

World Heritage Sites

Protected Areas and World Heritage



RWENZORI MOUNTAINS NATIONAL PARK UGANDA

The Rwenzori Mountains in southwestern Uganda are steep, rugged and well watered, rising high above dry plains and are ice-capped despite being nearly on the Equator. The Park covers most of the centre and eastern half of the range. It includes Africa's third, fourth and fifth highest peaks in an alpine highland of glaciers, snowfields and lakes which make it one of Africa's most beautiful mountain parks. It protects five distinct vegetation zones, several endangered species and the richest montane flora in Africa, a very unusual cloud forest of giant heathers, groundsels and lobelias, which has been called Africa's botanic big game.

COUNTRY

Uganda

NAME

Rwenzori Mountains National Park

NATURAL WORLD HERITAGE TRANSBOUNDARY SITE

1994: Inscribed on the World Heritage List under Natural Criteria vii and x.

1999-2004: Listed as a World Heritage site in Danger because of poaching and occupation by militias.

STATEMENT OF OUTSTANDING UNIVERSAL VALUE

The UNESCO World Heritage Committee issued the following Statement of Outstanding Universal Value at the time of inscription.

Brief Synthesis

The Rwenzori Mountains National Park provides stunning views of glacier and snow-capped mountains just kilometres from the equator, where it is contiguous with the Virunga National Park in the Democratic Republic of Congo (DRC). Having the third highest mountain in Africa at 5,109 m (after Kilimanjaro and Mount Kenya), the Park includes a much larger alpine area than either, covering an area of 99,600 ha of which 70% lies at over 2,500 m in height. The Rwenzori Mountains are the highest and most permanent sources of the River Nile, and constitute a vital water catchment. Their multitude of fast flowing rivers, magnificent waterfalls and stratified vegetation make the property exceptionally scenic and beautiful. The mountains are well-known for their unique alpine flora which includes many species endemic to the Albertine Rift in the higher altitude zones including giant heathers, groundsels and lobelias. The Park also supplies local communities with various wild resources and is an important cultural heritage.

Criterion (vii): The Rwenzoris are the legendary "Mountains of the moon", a reflection of the mist-shrouded mountains of this rugged massif that tower almost 4,000 m above the Albertine Rift Valley, making them visible from great distances. These mountains offer a unique and pristine landscape of alpine vegetation studded with charismatic giant lobelias, groundsels, and heathers which have been called "Africa's botanical big game". The combination of spectacular snow-capped peaks, glaciers, V-shaped valleys, fast flowing rivers with magnificent waterfalls, clear blue lakes and unique flora contributes to the area's exceptional natural beauty.

Criterion (x): Because of their altitudinal range, and the nearly constant temperatures, humidity and high insolation, the mountains support the richest montane flora in Africa. There is an outstanding range of species, many of which are endemic to the Albertine Rift and bizarre in appearance. The natural vegetation has been classified as

belonging to five distinct zones, determined largely by altitude and aspect. The higher altitude zones, covered by heath and Afro-alpine moorland, extend from around 3,500 m to the snow line and represent the rarest vegetation types on the African continent. Significant species include the giant heathers, groundsels, lobelias and other endemics. In terms of fauna, the Rwenzori have been recognised as an Important Bird Area with 217 bird species recorded to date, a number expected to increase as the park becomes better surveyed. The montane forests are also a home to threatened species such as the African forest elephant, eastern chimpanzee and l'Hoest's monkey. The endangered Rwenzori black-fronted or red duiker, believed to be a very localized subspecies or possibly a separate species, appears to be restricted to the Park.

Integrity

Challenges facing the Park include community uses of the park (such as collection of bamboo), tourism development, population growth and agricultural practices. While little agricultural encroachment has occurred due to the Park's clearly marked boundary, insecurity caused by rebel insurgence in recent years has affected park management and encouraged illegal activities, the reason for which the property was inscribed in the List of World Heritage in Danger from 1999-2004. The growing number of people living around the property is adding pressure on forest resources, although the cultural importance that the local communities attach to the Park as well as the various benefits they derive from ecotourism and regulated plant resource use is designed to manage this. The watershed functions as a result of the intactness of the boundary has enhanced the Park's capacity to act as the biggest contributor of water in the region for domestic and industrial use. The integrity of the property is further enhanced by its contiguity with the Virunga National Park in the DRC which provides an opportunity for gene flow and buffer properties.

