

**WILDLIFE
CONSERVATION
SOCIETY**

Langoué Bai, Ivindo National Park

Review of the pilot tourism project

2001- June 2008



**WCS Gabon
November 2008**

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Executive Summary

As a pilot project, the Wildlife Conservation Society (WCS) has been operating eco-tourism at the Langoué Field Station (Langoué FS) in Ivindo National Park (Ivindo NP) since 2004. The primary aim has been to assess the feasibility of this location for long-term tourism prospects. Written specifically for the Gabonese government, this report summarizes the development, the success and failures of the project, and makes recommendations to facilitate informed decision-making on tourism at Langoué or other protected areas in Gabon. Lessons learned in this pilot project can provide valuable information to shape future tourism projects in wild areas of Gabon.

1. Through the appropriate design and implementation of the project, no negative impact is apparent on wildlife populations of particular conservation importance, and the surrounding habitat.

2. Tourism in protected areas is a means to generate revenue for National Parks and conservation activities. Economic sustainability of the project was not achieved, in part due to the low tourist occupancy rate, and high operation costs relating to the remote location. The appeal of Langoué to tourists is undoubtedly high, however further investment in tourism there does not appear to be viable unless demand for the tourist product is projected to increase. Costs could be reduced for both tour operators and conservation bodies (either government or non-government) by the sharing of certain infra-structure such as road maintenance.

3. A *prior* formalization of the common interests and roles of involved parties, be it investors, tour operators, NGOs and government bodies, is an essential component of the long-term success of tourism projects in protected areas.

1. Introduction

1.1 WCS pilot project introduced

Langoué Bai was discovered during the Megatransect project across Gabon led by Mike Fay from WCS and National Geographic Society (NGS). It was immediately recognized as a place of extreme conservation value due to the abundance of several important large mammal species. Populations of the Forest Elephant (*Loxodontus africanus cyclotis*) (including many long-tusked males), Western Lowland Gorilla (*Gorilla gorilla gorilla*), Buffalo (*Syncerus caffer nanus*), Sitatunga (*Tragelaphus spekei gratus*) and Red River Hog (*Potamocheirus porcus*) congregate in the Bai from the surrounding forest to feed. Their abundance suggests an apparent lack of hunting. In the designation and delineation of Ivindo NP, during the large scale creation of the Gabon National Park system during 2002, Langoué Bai and its surrounding forest was a major feature for inclusion. It had previously been positioned within a logging concession zone. Although logging had not commenced in the area, future logging may have posed a threat to these critical wildlife populations through habitat disturbance and the possibility of hunting.

Soon after the discovery of Langoué Bai, WCS launched a research project in 2000 to monitor what was by then considered one of Gabon's most significant Elephant populations. A simple camp was constructed with an access route by land created, and since 2001 WCS has been constantly monitoring the large mammal populations at the Bai. The publicity surrounding and following the Megatransect through National Geographic Magazine (2000, 2001, 2004), increased international awareness of the new National Park system and Langoué Bai. Langoué Bai offers a unique opportunity to watch Elephants and Gorillas in an open grassy clearing, with a magnificent backdrop of old growth primary rainforest. With platforms located at the edge of the Bai, mammals can be viewed unperturbed in their natural feeding habits and social interactions.

WCS was approached by tour operators and the government to facilitate tourist access to the Bai, who collectively saw tourism as a key development to result from the National Park system. Therefore, pending private sector investment, WCS initiated an

experimental ‘conservation tourism’ operation, in conjunction with the ecological monitoring project at Langoué. The anticipation was that tourism revenue would cover some of the costs of research and conservation activities at the Bai and Ivindo NP, carried out collectively by WCS and Ivindo NP.

Following a period of construction of facilities specifically for tourists at Langoué FS and in Ivindo village, tourism has been operating there since 2004, and will cease in Dec 2008. WCS therefore has been carrying out wildlife monitoring for a total of 7 years, with tourism occurring in conjunction with this during the last 4 of these years. With these time-scales WCS are now in a good position to critically and constructively assess the tourism project addressing the key questions established prior to tourism development.

Can wildlife tourism be established at Langoué that will:

1. Not negatively impact the visitation rates to the Bai of key mammal species?
2. Generate income for the National Park and conservation activities?
3. Provide a model for wildlife tourism at other National Parks?

Our hope is that this pilot project will contribute to the informed development of tourism within Gabon. WCS does not intend to operate tourism facilities commercially, however through this project considerable experience has been gained in the development of a tourist project in a remote setting of high conservation importance in Gabon.

1.2 Langoué Bai background and description

Location, ecology and biophysical environment

Ivindo NP was designated to protect three of Central Africa’s magnificent waterfalls (the Kongou, Mingouli and Djidji), Langoué Bai itself, and a vitally important population of Elephants. Ivindo NP also includes the Ipassa Reserve where the IRET research station situated. The Elephant populations are particularly important because, while the estimated density of elephants within the park is not incredibly high, there are a significant number of large-tusked elephants. Similarly Gorilla density is quite low,

however important for monitoring as it is speculated it is a recovering population from an Ebola outbreak prior to 2000 (Maisels, 2005). **Appendix I** lists the mammal and bird species recorded within Ivindo NP. In Ivindo NP there are two major forest formations and a distinct formation rich in Caesalpinioideae (Leguminosae) on the Ivindo Plateau in the south of park. The western part is dominated by species abundant in the Atlantic coastal region in particular *Aucoumea klaineana*, which in the eastern part of the park gradually disappears and where species from the Congo Basin (Congo-BZV, Congo-K) become dominant. Besides these major forest formations there are many particular habitats, e.g. alluvial forest, marches, cliffs, bays and other grassy formations, adding to the already high plant biodiversity of Ivindo NP.

Ivindo NP boundaries border forestry concessions (Rougier, CEB, Cora Wood, Hua Jua and HTG; see **Figure 1**), and villages zones. The main threats to the park are illegal hunting, encroachment by neighboring forestry companies, and more recently the potential construction of a dam for hydroelectric power. Langoué Bai is situated in the south of Ivindo NP (S 0.18854 E 12.55899), isolated from human presence for decades. The two closest villages are Mouyabi 19.8 km away and Milolé 35 km away. Langoué Bai is located close to the area of highest human disturbance (which equates to hunting pressure) within the park recorded in a 2004 – 2005 survey (Figure 2) (Maisels, 2005), likely to originate from the village of Mouyabi.

The Bai is a marshy, mineral rich clearing, through which flows a small, clear sandy river. Initially this was thought to be the Langoué River, and although it later transpired to be a tributary of the River, the name remains. The Bai runs north to south, is 1000m long and ranges from 200m to 400m wide (see Figure 3 for photo). The Bai is on the valley floor, surrounded by steep slopes up to 470m.

Although the vegetation of the Bai is dominated by Cyperaceae grasses, the mammal fauna is exceptional. Elephants, Gorillas, Sitatunga, Buffalo are all regular visitors. Less frequent visitors include: Slender-snouted Crocodile (*Crocodylus cataphractus*), Otters (*Lutra maculicollis*; *Aonyx conjica*), Red River-hog, Mongoose

(*Atilax paludinosus pluto*), and Leopard (*Panthera pardus*). Elephants visit the Bai in order to eat the minerals, taken from specific locations within the Bai. Gorillas predominantly frequent the Bai to eat the herbaceous vegetation and the soil.

Biodiversity and conservation value

Langoué Bai has been called an “Eden”, and the “jewel of Gabon”, due to its aesthetic beauty and high abundance of many species previously mentioned, important for conservation. CITES listed species in Appendix I include Forest Elephants, Western Lowland Gorillas, and Central African Chimpanzees, and IUCN critical endangered species include Western Lowland Gorillas. Highly limited species include the Picathartes (*Picathartes oreas*) and Dja River Warbler (*Bradypterus grandis*). Due to the lack of human association disturbance the Elephants, Gorillas and Chimpanzees are less fearful of human presence. Butterfly diversity is exceptionally high in Ivindo NP and around Langoué Bai, with several new species having being described (Vande weghe, 2004). Many taxonomic groups have not been comprehensively surveyed, such as amphibians, reptiles, and insects apart from butterflies, and therefore it is not yet known what other species important for conservation may occur here. Recently a species of under-storey plant, *Baphia megaphylla*, collected from the Langoué area was described. There are key archaeological sites in the area, demonstrating an important historical aspect to the forest. Ornithologists often remark that Langoué Bai is a fantastic site for viewing forest bird species, and ~ 200 species have been recorded in the area.

WCS infra-structure and activities prior to tourism

Following the creation of Ivindo NP, WCS undertook further reconnaissance missions into the area in 2001, with an eye to establishing a field station in order to monitor the Bai. Investigation into the old forestry roads in the area showed a suitable old forestry road (72km long), reaching within 10km of the camp. The road provided easy access to the south west of Ivindo NP, to be used for park management, law enforcement, research and ultimately tourism activities.

WCS undertook the re-opening of the road to Langoué, purchasing the required machinery and forming a team dedicated to the road opening. Used 15 years previously for logging purposes, the road was in a reasonable condition, however required clearing of vegetation, grading, surfacing with laterite, and the building of drainage channels and 22 bridges. On-going maintenance by WCS has been necessary to keep the road in a usable condition. Due to the steep slopes onto a plateau the road could not be extended to the field station using the available resources, however was deemed the best option for access to Langoué. Helicopter access was the only alternative, and due to the expense is not considered a viable long-term option for regular use. On the opening of the road, precautions were taken to prevent unauthorized access into the park, by the placement of barriers. A basic field station was built on a large rock out-crop to accommodate the research assistants carrying out monitoring at the Bai, and support staff. This is located approximately 2 km from the Bai itself, and is no longer in use except for helicopter landing. In 2004 the new field station to include tourism was constructed at an alternative rock out-crop site nearby.

The primary research has been a long-term monitoring project focusing on the Elephants Gorillas, and other large mammals frequenting the Bai. Additional projects have been carried out by researchers associated with WCS. Steve Blake used a radio-collaring technique to determine the distance traveled by four individual Elephants that frequented the Bai, providing valuable information for conservation decisions concerning Elephants and their habitat. Peter Wrege has been recording Elephant vocalizations by placing large microphones around the Bai, to examine their communication habits. Olivia Scholtz has studied termite communities, which are essential for rain forest eco-system services. A student from Omar Bongo University in Libreville has carried out an environmental impact study of eco-tourism in PN Ivindo. Conservation “missions” by WCS and ANPN eco-guards around the Ivindo area have been carried out on occasions using Langoué FS as the base.

1.3 Eco-tourism background

Eco-tourism concepts

Tourism within protected areas is increasingly being used as an economic tool for conservation and local development. It is seen as potential revenue to off-set those lost from alternative forest uses considered less sustainable at the local or regional level, such as logging or hunting. It can therefore provide an economic value to the protected area, which if locally invested can encourage support from surrounding communities for conservation and biodiversity protection (Goodwin *et al*, 1998).

Eco-tourism is reported to be the fastest growing sector of the global tourism industry, with most tourism growth today occurring in and around the world's last remaining natural areas. It is a segment of nature or wildlife tourism encompassing the idea of responsible travel. It aims to maintain the integrity of an ecosystem by minimizing negative impacts on the environment, while generating economic opportunities that make conservation beneficial to local people (Pedersen, 2002). It is worth noting that "eco-tourism" is a liberally used term by tour operators, and there is often little legislation to ensure these aims are met. In this regard the tourism industry is self-regulating, and there is growing body of assessments and awards (e.g. Conde Naste) for the eco-tourism sector.

Langoué Bai as part of eco-tourism in Gabon

Tourists often visit several places within Gabon, each with a unique wildlife experience. This presents an attractive wildlife-tour package that can be achieved within one country that typically includes: Loango National Park, Lope National Park, and Langoué Bai of Ivindo NP. Langoué Bai offers visitors the opportunity to view Gorillas and Elephants in their natural habitat. The Gorillas are wild and are not habituated to contact with humans, therefore their behavior and visitation to the Bai is completely natural with respect to humans being present. This differs from habituated Gorilla programs for tourists, who although un-threatened by humans would be behaviorally affected by human presence. The combination of this and Gabon's economic and political stability, positions Langoué Bai as one of the few Bais possible to visit with relative ease, amongst those known to exist in Central Africa. It is at present one of the easiest place for tourists to observe aggregations of some of the Congo basin's most magnificent large mammal species.

The tourist projects that exist within Ivindo NP encompass two of the major features protected by the park. Apart from WCS at Langoué, FIGET (*Fondation Internationale de Gabon Ecotourisme*) is located close to Kongou Waterfalls. This is accessed via Makoukou, followed either by pirogue ride or vehicle using a recently constructed road (for the dam development) to the accommodation. Connection between WCS Langoué FS and FIGET is restricted due to the lack of easy transport between the two, and as a result tourists rarely visit both locations.

SWOT analysis of Langoué as a tourism destination.

The Strengths, Weaknesses, Opportunities and Threats analysis (see **Appendix II** for the complete analysis) summarizes that Langoué has a marketable product – with the strengths and opportunities focused around characteristics of the Bai and the charismatic species. The weaknesses and threats mainly relate to the logistical difficulties of the area, and lack of cohesive tourism and infra-structure development within Gabon and institutional support.

2. WCS tourism “product”

2.1 Development & infra-structure decisions

Access

Tourists would arrive at Ivindo village either by the SETRAG (*Société d’Exploitation de Transgabonais*) train or chartered airplane to the Rougier owned run-way. The only realistic access is via the road from Ivindo that has been cleared and maintained by WCS since 2001 (see route in Figure 1). The cost of the road opening and maintenance has been vastly larger than expected. The real cost of opening the road is hard to calculate (purchasing of material, staff time, equipment), while maintenance has required a dedicated 4 man team, with two vehicles, chain saws and other road clearing equipment.

Due to the remoteness and over-land access by vehicle and foot, providing a tourism service required detailed logistical planning. Storms frequently resulted in trees falling across the road, which needed to be cleared not only for tourist movements, but as a key safety aspect to enable rapid evacuation if necessary. In order to achieve this, every car trip between Langoué and Ivindo required the support necessary to clear any debris on the road; a trained chainsaw user, one or two assistants, large chainsaw and tools. This equated to two cars for each tourist trip; one as a tourist car and one with the personnel and equipment to clear the road.

