

## WORLD HERITAGE NOMINATION - IUCN SUMMARY

### BWINDI IMPENETRABLE NATIONAL PARK (UGANDA)

Summary prepared by IUCN/WCMC (March 1994) based on the original documentation submitted by the Government of Uganda. This original and all documents presented in support of this nomination will be available for consultation at the meetings of the bureau and the committee.

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#### 1. LOCATION

In the Kigezi Highlands of south-west Uganda, within the Districts of Kabale, Kisoro and Rukungiri. Adjacent to the border of Zaire.

#### 2. JURIDICIAL DATA

Gazetted a forest reserve in 1932 and as an animal sanctuary in 1961 and upgraded to a national park in 1991. Legal protection is now total, although extractive use may be sanctioned by the Board of Trustees, Uganda National Parks.

#### 3. IDENTIFICATION

Bwindi is characterised by steep hills and narrow valleys with a general incline from the north and west to the south-western corner. Together with some remnant lowland forest outside the boundary, the park constitutes an important water catchment area serving the surrounding densely populated agricultural land. With an area of 32,092ha and an altitudinal range of 1,190-2,607m, Bwindi is one of the few large expanses of forest in East Africa where lowland and montane vegetation communities meet. Combined with its probable role as a Pleistocene refuge, the forest hosts an extremely high biodiversity. Bwindi is the most diverse forest in East Africa for tree species (more than 163 species) and ferns (more than 104 species), as well as other taxa. The trees account for 38% of the total recorded for the country and include 10 species not found elsewhere. A further 16 species have only a very restricted distribution in south-west Uganda, and one species, *Lovoa swynnertonii*, is globally threatened (V).

Bwindi has one of the richest faunal communities in East Africa, including over 214 species of forest bird (> 65% of the country's total), 7 species of diurnal primate (58% of the country's total), and 202 species of butterfly (84% of the country's total). Highly significant is the presence of almost one half (300 of about 650) of the world's population of mountain gorillas (E). Bwindi is also an important locality for the conservation of Afromontane fauna, in particular those endemic to the mountains of the western rift valley. At least 70 of the 78 montane forest bird species occurring in the Albertine Rift region are found in the forest, including 22 of the 27 endemics. In the case of butterflies, 8 Albertine Rift endemics are known to occur in the forest, which may be the most important in Africa for the conservation of montane butterflies. Overall, Bwindi contains 9 globally threatened species: mountain gorilla (E), common chimpanzee (V), l'hoests monkey (V), African elephant (V), African green broadbill (R), Grauer's rush warbler (V), Chaplin's flycatcher (R), African giant swallowtail (R) and cream-banded swallowtail (V).

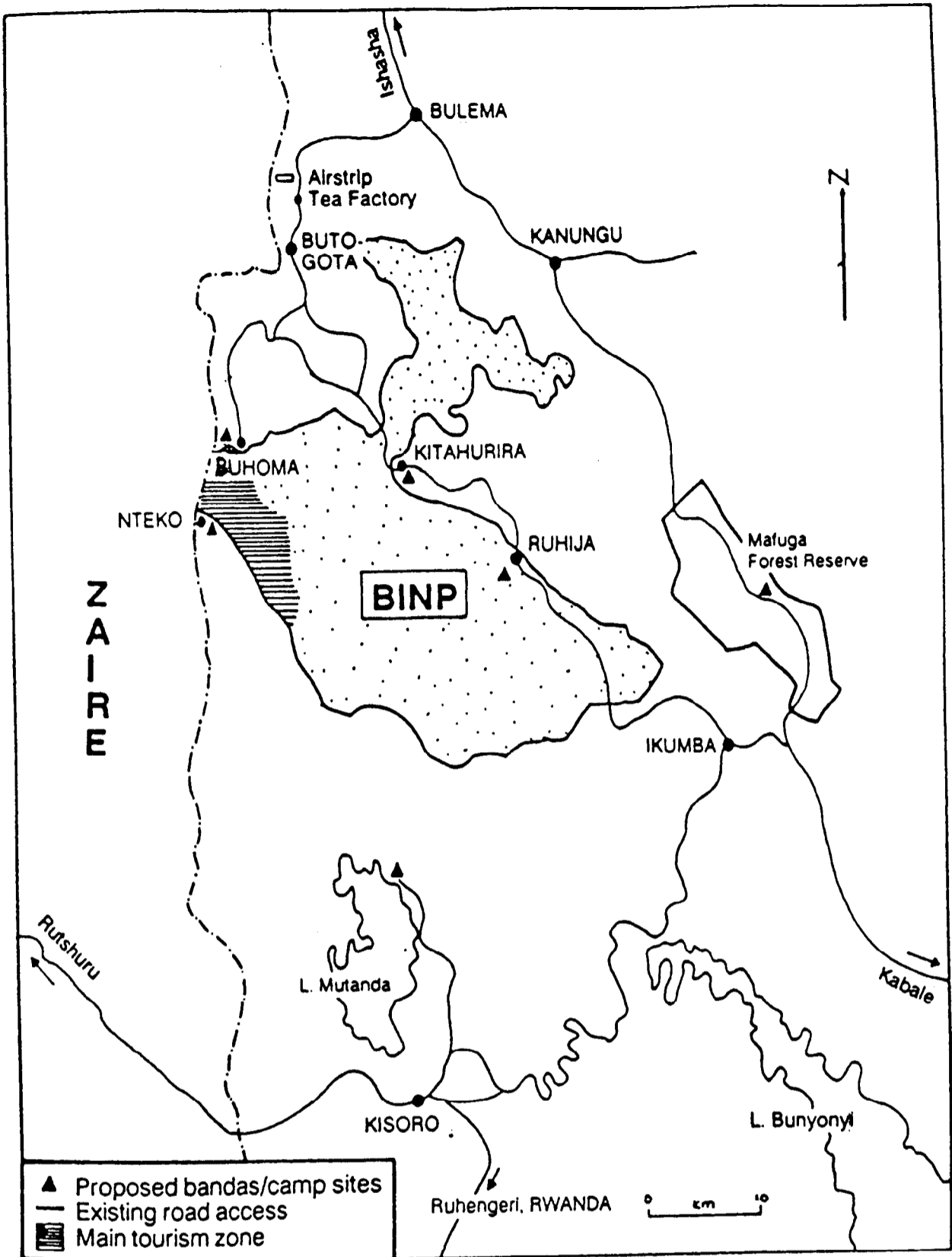
#### 4. STATE OF PRESERVATION / CONSERVATION

During the civil unrest in the 1970's and early 1980's, the Forest Department management structures collapsed leading to illegal exploitation of the forest for timber, bushmeat, gold and building materials. Stabilisation has now occurred, following the establishment of the Impenetrable Forest Conservation Project (IFCP) in 1986, and its subsequent work with the Forest Department, and more recently with Uganda National Parks. In addition to law-enforcement, the main achievements to date are in the areas of inventory and monitoring, research, staff training, and demarcation and securing of park boundaries. Due to the extremely high population density in surrounding areas, Bwindi is threatened with agricultural encroachment. Uganda National Parks is assisted in this area by the WWF and CARE Development Through Conservation (DTC) project, which is promoting good relations with the local community via a large-scale agro-forestry programme. An overall management plan for Bwindi has been prepared by the Institute of Tropical Forest Conservation (ITFC) at Ruhija, Bwindi. There is no evidence of gorilla hunting in the forest although tourism does pose a substantial threat to these animals if tracking protocols are not strictly enforced.

