO's. Loango National Park was used as a site specific example to develop this model plan.

- The draft model plan included Park objectives, Park-wide rules and regulations, and specific management zones to protect and manage key resources. Park administration and Annual Work Plan concepts were included as components of the Park Plan.
- The work session provided important practical training and experience for park planning concepts and park plan development and administration.
- Future US technical assistance could provide continued review and development of the draft management plan framework for Loango National Park. Additional training and work sessions could be presented to assist in development of management plans for each of the 13 National Parks.
- Technical assistance could also be provided in concepts of broader landscape conservation planning within and among forestry concessions and their relationship with National Park protected areas for broad scale biodiversity conservation and sustainable forest management.

Recreation And Tourism

- Gabon's newly created National Park System contains many world class features such as large tracts of tropical rainforest, extensive lagoons, and incredible wildlife populations including elephants, gorillas, and hippopotami. .
- When tourists compare Gabon's National Parks to others in the same market, there are some barriers due to the cost, challenge in reaching them, and unpredictable opportunities to view wildlife. The more barriers removed, the greater the capacity for a tourism market attraction in Gabon.
- Gabon's National Park System is one piece of an overall National Tourism Strategy. In turn, Gabon's tourism industry should be only one piece in the country's overall economic diversification strategy.
- A National Park System marketing plan should be developed to help spread the word about these newest National Parks in the world and the wonders they contain. Such a marketing plan and effort will help Gabon realize the tourism potential of the Park System.

Training

- Meetings with the ENEF (Ecole National des Eaux et Foret –the National Forestry School) staff have identified training opportunities for the new National Park staff. ENEF has a formal collaboration with other schools within the Congo Basin and opportunities for collaboration with the European Union and nongovernmental organizations (NGOs) of the Congo Basin Forest Partnership.
- Field personnel would benefit from practical vocational skills training, such as law enforcement procedures, officer safety, first aid, and search and rescue.
- National Park Conservators may need specific management training for park administration, community relations, and planning.
- The specific skill needs seen in Gabon could correspond to USG technical support in the development of 'train the trainer' programs. Any US assistance would have to be adapted and practical for the realities of Gabon's structure, system and capacity.

Information and Databases

- Complete and current databases and Geographical Information Systems (GIS) are necessary to develop and implement National Park plans.
- There are highly skilled and competent GIS professionals in the National Institute for Cartography (INC) in Gabon.
- The greatest need is for improved collaboration among the Ministries, NGO's, and industry to develop data standards and assimilate and share existing data to develop a centralized and integrated database.
- There is a need for state-of-the-art GIS software and related training.

This report is broken into 4 main thematic categories: park planning, tourism development, GIS/Data systems and Training. Each of these thematic area summaries was provided by the appropriate technical specialist whose names are provided at the end of each of their sections.

III. NATIONAL PARK PLANNING

A. Background

A 5-day working session was conducted at Iguela (a small village and ecotourism resort located within the broader Gamba Protected Area) to develop a planning process framework for a national park plan and develop a model park management plan. Participants included Iguela Brigade staff Madame Monique Safu and Roger Azize, Daniel Idiata from MEF, the USG (US Government) Technical team, Mike Fay and JG Collomb from Wildlife Conservation Society, and representatives from World Wide Fund for Nature (WWF), which included Joseph Ngowou, Bas Huijbregts and Jaap Oostider.

The first step in the working session was to review basic concepts of land management planning. A presentation was given on landscape planning in the US National Forest System lands using the Alaskan Tongass Land Management Plan as an operational example.

The second step in addressing the need for a park management plan was to review the Draft Gamba Complex Plan. Some participants, including staff of the Iguela Brigade, had never seen the plan before and had not had a chance to review the document even though this plan has been in development since 1992. Based upon the overview of land management planning in the US, a number of limitations in the Gamba draft plan were identified by workshop participants. These included:

- No goals or objectives were identified for the management area.
- No land use zoning principles or concepts were included.
- No management standards or land use rules developed.
- No monitoring section was included.
- Too much background material that better belongs as an appendix.
- Too much detail on operational issues and specific implementation
- Some management aspects of the plan were beyond government control.
- Many lists of activities to undertake, but no focus or prioritization.
- Since the plan was so long in development, some of the data was outdated.
- Organizational structure for implementation of the plan was not clear.