Accommodation

When building the Langoué FS it was important to attain the maximum standard for the accommodation possible with the budget secured, while having minimal environmental impact. The Langoué FS is situated on a natural rock out-crop. WCS moved from the initial field station on a larger rock out-crop (where helicopters now land), to liberate it for an intended private lodge construction that never materialized. During construction, numerous challenges were faced predominantly linked to the logistics of bringing in all the material and housing of the construction team. The construction of the field station took 2 years to build in total, and feedback from the guests has been very positive (see section 3.5). WCS designed the camp to be as

environmentally neutral as possible, with renewable energy sources and minimal waste creation.

The solar panel system has exceeded all expectations as an effective renewable energy source. It has become one of the key demonstration sites that solar power can be a reliable, cost effective and environmentally friendly method for electricity generation in Central Africa. The system provides 24 hour electricity sufficient for all requirements to date (lights, 12V freezer, laptops etc), it has been maintenance free, and is silent. After the initial investment of \$20,000 it has been cost free.

Consideration of the waste system was important to avoid the transmission of diseases from humans to wildlife populations, in particular the apes. The position of the camp on a rock meant long-drop toilets were not suitable, and a composting toilet was the only option. Unlike long-drop toilets, composting toilets employ a process of both decomposition and evaporation, resulting in zero-waste output. Although the toilet does work, it has not been as successful as hoped due to incorrect installation. Tourists frequently commented that one toilet was insufficient for the entire camp of tourists. Other waste was burnt and buried, aside from batteries, glass and aluminum cans that were carried out to the road, and buried outside of the national park.

One key issue during camp construction was the supply of wood. Initially all the wood was purchased from sawmills, and transported by helicopter into Langoué. Due to the exceptionally high cost helicopter transport, and the unfeasibility of carrying wood in by foot, it was not possible for all wood to be brought in. Consequently, with permission from the government, wind fallen trees in the vicinity of the camp were sawn into planks onsite, significantly lowering the lower cost per m³ of wood cut. The wood was used to construct 5 bungalows for tented accommodation, a kitchen, a dining room with lounge, two offices, separate store room, staff dormitories, shower block, and toilets.

2.2 A standard tourist visit

WCS has been taking bookings from 3 tour operators based in Gabon: Mistral Voyage, Eurafrique and SCD (*Société de Conservaition et Développement*). Tourists would either book directly with them or via international tour operators who work with these “on-the-ground” tour operators. This section provides an overview of the WCS Langoué Bai tourism experience and product offered during the pilot project (see **Figure 4** for photographs).

WCS’ Langoué eco-tourism product focused on the Bai, which offered a rare opportunity to observe typically elusive forest mammals in the open. Tourists were hosted in the research camp, considered rustic and comfortable, with simple wooden buildings and a terrace underneath the solar panels. The tourists would stay in furnished safari style tents on platforms, with a balcony looking out onto the forest. There was a capacity for 8 tourists, while personal guides could stay in simpler tent. All meals were provided. From two observation platforms at the edge of the Bai, tourists could relax and watch the days events in the Bai unfold, with excellent birding opportunities. Spotting scopes, tripods and reference books were provided. Tourists usually spent the whole day at the Bai with a picnic lunch and drinks provided. In addition there were a number of gentle forest walks to see some picturesque waterfalls.

Transport	<ul style="list-style-type: none"> • Arrival at Ivindo village by train or chartered plane. • Provided with refreshment, re-organize luggage. • 2 hour drive to end of road, with wildlife spotting opportunities. • 7km (approx. 2 hours) hike into camp accompanied by 2 guides (porters not generally provided).
Arrival	<ul style="list-style-type: none"> • An introductory talk that covered the history of the site, conservation issues, health & safety issues. • Hot showers were available. • Dinner eaten with all the staff to provide visitors with an opportunity for relaxed discussion with the research and camp staff.
Bai visit	<ul style="list-style-type: none"> • Tourists accompanied the researchers to the Bai for the day (usually departing at 7.30, returning by 17.00). • The 1 hour walk provided wildlife spotting opportunities. • Two platforms positioned on the edge of the Bai could be used, each with certain wildlife advantages (i.e. proximity and chance of seeing certain animals). • Research assistants would talk about the research methods. • Picnic lunch and drinks were provided. • Sleeping over-night at the Bai was an option provided, however this was halted in 2008 to reduce impact on wildlife populations.
Other walks	<ul style="list-style-type: none"> • There are 2 waterfalls, one a short walk through the old camp, the other a longer 3 hour round trip.

	<ul style="list-style-type: none"> • Specific walks were made that allowed walking at a slower pace through the forest in order to see birds of particular interest.
Departure	<ul style="list-style-type: none"> • An early departure was typical, in order to give sufficient time for the walk and drive to Ivindo, followed by a shower and snack at the WCS office in Ivindo.

2.3 Current infra-structure and staffing for tourism

Fixed over-heads

Buildings – Langoué	<ul style="list-style-type: none"> • Dinning room, with seating annex and walkway to kitchen. • Office and store room. • 5 platforms with large furnished tents for tourists. • 2 smaller platforms for smaller tents to house guides and visiting researchers. • Staff building with 5 bedrooms. • Separate store room for equipment.
Camp equipment	<ul style="list-style-type: none"> • Solar panel system, spare generator • Water pump, and water tank above shower units. • Kitchen and dinning wear e.g. plates, pots etc. • Tents, roll mats and sleeping bags, bed linen. • Radio and satellite communication systems • Scopes, tripods, reference books, scientific material.
Camp staff	<ul style="list-style-type: none"> • One cook. • Two camp assistants. • Two research assistants/eco-guides. • One international camp manager. • One administrator in Ivindo
Transport	<ul style="list-style-type: none"> • Three 4WD vehicles. • One road digger. • Two chainsaws.
Road staff	<ul style="list-style-type: none"> • 2 chauffeurs. • 3 road clearing staff.
Buildings – Ivindo	<ul style="list-style-type: none"> • Fully equipped house/office for WCS staff. • Additional casse passage & presentation room. • Generator.

Marginal over-heads

Food	<ul style="list-style-type: none"> • Food orders specifically for tourists including fresh vegetables, frozen meat and fish.
Staff	<ul style="list-style-type: none"> • Additional staff to porter tourist baggage, and food requirements.

3. Results of Tourism at Langoué Bai

3.1 Impact of tourism on wildlife

A concern raised by WCS and Ivindo NP authorities was the negative impact that the increased human presence at the Bai resulting from tourism, may have on the wildlife populations and behavior. The primary concern was sound and visual disturbance at the Bai, and regular movement of people to the Bai. Other points of possible wildlife disturbance were along the trails regularly used between the road and camp, the camp and Bai, and in the vicinity of the camp. Monitoring carried out by WCS at the Bai provides long-term seasonal and annual data that can be employed to assess any impact on animal visitation rates resulting from tourism. **Figure 5** & **Figure 6** illustrate the annual trends (trend line; red & green) in visitation rates of Elephants and Gorilla groups, adjusted for sampling effort (standardized month = 210 surveying hours), and taking into account seasonal fluctuations.

It is clear that neither long-term Elephant nor Gorilla group visitation rates (trend line) have been reducing since the commencement of tourism in 2004. The dramatic fluctuations observed, e.g. between <100 and >1000 elephant visits per month at different times of the year, are due to seasonal variance in Bai frequentation (see **Figure 7**). In the case of Elephants, they especially favor nocturnal visits during the drier seasons, hence the low values during these times. Similarly, while Gorilla group visitation rates vary from 0 to >100 per month, this variance has been stable across the years since 2002, with no apparent down-turn associated with increasing tourism numbers.

The option of sleeping at the Bai was halted in 2008, due to concerns of increased impact on the wildlife, and the additional logistics required. In the above analysis there is no evidence for a negative impact on the Gorillas and Elephants. However a more detailed analysis may be required to determine any effect on Bai frequentation originating from regular over-nighting at the Bai platform. Indeed the chance to sleep at the Bai was very popular with tourists, and actively promoted by the tour operators.

The monitoring provides data on the individual Gorilla groups visiting the Bai since 2001 (**Table 1**). 21 groups (includes family groups and solitary males) have been recorded in total, with their visitation varying across the years. The number of solitary males has decreased since 2002, while the number of family groups has remained stable (between 3 and 5). Two families Dulis, and Padouk, and four solitary males, Renoir, Malevitch, Moshe and Van Gogh, have been visiting the Bai consistently since 2002. The Gorillas would be aware of human presence at the platforms, and these individuals and groups in particular would now be habituated to human presence at a distance of >50m.

The camp was designed to have a minimal negative impact on the habitat and wildlife, originating from noise, emissions, waste or forest clearing. While animals are likely to avoid the camp area and regularly used trails due to the ambient disturbance, animals do frequent both the camp and trails, typically for feeding. It is apparent that the absence of hunting in this area has reduced human-associated fear that animals may otherwise have in hunted areas. Regular mammal visits in and around the camp are Chimpanzees, Elephants, monkeys and Brush-tailed Porcupines, none of which are encouraged into the camp by human-provided food.

3.2 Costs and revenue (FY06 – FY08)

Initial investment into construction of the camp, the necessary equipment and staffing, occurred prior to Fiscal Year 06, and therefore has not been included in this analysis. This start up investment would however have been substantial and included large cost items, such as the purchasing of vehicles, camp furnishings, helicopter transport of material, and salaries of the construction and support team. The finances that are presented here from FY06 – FY08 therefore represent mostly the operation costs of the Langoué FS, which has accommodated both tourism and research. The sharing of the infra-structure meant that few costs were dedicated solely to either tourism or research (summarized in **Table 2**).

The total running cost during this three year period was US\$ 1,020,170, averaging US\$ 340,057 per year. Costs have reduced progressively each year by on average US\$

28,000, to US\$ 294,502 in FY08. A significant additional cost required specifically to manage the tourism was the employment of a foreign (proficient in English) staff member. Foreign staff costs, which would include wage, international flight, insurance, and repatriation, were the most significant, comprising 32% of total costs (Figure 7). This has however reduced from US\$ 120,000 in FY06, to US\$ 80,000 in FY08. 25% of total costs were spent on local staff; covering wages, per diems, rent, and public transport to/from Ivindo. This includes the permanent staff; research assistants (who acted as eco-guides), camp assistants, the road team, and Ivindo administrator, and temporary staff e.g. porters and construction workers. The fluctuation in local staff costs (Figure 8) matches those of the tourism revenue, which may reflect the additional man-power required for tourism transport and portering food, drinks and tourist luggage.

The third largest costs were those associated with vehicles (10%), which include vehicle repairs and fuel, but not the purchasing of vehicles which occurred prior to 2006. This high value stems from several factors; high number of vehicles required, frequency of driving to Langoué FS (see section 2.1), nature of the terrain, and continuous road clearing activities. Food and drink costs (9% of total costs) have fluctuated slightly with that of tourism revenue, due to the additional food required for the tourists, catered for specifically with fresh vegetables, fruit and meat. Insurance costs that included vehicle, and professional liability (8% of total) have reduced but remain significant. Telephone costs were also significant (6%), and include email communication through satellite telephones. Camp equipment is very low (2%), largely due to the purchasing of items during the set-up period prior to FY06.

Direct earnings from tourism, which consisted largely of tourist booking through the local tour agencies, but also included associates of WCS and television crews (see **Appendix III** for prices charged), covered less than a third of total costs (32%). WCS was able to employ revenue from grants, such as CARPE (Central African Regional Program for the Environment) and USFWS (United States Fisheries and Wildlife Service) assigned for the wildlife monitoring programs and conservation tasks in Ivindo NP, as well direct financial support from WCS in order to continue operating through the

pilot period. Tourism revenue has increased by 12% from FY06 to FY08, while costs have reduced by 21% during the same period, however the short-fall in FY08 remained high at US\$ 175,000.

If it is assumed that tourist occupancy rate at Langoué FS was 30% of its full capacity (see section 3.5; *The demand*) during FY08, tourism revenue would have increased to ~US\$ 360,000 at full capacity. A concurrent increase in the total expenses (FY08 US\$ 294,502) such as local staff, transport, food and drinks would be expected, however it appears tourism revenue could have covered total costs.

3.3 Ivindo NP revenue

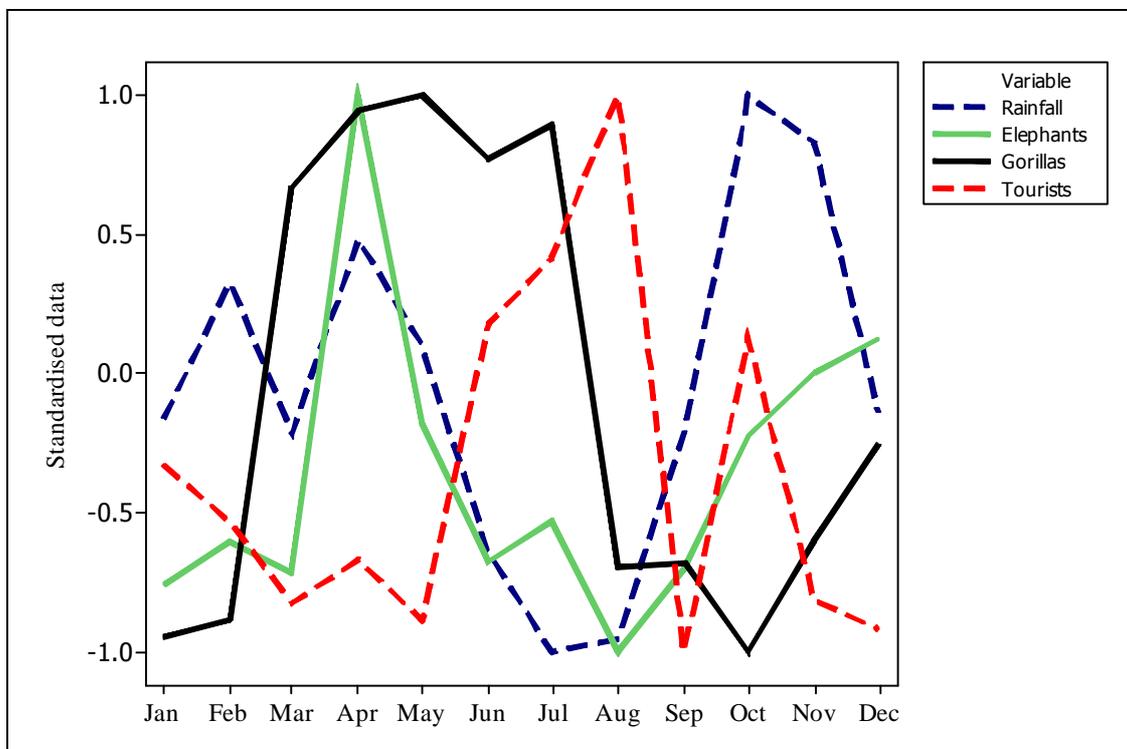
In August 2005, the authority in charge of the national parks (CNPN = Conseil National des Parc Nationaux; currently ANPN = Agence National des Parc Nationaux) introduced a park entry fee of 5,000 FCFA per person per day, for visitors to Ivindo NP. Since the onset of the park fees to the end of June 2008, Langoué Bai has received 509 visitors, staying 2165 days, generating 10,940,000 FCFA (\$25,500) for the National Park. Visitation numbers has increased annually, with seasonal fluctuations within this typical of global tourism trends (Figure 9). Peak revenue months are June-July, and January. From 2006 WCS started a tourist close-out period during September due to low animal activity at the Bai, and to allow camp maintenance.