#### 5. JUSTIFICATION FOR INCLUSION ON THE WORLD HERITAGE LIST

The Bwindi Impenetrable National Park nomination, as prepared by the Government of Uganda, provides the following justification for designation as a World Heritage natural property:

- (iv) **Contain the most important and significant natural habitats for threatened species** Bwindi is the most important area in Uganda for species conservation due to an exceptional diversity that includes many Albertine Rift endemics. Bwindi has the highest diversity of tree and fern species in East Africa, and may be the most important forest in Africa for montane forest butterflies. Bwindi is also the home of nine globally threatened species, including almost one half of the world's population of mountain gorillas.



- ▲ Proposed bandas/camp sites
- Existing road access
- ▨ Main tourism zone

# WORLD HERITAGE NOMINATION - IUCN TECHNICAL EVALUATION

## BWINDI IMPENETRABLE NATIONAL PARK (UGANDA)

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### 1. DOCUMENTATION

- i) IUCN/WCMC Data Sheet (15 references)
- ii) Additional Literature Consulted: UNP. 1993. Bwindi Impenetrable National Park Management Plan; Kingdon, J. 1991. Assessing Conservation Priorities in East Africa. African Wildlife J.; ICBP. 1992. Putting Biodiversity on the Map. 90 p.; Kingdon, J. 1990. Island Africa; IUCN.1990. Biodiversity in Sub-Saharan Africa; UNEP. n.d. Strategic Resources Planning in Uganda. Vol. II, III; Cunningham, A.B. 1992. People, Park and Plant Use in Bwindi. Report to CARE. 95 p.
- iii) Consultations: Five external reviewers; UNP staff; Makerere University specialists; WWF; CARE and International Gorilla Conservation Project staff.
- iv) Field Visit: March, 1994. J. Thorsell, M. Young

### 2. COMPARISON WITH OTHER AREAS

Bwindi is one of some 70 protected areas found in the Afromontane biogeographic unit. Along with Cape Fynbos, Afromontane forest is the rarest vegetation type on the continent. The unit can be sub-divided into five regional clusters with the Albertine montane rift group being the one that incorporates Bwindi. The small remnant forests in this cluster extend from the Itombwe mountains in eastern Zaire, 500 km. north to the Rwenzori mountains. The entire unit is of exceptional biological value for its particularly distinct and rich flora, and to a lesser extent, fauna. Two other World Heritage sites are found in this region: Kahuzi-Biega and Virunga and a third one (Rwenzori) has also been nominated. All of these contain montane forest similar to Bwindi but all show distinctions in species make-up and physiography.

Within Uganda, Bwindi is one of 12 important forest blocks. Figure I shows the location of these as well as the former extent of forest cover. Only Bwindi and Rwenzori have Albertine montane vegetation and only Bwindi has mid-elevation (down to 1160 m) forest. It is also believed to be a pleistocene refugia. It is not the largest of these 12 forests, but, along with the Ruwenzori and Semliki forests, is considered the richest in terms of species. Bwindi is also the main stronghold of the mountain gorilla although a small number still occur in the small Mgahinga National Park which is adjacent to Rwanda's Volcano National Park.

Within the east African region, Bwindi and the Udzungwa National Park in Tanzania are the only forests with contiguous lowland and montane communities. Consequently it has very high species diversity with more plant and bird species (336 species) than any other forest in the area. It is also the richest forest in the region for butterflies (220 species). Bwindi is also significantly richer than the Bafumbira Volcanoes to the south (eg. 30% more mammal species). Bwindi has one of the richest mammal faunas in all of Africa with 120 species. For comparison, the Serengeti World Heritage site has 70. The site is included as one of the 29 most important forests in Africa for plant conservation by IUCN's Species Survival Commission and is one of the critical "hot-spots" for the world's endemic birds as determined by ICBP.

In conclusion, it is certain that the natural montane forests that remain in the Albertine Rift are all extremely important for science and conservation. Two of the most important, each of which contain portions of this forest, are already on the World Heritage list (Virunga and Kahuzi-Biega). The prospect of extending the Virunga into the Volcans and Mgahinga National Parks is also being considered. Bwindi (and Rwenzori) is seen as a complement to these, not duplicating their features but adding what would be the key and probably final area that would meet World Heritage criteria in this unique and valuable part of the globe.