Based upon this review, participants agreed to attempt development of a new model park management plan and not use the draft Gamba Complex Plan because of its limitations. Participants used the Tongass National Forest Land Management Plan as a framework to guide development of a model park management plan. The nearby Loango National Park was used for this exercise because of the local knowledge of Iguela Brigade personnel, the availability of GIS data layers, and some background material available in the draft Gamba Plan. The key components were a statement of the goals and objectives, park-wide management standards, and standards for specific land use zones identified for priority uses. The draft model management plan is contained in a separate document.

B. Opportunities for Park Planning Technical Assistance

USDA Forest Service planners could continue to assist in further review and development of the Loango National Park Plan. This would involve reviewing the existing draft document for completeness and evaluating the continuing zoning work that was assigned as a result of the Iguela planning exercise.

USDA Forest Service landscape planners should present planning workshops similar to the Iguela effort to assist in the development of plans for other Gabon National Parks. Ideally, local staff from several adjacent or ecologically similar parks would participate as well as representatives from local NGOs. There should also be continuity between planning efforts as they develop. Such continuity can only be ensured when Gabon identifies an official to be responsible for the planning of the National Park System. At present, it is not clear who has decision-making authority. Mr. Daniel Idiata would be an excellent candidate due to his current Ministry position, administrative experience, knowledge about the diverse park natural resources and his valuable participation in the model park plan development at Iguela. Finally, selected local staff should also be involved to cross train and share experiences and understanding of the planning process. An excellent candidate would be Mr. Roger Azize, who contributed valuable knowledge and insight into the Iguela effort due to his extensive local knowledge of the Loango ecosystem. By participating in future planning efforts on other parks, both Mr. Idiata and Mr. Aziza might learn to serve as trainers for subsequent planning efforts.

The Forest Service could provide technical assistance in the design of a permitting and administration system to implement a National Park plan. Such a permitting system may be under development, but additional assistance might be necessary once the full breadth of potential management and tourism activities within the National Parks becomes apparent. This realization came to light while considering the variety of activities that might occur and must be managed in the Iguela planning exercise.

--Chris Iverson, USDA Forest Service Assistant Director of Wildlife

IV. RECREATION/TOURISM COMPONENT OF LAND MANAGEMENT PLANNING

Gabon's new National Park System contains world-class attractions. The national park system seems to represent the variety of ecosystems found in Gabon and the broader Congo Basin. Additionally, the parks contain significant populations of keystone species such as elephants, hippopotami, and gorillas, as well as rich botanical diversity and spectacular scenery. As a result, Gabon has world quality natural features and attractions to serve as a base for a developing ecotourism industry associated with the National Park System.

A. Challenges

Gabon faces stiff competition with other regions competing for the same market and faces many barriers in the development of a nationwide tourism industry and an ecotourism industry within the National Park System.

Viewing: While Gabon has significant wildlife populations, the forested environment makes them harder to observe for the casual tourist. Since wildlife viewing is a primary reason many tourists come to Africa, this unpredictability definitely poses challenges for tour operators and places Gabon at a disadvantage to countries with more open savannah habitats conducive to wildlife viewing.

Transportation: Lack of infrastructure to points outside of Libreville, road closures for part of the year, difficult terrain, one railway line in the country, and inconsistent and expensive air travel make this a key issue for improvement. Current transportation schedules are not attractive to tourism operators.

Customer service: Anglophone Africa may draw more tourists from England and America, the source of the ecotourism market, than Francophone Africa due to the lack of spoken English. Customer service levels were in need of improvement and demonstrated many inconsistencies; business owners, the majority non-Gabonese, report that it is difficult to recruit Gabonese employees for service-related positions.