Revenue from park fees is intended to contribute towards park protection and management activities. If tourism at Langoué and Ivindo were to continue it is predicted that this revenue would increase, due to the growing number of tourists. In other countries within the Congo Basin, Gorilla tourism has generated sufficient revenues for National Parks to cover the cost of park management. However it is uncertain whether tourism will development sufficiently in Gabon to fund the National Park system completely.

3.4 Seasonal trends in tourist numbers and wildlife visitation patterns

The monitoring shows that there is a 50% chance on any given day of seeing a Gorilla at Langoué Bai, however seasonally this varies dramatically. Increasingly tour agencies are organizing the timing of tourist packages to fit in with optimal wildlife viewing. In the case of Langoué, Gorilla viewing is a key consideration, while Elephant viewing is less so due to the good chance of seeing them elsewhere. Equally tourism numbers vary seasonally according to standard holiday periods.

The peak in Gorilla visitation rates occurs from March and August (**Figure 7: Seasonal models of Gorilla & Elephant Bai visitation, Rainfall and Tourist numbers**)



). This coincides with the a peak in tourist visitor number from June o August, the peak Elephant visitation (April), and both the small wet season (April-May), and long dry season (June-August). August to November has both low Elephant and Gorilla visitation rates, which at the on-set of the large wet season, makes this a less optimal time for tourists to visit. Elephant activity increases at the Bai from October, however Gorilla activity is low due to the rainy period.

If one were to provide and promote tourist trips around standard holiday seasons, and optimal wildlife viewing at the Bai:

- the Easter holiday period is ideal for Gorilla and Elephant viewing.
- Gorilla viewing remains consistently high until the mid-Summer holiday period (the dry season). This is a less ideal period for Elephants during the day. Over-night trips at the Bai would be recommended in order to see Elephants.
- Gorilla and Elephant visitation increases towards the beginning of the Winter holiday period, is the large rainy season comes to an end.

3.5 Visitor profile & feedback

In order to evaluate Langoué as a tourism product, tourists completed a simple questionnaire relating to their stay at Langoué. A total of 111 questionnaires were collected, representing just <40% of the tourists that visited during the study time.

Tourist profile

The predominant age group for the tourists is within the 36-45 age bracket (Figure 10). There is a slight majority of male visitors (57%). Two thirds of the visitors were European, with a quarter of visitors coming from North America (Figure 11). British and American visitors were the most dominant nationality (24% and 23% respectively), followed by French (Figure 12). There were very few Gabonese, and African national visitors represented just 2%. The majority of visitors were non-residents (86%) visiting Gabon on holiday. The residents (14%) were predominantly WCS staff, colleagues and friends.

The demand

509 tourists have stayed at Langoué FS since August 2005, with seasonal fluctuation in tourist visitation (Figure 13). This has not been as high as expected and represents only a 30% occupancy rate (8 beds at 26 nights a month, 11 months a year is 6864 for 3 years).

This low occupancy could have resulted from several factors.

- *Publicity.* WCS did not itself publicize Langoué as a tourist destination, and relied upon the tour operators. Publicity on the international market appears to have been good, while publicity internally in Gabon was weak. Exposure in National Geographic Magazine is likely to have generated and maintained this tourism interest.
- *The product.* Lack of interest in the product or the product does not meet the demands.
- *The cost.* The cost is too high and limits a potential tourism market

It is worth noting that low occupancy rates has been apparent in other lodges around Gabon, indicating that the demand for the tourist options available in Gabon is lower than expected.

Feedback of the “Product”

Reservations and information

43% of respondents had booked directly or indirectly with SCD, and 25% with Mistral Voyage. Many had learnt about Langoué Bai through National Geographic Magazine and their television programs. Around 40% could not find sufficient information about Langoué prior to arrival, and many commented on a general lack of information on Gabon. This is despite the availability of guide books on Gabon, and on specific National Parks (although published in French). The information lacking on Langoué included: practicalities of visiting Langoué, warning about the fitness level required, seasonality of Gorilla and Elephant viewing at the Bai, and viewing distances from the animals (typically >50m).

Getting to Langoué

Nearly 70% of tourists arrived with the night train from either Lope or Libreville. SCD clients increasingly benefit from their charter flight service. Over 90% of tourists leave Ivindo with the train, many taking the Thursday day train to Libreville, enabling them to see the magnificent views of Gabon along SETRAG railway. Frequent negative comments about the train journey include: lateness, low comfort level on trains and waiting rooms at train stations, train carriage temperature, lack of information regarding stations and delays.

The walk

The walk into camp was generally rated as being medium to difficult. Respondents commented that the tiredness from the train journey accentuated the difficulty.

The Bai

The questionnaire asked tourists to rate certain criteria as excellent, good, satisfactory, poor and very poor (Figure 14). Over 85% of the respondents rated the wildlife viewing as excellent (60%) or good (26%). The 14% that rated it satisfactory or poor typically did not see Gorillas during their time at Langoué. Comments relating to the wildlife viewing often included the distance away from the animals. However they appreciated the availability of spotting scopes and did enjoy learning to take photos through the spotting scope. Over 80% saw Gorillas (either solitary or a group) in the Bai, and 50% saw a Gorilla group in the Bai. All respondents saw Elephants and Sitatunga (Figure 15).

The viewing platform was highly rated, with just over 30% rating the viewing platform as excellent, 55% as good, while 11% as satisfactory. The main feedback was that the observation platform was too small (5m x 3,5m) when there were 8 tourists present.

The knowledge and skill of the guides were highly rated: 88% said it was excellent or good, with many positive comments that the research assistants were very experienced, helpful and knowledgeable. Communication received 70% scores in the

excellent and good category. It was frequently commented that although the research assistants knew a lot, the language barrier prevents clear explanations. Nearly 60% of respondents rated the overall quality of experience at the Bai as excellent, with 35% as good. The satisfactory and poor (6%) answers attain to those tourists who did not see Gorillas in the Bai.

The Camp

The camp frequently surpassed all expectations in terms of comfort and food (Figure 16), with all criteria scoring over 85% as excellent or good. Half of the respondents rated the comfort of the camp as being excellent, and 60% rated the service as excellent.

General feedback

- Excellent atmosphere in camp
- Very good insight into the Gabonese rainforests and conservation

General recommendations

- Accurate information about animal viewing opportunities and their seasonality
- Photo hides closer to animals
- Introductory evening talk to the research, forest, and history of Langoué
- Night walks
- Canopy walks
- A slower drive into camp to view points on route
- Assurance of emergency evacuation procedure
- Porter service for baggage
- Hope that increased tourism would not ruin tranquility

The results of the questionnaire were encouraging with regard to WCS operations, and gave us an insight to areas of the tourism product that could be improved.

4. Discussion

4.1 WCS Langoué successes and failures

Bais and their surrounding habitat are extremely important for conservation, due to the small number known to exist, and their importance to many wildlife populations. Protection of these areas is therefore a high conservation priority. WCS Langoué FS was initially set up as a research project, and since 2001 WCS researchers have been monitoring Bai visitation patterns of large forest mammals. It is one of only three locations in Central Africa where long-term monitoring (>5 years) of protected species at Bais has been carried out. When the tourism project commenced, the hope was that the revenue from tourism would fund the research. The tourists would also benefit from the presence of researchers by learning about forest ecology and conservation issues.

During the pilot study this vision has been semi-realized. Due to the low tourist occupancy rates experienced, tourism revenue has been insufficient to cover operation costs of Langoué FS. Additional funds were necessary and sourced by WCS through its funding channels. It should therefore be accepted that during the last 4 years WCS has been subsidizing tourism to Langoué. The tourists did benefit from the interaction with local researchers. However this was at the expense of the volume and quality of the monitoring, due to the lack of separate staffing to support tourism and research activities. The research assistants effectively acted as tour guides limiting the time available for the monitoring, although the minimum level of monitoring was still undertaken. While the sharing of infra-structure could improve the cost effectiveness of tourism and research, the sharing of personnel appears to compromise the quality of both. At Langoué FS the additional cost of having staff dedicated to either tourism or research was not considered feasible due to both inconsistent tourism occupancy therefore staffing need, and insufficient tourism revenue.

For tourism to continue at Langoué FS further investment would be suggested in the maintenance and improvement of facilities thus far provided by WCS.

- Direct road access to the camp would allow more tourists to visit. Finding a suitable access route, either as a continuation of the current road, or an alternative access route from Mouyabi, would however require substantial effort.
- Due to the unreliability of the SETRAG train service to Ivindo, sourcing the most cost effective alternative which is likely only to be airplane access to Ivindo.
- A clear emergency evacuation procedure, that can be quickly executed when required, through continued communications and agreements with the relevant helicopter and airplane services.
- Improved toilet and shower facilities, and general camp maintenance.
- Extended trail system (employing the existing elephant trails) to widen the number of forest walks available.
- Gabonese tour-guides, with some English proficiency, who can lead interpretive wildlife walks.

4.2 Model for tourism

Well planned eco-tourism can attain to a triple-bottom-line development and management approach, perceived as the most sustainable due to the inclusion of economic, environmental and social considerations in the model. There are many examples globally where tourism to sites of biological and/or cultural importance is a significant contributor to the local and national economy. Tourism can provide the financial resources that may not have otherwise been available in order to improve or protect these sites. However with high visitation rates, management of tourism is important to maintain the integrity of the site.

If tourism is seen as a means to economically justify the continued protection of an area such as Langoué Bai, considered to be of high conservation importance, this is only possible if tourism is itself viable and sustainable. Following four years of running tourism at Langoué FS, WCS is able to address key issues and make recommendations relevant to future feasibility analyses of tourism in wild areas of Gabon. The relevance of each point is illustrated using the experience acquired at Langoué. As WCS has been

pivotal in the design and implementation of tourism on the ground, but less so in other areas such as marketing, what is presented here can not be considered an exhaustive list.

Unique wildlife experience & conservation importance

Eco-tourism and conservation efforts are often, but not exclusively, inextricably linked concepts; people want to see something incredibly rare/unique, it is of high conservation importance because it is rare / unique. Therefore eco-tourism is seen as potential source of revenue to directly support conservation efforts in that area. The opportunity to see Gorillas in the wild has been a key attraction to tourists visiting Langoué. Other aspects include the uniqueness of the Bai, adventure associated with the remoteness, bird watching, primary rainforest and interaction with researchers. Wildlife activity is however extremely seasonal at the Bai, and the design and promotion of visits would ideally complement these natural fluctuations. Gorilla sighting is likely to remain a focal point of tourists' agenda to Gabon or Langoué. The reputation of Langoué beyond a place to see Gorillas in a Bai could however easily be broadened, given greater communication between the tour promoters and field personnel, such as tracking for Chimpanzees, interpretative ethno-botany walks, jungle survival trips, and environmental education tours for Gabonese groups at a reduced cost. Langoué Bai does currently provide a wildlife experience not available elsewhere in Gabon.

Financial considerations

Given the nature of the site, it would have been very difficult to accurately forecast the operation costs and tourist demand of Langoué FS prior to development. It appears that the minimum threshold of tourist numbers required to sustain the operations costs was its maximum occupancy rate; 8 beds, 26 nights per month, 11 months per year (2288 nights per year). However on average only 30% occupancy was attained. Clearly an important question to be addressed is; due to any number of reasons e.g. a growing market, or an improved tourism “product” that caters for a wider audience, can one confidently anticipate higher demand that can meet the minimum threshold necessary for financial sustainability?

The extremely high cost of visiting Gabon as a tourist, renders it as an exclusive holiday destination affordable by a relatively small section of the eco-tourism market. The typical profile is: very high earning bracket, higher age range, well seasoned wildlife travelers to Africa. This presents a catch 22 situation, as the high cost of a holiday (due to the cost of over-heads in Gabon and number of intermediate agencies involved) places greater expectation of a tourist product comparable in quality and wildlife experience to other African holiday destinations. Eco-tourism tends to attract young, highly educated individuals with professional occupations. They prefer less crowded destinations that offer challenging experiences (Pedersen, 2002), with a focus on learning about and discovering nature (Eagles, 1995). Langoué would therefore clearly meet these criteria of the wider eco-tourism market, if the expense of the holiday was less of a limiting factor.

Minimum environmental impact infra-structure

A major justification for eco-tourism over other resource uses of natural areas is its low long-term environmental impact, either to the habitat or wildlife populations. Due to WCS' role as stewards of conservation efforts, this was a key issue in the design of Langoué FS. The increased frequency of people (both tourists and the necessary support staff) visiting Langoué as a result of tourism, could have generated localized disturbance, thereby jeopardizing the integrity of the site. However Langoué FS is a valuable show-case of impact minimization (See section 2.1) for both research stations and tourist lodges in protected areas. In some cases a greater financial initial investment is required, however this is redeemed due to reduced subsequent costs, such as the solar power system. Other issues such as waste management will have on-going elevated costs, necessary to minimize impact.