Protection and Management Requirements

Rwenzori Mountains National Park is managed by Uganda Wildlife Authority (UWA, UWA succeed Uganda National Parks (UNP) which was the management authority at the time of Inscription of the site as a World Heritage Site) in accordance with the provisions of the National laws(The constitution (1995), Uganda Wildlife Act (2000), National Environment Management Act (2000), Forest and Tree planting Act (2003), Local Government Act (1987), The Land Act (1989) and international conventions (Convention of Biological Diversity 1992 (CBD), Convention on International Trade in Endangered Species (CITES), the RAMSAR convention 1971 and the World Heritage Convention 1972). It was gazetted in 1991 under statutory instrument number 3 in 1992 and the National Park's Act 1952.

The park is considered a model for integration of cultural values into the Protected Area Management framework as an innovative approach to resource management, the first of its kind in Africa. As a result, the local communities have embraced collaborative resource management initiatives. Given its significance as one of the biodiversity hotspots in the Albertine Rift, various local and international NGOs have supported the management and conservation of the property. A General Management Plan guides management operations on-site. Key challenges to address include illegal felling of trees, snow recession due to global warming, human population pressure adjacent to the property and management of waste generated through tourism operations. UWA is addressing the above threats through resource protection, community conservation education, research and ranger-based monitoring, ecotourism and transboundary initiatives with the DRC. The long-term maintenance of the integrity of the property will be achieved through sustainable financing, ecological monitoring, continued collaboration with key stakeholders and regional cooperation.

IUCN MANAGEMENT CATEGORY

II National Park

BIOGEOGRAPHICAL PROVINCE

Central African Highlands (3.20.12)

GEOGRAPHICAL LOCATION

In southwest Uganda on the border with Virunga National Park in the Democratic Republic of Congo (D.R.C.) on the east side of the western rift valley between 0° 06' to 0° 46'N and 29° 47' to 30° 11'E.

DATES AND HISTORY OF ESTABLISHMENT

- 1937: The boundaries of a forest reserve area were demarcated;
- 1941: All terrain above approximately 2,200m was gazetted as a Forest Reserve;
- 1948: Forest Act confirmed the designation (amended in 1964);

- 1977-1986: Civil war and the collapse of the economy made protection impossible; hunting surged and some farmers encroached on the Park;
- 1989: The upper part of the Reserve was gazetted as a National Park with Bwindi Impenetrable and Mgahinga Gorilla National Parks;
- 1991: The National Park which included the whole Forest Reserve area as a result of donor aid pressure was established by Statutory Instrument 3 under the National Parks Act of 1952; the local people's use of the forest resources was restricted;
- 1999-2004: Listed as endangered because of poaching, encroachment and rebel militia activity, especially between 1997 and 2001 when control was reasserted; lack of funding also prevented conservation.

LAND TENURE

Government-owned through the Uganda Wildlife Authority (UWA), in the Districts of Kasese, Bundibugyo and Kabarole. The Park is protected but extraction may be sanctioned by the Board of Trustees.

AREA

99,600 ha. For 50 km it borders the *Parc National des Virunga* in the D.R.C., also a World Heritage site, the northern extension of which includes a fifth of the Rwenzori Mountains.

ALTITUDE

1,670m - 5,109m (the Margherita peak of Mount Stanley). 70% (68,000 ha) of the Park is above 2,500m. Other areas are: 2,250-2,500m (16,000 ha); 2,000-2,250m (11,000 ha); below 2,000m, 2,800 ha.