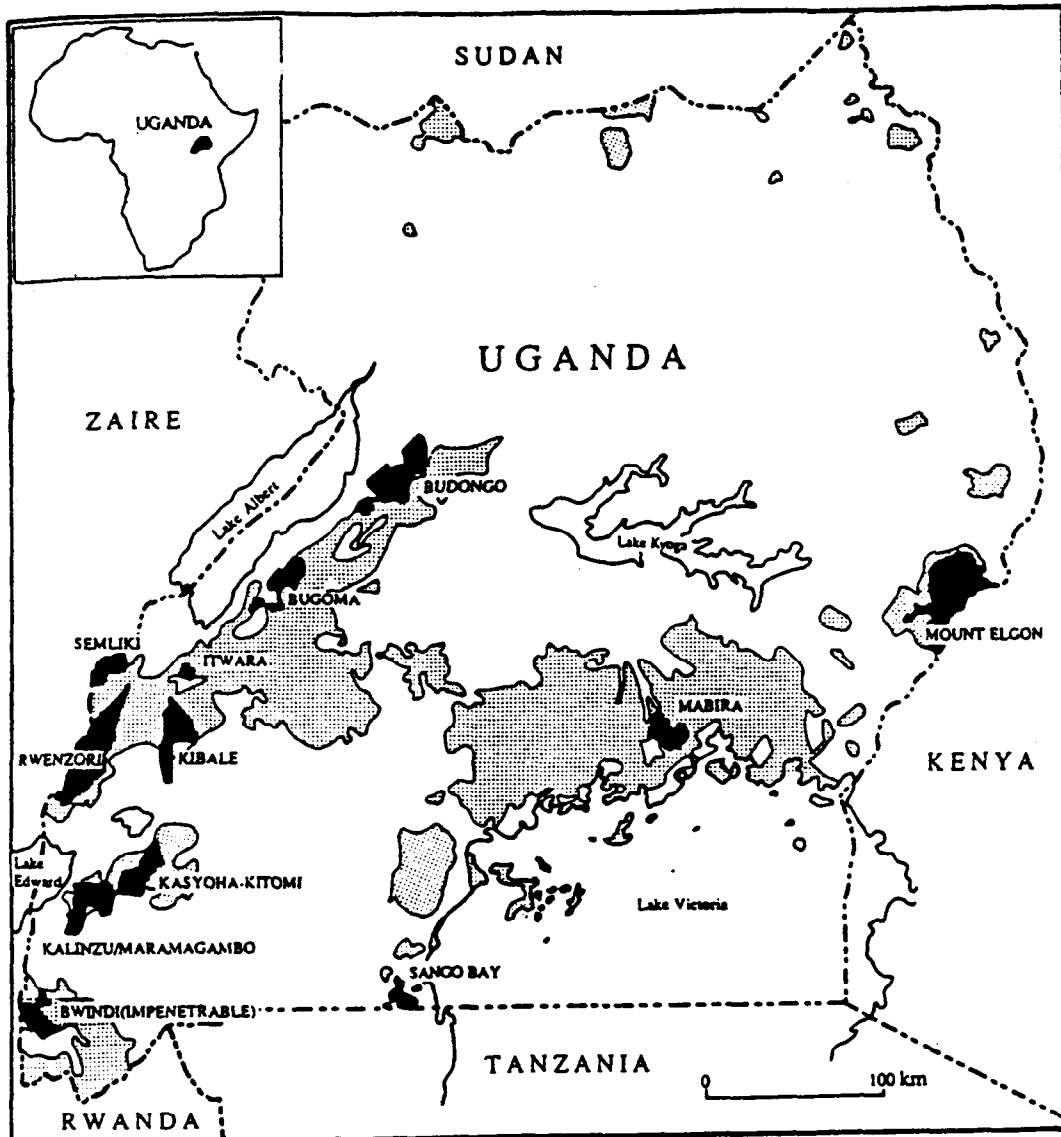


Figure 1. Showing the locality of Bwindi-Impenetrable National Park, Uganda in relation to other forest in Uganda, showing the former extent of forest cover (from Howard, 1991).

### 3. INTEGRITY

The history of conservation of the Bwindi forest goes back to 1932 when much of it was gazetted as a forest reserve. Pit sawing was then legal and much valuable timber was selectively removed. Until recently, poaching was widespread resulting in two species extirpations (buffalo and leopard) and the reduction of many others (elephant, gorilla, forest hog, bushbuck). Gold mining and prospecting also caused localized damage. These activities are now largely under control thanks to the creation of the national park and various conservation projects supported by NYZS, CARE, WWF, USAID, the International Gorilla Conservation Programme and others.

The boundary of Bwindi is not ideal as the boundary area ratio is high and the area of park/people contact requires intensive management. There are several narrow corridors between sectors that will create difficulties for movement of wildlife. Due to human disturbance and clearing of vegetation there is little that can be done to expand the area around these constrictions.

Apart from the civil disruptions that occurred in Uganda in the late 1970's and 1980's, the main pressure on Bwindi has come from the build-up of human populations around its boundaries. Situated in one of the highest human population density areas in Africa, Bwindi is surrounded by 100,000 people within 5 km of its 115 km long boundary. The park, like many others in the tropics, has become an island of forest in a sea of rural farmers and pitsawyers. There have been a number of encroachments along the boundary and in many places there is no transition zone between park and pasture.

There are a number of imaginative actions underway to mitigate the human pressures. The management plan allows for a multiple use zone 2 km inside most of the park where regulated harvest of some forest resources (honey, medicinal plants) is allowed. A sustainable development zone around the park is also defined (but not included as part of the nomination). There are also a number of projects underway (plant nurseries, eco-tourism, education) to gain support for conservation from the local communities. Local cooperation is complemented by enforcement and 263 arrests for illegal activities were made in 1993.

The scientific basis for management of the park has been considerably strengthened by the creation of the Institute of Tropical Forest Conservation (ITFC), an NGO based in the park and now funded by CARE and WWF. The Development through Conservation Project (CARE) and the International Gorilla Conservation Programme (IGCP) are also assisting UNP authorities.

Finally, a Bwindi Conservation Trust has received final approval and the Global Environment Facility (GEF) will initially provide \$ 4 million to ensure long-term funding support for the park.

In conclusion, despite the many years that the Bwindi forest was inadequately protected, the situation over the past four years has greatly improved. In many ways it has become a model for other tropical forest conservation projects. Although there are many management issues yet to be resolved (eg. sufficient trained staff, expanding tourism), the authorities in Uganda are to be commended for their initiative in instituting an effective management regime.

### 4. ADDITIONAL COMMENTS

None

### 5. EVALUATION

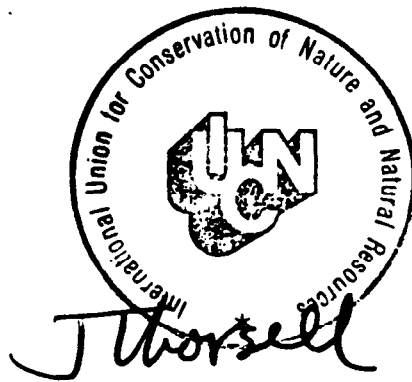
Bwindi has features of **local** importance (eg. forest product collection), **national** importance (eg. watershed values), **regional** importance (eg. climate balance), and **international** significance (eg. biodiversity, threatened species).

It is one of the most important areas in Africa for avifauna, for butterflies, for mammals and for plants. It is the richest forest in the region for trees (160 + species) and ferns. As a key site for biodiversity on the continent, the park clearly meets natural criterion *iii* for superlative natural phenomena. The site also meets criterion *iv* for threatened species particularly for its viable population of mountain gorilla but also for several other afro-montane plants and animals.

Corresponding conditions of integrity are met although it is recognized that the site is reduced in size and it does not have an ideal boundary configuration. It is well-supported by international donors and by the Uganda government and has an exemplary management plan backed by effective implementation.

## 6. RECOMMENDATIONS

Bwindi Impenetrable National Park should be added to the World Heritage list under criteria *iii* and *iv*. The authorities in Uganda and the numerous donor agencies should be commended for taking action before it was too late to protect the forest and installing a progressive and effective management regime.





**COUNTRY** Uganda

**NAME** Bwindi Impenetrable National Park

**IUCN MANAGEMENT CATEGORY** II (National Park)

**BIOGEOGRAPHICAL PROVINCE** 3.05.04 (East African Woodland/Savanna)

**GEOGRAPHICAL LOCATION** In the Kigezi highlands of south-west Uganda, on the edge of the western rift valley, within the Districts of Kabale, Kisoro and Rukungiri. The park borders with Zaire to the west. The nearest main town is Kabale to the south-east (29km by road). 0°53'-1°08'S, 29°35'-29°50'E

**DATE AND HISTORY OF ESTABLISHMENT** In 1932, what are now the northern and southern sectors of the forest were gazetted as Kasatora and Kayonza Crown Forest Reserves respectively, covering a total area of 20,700ha. Later, in 1948, the two reserves were combined and extended into the Impenetrable Central Crown Forest Reserve covering 29,800ha (Forest Act, 1947, amended 1964). Two local forest reserves were then incorporated into the central reserve in 1961, increasing the gazetted area to 32,080ha. In the same year, the entire reserve was gazetted an animal sanctuary (Game Preservation and Control Act, 1959, amended 1964) in an effort to grant additional protection for the mountain gorillas. Bwindi was finally upgraded to a national park in 1991 (Statutory Instrument No.3, 1992, National Parks Act, 1952), along with the creation of two other mountain national parks in Uganda: Rwenzori Mountains and Mgahinga Gorilla. This final change was accompanied by incorporation of the 1,000ha Mbwa tract.

**AREA** 32,092ha. The entire area is proposed as a World Heritage site.

**LAND TENURE** Public. The park is owned by Uganda National Parks, a government parastatal body. Protection is total, although extractive use may be sanctioned by the Board of Trustees.

**ALTITUDE** 1,190-2,607m. The lowest point occurs in the northern-most tip of the park, and the highest is Rwamunyonyi hill on its eastern edge.