No evidence can be found for a negative impact of tourism on animal visitation to the Bai. This was likely in part to result from research being carried out at the same platforms, thereby encouraging tourists to keep noise levels to the minimum. Indeed the regular movement of vehicles and presence of tourists would probably have deterred hunters from entering the area.

Agreements with government authorities, tour operators and conservation groups

Associated with any tourist development is the expectation of direct and indirect benefits to the relevant authorities and local populations. This can take several forms such as revenue from park entry fees to fund park management, training and employment of local staff, localized purchasing of goods and services (such as food and artisan), and investment in infra-structure. Such benefits are best provided when the needs of the involved parties are identified; however this ideally would occur at the onset of a development, through formal agreements outlining expectations and mechanisms for accountability.

At Langoué FS, the main beneficiary has been Ivindo NP through park entry fee income. Benefits to Ivindo village has been the increased stopping of the train at Ivindo station to four times a week, and the purchasing (although at a low frequency) of locally produced food. These have largely evolved in an *ad hoc* fashion and lacked prior formal agreements that could have been built into the tourism model. In some cases initiatives have simply failed to succeed, such as the production of local artisan to sell to tourists. WCS had anticipated that the tourism operation, once developed, would be formerly handed over to an interested tour operator. When this did not eventuate, partly due to the lack of formerly binding agreements, WCS continued operating tourism for the interim period due to the substantial investment made by WCS to establish a tourism market for Langoué. While it is often hoped that tourism can contribute to conservation efforts, the operation of tourism is not however the function of WCS.

4.3 Future of Langoué FS

WCS has been conducting research at Langoué Bai since 2001, using Langoué FS as the base camp since 2004. The potential for conservation research and activities that build on 7 years of monitoring data are numerous. These will be determined by conservation priorities that align with WCS' core values i.e. protection of critical habitats and wildlife, and the available funding. It will commence in 2009 with a park wide monitoring survey, to map the distribution and abundance of key large mammal groups and disturbance

regimes across Ivindo NP and certain buffer zones. Langoué FS will be employed as the base camp for surveying missions in the southern sections of the park.

Generating revenue from tourism does not however fit the remit of WCS' values, and following this pilot project WCS is ceasing to run tourism at Langoué FS from the end of 2008. We have however accumulated a wealth of knowledge on the operation of tourism in Langoué, which could be relevant to future tourism projects there or elsewhere in protected areas of Gabon. In that regard, the aim of this report is to inform decision makers of this knowledge. WCS are available to advice interested authorities and parties, in particular where tourism has a capacity to contribute to conservation efforts.

Figure 1: Map of Ivindo NP, with logging concessions (Tomo Nishihara)

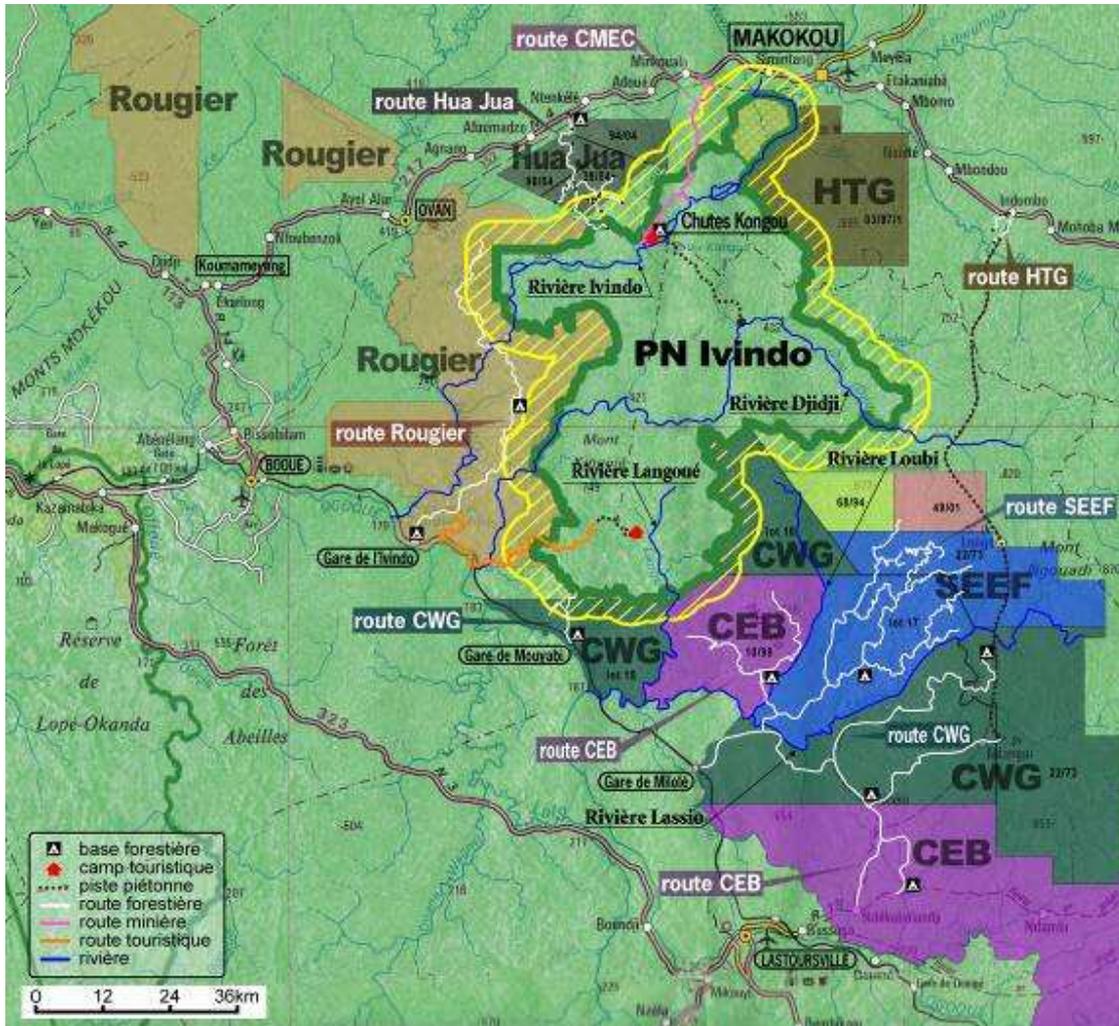


Figure 2: Map of human disturbance in Ivindo NP

Figure 3: Aerial photograph of Langoué Bai



Figure 4: Tourism photographs

Langoué FS, Picathartes nest, SETRAG train at Ivindo, tourists at the Bai platform



Figure 6: # Gorilla group visits per month, with trend line

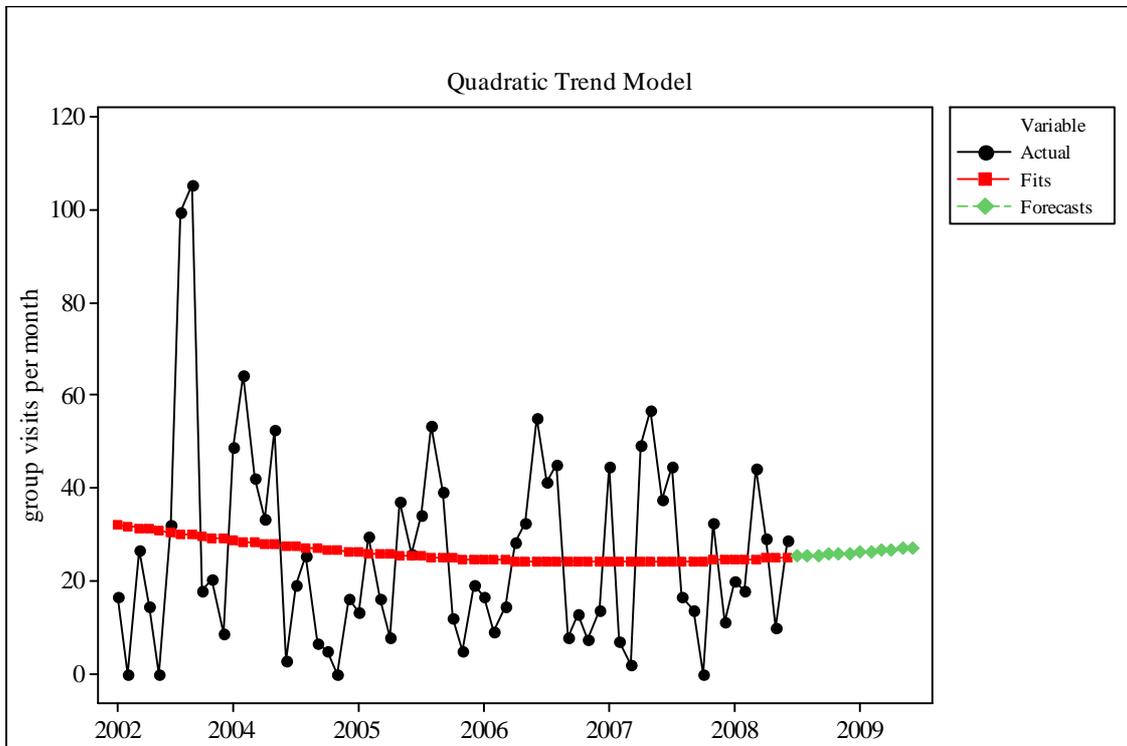


Figure 7: Seasonal models of Gorilla & Elephant Bai visitation, Rainfall and Tourist numbers

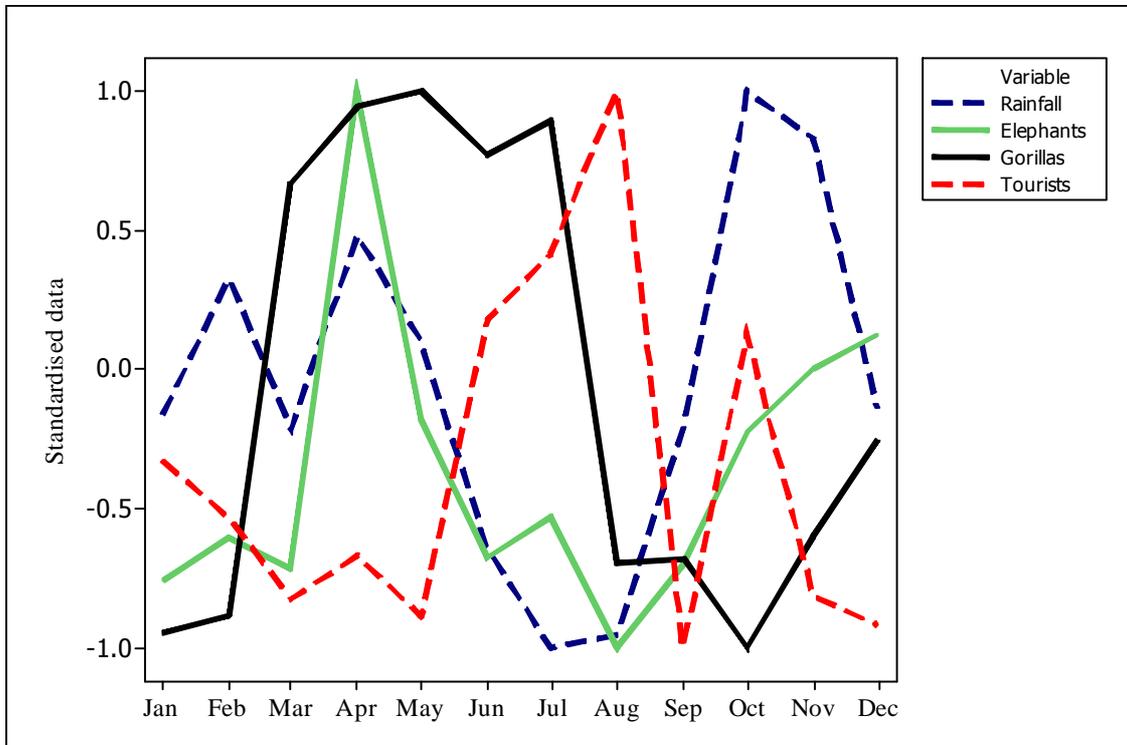


Figure 7: FY06-FY08 breakdown of costs (US\$ 1,020,172)

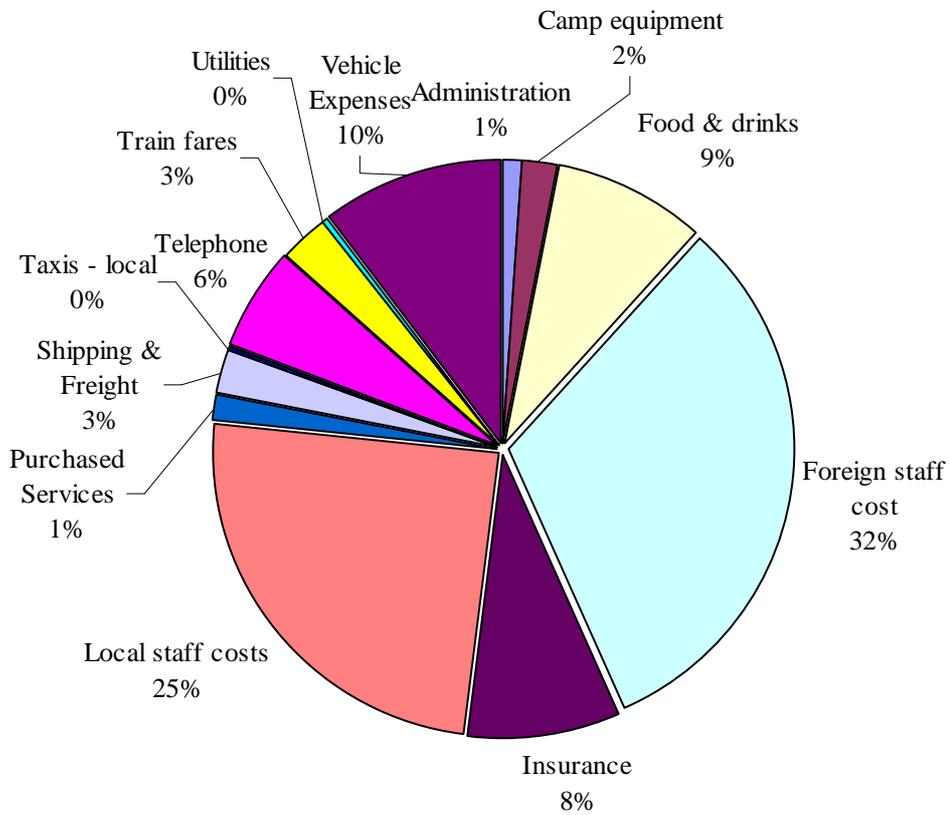


Figure 8: Cost categories (lower value categories not included) and revenue by fiscal year