Cultural mementos: Obtaining mementos of the tourist visit is difficult. The deep-seated concern over and regulations against photography discourage one of the tourists' most important experiences - photographing their travels. At the same time, there are almost no native crafts or products for tourists to purchase in memory of their visit.

B. Ecotourism Industry Realities

The economic benefits of developing a National Park ecotourism industry should represent one component in an overall Tourism Strategy for Gabon. These strategies should contribute to a broader goal of economic diversification. National Park tourism revenue cannot replace at the same level the declining oil revenues. However, as noted above, a viable tourism product exists and as barriers are removed, the overall tourism market will grow.

It is important that an organizational structure for the National Parks is developed to allow the government of Gabon to collect revenues such as fees, contractual payments, taxes, and direct donations. The idea of developing a parastatal structure through an “*établissement public*” seemed to be a viable option. Such a structure, under the direction of the National Parks Council, can better implement policies and solutions in a manner that cuts across ministerial boundaries.

Initial efforts in the National Parks should focus on self-sustaining operations. Then, as programs are implemented and the ecotourism industry develops, that focus can broaden. The following steps represent a potential evolution in how park generated revenues could be prioritized:

- Combine foreign aid available through bi-lateral, multi-lateral and foundation contributions with government allocations to initiate start-up operations and establish fee and revenue generation programs. Emphasize cooperation and collaboration for most effective use of limited financial resources.
- Fund park operations through entry fees, permit fees, direct donations, contributed/in-kind services, and product sales.
- Hire local community residents to work in the parks or related businesses.
- Share a percentage of revenues back to local communities in the form of support to medical and social services.
- Contribute a percentage of the revenues to the national treasury.

A coordinated program for developing, reviewing and permitting/contracting tourism and other commercial services or “cahier des charges” is critical. This will maximize the revenue potential and coordination of these permits/contracts. Such a program could also address the issues that exist between coordinating licenses from the Ministry of Tourism and permits/contracts from the Ministry of E&F. Similarly, such a system could coordinate with the Labor Ministry to ensure that labor rules are consistent with the needs of the tourism industry. Finally, such a system could establish standards for determining the feasibility of business proposals and ensuring that only viable business operations are granted permits. A one-stop office for all commercial permits/contracts and related paperwork would facilitate business for tourism operators.

The Government of Gabon should be aware of the defining characteristics of what ‘ecotourism’ means. The standard guidelines are as follows:

- a. Provide visitors with meaningful, education experiences in “pristine” environments through personal engagement with the natural and cultural environment**
- b. Result in minimal, or limited, impact on the natural and cultural features which serve as the tourism attraction base
- c. Feature small-scale development designed and implemented in a manner that is consistent with local needs and management capacity, and focused on sustaining local economies over an extended period of time
- d. Encourage the retention of economic benefits resulting from the tourism activity within the local communities
- e. Positively contribute to the conservation programs of the parks rather than merely co-exist with them

C. Operational Suggestions

The USDA Forest Service Limits of Acceptable Change methodology could be a very useful tool to the Gabonese in determining capacities for ecotourism and other recreational development. Technical assistance could be provided on its benefits and application.

A National Tourism Strategy and Marketing Plan should be developed. The National Park tourism industry should complement other tourism areas such as the business market, the Libreville convention market with the development of pre- and post-convention tours, and the resident/expatriate market.

A National Park System Marketing/Communication Plan needs to be developed in concert with the tourism strategy. This plan will identify key messages, materials, and delivery mechanisms for a variety of audiences including the communities near the parks, Libreville, expatriates, companies doing business in Gabon, neighboring countries in the Congo Basin Forest Partnership, and international tourism operators. As part of the marketing plan, a branded identity will be developed including logos, taglines, and design guides for the production of printed and other promotion materials. Next a line of promotional products will be designed and developed as opportunities arise. This communication plan can also help guide the design, development, and delivery of the Ecotourism Business Fair to be held in Libreville in September of 2004.