PHYSICAL FEATURES

The Rwenzori mountains are an extremely steep and rugged mountain range approximately 40 kilometers wide by 80 kilometers long, running south-southwest to north-northeast just north of the equator. There are twenty five peaks above 4,500m high. Their high point is Africa's third highest peak, Margherita (5,109m), one of the two summits of Mount Stanley. The mountains are a horst block of Precambrian metamorphosed crystalline basement (gneiss, amphibolite, granite and quartzite) lifted above the surrounding plains during the formation of the Western (Albertine) Rift Valley in the late Pliocene (Howard, 1991; Taylor, 2003). The range is tilted up on the west so that the faulted western scarp slope is steep. In Uganda which includes over two thirds of the range, the eastern slopes are gentler though deeply dissected by valleys. The three highest peaks, Mounts Stanley, Speke and Baker (the third, fourth and fifth highest peaks in Africa) are permanently covered by snowfields and small retreating glaciers; the lower Mounts Emin, Gessi and Luigi di Savoia also retain more or less permanent snowfields (Yeoman, 1989). The range has 23 peaks above 4,500m which hold the largest glaciated area in Africa, estimated at 11.5 x 6.5 sq.km. in 1906 but having recently retreated at 0.7 sq.km per decade covered only 0.86 sq.km in 2006 (Rwenzori Abruzzi, 2006). Heavy glaciation has sculpted cirques and left many moraines, lakelets and bogs on the Stanley ice plateau. However, the glaciers are melting fast. Some have gone, and the remaining area is now only about a quarter what it was 50 years ago.

Although not as high as Mount Kilimanjaro, and slightly lower than Mount Kenya, the Rwenzori mountains have a larger alpine area than either (Butynski, 1992): 70% of the Park is above 2,500m. Most of the soils show a well-marked altitudinal zonation caused by a combination of age, climate and erosion history (WHC-AS, 2004). The rocks and leaching produce acidic soils of low fertility, except on parts of the northern ridge where volcanic ash from the Fort Portal plateau was deposited (Loefer, 1997). The Rwenzori are a vital water catchment area. The extensive upland bogs act as a huge sponge which absorbs and regulates the rainfall. They are the highest and most permanent source of the river Nile, feeding it via eleven rivers and Lake Rutanzige (Lake Edward) and Lake George in Uganda. They supply 500,000 Ugandans who depend on the mountain forests for their drinking water

and for protection from flooding and as well as for irrigation, hydro-electric power and inflow to the fisheries of Lakes Rutanzige and George (Howard, 1991).

CLIMATE

The climate is tropical, affected by altitude, topography and the seasonal movements of the Inter Tropical Convergence of the southeastern monsoon with winds from the northeast. Most of the plains at the foot of the range lie in a rain shadow and receive as little as 750mm of rain a year (WHC-AS, 2004). The mountains trap the humid air of the Congo basin and are very wet, rain falling on most days even in the dryer months. Above 2,500m clouds can persist for several days. Annual precipitation above the foothills averages 2500mm, peaking twice, in March to May and September to December, influenced by the prevailing north-easterly winds and south-easterly monsoon; monthly rainfall can exceed 375mm. Conditions are related to altitude. Snowfall is greater than on Mounts Kenya and Kilimanjaro and ice rime forms in freezing mists on the mountains. The high precipitation results in permanent icefields and glaciers, despite their location on the Equator. At high elevations, due in part to the frequent cloud cover, the diurnal temperature range is small, swinging daily from above to below freezing, and characterised by Hedberg (1964) as “summer every day and winter every night”, reducing mechanisms for frost-tolerance in the giant succulents. However, climate change is reducing the glaciers, which, by 1990, had receded to about 40% of the extent recorded in 1955 and less than a quarter of that measured by the Duke of the Abruzzi in 1906. Little or no accumulation of ice is occurring. At this rate snow and ice are predicted to disappear from the Rwenzori Mountains within the next two to three decades (Taylor, 2003). But the glaciers make such a small contribution to river flow that their disappearance will have a negligible effect on water supplies. More detailed information on the mountains' climate is given in Osmaston (1989 & 1998).