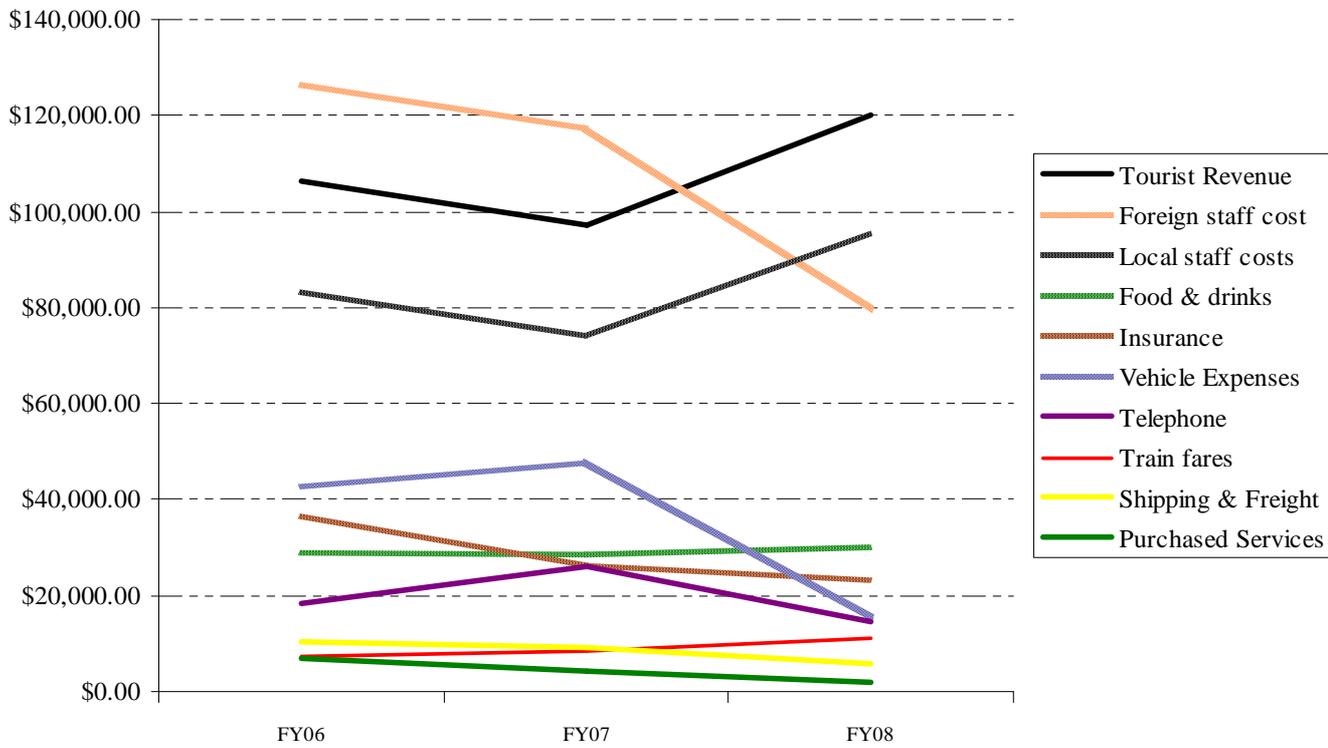


Figure 9: Park Fee revenue per quarter

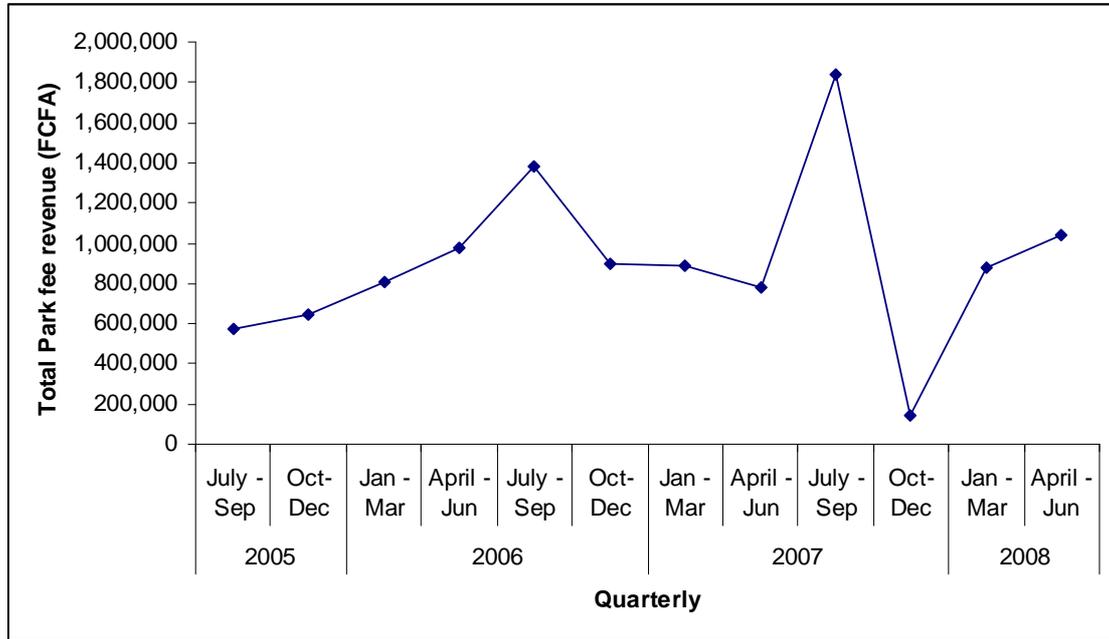


Figure 10: Age profile of tourists visiting Langoué

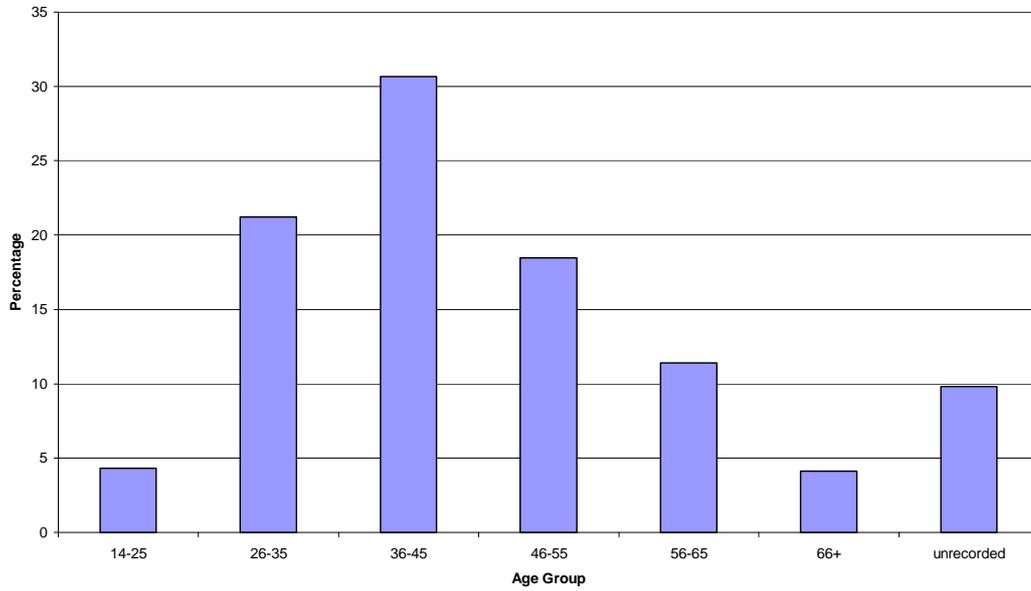


Figure 11: Continent of origin of Langoué visitors (FY06-FY08)

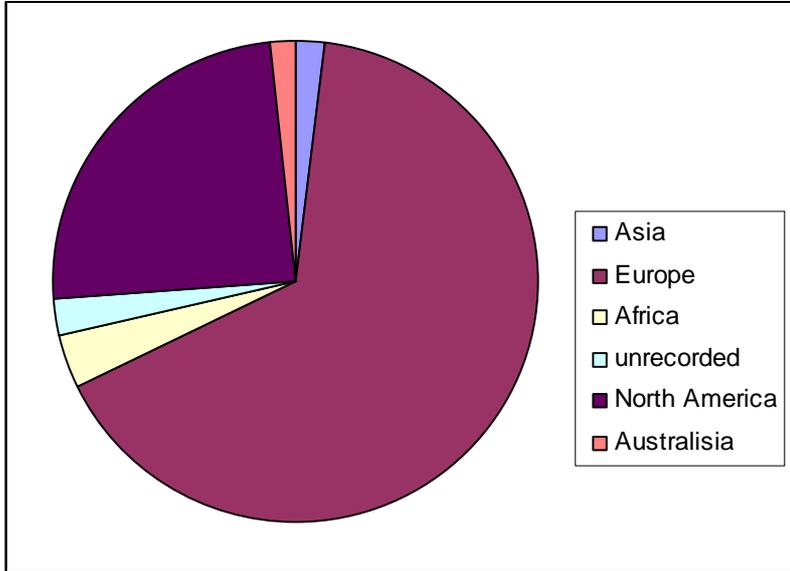


Figure 12: Nationality of visitors at Langoué (FY06-FY08)

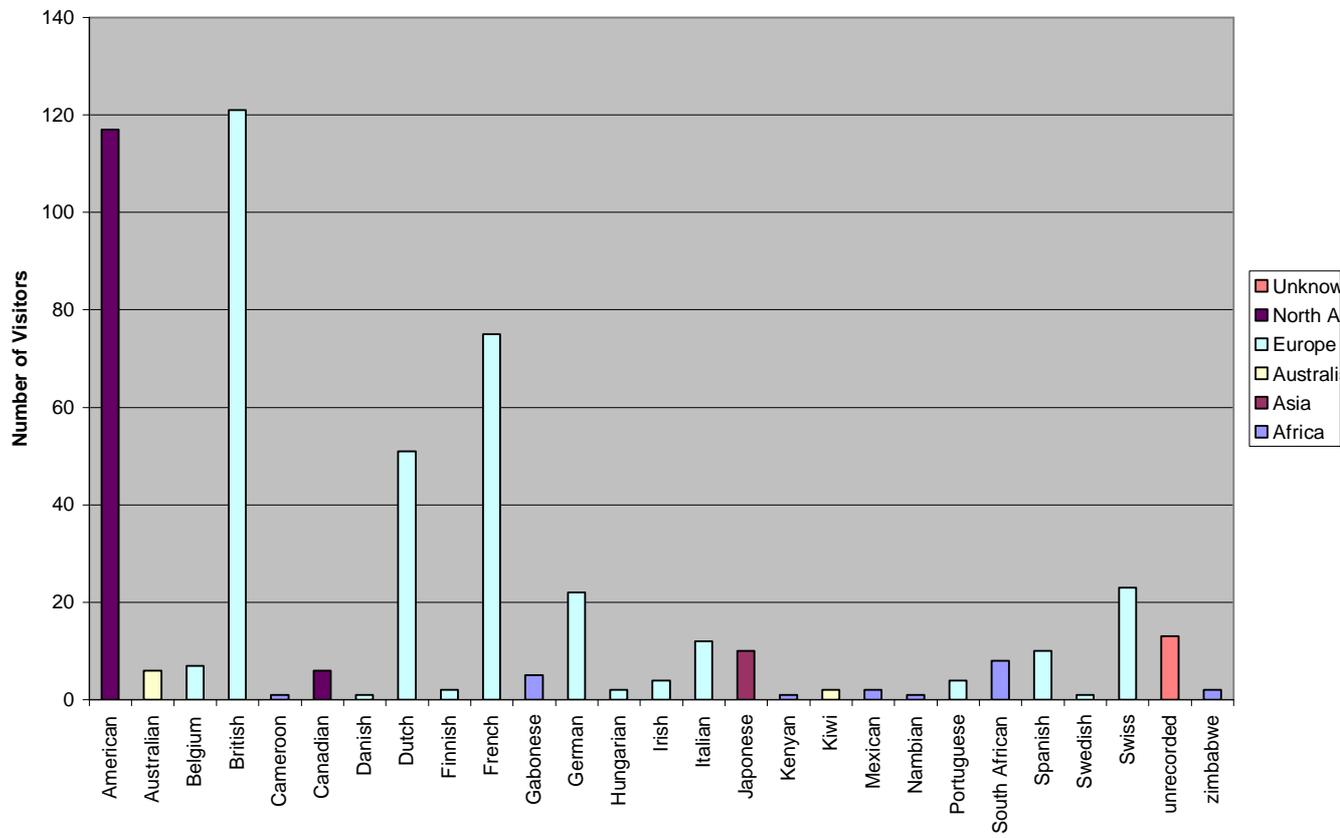


Figure 13: Tourist numbers (FY06-FY08)