Given the advanced timetable under which most tour businesses operate, these strategies and marketing plans are a high priority for immediate development and support through technical

assistance. Similarly, the European Union currently has a contract in place in Gabon to assess and develop tourism capacity, both at the national level and specifically for the Gamba Complex. It will be critical to coordinate and collaborate with this existing effort rather than to duplicate or replace it.

The management and operation of the National Parks needs to be accomplished in a seamless fashion by employees and partners of the National Park System, not individual ministries. There was a distinction made between the “ecoguards” who basically serve as law enforcement rangers and currently come from the Ministry of Water and Forests, and the “ecoguides” who basically serve as interpreters and are envisioned as coming from the Ministry of Tourism. The potential for confusion, duplication, and working at cross- purposes is extremely high. Staff must be united under a common entity and may need to receive similar training. It may also be important to determine if there is a need for two separate positions or not.

-- Bonnie Lippitt, USDA Forest Service Interpretation/Tourism Program

V. GEOGRAPHIC INFORMATION SYSTEMS (GIS)

A. Geographic Information Systems and Databases

A high quality, standardized and well-documented Geographic Information Systems (GIS) database, skilled GIS specialists and advanced software are essential for successful development and implementation of park management plans in Gabon. Currently the Gabonese government and local NGOs have many skilled and capable GIS specialists and a great deal of data is available for Gabon. The National Institute for Cartography (INC), World Wildlife Fund (WWF), Wildlife Conservation Society (WCS), most oil and logging companies and several of the Ministries in Gabon have GIS departments. All of these departments keep separate GIS datasets from a variety of sources with a varied degree of communication and data sharing, which has led in some cases to redundant work and to somewhat disorganized and outdated databases. The national parks system and management planning effort could benefit greatly from the GIS resources already present in Gabon by implementing a strategy to organize, standardize and expand current GIS resources.

B. GIS Implementation Strategy

A recommended national parks system GIS implementation strategy follows. Many of the steps have already been implemented, however collaboration between the partners (WCS, WWF, Gabonese government, Conservation International) must take place to discuss and reach agreements to finalize each step.

1. Establish a committee to work on data organization and standards

A GIS standards committee should be established to determine data standards and protocols for each GIS layer and database. Metadata must be established for each layer listing source and scale information and listing all attributes (fields) and defining all coding information. This group should be made up of at least Leonard Akie (WCS), Rufin Mikala (WWF), and representatives from INC, the Ministries with GIS departments, and Conservation International (CI). Other interested parties should also be consulted, such as park conservators, Bas Huijbregts, Mike Fay, Lee White, and Jean Marc Froment for Cybertracker (ECOFAC). The group should meet once a month to coordinate data organization tasks, set priorities, and to develop metadata for GIS

layers, particularly the attributes/fields and coding to be used for each layer. A committee chairperson should be nominated to lead the group and insure tasks are completed, meetings are attended, and appropriate people are contacted for input on data standards. A sample set of metadata for several GIS layers from Nouabale-Ndoki National Park in Republic of Congo will

Cybertracker is a patrol based monitoring system being used in many sites across Africa. Data is collected using a palm computer with easily recognized icons and a GPS unit. Ecoguards and rangers are able to record observations such as animal tracks or signs of poaching by pressing the appropriate icon. A brief menu guides the observer to answer other relevant questions by pressing other icons. The unit makes a geo-referenced point through the GPS unit which is then recorded along with other variables. The data is then downloaded into a GIS program. The system is proving to be a reliable way of obtaining high quality and consistent data for management purposes, even when collected by field personnel who are illiterate or unfamiliar with scientific notation.

be included in the GIS supplement document with more detailed technical information soon to follow this initial report. Furthermore, a standard GIS file structure should be created and all GIS computers will use this file structure to make data organization and map sharing easier. A sample file structure will be included in the GIS supplement document.