**PHYSICAL FEATURES** Bwindi is characterised by steep hills and narrow valleys, with a general incline from the north and western areas (below 1,750m), to the south-western corner (above 2,250m). Together with some remnant lowland forest outside the boundary, the park constitutes an important water catchment area serving surrounding agricultural land. Three major tributaries of the Ishasha River drain into Lake Edward to the north, and the Ndego, Kanyamwabo and Shongi Rivers flow southwards towards Lake Mutanda. In geological terms, the area is associated with upwarping of the western rift valley and its underlying rocks are phyllites and shales, with some quartz, quartzite and granite outcrops of the Karagwe-Ankolean System (Howard, 1991). The soils are mainly humic red loams, moderately to highly acidic and deficient in bases (Howard, 1991). Due to the steepness of slopes, the soils are very susceptible to erosion in areas where trees are cleared.

**CLIMATE** The climate is tropical with two rainfall peaks from March to May, and September to November. The annual mean temperature range is 7-15°C minimum to 20-27°C maximum; annual precipitation lies in the range 1,130-2,390mm (Howard, 1991) (UNP, 1993).

**VEGETATION** Bwindi is one of the few large expanses of forest in East Africa where lowland and montane vegetation communities meet. Combined with its probable role as a Pleistocene refuge, this situation has led to an extremely high biodiversity. Current evidence indicates that Bwindi is the most diverse forest in East Africa for tree species (more than 200 species) and ferns (more than 104 species), as well as other taxa (see FAUNA). In recognition, Bwindi was selected by IUCN's Plant Programme as one of the 29 forests in Africa most important for conserving plant diversity. The forest gets the name 'impenetrable' from the dense cover of herbs, vines and shrubs inhabiting the valley bottoms. Following Langdale-Brown (1964), the area is broadly classified as medium altitude moist evergreen forest, and high altitude forest. Approximately 40% of the forest is rich



to medium-rich mixed forest, including key species such as *Prunus Africana*, *Newtonia buchananii*, *Symphonia globulifera*, *Chrysophyllum spp.*, *Podocarpus spp.*, and *Strombosia scheffleria*. There are three (presumably climax) communities which tend to single-species dominance, the dominant depending on altitude. In the low-lying areas around 1,500m, *Parinari exelsa* is the dominant (about 10% of the park); around 2,000m it is *Newtonia buchananii* (about 11% of the park); and at around 2,200m, *Chrysophyllum gorungosanum* dominates (about 8% of the park). Almost 30% of the park is occupied by low stature communities, classified as poor, hill and colonising types. There are also small areas of swamp and grassland. Bamboo forest is restricted to less than 100ha. The trees of Bwindi are not particularly well known, and thus the current list may be far from complete. Nevertheless, the list of 200 species (47% of the country's total) includes 10 species not found elsewhere: *Croton bukebensis*, *Strombosiopsis tetrandra*, *Brazzeia longipedicellata*, *Grewia milbraedii*, *Maesobotrya purseglovei*, *Melchiora schliebenii*, *Xylopia staudtii*, *Allanblackia kimbiliensis*, *Memecylon spp.*, and *Leplaea mayombensis* (Howard, 1991) (Kakuru, in prep.). A further 16 species have only a very restricted distribution in south-west Uganda, and one species, *Lovoa swynnertonii*, is globally threatened (V in Uganda, ? overall) (Howard, 1991).

**FAUNA** Bwindi is believed to hold the richest faunal community in East Africa, including over 214 species of forest bird (336 species in total), 120 species of mammals (including 7 species of diurnal primate), and 202 species of butterfly (84% of the country's total). Highly significant is the presence of over one third of the world's population of mountain gorillas *Gorilla gorilla berengei* (about 300 out of 650) (E). A total of 12 species of bird, one primate and 3 butterflies occur only in Bwindi (and in some cases neighbouring highland forests of south-west Kigezi) within their Ugandan range. The birds are Fraser's eagle owl *Bubo poensis*, dwarf honeyguide *Indicator pumilio*, African green broadbill *Pseudocalyptomena graueri*, white-bellied robin chat *Cossyphus roberti*, Kivu ground thrush *Turdus tanganjicae*, Grauer's rush warbler *Bradypterus graueri*, Grauer's warbler *Graueria vittata*, short-tailed warbler *Hemitasia neumanni*, yellow-eyed black flycatcher *Melaenornis ardesiaca*, Chaplin's flycatcher *Muscicapa lendu*, montane double-collared sunbird *Nectarinia ludovicenis* and dusky twinspot *Clytospiza cinereoinacea*; the primate is the mountain gorilla; and the butterflies are cream-banded swallowtail *Papilio leucotaenia*, *Graphium gudenusi* and *Charaxes fournierae*. Bwindi is an important locality for the conservation of Afrotropical fauna, in particular those endemic to the mountains of the western rift valley. At least 70 of the 78 montane forest bird species occurring in the Albertine Rift region are found in the forest, including 22 of the 27 endemic species. In the case of butterflies, 8 Albertine Rift endemics are known to occur in the forest, which may be the most important in Africa for the conservation of montane butterflies (Butynski, 1993). Bwindi contains 9 globally threatened species: the mountain gorilla (E), common chimpanzee *Pan troglodytes* (V), l'hoests monkey *Cercopithecus l'hoesti* (V), African elephant *Loxodonta africana* (V), African green broadbill (R), Grauer's rush warbler (V), Chaplin's flycatcher (R), African giant swallowtail *Papilio antimachus* (R), and cream-banded swallowtail (V) (Howard, 1991). Buffalo were poached to extinction in the late 1960s, and leopard too more recently. The elephant population currently stands at approximately 20 animals.

**CULTURAL HERITAGE** No archaeological sites are known inside the park, although the wider Kigezi region may have been occupied from as early as 37,000 years ago (UNP, 1993; Cunningham, 1992). The earliest evidence of forest clearance dates back 4,800 years, most likely due to the presence of the Batwa (hunter-gatherer) people manipulating vegetation with fire (Hamilton, 1986). This is the earliest evidence for cultivation anywhere in tropical Africa (Hamilton, 1986). It was not until approximately 2000 years ago that Bantu agriculturalists arrived in the region (Cunningham, 1992). The extensive knowledge of wild animals and plants possessed by the Batwa people is threatened with disappearance unless their way of life is restored, or their knowledge condensed onto paper.

**LOCAL HUMAN POPULATION** Bwindi lies in one of the country's most densely populated rural areas, with figures ranging between 160 and 320 humans/sq.km at different locations around the forest. Approximately 10,000 families belonging to the Bachiga, Bafumbira and Barwanda (all Bantu) peoples cultivate the land immediately surrounding the park. Also present are between 50 and 100 Batwa families who have become disadvantaged following their eviction from the forest in 1964. According to Butynski (1984), about 84% of the forest compartments display signs of human activity, including pitsawing (29%), hunting (24%), mining (6%), livestock (10%), and

footpaths (67%) (Butynski, 1993). Only about 10% of the forest remains free from human disturbance. Although most local people appear to respect the park and show constraint in the use of its resources, large numbers do extract wood, bamboo, honey, bushmeat and gold. Butynski estimated that between 100 and 300 people were employed in pitsawing in 1983; a further 100 to 200 people in gold panning and mining; and between 60 to 120 in collecting bushmeat, building poles, fuelwood, bamboo, honey and medicinal plants in and around the park (Butynski, 1993). Commercial logging has never occurred in Bwindi due to its rugged terrain.