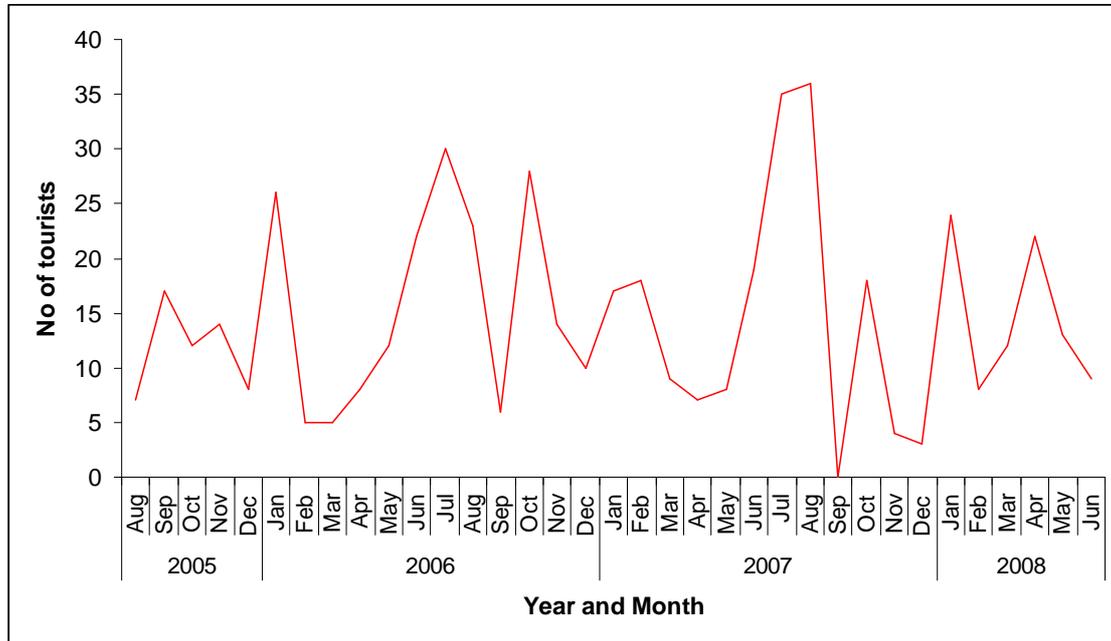


Figure 14: Visitors' evaluation of the Bai

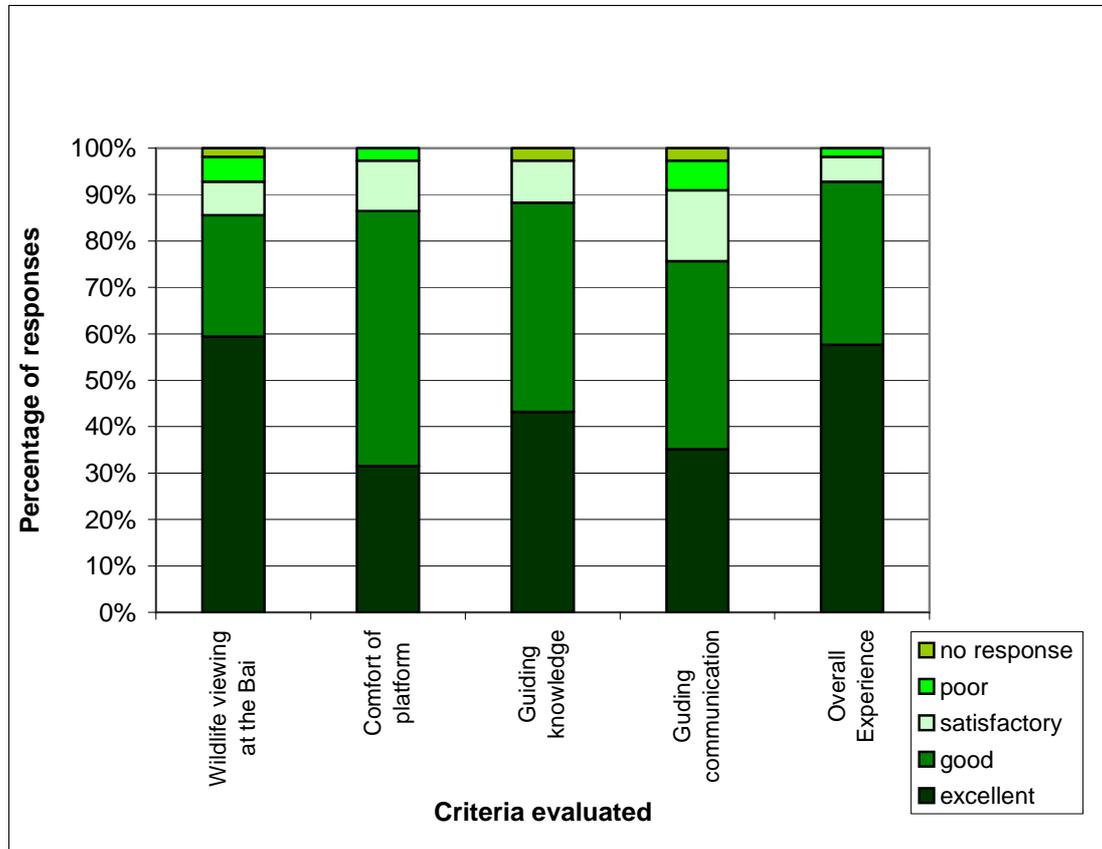


Figure 15: Viewing success rate of large mammals at the Bai by visitors

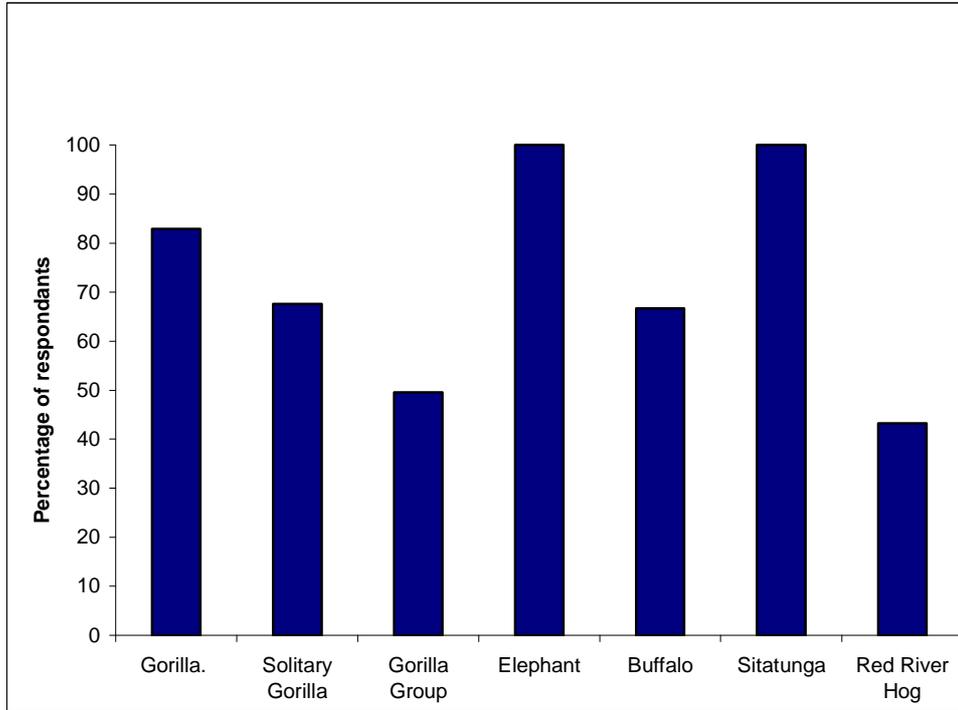


Figure 16: Visitors' evaluation of the camp

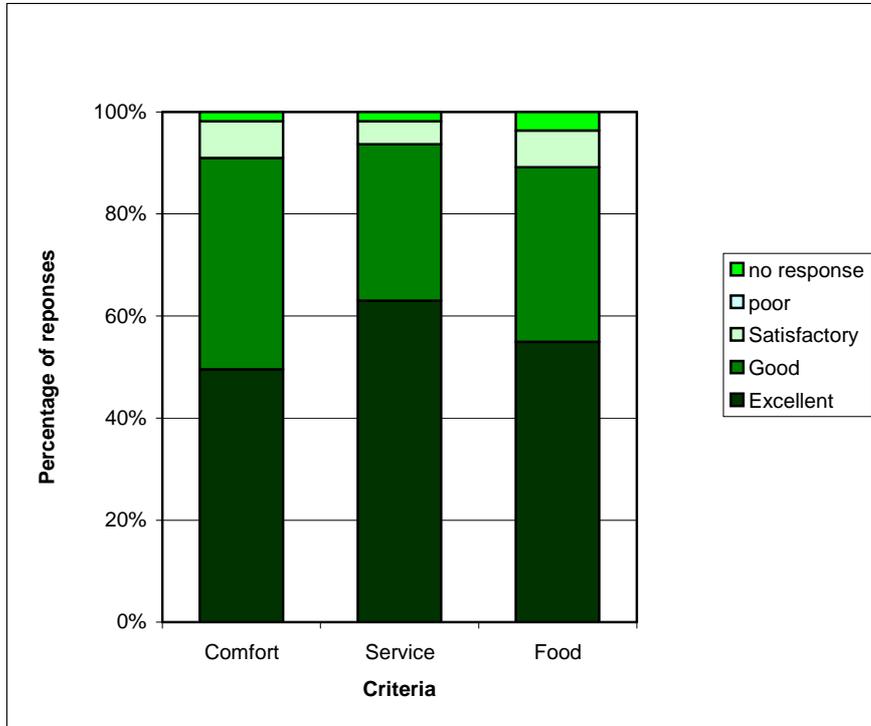


Table 1: Individual Gorilla group Bai visitation patterns from 2001-2008

Group	Family Group / solitary	Group size							Total # visits
		2002	2003	2004	2005	2006	2007	Jusque 06/2008	
Renoir	Solitary&Family	1	1	1	1	3	3	1	206
Malevitch	Solitary	1		1	1	1	1	1	182
Dulis	Family	2	2	4	5	7	6	6	108
Moshe	Solitary	1	1		1	1		1	104
Fracasse	Solitary& Family	1		1	1	1	3	3	102
Fujita	Solitary		1	1	1				93
Giotto	Solitary		1	1	1	1		2	85
Picasso	Solitary& Family	1	1	2	3	1	1		82
Padouk	Family	5	7	8	10	10	12	12	75
Nabucco	Family	7	7	10	6	2			50
Van Gogh	Solitary		1	1	1	1	1	1	39
Pollock	Solitary	1	1	1					37
Joey	Solitary& Family	1	1	1	1	1	2		34
Vasco	Solitary					1	1		33
Elie	Solitary			1	1				24
Mocco	Solitary	1		1					22
Arnold	Solitary	1		1	1				15
Igor	Solitary	1			1				9
Apollinaire	Family	1		3	3				7
Cheyenne	Solitary	1							7
New group	Family							14	4
# solitary visiting in year		12	8	11	11	8	4	4	
# families visiting in year		3	3	5	5	4	5	5	
# groups visiting in year		15	11	16	16	12	9	9	
# Group visits (adjusted for sampling effort)		391	data incomp	282	297	313	292		

Table 2: FY06 - FY08 financial break-down

Account Name	FY06	FY07	FY08	Grand Total
Administration	\$588.98		\$10,818.52	\$11,407.50
Camp equipment	\$8,555.17	\$5,038.40	\$2,708.83	\$18,497.55
Food & drinks	\$29,005.70	\$28,693.67	\$30,327.52	\$88,699.50
Foreign staff cost	\$126,564.21	\$117,466.59	\$79,727.92	\$323,758.72
Insurance	\$36,644.08	\$26,304.59	\$23,416.08	\$86,364.75
Local staff costs	\$83,558.99	\$74,112.73	\$95,730.88	\$253,411.02
Purchased Services	\$7,056.89	\$4,381.86	\$1,841.67	\$13,280.42
Shipping & Freight	\$10,382.87	\$9,189.71	\$5,700.86	\$25,630.05
Taxis - local	\$805.69	\$769.82	\$2,573.89	\$4,149.40
Telephone	\$18,291.30	\$26,062.31	\$14,658.43	\$59,012.04
Train fares	\$7,138.48	\$8,503.82	\$11,203.20	\$26,900.23
Utilities	\$908.28	\$1,791.29	\$327.32	\$3,026.89
Vehicle Expenses	\$42,736.68	\$47,830.18	\$15,467.02	\$106,033.88
Grand Total	\$372,237.32	\$350,144.97	\$294,502.14	\$1,020,171.95
Tourist Revenue	\$106,524.71	\$96,973.14	\$119,935.44	\$323,433.29

Appendix I: Species Lists

Mammals List of Langoué

Order	Scientific name	English name	Nom français
Primates	<i>Gorilla gorilla gorilla</i>	Western lowland Gorilla	Gorille de plaine de l'Ouest
	<i>Pan troglodytes troglodytes</i>	Central African Chimpanzee	Chimpanzé d'Afrique centrale
	<i>Cercopithecus cephus</i>	Moustached monkey	Moustac
	<i>Cercopithecus nictitans</i>	Putty-nosed monkey	Hocheur [Pain à cacheter]
	<i>Cercopithecus pogonias</i>	Crowned monkey	Cercopithèque pogonias
	<i>Colobus guereza</i>	Guereza colobus	Colobe guéréza
	<i>Galagoides demidoff</i>	Demidoff's galago	Galago de Demidoff
	<i>Lophocebus albigena</i>	Grey-cheeked mangabey	Mangabé à joues blanches
Carnivora	<i>Panthera pardus</i>	Leopard	Panthère [Léopard]
	<i>Felis aurata</i>	Golden cat	Chat doré
	<i>Aonyx congica</i>	Swamp otter	Loutre du Congo
	<i>Lutra maculicollis</i>	Spot-necked otter	Loutre à cou tacheté
	<i>Mellivora capensis</i>	Honey badger	Ratel
	<i>Herpestes sanguineus</i>	Slender mongoose	Mangouste rouge
	<i>Herpestes naso</i>	Long snouted mongoose	Mangouste a long museau
	<i>Bdeogale nigripes</i>	Black legged mongoose	Mongouste a pattes noires
	<i>Atilax paludinosus</i>	Marsh mongoose	Mangouste des marais
	<i>Civettictis civetta</i>	Civet	Civette
	<i>Genetta servalina</i>	Servaline genet	Genette servaline
	<i>Genetta tigrina</i>	Blotched genet	Genette agrandes taches
	<i>Nandinia binotata</i>	African palm civet	Nandinie
Proboscidiens	<i>Loxodonta africana cyclotis</i>	Forest elephant	Eléphant de forêt
Artiodactyles	<i>Tragelaphus spekei</i>	Sitatunga	Sitatunga
	<i>Tragelaphus euryceros</i>	Bongo	Bongo
	<i>Syncerus caffer nanus</i>	Forest buffalo	Buffle de forêt
	<i>Cephalophus silvicultor</i>	Yellow-backed duiker	Céphalophe à dos jaune
	<i>Cephalophus nigrifrons</i>	Black-fronted duiker	Céphalophe à front noir
	<i>Cephalophus leucogaster</i>	White-bellied duiker	Céphalophe à ventre blanc
	<i>Cephalophus dorsalis</i>	Bay duiker	Céphalophe bai
	<i>Cephalophus monticola</i>	Blue duiker	Céphalophe bleu
	<i>Cephalophus ogilbyi</i>	Ogilby's duiker	Céphalophe d'Ogilby
	<i>Neotragus batesi</i>	Dwarf antelope	Antilope de Bates
	<i>Cephalophus callipygus</i>	Peter's duiker	Céphalophe de Peters
	<i>Hyemoschus aquaticus</i>	Water chevrotain	Chevrotain aquatique
	<i>Hylocherous meinertzhageni</i>	Giant Forest Hog	Hylochère
	<i>Potamochoerus porcus</i>	Red river hog	Potamochère
Hyraxes	<i>Dendrohyrax dorsalis</i>	Tree hyrax	Daman d'arbre