If a separate standards committee has not been formed for Cybertracker, this GIS committee could also take the lead on implementing these standards. Many parks and protected areas in the Congo Basin are just now starting to use Cybertracker for wildlife and other field observations. This will be an invaluable inventory and monitoring landscape tool for the Congo Basin and standards should be put in place immediately to insure a seamless database between all users in the Congo Basin, including establishing a protocol for adding new fields or icons and codes that would involve agreement from all committee members.

It is also recommended that a database of illegal activities, such as poaching, snares, and illegal fishing is standardized and maintained by all parks and protected areas in the Congo Basin. Cybertracker could be used when physical evidence is present, however reliable hearsay and cases turned in to local authorities should also be recorded. Each case should be followed up and punishment recorded in the database. Monitoring illegal activities and punishment across the Congo Basin will help identify what prevention methods have been more successful, such as early childhood education, closing forest roads, severe punishment, job availability, etc.

Grants distributed by CARPE/USAID should require grantees that use GIS to demonstrate they were building a GIS database and working with local governments and NGOs on sharing and standardizing datasets.

2. Identify Data Needs for Park Planning and Management

A list of GIS layers needed for national park planning and management should be identified (e.g. villages: population, main employment, main tribe or clan, etc.). Currently there are many GIS layers available for Gabon, however many are at a broad country scale (1:200,000 or 1,000,000) and more detailed layers are necessary for the parks. Ideally most GIS layers for the parks should be at the 1:50,000 scale, but 1:24,000 is preferred. Many of the logging and oil companies have more detailed GIS layers, and satellite imagery and GPS can also be used to collect data at this finer scale. A draft list of GIS layers has been created and will be available in the GIS supplement document. This list should be reviewed and updated by participants in the park management planning process and the GIS standards committee.

One of the most important GIS layers needed is a detailed vegetation map with a standardized classification system. A 1:24,000 scale vegetation map with a minimum mapping unit of 1 - 2 ha

would be ideal for park planning. This amount of detail was necessary when developing the draft management zones for the Loango Park to delineate critical habitat areas for certain species. Greater detail will require more ground truthing, and accessibility to some areas is an issue, as is personnel, funding, and cloud cover on the imagery, so the park managers may need to identify priority areas in each park for this level of detail.

Sassan Saatchi of JPL/NASA (<http://www-radar.jpl.nasa.gov/africamap/>) is working on mid- to broad scale vegetation mapping of the Congo Basin using radar and other imagery, and CARPE (<http://carpe.umd.edu/> and <http://osfac.umd.edu/>) may be looking into doing another more detailed Congo Basin vegetation classification with more ground-truthing. Chris Wilkes of WCS-Gabon may be available for ground-truthing for all projects (after the park boundary demarcation project).

3. Identify existing data layers

Leonard Akie of WCS and INC has been working with INC and Ministries and Shell Oil to collect available GIS layers. Other groups such as WWF, CI, and other oil and forestry companies should be contacted for data. A list of data sources for Gabon has been started and will be included in the GIS supplement document.

4. Assess current GIS resources and needs (personnel, software, hardware)

WCS has one fulltime GIS specialist (Leonard Akie), and WWF has at least one fulltime specialist (Rufin Mikala), plus Annabelle Honorez will be working in Gamba soon. Leonard needs at least one GIS assistant, and recruiting from the GIS and Remote Sensing Departments at the local universities is recommended. Ideally each park will have a full time GIS specialist to develop, manage and update GIS layers, conduct analysis and modeling and offer support to local researchers, while the central office in Libreville would develop and enforce standards for GIS and other databases and collect and integrate all layers into countrywide datasets. If one GIS specialist per park is not feasible, GIS specialists could be zoned and shared between 2 or 3 parks.