**VISITORS AND VISITOR FACILITIES** Following the preparation of a tourism development plan (IGCP, 1992), Bwindi opened for mountain gorilla tourism in April 1993. The park is set to become a major tourist destination, especially following the collapse of gorilla tourism in Rwanda due to civil war, and the absence of law and order in eastern Zaire. Tourism facilities are limited however; for the time being tourists must camp at the Buhoma site (from which the gorilla treks depart), or stay overnight in Kabale town and drive into the park early next morning. The Buhoma site has a running water supply and electricity generator. In August 1993, private concessions were awarded to tour operators allowing the development of accommodation at selected sites around the forest. The Kenyan company, Abercrombie and Kent, took the largest concession, and it is hoped that high quality, environmentally sympathetic facilities will be available shortly.

**SCIENTIFIC RESEARCH AND FACILITIES** A survey of the conservation status of the park was carried out by Harcourt in 1979, and an ecological survey was subsequently carried out by Butynski of the New York Zoological Society, who also recommended the establishment of a permanent field station (Butynski, 1984). In 1986, the Impenetrable Forest Conservation Project (IFCP) was set up at Ruhija, staffed by a full time expatriate, 5 graduate counterparts and 20 assistants. The site now contains a library, laboratory equipment, and accommodation and facilities for up to 60 people. Howard (1991) undertook a further survey of the forest in September 1986 as part of a large scale Forest Department inventory. Further studies of the avifauna were conducted by Butynski and Kalina (1992). In 1991, the facilities of IFCP were developed into the Institute of Tropical Forest Conservation (ITFC) at Ruhija, to act as a field station for Mbarara University of Science and Technology. The main aims of the Institute are to systematically inventory the fauna and flora, initiate conservation programmes, and assess the population, distribution and particular requirements of the mountain gorillas. Working in close collaboration with ITFC is the CARE Development Through Conservation (DTC) project, which is researching the economic needs of the local community, training Ugandan students in inventory techniques and ethnobotany, and running extension programmes with local farmers.

**CONSERVATION VALUE** Bwindi is undoubtedly the most important area in Uganda for species conservation due to its exceptional species diversity, including many Albertine Rift endemics and 9 globally threatened species. Bwindi is also believed to hold the richest faunal community in East Africa, due in part to its provision of an extensive lowland-montane forest continuum (Afro-montane forest is recognised as the rarest vegetation type in Africa). Further, Bwindi is internationally important as the habitat of more than one third of the world's population of mountain gorillas.

**CONSERVATION MANAGEMENT** Until 1994, the most recent management plan for Bwindi was the Forest Department Working Plan 1961-71 (Leggat *et al.*, 1961), which emphasised simultaneous preservation of forest cover with maximum sustainable timber production. Unfortunately, the period following 1971 saw Forest Department management structures collapse, leading to massive illegal exploitation of the forest for timber, bushmeat, gold, building materials, cultivation and livestock grazing. Stabilisation has now occurred following the establishment of IFCP in 1986, and under the auspices of various initiatives, first with the Forest Department, and more recently with Uganda National Parks. In addition to law-enforcement, the main achievements to date are in the areas of inventory and monitoring, research, staff training, and demarcation and securing of park boundaries. Due to the high population density of surrounding areas, Bwindi is threatened with agricultural encroachment. In combating this threat, Uganda National Parks is assisted by the CARE DTC project which is promoting good relations with the local community via a large-scale agro-forestry programme. In addition to its out-forest work, DTC has also studied in-forest resource use and zoning strategy. An overall management plan has recently been prepared jointly by ITFC, DTC,

and Uganda National Parks (UNP, 1993), although a tourism-specific plan has been in use since the beginning of 1993 (IGCP, 1992).

**MANAGEMENT CONSTRAINTS** Although there is no evidence of gorilla hunting in the forest, poaching for antelope, pigs and other large mammals is common; relatively intensive logging also occurs in certain areas, as does the extraction of gold and charcoal. Consistent help from IFCP and DTC has enabled the Forest Department (and more recently Uganda National Parks) to reduce most illegal activity to sustainable levels. However, the position of Bwindi as an isolated forest surrounded by a densely settled local population makes agricultural encroachment the major threat to forest integrity. Lack of community participation in park management, plus a low level of public awareness in conservation, exacerbate the human threat. Unless the measures proposed in the current management plan (UNP, 1993) are implemented quickly, encroachment is likely in future. Tourism poses the greatest threat to Bwindi's mountain gorilla population due to the possibility of disease transmission if tourists are brought into close proximity with the gorillas. Tracking protocols of the kind proposed in the tourism development plan must be adhered to strictly if the gorillas are not to be put at risk. A lack of Ugandan wildlife veterinarians currently limits the sustainability of the gorilla tourism project.

**STAFF** As the park is still relatively new, a Chief Park Warden has not yet been appointed. However, two wardens have been appointed for law enforcement, and one further warden is on secondment from the Game Department. The plan is to have a total of seven wardens to cover all aspects of park management. The original 15 game guards and 12 forest rangers who worked in the forest before it was gazetted as a national park have all been re-appointed as rangers. A further 24 rangers are currently being trained at ITFC.

**BUDGET** No information.

**LOCAL ADDRESSES** Uganda National Parks, Plot 31 Kanjokya Street, Kamwokya-Kololo, P.O. Box 3530, Kampala, Uganda (tel: 010-256-41-256534).

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DATE March 1994

## DÉSIGNATION POUR LA LISTE DU PATRIMOINE MONDIAL - RÉSUMÉ UICN

### PARC NATIONAL IMPÉNÉTRABLE DE BWINDI (OUGANDA)

Résumé CMSC/UICN (mars 1994) préparé d'après la désignation d'origine soumise par le gouvernement de l'Ouganda. L'original et tous les documents présentés à l'appui de cette désignation seront disponibles pour consultation aux réunions du Bureau et du Comité.

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#### 1. SITUATION

Sur les hauts plateaux de Kigezi, au sud-ouest de l'Ouganda, dans les districts de Kabale, Kisoro et Rukungiri. Près de la frontière du Zaïre.

#### 2. DONNÉES JURIDIQUES

Classé réserve forestière en 1932 et sanctuaire de faune en 1961 puis élevé au rang de parc national en 1991. La protection juridique est maintenant totale, toutefois des activités extractives peuvent être autorisées par le Conseil d'administration des parcs nationaux de l'Ouganda.

#### 3. IDENTIFICATION

Bwindi se caractérise par des collines abruptes et des vallées étroites d'inclinaison générale nord et ouest à sud-ouest. Le parc, avec quelques vestiges de forêts de plaine situés en dehors de ses limites, constitue un bassin versant important pour les terres agricoles voisines fortement peuplées. Avec une superficie de 32,092 ha et un gradient altitudinal de 1190 à 2607m, Bwindi est l'une des rares grandes régions de forêts d'Afrique de l'Est où les communautés végétales de plaine et de montagne se rencontrent. Si l'on ajoute à cela son rôle probable de refuge du Pléistocène, la forêt possède une diversité biologique extrêmement riche. Bwindi est la forêt d'Afrique de l'Est la plus diversifiée pour les espèces d'arbres (plus de 163 espèces) et de fougères (plus de 104 espèces) mais aussi d'autres taxons. Bwindi possède 38 pour cent des arbres répertoriés en Ouganda dont 10 espèces qui n'existent nulle part ailleurs. On y trouve aussi 16 autres espèces à la distribution très limitée dans le sud-ouest du pays et une espèce, *Lovoë swynnertonii*, menacée au plan mondial (V).