VEGETATION

The Rwenzori mountains are an island of rainforest and alpine vegetation surrounded by dry plains. They are within a WWF/IUCN Centre of Plant Diversity and are known for their unusual luxuriant acid-soil adapted flora, the richest montane flora in Africa. This grows at high altitudes and includes many species endemic to the western Rift Valley. It occurs because the high precipitation, cloud cover and humidity are combined with high levels of ultraviolet insolation and a low annual temperature variation. 55% of the Park is forested or wooded. There is marked vegetational zoning with changes in altitude and site but the type of vegetation is also dependent on differences in soils and the degree of drainage. The four main altitudinal zones are (a) montane forest, (b) bamboo forest on better soils or *Mimulopsis* tangle elsewhere, (c) *Rapanea - Hagenia* thicket, tree heather on poor soils, or bog, and (d) afro-alpine moorland. The slopes below the Park boundary were formerly grassland but are now densely cultivated. However except in the valley bottoms there were no substantial areas of forest where clearance took place for farming (Osmaston, *in litt.*, 2006).

Up to about 2,300m in the Park, the vegetation is mixed broad-leaf forest of *Symphonia globulifera*, *Prunus africana*, *Albizia*, *Podocarpus* and *Dombeya* species, with few large trees and an open canopy, though denser in valley-bottoms and on flat ridge crests. In sheltered valleys this can reach higher. Above this to above 3,200m the vegetation is characterized by afromontane forest trees, some up to 20m tall, predominantly *Erica* (formerly *Philippia*) *philippia*, and *E. johnstonii*, draped with the lichen *Usnea longissima*, bryophytes and pteridophytes (Lush, 1993). On the better soils up to 3,800m there is a bamboo forest zone dominated by *Sinarundinaria alpina*, often in pure stands, or mixed with *Podocarpus latifolia* with elsewhere an impenetrable belt of *Mimulopsis elliotii* and the two lowest altitude 'giants' *Senecio erici-rosenii* and *Lobelia gibberoa*. Above this is a grassland zone with scattered giant lobelia, interrupted by rocky outcrops, swamps, and streams, and, to 3,800m on better soils, cloud woodland continues of *Rapanea rhododendroides* and *Hagenia abyssinica*, over a thicket of *Hypericum lanceolatum* and *H. keniense*. On poorer but well drained soils there is a dense vegetation of tree heathers, *Erica trimeria* and *E. kingaensis*, giant senecios such as *Dendrosenecio johnstonii*, *D. adnivalis*, and giant *Lobelia lanuriensis* up to 5m high, floored and festooned with ferns, mosses and liverworts. Bogs have huge tussocks of *Carex runssoroensis*, *Festuca abyssinica* and monumental *Lobelia bequaertii*. Above this zone, Afro-alpine moorland extends to the snow line at 4,400m with *Senecio* groves in sheltered spots but elsewhere dominated by scrubby thickets of *Helichchrysum*

stuhlmannii, *H. guilelmii*, *Alchemilla subnivalis* and *A. stuhlmannii* with scattered beautiful silvery blue *Lobelia wollastonii* (Yeoman, 1989; Howard, 1991; Osmaston, 2006).

Of the 278 woody plant taxa found in the afro-alpine zone of the great East African mountains, 81% are endemic to east Africa and 19% are found only in the afro-alpine belt (Lush, 1993). However, it is still largely unknown how many plant species occur in the afro-alpine region. Most astonishing are the giant groundsels, ericas and lobelias of the ecologically fragile tree heath and alpine zones (Butynski, 1992). As most botanising has been on the high altitude flora, only 75 tree species (18% of the country's total) have so far been recorded in the montane forest zone and it is expected that many more will be found there. Two trees are endemic to the Rwenzori: *Hypericum bequaertii* and *Schefflera polysciadia*, and seven others are regional endemics. These include *Erica kingaensis*, *Erica johnstonii*, *Vernonia* sp.aff. *adolphi-friderici*, *Ficalhoa laurifolia* and *Ocotea usambarensis* (Howard, 1991).