Currently GIS users in Gabon use MapInfo, ESRI's ArcView 3.2, and some ArcInfo. Ideally all users would use the same software to make sharing map documents and GIS layers easier. ESRI is the leader in the GIS market and offers products with the most functionality and compatibility. WCS and likely WWF will be acquiring ESRI's ArcGIS software this year, which is replacing ArcView 3.2. I am assisting WCS with the grant application and will be the mentor for the grant. The Gabonese government had also shown interest in upgrading to ArcGIS. If the government dedicates GIS specialists to work on the GIS database for the parks, it may be possible to obtain 2 to 3 licenses for these government specialists

For ArcGIS training, ESRI offers online internet classes in English (<http://campus.esri.com/>) which users in Gabon could take from an office with a satellite internet connection. The Forest Service may be able to put on an ArcGIS course in Gabon in English and French. There is a French-speaking ArcView trainer in Cameroon (Chris Wilkes has contact information) who could be contacted to find out if she is using ArcGIS and could put the training on in French. Ideally the current advanced GIS specialists (Leonard, Rufin, and Annabelle) should become highly skilled in the use of the new ArcGIS software and then put training on for the rest of the users. Sending them to France for French courses in ArcGIS would be very expensive (in the US a 5-day class tuition is \$2000; or a trainer can be flown to a site in the US and teach a 12-student 5-day class for \$16,000), but it may need to be considered for the French-speaking Gabonese users.

Hardware such as a satellite internet connection at the Libreville offices and park headquarters would be extremely useful. Currently Internet connections in Libreville are extremely slow and email attachments must be < 1 MB, and doing research on the Internet is nearly impossible, further isolating Gabon and the parks. Geolink offers a satellite connection for about \$7000 plus a \$700/month fee. Additionally a large format plotter for the WCS office would be useful and is part of the ESRI grant request.

As the parks project expands in the coming years and the GIS database grows, a central GIS office in Libreville should be considered where WCS, WWF, CI, and government GIS special lists assigned to the parks project would be collated and networked. ESRI's ArcSDE (spatial database engine) for data storage and management and ArcIMS (internet map server) for posting GIS layers on the Internet and enabling users to download data and create maps would also be useful at this point.

5. Use GIS to Support National Park Planning

Once the key GIS layers are available (vegetation, villages, roads, streams, etc.) the management zone layer can be created for park planning. The map shows where certain practices can and cannot occur. It is a complex process to create the layer. First a list of relevant management zones for each park need to be identified, then each zone digitized on the map or selected from an existing GIS layer, and finally the zones need to be prioritized and overlaid. A sample management zone map and list of zones for the Loango National Park will be available in the GIS supplement document.

6. Possibilities for future USDA Forest Service GIS technical assistance and/or visits:

1. ArcGIS training in English and French
2. Assistance with GIS data standards and data collection and organization
3. Assistance with vegetation classification if CARPE and JPL/NASA are not available
4. Assistance with developing management zone layers and hierarchy for parks
5. Assistance and continued support in acquiring and mentoring ESRI software grant
6. Provide a USFS aerial videography specialist to organize backlog of video tapes and GPS files and provide or recommend a new videography system and provide training

-- Julie Luetzelschwab, USDA Forest Service, Geographic Information Systems and Database Coordinator

VI. TRAINING

A. National Park Staff Training

Development of an effective National Park System will require trained staff to develop, implement national park plans, and supervise park management. Several existing training programs were identified during our trip. The existing capacity for training must be assessed, potential partners in park staff training must be identified, and coordination between partners must occur to minimize duplication of effort in park staff training.

ENEF has identified that the new National Park staff will need training. I made two trips to the *Ecole Nationale des Eaux et Forêts* to meet with Samuel Ikogou, Directeur General, and his staff. Accompanying me on the first occasion was Dr. Lee White and Dr. Nicole Muloko Ntoutoume., both from Wildlife Conservation Society (WCS), and Bonnie Lippit, USFS Team Gabon. On the

second occasion, I was accompanied by Dr. Nicole Muloko Ntoutoume from WCS. In discussions with Ikogou, he indicated that they were planning on training the new park staff, including the Conservators. ENEF is depending upon contributions from the United States for: creation of new infrastructure for the school, expertise in defining and formation of the courses, and providing train-the-trainer courses. I promised to send some course syllabuses and outlines from currently existing US materials.