La communauté animale de Bwindi est une des plus riches d'Afrique de l'Est avec 214 espèces d'oiseaux *de forêt* (> 65% du total national), 7 espèces de primates diurnes (58% du total national) et 202 espèces de papillons (84% du total national). La présence de près de la moitié (300 sur environ 650) de la population de gorilles de montagne (E) est hautement significative. Bwindi est également un site important pour la conservation de la faune afro-montagnarde, en particulier les espèces endémiques des montagnes de la vallée orientale du rift. Au moins 70 des 78 espèces d'oiseaux de forêt montagnarde de la région du rift albertin sont présentes dans la forêt qui est peut-être la plus importante en Afrique pour la conservation des papillons de montagne. D'une manière générale, Bwindi sert de refuge à neuf espèces menacées au plan mondial: le gorille de montagne (E), le chimpanzé (V), le cercopithèque de L'Hoest (V), l'éléphant d'Afrique (V), l'eurylaïme de Grauer (R), le bouscarle de Grauer (V), le gobemouche de Chapin (R), *Papilio antimachus* (R) et *Papilio leucotaenia* (V).

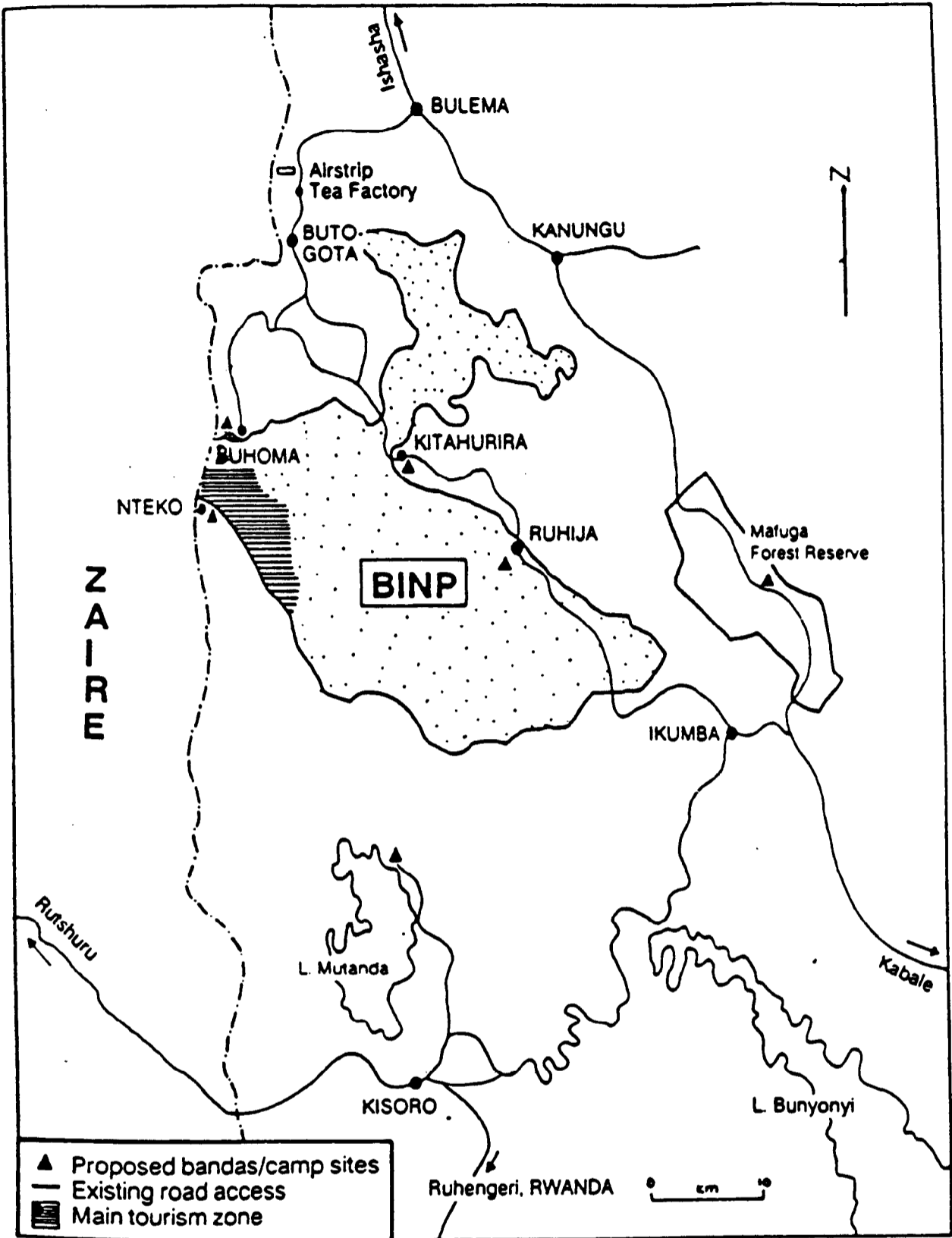
#### 4. ETAT DE PRÉSERVATION/CONSERVATION

Durant les troubles civils des années 70 et du début des années 80, les structures de gestion du Département des forêts se sont effondrées ce qui a entraîné l'exploitation illicite de la forêt pour le bois, le gibier, l'or et les matériaux de construction. Aujourd'hui, la situation est stabilisée depuis la mise en place, en 1986, du Projet de conservation de la forêt impénétrable puis de la collaboration avec le Département des forêts et, plus récemment, avec les Parcs nationaux d'Ouganda. Outre l'application des lois, les principales réalisations ont eu lieu, à ce jour, dans les domaines de l'inventaire et de la surveillance, de la recherche, de la formation du personnel, du tracé et de la protection des limites du parc. En raison de la très forte densité de population que l'on note aux alentours, Bwindi est menacé d'empiètement par l'agriculture. Les Parcs nationaux d'Ouganda sont épaulés, à cet égard, par le Projet de développement par la conservation du WWF et de CARE qui favorise les bonnes relations avec la communauté locale dans le cadre d'un grand projet d'agro-foresterie. L'Institut de conservation de la forêt tropicale de Ruhija, Bwindi, a préparé un plan global de gestion pour Bwindi. Il n'y a pas de signe de chasse au gorille dans la forêt mais le tourisme constitue une menace grave pour ces animaux si les règles de pistage ne sont pas strictement appliquées.

#### 5. RAISONS JUSTIFIANT L'INSCRIPTION A LA LISTE DU PATRIMOINE MONDIAL

Pour justifier la désignation du Parc national impénétrable de Bwindi pour la Liste du patrimoine mondial, le gouvernement de l'Ouganda donne les raisons suivantes:

- (iv) **Habitats naturels les plus importants et les plus représentatifs où survivent des espèces menacées.** Bwindi est la région d'Ouganda la plus importante pour la conservation étant donné la diversité exceptionnelle des espèces que l'on y trouve, y compris de nombreuses espèces endémiques du rift albertin. Bwindi possède la plus grande diversité d'espèces d'arbres et de fougères en Afrique de l'Est. C'est peut-être la forêt la plus importante d'Afrique pour les papillons de forêt montagnarde. Bwindi est aussi le refuge de neuf espèces menacées à l'échelon mondial et, en particulier, de près de la moitié de la population mondiale de gorilles de montagne.