Pholidota	Phataginus tricuspis	Tree pangolin	Pangolin commun
	Smutsua gigantea	Giant pangolin	Pangolin géant
Rodentia	Protoxerus stangeri	African giant squirrel	Grand ecureuil de Stanger
	Myosciurus pumilio	African pygmy squirrel	Ecureuil pygmée
	Atherurus africanus	Brush-tailed porcupine	Athérure africain

Birds List of Langoue

Scientific name	English name	Nom français
Hérons (ARDEIDAE)		
<i>Ixobrychus sturmii</i>	Dwarf Bittern	Blongios de Sturm
<i>Ardeola ralloides</i>	Squacco Heron	Crabier chevelu
<i>Bubulcus ibis</i>	Cattle Egret	Héron garde-boeufs
<i>Butorides striatus</i>	Green (-backed or Striated) Heron	Héron strié
<i>Egretta garzetta</i>	Little Egret	Aigrette garzetta
<i>Egretta alba</i>	Great (White) Egret	Grande Aigrette
<i>Ardea purpurea</i>	Purple Heron	Héron pourpré
<i>Ardea cinerea</i>	Grey Heron	Héron cendré
<i>Ardea goliath</i>	Goliath Heron	Héron goliath
Hamerkop (PCOPIIDAE)		
<i>Scopus umbretta</i>	Hamerkop	Ombrette africaine
Storks (CICONIIDAE)		
<i>Ciconia episcopus</i>	Woolly-(or White-) necked Stork	Cigogne épiscopale
<i>Ephippiorhynchus senegalensis</i>	Saddle-billed Stork	Jabiru d'Afrique
<i>Ciconia ciconia</i>	White Stork	Cingogne blanche
Ibises (THRESKIORNITHIDAE)		
<i>Bostrychia hagedash</i>	Hadada	Ibis hagedash
<i>Bostrychia rara</i>	Spot-breasted Ibis	Ibis vermiculé
Ducks (ANATIDEAE)		
<i>Pteronetta hartlaubii</i>	Hartlaub's Duck	Canard de Hartlaub
Birds of Prey (ACCIPTITRIDAE)		
<i>Haliaeetus vocifer</i>	African Fish Eagle [West African River Eagle]	Pygargue vocifer
<i>Gypohierax angolensis</i>	Vulturine Fish Eagle [Palm-nut Vulture]	Palmiste africain
<i>Dryotriorchis spectabilis</i>	Congo Serpent Eagle	Serpentaire du Congo
<i>Circus aeruginosus</i>	African marsh Harrier	Busard des roseaux
<i>Accipiter toussenelii</i>	Red-chested Goshawk	Autour de Toussenel
<i>Urotriorchis macrourus</i>	Long-tailed Hawk	Autour à longue queue
<i>Spizaetus africanus</i>	Cassin's Hawk Eagle	Aigle de Cassin
<i>Stephanoaetus coronatus</i>	Crowned (Hawk) Eagle	Aigle couronné
Guineafowls (NUMINDIDAE)		
<i>Agelastes niger</i>	Black Guineafowl	Pintade noire
<i>Guttera plumifera</i>	Plumed Guineafowl	Pintade plumifère
Francolins (PHASIANIDAE)		
<i>Francolinus lathamii</i>	Latham's Forest Francolin	Francolin de Latham
<i>Francolinus squamatus</i>	Scaly Francolin	Francolin écaillé
Rails (RALLIDAE)		
<i>Canirallus oculus</i>	Grey-throated Rail	Râle à gorge grise

<i>Sarothrura pulchra</i>	White-spotted Flufftail	Râle perlé
<i>Sarothrura rufa</i>	Red-chested Flufftail	Râle à camail
<i>Amaurornis flavirostris</i>	Black Crake	Râle à bec jaune
Finfoots (HELIORNITHIDAE)		
<i>Podica senegalensis</i>	African Finfoot	Grebifoulque d'Afrique
Jacaniidae (J A C A N I D A E)		
<i>Actophilornis african</i>	African Jacana [Lily-Trotter]	Jacana à poitrine dorée
Plovers (CHARADRIIDAE)		
<i>Charadrius forbesi</i>	Forbes's (Banded) Plover	Pluvier de Forbes
Snipes (SCOLOPACIDAE)		
<i>Gallinago media</i>	Great Snipe	Bécassine double
Sandpipers (SCOLOPACIDAE)		
<i>Tringa glareola</i>	Wood Sandpiper	Chevalier sylvain
Doves and Pigeons (COLUMBIDAE)		
<i>Treron calva</i>	African Green Pigeon	Columbar à front nu
<i>Turtur brehmeri</i>	Blue-headed Wood Dove	Tourtelette demoiselle
<i>Turtur tympanistria</i>	Tambourine Dove	Tourtelette tambourette
<i>Columba unicincta</i>	Afep Pigeon	Pigeon gris
Parrots and lovebirds (PSITTACIDAE)		
<i>Psittacus erithacus</i>	Grey Parrot	Perroquet Jaco
<i>Agapornis swindernianus</i>	Black-collared lovebird	Inseparable a collier noir
Turacos (MUSOPHAGIDE)		
<i>Corythaeola cristata</i>	Great Blue Turaco	Touraco géant
<i>Tauraco persa</i>	Green Turaco	Touraco vert
<i>Tauraco macrorhynchus</i>	Yellow-billed (Verreaux's) Turaco	Touraco à gros bec
Cuckoos and coucals (CUCULIADAE)		
<i>Oxylophus jacobinus</i>	Jacobin (or Black-and-white) Cuckoo	Coucou jacobin
<i>Cuculus solitarius</i>	Red-chested Cuckoo	Coucou solitaire
<i>Cuculus clamosus</i>	Black Cuckoo	Coucou criard
<i>Cercococcyx mechowi</i>	Dusky Long-tailed Cuckoo	Coucou de Mechow
<i>Chrysococcyx cupreus</i>	African Emerald Cuckoo	Coucou foliotocol
<i>Ceuthmochares aureus</i>	Yellowbill [Green Coucal]	Malcoha à bec jaune
<i>Chrysococcyx flavigularis</i>	Yellow-throated Cuckoo	Coucou à gorge jaune
<i>Centropus anselii</i>	Gabon Coucal	Coucal du Gabon
Owls (STRIGIDAE)		
<i>Jubula lettii</i>	Maned (or Akun Scops) Owl	Duc à crinière
<i>Otus icterorhynchus</i>	Sandy Scops Owl	Petit-Duc à bec jaune
<i>Glaucidium tephronotum</i>	Red-chested Owlet	Chevêchette à pieds jaunes
<i>Glaucidium sjostedti</i>	Chestnut-backed (or Sjöstedt's) Owlet	Chevêchette à queue barrée
<i>Strix woodfordii</i>	African Wood Owl	Chouette africaine
Nightjars (CAPRIMULGIDAE)		
<i>Caprimulgus batesi</i>	Bates's Nightjar	Engoulevent de Bates

Caprimulgus binotatus	Brown Nightjar	
Swifts (APODIDAE)		
Rhaphidura sabini	Sabine's Spinetail	Martinet de Sabine
Telacanthura melanopygia	Black (or Chapin's) spinetail	Martinet de chapin
Neafrapus cassini	Cassin's Spinetail	Martinet épineux de Cassin
Apus pallidus	Pallid Swift	Martinet pale
Apus apus	European Swift	Martinet noir
Apus batesi	Bates's Swift	Martinet de Bates
Apus horus	Horus Swift	Martinet horus
Trogons (TROGONIDAE)		
Apaloderma narina	Narina's Trogon	Trogon narina
Apaloderma aequatoriale	Bare-cheeked Trogon	Trogon à joues jaunes
Kingfishers (ALCEDINIDAE)		
Halcyon badia	Chocolate-backed Kingfisher	Martin-chasseur marron
Halcyon malimbica	Blue-breasted Kingfisher	Martin-chasseur à poitrine bleue
Ceyx lecontei	African Dwarf kingfisher	Martin-pecheur a tete rousse
Halcyon senegalensis	Woodland (or Senegal) Kingfisher	Martin-chasseur du Sénégal
Alcedo leucogaster	White-bellied Kingfisher	Martin-pêcheur à ventre blanc
Bee-eaters (MEROPIDAE)		
Merops gularis	Black Bee-eater	Guêpier noir
Merops albicollis	White-throated Bee-eater	Guêpier à gorge blanche
Merops malimbicus	Rosy Bee-eater	Guêpier gris-rose
Rollers (CORACIIDAE)		
Eurystomus gularis	Blue-throated Roller	Rollier à gorge bleue
Hornbills (BUCEROTIDAE)		
Tropicranus albocristatus	White-crested Hornbill	Calao à huppe blanche
Tockus hartlaubi	Black Dwarf Hornbill	Calao de Hartlaub
Tockus camurus	Red-billed Dwarf Hornbill	Calao pygmée
Tockus fasciatus	African Pied Hornbill	Calao longibande
Ceratogymna fistulator	Piping Hornbill	Calao siffleur
Ceratogymna atrata	Black-casqued Wattled Hornbill	Calao à casque noir
Barbets,tinkerbirds (CAPITONIDAE)		
Pogoniulus scolopaceus	Speckled Tinkerbird	Barbion grivelé
Pogoniulus atroflavus	Red-rumped Tinkerbird	Barbion à croupion rouge
Pogoniulus subsulphureus	Yellow-throated Tinkerbird	Barbion à gorge jaune
Buccanodon duchaillui	Yellow-spotted Barbet	Barbican à taches jaunes
Trichoaema hirsuta	Hairy-breasted Barbet	Barbican hérissé
Trachyphonus purpuratus	Yellow-billed Barbet	Barbican pourpré
Honey Guides (INDICATORIDAE)		
Melignomon zenkeri	Zenker's Honeyguide	Indicateur de Zenker
Woodpeckers (PICIDAE)		
Campethera cailliautii	Green-backed (or Little Spotted) Woodpecker	Pic de Cailliaut
Campethera caroli	Brown-eared Woodpecker	Pic à oreillons bruns

Dendropicos xantholophus	Yellow-crested Woodpecker	Pic à couronne d'or
Broadbills (EURYLAIMIDAE)		
Smithornis sharpei	Grey-headed Broadbill	Eurylaime à tête grise
Smithornis rufolateralis	Rufous-sided Broadbill	Eurylaime à flancs roux
Saw-wing (HIRUNDINIDAE)		
Psalidoprocne nitens	Square-tailed Saw-wing	Hirondelle à queue courte
Swallows (HIRUNDINIDAE)		
Hirundo fuliginosa	Forest Swallow	Hirondelle de forêt
Hirundo rustica	Barn (or European) Swallow	Hirondelle rustique
Wagtails (MOTACILLIDAE)		
Motacilla clara	Mountain (or Long-tailed) Wagtail	Bergeronnette à longue queue
Cuckoo-Shrikes (CAMPEPHAGIDAE)		
Coracina azurea	Blue Cuckoo-Shrike	Echenilleur bleu
Campephaga quiscalina	Purple-throated Cuckoo-Shrike	Echenilleur pourpré
Bulbuls (PYCNONOTIDAE)		
Andropadus virens	Little Greenbul	Bulbul verdâtre
Andropadus gracilis	Little Grey Greenbul	Bulbul gracile
Andropadus ansorgei	Ansorge's Greenbul	Bulbul d'Ansorge
Andropadus curvirostris	Plain (or Cameroon Sombre) Greenbul	Bulbul curvirostre
Andropadus gracilirostris	Slender-billed Greenbul	Bulbul à bec grêle
Andropadus latirostris	Yellow-whiskered Greenbul	Bulbul à moustaches jaunes
Calyptocichia serina	Golden Greenbul	Bulbul doré
Baeopogon indicator	Honeyguide Greenbul	Bulbul à queue blanche
Baeopogon clamans	Sjöstedt's Honeyguide Greenbul	Bulbul bruyant
Ixonotus guttatus	Spotted Greenbul	Bulbul tacheté
Thescelocichla leucopleura	Swamp (or White-tailed) Palm Greenbul	Bulbul des raphias
Phyllastrephus icterinus	Icterine Greenbul	Bulbul ictérin
Phyllastrephus xavieri	Xavier's Greenbul	Bulbul de Xavier
Phyllastrephus albigularis	White-throated Greenbul	Bulbul à gorge blanche
Bleda syndactyla	Red-tailed Bristlebill	Bulbul moustac
Criniger chloronotus	Eastern Bearded Greenbul	Bulbul à dos vert
Criniger calurus	Red-tailed Greenbul	Bulbul à barbe blanche
Criniger ndussumensis	White-bearded Greenbul	Bulbul de Reichenow
Nicator chloris	Western Nicator	Nicator vert
Thrushes (TURDIDAE)		
Stiphornis erythrothorax	Forest Robin	Rougegorge de forêt
Saxicola torquata	Common Stonechat	Tarier pâtre
Neocossyphus rufus	Red-tailed Ant Thrush	Neocossyphe à queue rousse
Neocossyphus poensis	White-tailed Ant Thrush	Neocossyphe à queue blanche
Neocossyphus fraseri	Rufous Flycatcher Thrush	Stizorhin de Fraser
Alethe diademata	Fire-crested (or White-tailed) Alethe	Alèche à huppe rousse
Alethe poliocephala	Brown-chested Alethe	Alèche à poitrine brune
Warblers (SYLVIIDAE)		