FAUNA

Although its former forest cover has been fragmented, the region still has the richest montane fauna on the continent. Knowledge is greatest for higher altitude species. The mountains contain 70 species of mammals (Wilson, 1995) including six species of diurnal primate. There are said to be 54 Albertine Rift endemics of which 5 species are endangered, 14 are threatened and 4 have restricted range although none is unique to the Rwenzori. Among the mammals there is a high level of sub-specific endemism, for instance the Ruwenzori sun squirrel *Heliosciurus ruwenzorii*, Ruwenzori shrew *Ruwenzorisorex suncoides* (VU), Ruwenzori otter-shrew *Micropotamogale ruwenzorii*, Ruwenzori horseshoe bat *Rhinolophus ruwenzorii* (VU), typical vlei rat *Otomys dartmouthi*. Ruwenzori colobus monkey *Colobus angolensis ruwenzorii* and Ruwenzori leopard *Panthera pardus ssp.ruwenzorii*, seen as high as 4000m (Ruwenzori Abruzzi, 2006). Although in low numbers due to poaching, some globally threatened species are still found in the park: elephant *Loxodonta africana* (VU), chimpanzee *Pan troglodytes schweinfurthii* (EN: ±645 individuals; Plumtre 2010) and L'hoests monkey *Cercopithecus lhoesti* (VU). Rarer species include a blue monkey endemic to the mountain *Cercopithecus mitis stuhlmannii*, the Ruwenzori hyrax *Dendrohyrax arboreus ruwenzorii*, the near-threatened okapi *Okapia johnstoni*, forest hog *Hylochoerus meinertzhageni*, bush pig *Potamochoerus porcus*, Ruwenzori red duiker *Cephalophus nigrifrons rubidus*, yellow-backed duiker *C. silvicultor* and central African savanna buffalo *Syncerus caffer aequinoctialis* (Yeoman, 1985).

The Park is within one of the world's Endemic Bird Areas (Stattersfield *et al.*, 1998). There are at least 177 species of forest birds (17.6% of the country's total) according to Wilson (1995) including 19 birds endemic to the Albertine rift. Notable species are the endemic Ruwenzori turaco *Ruwenzorornis johnstoni*, bamboo warbler *Bradypterus alfredi*, Shelley's crimson-wing *Cryptospiza shelleyi* (VU) and four sunbirds, the regal *Nectarinia regia*, red-tufted malachite *N. johnstoni*, golden-winged *N. reichenowi* and greater double-collared *N.afra*. Other near threatened species include dwarf honeyguide *Indicator pumilio*, Grauer's cuckoo-shrike *Coracina graueri*, Lagden's bush-shrike *Malaconotus lagdeni* and Archer's ground robin *Cossypha archeri*. African black duck *Anas sparsa* is sometimes seen on high lakes. The Ruwenzori range frog *Ameitia ruwenzorica* is an endemic, the Uganda clawed frog *Xenopus ruwenzori* is of restricted range. There are two species of forest horned chameleons endemic to the range Ituri chameleon *Kinyongia adolphi-friderici* and Ituri forest chameleon *Chamaeleo ituriensis*. The only snake recorded in 1994 was the western black tree snake *Thrasops jacksoni* (but see Behangana 1998). There are also 15 species of butterfly (22% of the country's total) (Howard, 1991) and a 1948-49 study of invertebrate life forms listed 60 species in the alpine zone alone, 25 of which were new to science (Salt, 1987). Indigenous fish include *Varicorhinus ruwenzori*. This suggests that a more extensive fauna may still be awaiting discovery.

CONSERVATION VALUE

The Rwenzori mountains, higher than the Alps and ice-capped though nearly on the Equator, are exceptional for their scientific importance and spectacular scenery. They are the most permanent sources of the Nile and a vital water catchment for over 500,000 people. Because of their altitudinal range, and the nearly constant temperatures, humidity and high insolation, the mountains support the richest montane fauna in Africa. There is an outstanding range of species, many, especially at high

altitude, endemic to the Albertine rift and bizarre in appearance. Also present are at least three globally threatened mammals, plus a potentially large number of undocumented invertebrates and plants. The Park is a small but significant element of the transnational western rift system of protected areas, one of the most extensive conservation zones in Africa. Conserving the Rwenzori is a major opportunity to maintain intact an extensive sensitive habitat. The Park lies within a Conservation International-designated Conservation Hotspot and is designated one of WWF's Global 200 Freshwater Ecoregions.