- ▲ Proposed bandas/camp sites
- Existing road access
- ▨ Main tourism zone

Ruhengeri, RWANDA 0 5 10 km

# DÉSIGNATION POUR LE PATRIMOINE MONDIAL - EVALUATION TECHNIQUE UICN

## PARC NATIONAL IMPÉNÉTRABLE DE BWINDI (OUGANDA)

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### 1. DOCUMENTATION

- i) Fiches de données UICN/CMSC (15 références)
- ii) Littérature consultée: UNP. 1993. Bwindi Impenetrable National Park Management Plan; Kingdon, J. 1991. Assessing Conservation Priorities in East Africa. African Wildlife J.; CIPO. 1992. Putting Biodiversity on the Map. 90 p.; Kingdon, J. 1990. Island Africa; UICN. 1990. Biodiversity in Sub-Saharan Africa; PNUE. n.d. Strategic Resources Planning in Uganda. Vol. II, III; Cunningham, A.B. 1992. People, Park and Plant Use in Bwindi. Report to CARE. 95 p.
- iii) Consultations: 5 examinateurs indépendants; personnel du PNUE; spécialistes de l'Université de Makerere; WWF; personnel de CARE et du Projet international de conservation des gorilles.
- iv) Visite du site: mars 1994. J. Thorsell, M. Young

### 2. COMPARAISON AVEC D'AUTRES AIRES

Bwindi est une des quelque 70 aires protégées que l'on trouve dans l'unité biogéographique de la forêt afro-montagnarde. Avec le Cap Fynbos, la forêt afro-montagnarde est le type de végétation le plus rare du continent. L'unité peut être subdivisée en cinq groupes régionaux, le groupe du rift montagnard albertin incorporant Bwindi. Dans ce groupe, les petits vestiges forestiers s'étendent des monts Itombwe, est du Zaïre jusqu'à 500 km au nord des monts Rwenzori. L'unité tout entière présente un intérêt biologique exceptionnel pour sa flore particulièrement riche et distincte et, dans une moindre mesure, pour sa faune. Dans cette région, on trouve deux autres biens du patrimoine mondial: Kahuzi-Biega et Virunga; un troisième (Rwenzori) a également été désigné. Tous contiennent des forêts de montagne semblables à celle de Bwindi mais tous sont différents par les espèces que l'on y trouve et par leur physiographie.

En Ouganda, Bwindi est un des 12 blocs forestiers importants. Sur la Figure 1, on voit l'emplacement de ces blocs ainsi que l'étendue ancienne de la couverture forestière. Seuls Bwindi et Rwenzori ont une végétation de montagne albertine et seul Bwindi a une forêt d'altitude moyenne (descendant à 1160 m). On pense que c'est aussi un refuge du Pléistocène. Ce n'est pas la plus grande des 12 forêts mais, avec Rwenzori et les forêts de Semliki, c'est celle qui est considérée comme la plus riche en espèces. Bwindi est aussi la principale place forte des gorilles de montagne bien qu'il reste un petit nombre de ces animaux dans le petit Parc national de Mgahinga limitrophe du Parc national des Volcans au Rwanda.

Dans la région d'Afrique de l'Est, Bwindi et le Parc national d'Udzungwa, en Tanzanie, sont les seules forêts présentant des communautés contiguës de montagne et de plaine. En conséquence, Bwindi présente une très grande diversité d'espèces et possède plus d'espèces de plantes et d'oiseaux (336 espèces) que toute autre forêt de la région. C'est aussi la forêt la plus riche de la région pour les papillons (220 espèces). Bwindi est considérablement plus riche que les volcans Bafumbira situés au sud (par ex. 30% d'espèces de mammifères en plus). Bwindi possède une des faunes de mammifères les plus riches d'Afrique avec 120 espèces. En comparaison, le Bien du



patrimoine mondial du Serengeti n'en a que 70. La Commission de la sauvegarde des espèces de l'UICN a inclus Bwindi dans les 29 forêts les plus importantes d'Afrique pour la conservation des plantes et BirdLife International la considère comme un des «points chauds» mondiaux pour les oiseaux endémiques.

En conclusion, il est certain que les forêts montagnardes naturelles restantes dans le rift albertin sont extrêmement importantes pour la science et la conservation de la nature. Deux des plus importantes, contenant chacune des portions de cette forêt, sont déjà sur la Liste du patrimoine mondial (Virunga et Kahuzi-Biega). On envisage aussi la possibilité d'agrandir les Virunga par l'adjonction des Parcs nationaux de Mgahinga et des Volcans. Bwindi (mais aussi Rwenzori) est considéré comme complémentaire à ces sites, avec des caractéristiques qui ne font pas double emploi mais complémentaires. Il s'agit sans doute de la dernière zone clé satisfaisant aux critères du patrimoine mondial dans cette région unique et précieuse de la planète.