Other Congo Basin schools should be inventoried for their ability to provide needed training. The Director of Ministry of Tourism stated that Omar Bongo University had courses available in tourism. With the current infrastructure of ENEF and other Congo Basin schools available, training should built on existing programs. Andre Toham, WWF, he indicated that he is also working on training needs for the parks and that European Union support is also coming.

Much further research will be needed to assure that all parties are involved in the discussions for training. Activities are happening at ENEF and the other Congo Basin Schools. The EU has people on the ground at Gamba and perhaps Lope currently working on training needs for staff. The US may be able to assist in these needs, but must be careful to not overlap existing training.

B. Field Personnel Training

Discussions with field personnel from NGOs and brigade staff, indicated that they needed instruction in the practical skills of everyday park management. While some had received instruction at ENEF, they felt that they did not learn the “how tos” and practical skills needed to deal with park visitors and violators. The brigade’s primary duty is to enforce poaching laws. Field personnel will need practical vocational skills such as law enforcement procedures, officer safety, first aid, nature guiding and search and rescue, as well as educational skills.

There is an important difference between “education” and “training.” The three year program at ENEF provides the basic education needed, but continual training throughout one’s career is important. The concept of short duration, intensive courses to train ENEF graduates in park management was stressed. Using field personnel with practical experience as instructors was recommended and in the basis for most training in the United States USFWS and USNPS. Almost everyone we talked with indicated that learning English was a high priority. Additional skills training that might be of benefit are included on a separate page. A system of uniforms with accompanying patches or badges should be instituted for course completions.

Training Recommendations for Field Staff

Eco-guards	Eco-guides	Brigade Chiefs
Laws & regulations	Laws & regulations	Laws & regulations
L.E. techniques Physical tactics Arrest techniques Officer Safety	How to deal with L.E. situations they come upon Officer Safety	L.E. techniques Officer Safety
Judicial System	Natural & Cultural History	Judicial System
Equipment Skills	Environmental Education	People/communication skills
Surveillance	Process of Interpretation	Management skills
First Aid	First Aid	Admin. & Personnel
Search and Rescue	How to approach animals	Supervision
GPS	Wildlife & Plant Biology	Education/Outreach
	Tourism Principles	GIS/GPS
	GPS	

C. National Park Conservators Training

Park Conservators will benefit from additional management training, beyond their basic education, in park administration, community relations, and planning. Training in decision making, problem solving and collaboration will also be important. They will need to be conversant in the park legislation, laws, regulations, permitting, and policies. They will need skills in public outreach and education, supervision, personnel, budget, and community and media relations. Knowledge of GIS will assist in the management planning aspect. Tourism and public use principles should be included.

Development of a two-three week course is recommended to present to the Park Conservators that is similar to the USFWS Refuge Management Academy, or to the NPS Ranger Skills. This course would provide basic short sessions in many of the topics listed above and would provide a time for all the Conservators to be together and learn the same materials at the same time. Whether to bring these students to the US or provide US instructors in Gabon is the question. Providing the training in Gabon where adequate training facilities are available at ENEF or one of the other Congo Basin schools is likely a more cost effective option. The Shell facility at Gamba that Smithsonian Institution is occupying may provide adequate training facilities. Lodging, cafeteria and classroom space is available.

Conservators training could include some time in the United States to visit National Parks, and maybe even shadow a Park Superintendent, Wildlife Refuge Manager or Forest Supervisor, it may be more cost effective to send US instructors to Gabon. In either location, an interpreter would be needed.

D. Training Programs For “Train The Trainer”

The United States Fish and Wildlife Service, United States National Park Service, and the USDA Forest Service have a vast knowledge of park and forest management techniques. Train-the-trainer techniques have been used for many years by these agencies to develop new instructors and rapidly spread new information across the various individual parks, refuges and forests. Once field employees are trained and gain practical experience, they then become the ‘trainers’. The Director of ENEF indicated that he would like this type of training from the United States.