CULTURAL HERITAGE

The Rwenzori Mountains are identified with Pliny's *lunae montes*, 'Mountains of the Moon' and as the 'source of the Nile'. They are the homelands of the Bakonjo and Baamba peoples. The Bakonjo are a Bantu-speaking people who have lived in the foothills of the mountains for many generations, and whose culture is adapted to the steep slopes and climate of Rwenzori (Yeoman, 1992). Respect for the mountains as the sanctuary of a powerful fertilising spirit, Kitasamba, as well as their inaccessibility, has kept men away from the high lands. The Rwenzori were first visited from the West by the explorer Stanley in 1899 which inaugurated a period of exploration, culminating in the climbing of Mount Stanley by the Duke of the Abruzzi's team in 1906.

LOCAL HUMAN POPULATION

In 1910, the colonial boundary between the Congo and Uganda divided the Bakonjo, Baamba and the related Banande people to the west, an artificial division (Yeoman, 1992). The region is one of the most densely populated in Africa with 150-450 people/sq km. The Rwenzori area itself is home to three hundred thousand Bakonjo people (Loefler, 1997). In the 1960s, coffee, mountaineering and the Kalimbe mine brought prosperity and improved health services and infrastructure to the region. Traditional uses of forest resources were permitted under the former Forest Reserve designation, including the extraction of building materials, fibres, firewood and medicinal plants. These resources were taken out sustainably, and new agreements have been made about the harvesting rights. No-one currently lives within the Park, although the lower slopes in many places are cultivated up to its border, causing erosion and landslips, and the demands of a poor but growing population continue to increase. Illegal hunting of small game no longer continues, presumably because there is little left. Agriculture is still the main source of income for local communities except in one sector which supplies most of the guides and porters for the central trail (Osmaston, *in litt.*, 2006).

VISITORS AND VISITOR FACILITIES

The Rwenzori Mountains, known for millennia as 'the Mountains of the Moon', are remarkable for being ice-capped although on the Equator. They are a spectacular if often wet and mist-hidden tourist attraction that have drawn visitors for much of this century. The high altitude flora was described as 'Africa's botanic Big Game' by the botanist Hedberg in 1963 and has great tourist potential. Birdwatching is very good, but the terrestrial life is hard to see. However, as there are no motorable tracks and the rainfall is heavy from March to June and September to December, the tourism is strenuous. The number of tourists was 1,325 in 1991 and between 1990 and 1995 there were over seven thousand visitors who spent an average of five to six nights on the mountain (Loefler, 1997). With the support of USAID, in 1987 the Bakonjo's own Rwenzori Mountaineering Services (RMS) began to provide logistic support to visitors, including guides, paths, signposts, bridges and mountain huts to direct some income from tourism to the local people to earn their support for the Park. There is a 7-day guided circuit trail which does not tackle the summits. The trails tend to be steep and slippery and the high rainfall, cold, boggy ground and mud make them challenging. The rapid melting of the glaciers is making access to the highest peaks more dangerous and difficult due to steep and loose rocks, causing serious casualties, which must affect management (Osmaston, *in litt.*, 2006).

The Park was closed between July 1997 and late 2000 during the unrest, and security is still an issue. Landmines remaining from the rebel occupation may still be dangerous. There are a small hostel and campground at Nyakalengija near the main entrance to the Park at Ibanda where the Park headquarters and the RMS headquarters are located. This is at the main base for climbing the mountain for the high circuit route for which RMS won a 30-year guiding concession in 2005. There are

3 lodges and a camp at Ibanda and several hotels in Kasese town, 20 km southeast, where there is an RMS office, also at Fort Portal, one being Camp Norway at nearby Mitende. In 2008 Rwenzori Trekking Services at Kilembe started offering more basic mountain trekking. Trails in the lower montane forest are being created for visitors not wanting to climb. The Uganda Wildlife Authority is implementing a strategy for tourism.