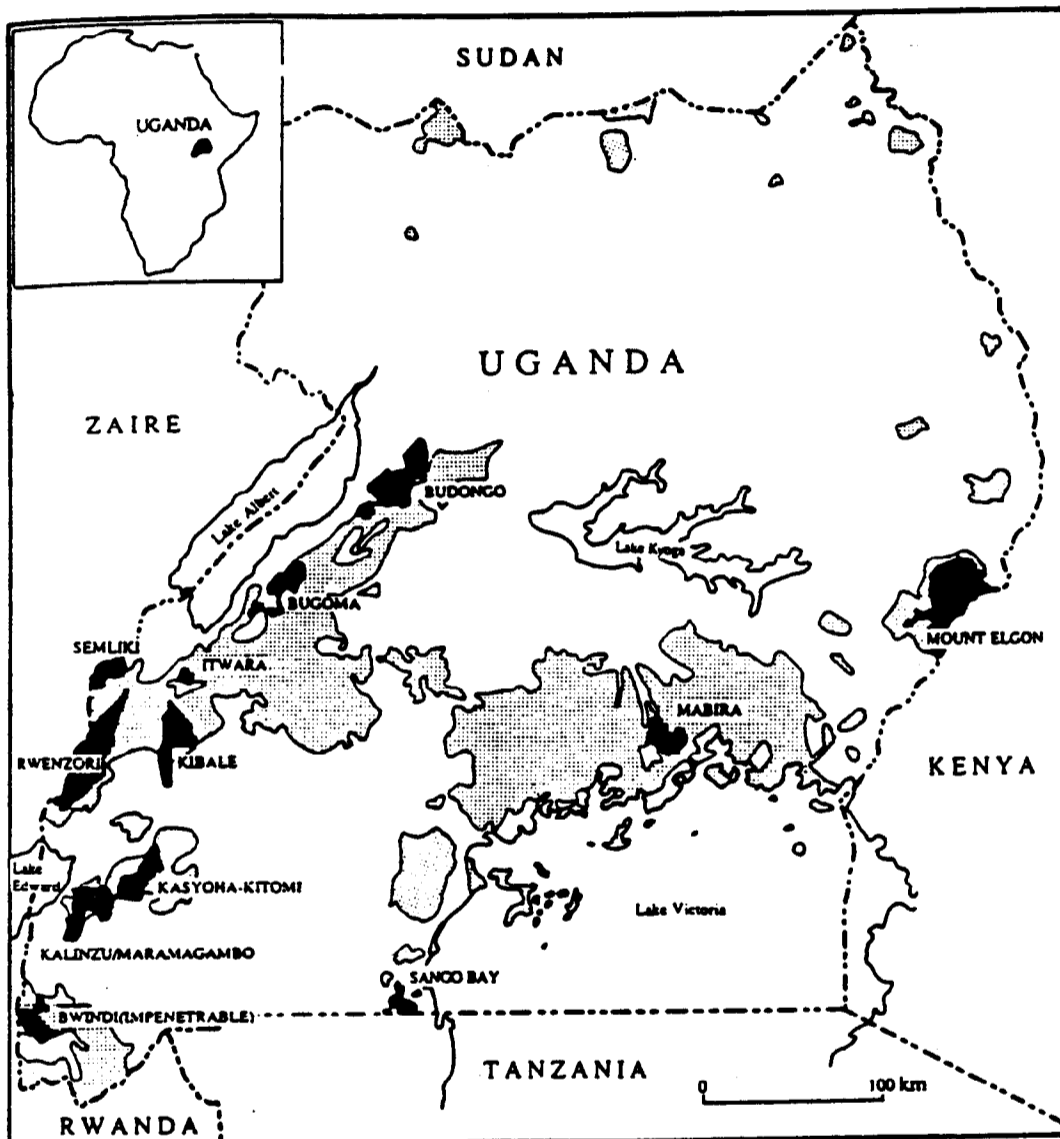


Figure 1. Showing the locality of Bwindi-Impenetrable National Park, Uganda in relation to other forest in Uganda, showing the former extent of forest cover (from Howard, 1991).

### **3. INTÉGRITÉ**

L'histoire de la conservation de la forêt de Bwindi remonte à 1932, lorsqu'une bonne partie de sa superficie fut classée réserve forestière. Le sciage de long était alors légal et beaucoup de bois de valeur a été sélectivement coupé. Il n'y a pas longtemps, le braconnage était encore très répandu: il a entraîné la disparition de deux espèces (buffle et léopard) et l'appauvrissement de beaucoup d'autres (éléphant, gorille, hylochère, guib harnaché). Des dommages localisés ont également été causés par la prospection et l'exploitation de l'or. Depuis la création du parc national et la mise en place de différents projets de conservation financés par la NYZS, CARE, le WWF, USAID, le Programme international de conservation des gorilles, entre autres, ces activités sont aujourd'hui largement sous contrôle.

Les limites de Bwindi ne sont pas idéales car le rapport entre le périmètre et la superficie est élevé et la zone où le parc est en contact avec la population nécessite une gestion intensive. Il existe plusieurs couloirs étroits entre les secteurs, qui sont des entraves au mouvement de la faune sauvage. En raison de l'empiétement et du défrichage, il n'est guère possible d'étendre la superficie autour de ces goulots d'étranglement.

A l'exception des troubles civils qui ont secoué l'Ouganda vers la fin des années 70 et le début des années 80, les pressions principales qui se sont exercées sur Bwindi sont le résultat de l'expansion démographique autour de la zone. Situé dans une des régions d'Afrique à la plus forte densité de population, Bwindi compte 100,000 personnes sur 5 km de son immense périmètre de 115 km. Le parc, comme bien d'autres sous les tropiques, est devenu un îlot forestier dans un océan occupé par de petits agriculteurs et des scieurs de long. En bordure, on note un certain nombre d'empiétement et, bien souvent, il n'existe pas de zone de transition entre le parc et les pâturages.

Plusieurs expériences originales sont en cours pour atténuer les pressions humaines. Le plan d'aménagement prévoit une zone d'utilisation multiple de 2 km à l'intérieur de presque tout le parc où la cueillette réglementée de certaines ressources forestières (miel, plantes médicinales) est autorisée. On a également défini, autour du parc, une zone de développement durable (qui n'est pas incluse dans la désignation). Plusieurs projets sont également en cours (pépinières, écotourisme, éducation) pour obtenir l'appui de la communauté locale aux activités de conservation. Cela est complété par l'application des lois et l'on a procédé à 263 arrestations pour activités illicites, en 1993.

Le fondement scientifique de la gestion du parc a été considérablement renforcé par la création de l'Institut de conservation de la forêt tropicale, ONG basée dans le parc et financée par CARE et le WWF. Le projet de développement par la conservation (CARE) et le Programme international de conservation des gorilles prêtent également assistance aux autorités des Parcs nationaux de l'Ouganda.

Enfin, un Fonds pour la conservation de Bwindi vient d'être définitivement approuvé et le Fonds pour l'environnement mondial (GEF) procédera à un versement initial de 4 millions de dollars pour garantir au parc un appui financier à long terme.

En conclusion, malgré les nombreuses années durant lesquelles la forêt de Bwindi n'a pas reçu de protection adéquate, la situation s'est fortement améliorée depuis quatre ans. A bien des égards, elle est devenue un modèle pour d'autres projets de conservation des forêts tropicales. Et même s'il reste de nombreuses questions à résoudre du point de vue de la gestion (par ex. suffisamment de personnel formé, expansion du tourisme), les autorités ougandaises doivent être félicitées pour avoir pris l'initiative d'instituer un régime d'aménagement et de gestion efficace.

### **4. AUTRES COMMENTAIRES**

Aucun

## 5. EVALUATION

Bwindi présente des caractéristiques d'importance **locale** (par ex. cueillette de produits forestiers), **nationale** (par ex. rôle de bassin versant), **régionale** (par ex. équilibre climatique) et **internationale** (par ex. diversité biologique, espèces menacées).

C'est une des régions les plus importantes d'Afrique pour l'avifaune, les papillons, les mammifères et les plantes. C'est la forêt la plus riche de la région pour les arbres (160+ espèces) et les fougères. En tant que site clé pour la diversité biologique du continent, le parc satisfait sans ambiguïté au critère naturel *iii* relatif aux phénomènes naturels exceptionnels. Il satisfait aussi au critère *iv* pour les espèces menacées et, en particulier, pour sa population viable de gorilles de montagne mais aussi pour plusieurs autres plantes et animaux afro-montagnards.

Les conditions d'intégrité correspondantes sont satisfaites même s'il est considéré que les dimensions du site sont réduites et que le tracé de ses limites n'est pas idéal. Il bénéficie d'un bon soutien de la part de bailleurs de fonds internationaux et du gouvernement de l'Ouganda et dispose d'un plan d'aménagement exemplaire, soutenu par une mise en oeuvre efficace.

## 6. RECOMMANDATIONS

Le Parc national impénétrable de Bwindi devrait être ajouté à la Liste du patrimoine mondial au titre des critères *iii* et *iv*. Les autorités ougandaises et les nombreux bailleurs de fonds devraient être félicités pour avoir pris, avant qu'il ne soit trop tard, des mesures pour protéger la forêt et installer un régime de gestion efficace et progressiste.