Specific instruction at all levels could be of use. Special agents from the United States Fish and Wildlife Service, United States National Park Service or United States Forest Service could provide practical skills in law enforcement techniques, patrol and arrest, officer safety, firearms, surveillance, physical tactics, and use and care of specialized equipment such as 4X4 vehicles, boats, ATVs, surveillance, GIS/GPS and other equipment. Interpretation specialists from the US agencies could instruct in the process of interpretation, environmental education, eco-tourism principles, natural and cultural history preservation. Agency field managers could provide instruction in management techniques, park planning, education and outreach to the communities and publics, communication skills, supervision and management of the resources. Additional training could be provided by GIS and computer specialists.

-- Nancy Streeter, US Fish and Wildlife Service, National Conservation Training Center Staff

VII. US Technical Assessment Team Schedule and Meetings

The Team would like to thank the Wildlife Conservation Society for their leadership and initiative in developing the schedule, contacting key officials, and providing important logistical support. In particular, JG Collomb provided invaluable logistical assistance and translation skills. Success of the trip can be largely attributed to WCS and JG. The following represents an overview of the Team's schedule and officials that the Team visited with.

- June 17 Arrive Libreville, Briefings by Embassy and WCS
- June 18 Formal meetings with Ministry of Water and Forests (E&F), World Wildlife Fund (WWF), European Union Tourism Project Contractor
- June 19 Formal meetings with Chair of the National Parks Council, WWF, and Staff at the National School of Water and Forests
- June 20 Chris Iverson presented reduced impact logging concepts to small business group; Flight to Gamba, Formal meeting with Gamba Prefect
- June 21 Formal meetings with E&F Gamba Brigade, Smithsonian Biodiversity Program Coordinator, and USAID CARPE Coordinator John Flynn. Boat ride to Sette Cama.
- June 22 Tour of Gamba Complex Protected Area by WWF, return to Gamba.
- June 23 Formal meeting with Gamba Departmental Council. Flight to Iguela.
- June 24-30 Development of Model National Park Land Management Plan with staff from Ministry of E&F, E&F Iguela Brigade, WCS, and WWF.
- June 30 Return flight to Libreville, Formal meetings with Embassy, Ministry E&F
- July 1 Formal meetings with National Park Council, Deputy Minister of Tourism, and Press Conference coordinated by Embassy. Return to USA.
- July 2 Arrive home.

Important meetings took place with the following Cabinet-level leaders in the Gabonese Government:

- Rene Adiahenou, Assistant Secretary General to the President and Chair of National Parks Council
- Jean Memvie, Secretary General of Ministry of Water and Forests (E&F)
- Membership of the National Parks Council including the Ministers of E&F, Tourism, Planning, Finance, Defense, Interior, Land Management, and Mining

During the trip, the following individuals were also contacted on various issues:

- LaShandra Sullivan, US Embassy Economic Officer
- Ministers/Deputies/Staff, Ministries of Water and Forests (E&F), Tourism, Finance
- Head and Head of Students, National School for E&F
- E&F Field Brigades, Gama, Sette Cama, Iguela
- John Flynn, USAID CARPE Coordinator
- Dr. Lee White, WCS
- Mike Fay, WCS
- JG Collomb, WCS
- Andre Toham, WWF
- Bas Huijbregts, WWF
- Jaap Oostander, WWF
- Jose Kalpers, EU Tourism Contractor
- Manuelle Prunier, EU Tourism Contractor
- Prefect (Mayor) of Gamba
- Vice Chair of Departmental Council (County Commissioner), Gamba

- Patrice Pasquier, Mistral Voyages
- Owners, Sette Cama Safari Lodge
- Managers, Camp Iguela Lodge
- Fishing/Tourism Guide, Camp Iguela Lodge
- Client, Camp Iguela Lodge