<i>Bradypterus grandis</i>	Ja River Scrub Warbler	Bouscarle géante
<i>Bathmocercus rufus</i>	Black-faced Rufous Warbler	Bathmocerque à face noire
<i>Eremomela badiceps</i>	Rufous-crowned Eremomela	Erémomèle à tête brune
<i>Sylvietta virens</i>	Green Crombec	Crombec vert
<i>Sylvietta denti</i>	Lemon-bellied Crombec	Crombec à gorge tachetée
<i>Phylloscopus budongoensis</i>	Uganda Woodland Warbler	Pouillot de l'Ouganda
<i>Macrosphenus flavicans</i>	Yellow Longbill	Nasique jaune
<i>Macrosphenus concolor</i>	Grey Longbill	Nasique grise
<i>Hylia prasina</i>	Green Hylia	Hylia verte
Cisticolas (CISTICOLIDAE)		
<i>Cisticola anonymus</i>	Chattering Cisticola	Cisticole babillarde
<i>Cisticola galactotes</i>	Winding Cisticola	Cisticole roussâtre
<i>Prinia bairdii</i>	Banded Prinia	Prinia rayée
<i>Apalis nigriceps</i>	Black-capped Apalis	Apalis à calotte noir
<i>Apalis rufogularis</i>	Buff-throated Apalis	Apalis à gorge rousse
<i>Camaroptera brachyura</i>	Bleating Warbler [Grey-backed Camaroptera]	Camaroptère à tête grise
<i>Camaroptera supercilialis</i>	Yellow-browed Camaroptera	Camaroptère à sourcils jaunes
<i>Camaroptera chloronota</i>	Olive-green Camaroptera	Camaroptère à dos vert
Flycatchers/Wattle-eyes/Batis (MUSCICAPIDAE, MONARCHIDAE, PLATYSTEIRIDAE)		
<i>Fraseria ocreata</i>	Fraser's Forest-Flycatcher	Gobemouche forestier
<i>Muscicapa caeruleascens</i>	Ashy (or Blue-grey) Flycatcher	Gobemouche à lunettes
<i>Fraseria cinerascens</i>	White-browed forest flycatcher	Gobemouche a sourcils blancs
<i>Elminia nigromitrata</i>	Dusky crested flycatcher	Tchitrec a tête noire
<i>Muscicapa sethsmithi</i>	Yellow-footed Flycatcher	Gobemouche à pattes jaunes
<i>Muscicapa infuscata</i>	(African) Sooty Flycatcher	Gobemouche enfumé
<i>Myioparus griseigularis</i>	Grey-throated Tit Flycatcher	Gobemouche à gorge grise
<i>Myioparus plumbeus</i>	Grey Tit Flycatcher	Gobemouche mésange
<i>Erythrocerus mcallii</i>	Chestnut-Capped Flycatcher	Erythrocerque à tête rousse
<i>Trochocercus nitens</i>	Blue-headed Crested Flycatcher	Tchitrec noir
<i>Terpsiphone batesi</i>	Bates's Paradise-Flycatcher	Tchitrec de Bates
<i>Terpsiphone rufocinerea</i>	Rufous vented paradise flycatcher	
<i>Terpsiphone rufiventer</i>	Red-bellied paradise flycatcher	
<i>Megabyas flammulatus</i>	Shrike Flycatcher	Bias écorcheur
<i>Bias musicus</i>	Black-and-White (or Vanga) Flycatcher	Bias musicien
<i>Dyaphorophya castanea</i>	Chestnut Wattle-eye	Pirit châtain
<i>Dyaphorophya tonsa</i>	White-spotted Wattle-eye	Pirit à taches blanches
<i>Dyaphorophya concreta</i>	Yellow-bellied Wattle-eye	Pirit è ventre doré
<i>Batis poensis</i>	Bioko (or Fernando Po) Batis	Pirit de Fernando Po
Picathartes (PICATHARTIDAE)		
<i>Picathartes oreas</i>	Grey-necked Picathartes	Picatharte du Cameroun
Babblers, Illadopsises (TIMALIIDAE)		
<i>Illadopsis fulvescens</i>	Brown Illadopsis	Akalat brun
<i>Illadopsis cleaveri</i>	Blackcap Illadopsis	Akalat à tête noire

Penduline Tits (REMIZIDAE)		
Anthoscopus flavifrons	Forest (or Yellow-fronted) Penduline Tit	Rémiz à front jaune
Pholidornis rushiae	Tit-hylia	Mésangette rayée
Sunbirds (NECTARINIIDAE)		
Anthreptes rectirostris	Green (or Yellow-chinned) Sunbird	Souimanga à bec droit
Anthreptes seimundi	Little Green Sunbird	Souimanga de Seimund
Deleornis fraseri	Fraser's (or Scarlet-tufted) Sunbird	Souimanga de Fraser
Cyanomitra cyanoaema	Blue-throated Brown Sunbird	Souimanga à gorge bleue
Cyanomitra obscura	Western Olive Sunbird	Souimanga olivâtre de l'Ouest
Chalcomitra rubescens	Green -throated Sunbird	Souimanga à gorge verte
Hedydipna collaris	Collared Sunbird	Souimanga à collier
Cinnyris chloropygius	Olive-bellied Sunbird	Souimanga à ventre olive
Cinnyris minulla	Tiny Sunbird	Souimanga minule
Cinnyris johannae	Johanna's Sunbird	Souimanga de johanna
Cinnyris superba	Superb Sunbird	Souimanga superbe
White eyes (ZOSTEROPIDAE)		
Zosterops stenocricotus	Forest White-eye	
Bushshrikes (MALACONOTIDAE)		
Dryoscopus sabini	Sabine's Puffback	Cubla à gros bec
Dryoscopus senegalensis	Red-eyed (or Black-shouldered) Puffback	Cubla aux yeux rouges
Laniarius leucorhynchus	Sooty Boubou	Gonolekfuligineux
Helmet-Shrikes (PRIONOPIDAE)		
Prionops rufiventris	Rufous-bellied Helmet-Shrike	Bagadai à ventre roux
Orioles (ORIOOLIDAE)		
Oriolus brachyrhynchus	Western Black-headed Oriole	Loriot à tête noire
Drongos (DICRURIDAE)		
Dicrurus atripennis	Shining Drongo	Drongo de forêt
Dicrurus modestus	Velvet-mantled Drongo	Dorongo modeste
Starlings (STURNIDAE)		
Lamprotornis purpureiceps	Purple-headed Glossy Starling	Choucador à tête pourprée
Lamprotornis splendidus	Splendid Glossy Starling	Choucador splendide
Weavers, malimbés (PLOCEIDAE)		
Malimbus racheliae	Rachel's Malimbe	Malimbe de Rachel
Malimbus cassini	Cassin's Malimbe	Malimbe de Cassin
Malimbus nitens	Gray's (or Blue-billed) Malimbe	Malimbe à bec bleu
Ploceus albinucha	Maxwell's black weaver	Tisserin de Maxwell
Ploceus dorsomaculatus	Yellow-capped weaver	Tisserin à cape jaune
Malimbus coronatus	Red-crowned Malimbe	Malimbe couronné
Estrildid finches (ESTRILDIDAE)		
Nigrita luteifrons	Pale-fronted Blackfinch	Nigrette à front jaune
Nigrita canicapilla	Grey-headed (or crowned) Blackfinch	Nigrette à calotte grise
Nigrita bicolor	Chestnut-breasted Blackfinch	Nigrette à ventre roux
Nigrita fusconota	White-breasted Blackfinch	Nigrette à ventre blanc

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Parmoptila jamesoni	Jameson's Antpecker	Parmoptile de Jameson
Estrilda astrild	Common Waxbill	Astrild ondulé
Estrilda atricapilla	Black-headed Waxbill	Astrild à tête noire
Spermophaga haematina	(Western) Bluebill	Sénégalé sanguin
Pyrenestes ostrinus	Black-bellied Seedcracker	Pyrénesse ponceau

Appendix II: SWOT analysis

Strengths of Langoué as a tourist destination

Langoué specific	Gabon generally
<ul style="list-style-type: none"> • Rare opportunity to clearly observe Gorillas, Elephants, Sitatunga etc. 	<ul style="list-style-type: none"> • Bai's are unique tourism product for Central Africa
<ul style="list-style-type: none"> • Spectacular old growth forest 	<ul style="list-style-type: none"> • Political and economic stability of Gabon
<ul style="list-style-type: none"> • Wide range of charismatic species present including Leopard, Chimpanzee, Civet, Porcupines, Red River-hogs, Mangabeys 	<ul style="list-style-type: none"> • Within a national park network, allowing for the development of a diverse tourism circuit within Gabon
<ul style="list-style-type: none"> • Isolated and unspoilt - an attraction to wildlife enthusiasts 	<ul style="list-style-type: none"> • Commitment from the government to develop the tourism sector in Gabon with special focus on ecotourism activities within the national parks
<ul style="list-style-type: none"> • Three picturesque waterfalls within easy walking distance 	<ul style="list-style-type: none"> •
<ul style="list-style-type: none"> • Accessible Bai 	<ul style="list-style-type: none"> •
<ul style="list-style-type: none"> • Wide range of bird species included the Grey-headed Rock-fowl 	<ul style="list-style-type: none"> •
<ul style="list-style-type: none"> • Comfortable accommodation available 	<ul style="list-style-type: none"> •
<ul style="list-style-type: none"> • WCS researchers provide detailed knowledge of the ecology of the area. 	<ul style="list-style-type: none"> •
<ul style="list-style-type: none"> • Well publicized by National Geographic magazines, and films (e.g. Ushuaia with Nicolas Hulout; 60 minutes) 	<ul style="list-style-type: none"> •

Weaknesses that will restrict or hinder tourism development at Langoué

Langoué specific	Gabon generally
<ul style="list-style-type: none"> • Distance and steepness of the walk to access the Bai and Camp 	<ul style="list-style-type: none"> • Lack of tourism management within Ivindo NP, hence little regulation of tourism and no centralised coordination of tourism activities
<ul style="list-style-type: none"> • No guarantee for gorilla observations 	<ul style="list-style-type: none"> • Limited and unreliable train connections to Ivindo Village
<ul style="list-style-type: none"> • Distance of the animals from the viewing platform (min 50m) 	<ul style="list-style-type: none"> • Gabon tourism is in its infancy and a poorly known international tourism destination
<ul style="list-style-type: none"> • Complex and potentially unreliable emergency evacuation procedure 	<ul style="list-style-type: none"> • Lack of developed tourism industry in Gabon, resulting in tourist demands and expectations not being met satisfactorily
<ul style="list-style-type: none"> • Difficult logistics required for transporting any material (food, equipment etc) into Langoué 	<ul style="list-style-type: none"> • The prevailing international perception of Central Africa as an insecure region
<ul style="list-style-type: none"> • Cost of maintaining the road into Langoué 	<ul style="list-style-type: none"> • High cost of a holiday in Gabon, as well as expensive international flights
<ul style="list-style-type: none"> • Lack of English speaking and trained 	<ul style="list-style-type: none"> • Administrative complexity, entry and

guides	exit formalities are bureaucratic and complicated
<ul style="list-style-type: none"> Reduction in quality research due to tourist demands 	<ul style="list-style-type: none">

Opportunities for Langoué as a tourist destination

Langoué Specific	Gabon generally
<ul style="list-style-type: none"> Development possible for footpaths into Langoué to reduce the incline 	<ul style="list-style-type: none"> Increased tourism interest in Gabon, resulting in increased numbers of visitors
<ul style="list-style-type: none"> Development of a quad trail into Langoué to simplify logistics 	<ul style="list-style-type: none"> Development of a national guiding scheme
<ul style="list-style-type: none"> Generation of revenue for park management and conservation 	<ul style="list-style-type: none"> Development of a rainforest express train to improve current tourism transport facilities and to make the trans-Gabonese a national tourism asset
<ul style="list-style-type: none"> Presence of tourists and researchers contribute to the protection of the zone 	<ul style="list-style-type: none"> Contribution to government goals to create an eco-tourism sector in Gabon

Threats

Langoué Specific	Gabon Generally
<ul style="list-style-type: none"> Potential risk of transmitting diseases to great ape populations 	<ul style="list-style-type: none"> Lack of long term investment and political will in developing and improving present tourism
<ul style="list-style-type: none"> Lack of uptake by target markets 	<ul style="list-style-type: none"> Future downturns in international tourism generally or to Gabon due to global and regional insecurities respectively.
<ul style="list-style-type: none"> Increased competition from other Bais and ecotourism destinations in Africa; especially regarding the cost competitiveness and quality of experience 	<ul style="list-style-type: none">
<ul style="list-style-type: none"> Lack of park management personnel to effectively carry out ant poaching missions and enforce park regulations, to secure wildlife populations 	<ul style="list-style-type: none">

Appendix III: WCS charges to visitors

WCS Staff - family -colleagues	
Accommodation (all food included)	25,000 CFA per night
Park fees	5,000 CFA per person per day
Car transfer (Aller-retour)	20,000 CFA per person
Porters	10,000 CFA per porter

Researchers (MSc, PhD, ENEF, etc) conducting research at Langoue.	
Accommodation (all food included)	10,000 CFA per day
Park fees	Should get waiver from conservator
Car transfer (Aller-retour)	20,000 CFA per person
Porters	10,000 CFA per porter

Collaborators	
Accommodation (all food included)	35,000 CFA per person per night
Park fees	5,000 CFA per person per day
Car transfer (Aller-retour)	20,000 CFA per person
Porters	10,000 CFA per porter

Film crews	
Accommodation:	35,000 CFA per person per night
Park fees	5,000 CFA per person per day
Porters	10,000 CFA per porter per day

Tourists:	
International 1-4 days stay:	120,000 CFA per person per night
International 5-9 days stay	90,000 CFA per person per night
Residents, VIP, Tour operator/guide	60,000 CFA per night
Park fees	5,000 CFA per person per day