SCIENTIFIC RESEARCH AND FACILITIES

Western scientific knowledge of the mountains started in 1899 with the explorer Baker, increased by several subsequent explorations culminating in the Duke of the Abruzzi's expedition of 1906 which reached, photographed and mapped the summits and the range. Extensive early biological collections were made by the expeditions of Wollaston in 1906, Abruzzi in 1906 and the joint British-Belgian expedition of 1952. Extensive geological surveys were made in the 1950s, prompted by the discovery of copper at Kilembe in the eastern foothills at the edge of the Park. This was intensively mined from 1956 to 1977, making an important contribution to Uganda's finances. There are proposals to restart this. A series of annual expeditions by Makerere College (now University) were carried out in the 1950s to study the retreat of the glaciers (Whittow *et al.*, 1963).

The most extensive recent general biological surveys of the mountains were done by Howard for the Forest Department (Howard (1991) and Plumtre for the Wildlife Conservation Society. Salt (1987) made a study of the invertebrate species in the high altitude alpine zone. Yeoman collected much baseline biodiversity data during the 1980s while preparing his book *Africa's Mountains of the Moon: Journeys to the Snowy Sources of the Nile* (1992). Other surveys have been made of particular groups and topics, which were collected in a special volume (Osmaston *et al.*, 1994). Further studies were reported by Kaser and Osmaston (2002) together with a map of the moraines left by several past glaciations, which covered up to half the area of the Park and greatly modified the landscape (Osmaston & Kaser, 2001; Osmaston, 1994). In 2007 a major project from Makerere University and University College London, *Climate Change and the Aquatic Ecosystems of the Rwenzori Mountains*, set out to gauge the extent and impact of glacial recession and environmental change in the mountains, which produced several scientific papers, theses and articles. Staff from the Austrian Institute for Geography were co-researchers (UCL, 2010). The state is involved in research on elephants, chimpanzees and natural resources use and ecological monitoring. No permanent scientific facilities exist in the area.

MANAGEMENT

Until about 1977 the Rwenzori Forest Reserve was managed and effectively protected by Forest Department staff, who regularly patrolled and annually cleared the boundaries. After the collapse of law and the economy under Amin, this ceased. In 1989 the mountains were designated a National Park to pre-empt threats from an ever-increasing surrounding population. A little local encroachment occurred but was effectively dealt with by evictions in the 1990s (Osmaston, *in litt.*, 2006). During the period of rebel incursions between 1997 and 2001, protection was again not easy. RMS took on some management such as developing visitor facilities and training guides. Participatory conservation became a guiding policy and local communities are encouraged to join the management of the Park, especially of the lower forests, to overcome their fears that traditional use of forest resources would be curtailed. As a result the people are now more cooperative towards the Park authorities.

The Rwenzori Mountains Conservation and Development Project, funded by USAID and implemented by WWF in the early 1990s made improvements until the rebel occupation between 1999 and 2002. In Phase 1 a Park management plan was prepared to cover zoning, tourism development, infrastructure and community participation; also to raise awareness of conservation and reduce local pressures on the Park through promoting soil conservation and agroforestry (WWF, 1996). Kilembe Mines of Kasese were to take on a management role after completing a hydroelectric facility on the Mubuku river, and rural electrification was expected to reduce the pressing need for fuelwood. Further prospecting in the park by the mining company has been suspended and the granting and working of mining concessions may stop. In 2004 the government began to re-survey and mark the boundaries, to be completed by 2006, and with the assistance of the Wildlife Conservation Society to implement some of the policies of

a ten-year General Management Plan and re-establish order. WCS is also assisting the development of transboundary collaboration with neighbouring Virunga National Park.

MANAGEMENT CONSTRAINTS

During the 1990's, especially between 1997 and 2001, owing to civil unrest and lack of funding, the remaining rangers were unable to exercise enough control. Rebels used the Park as a refuge, launching attacks on communities and institutions around the Park. Projects were suspended and there was serious insecurity and lack of monitoring and facilities over much of the Park. The montane forest was violated by extensive hunting for bushmeat and other resources. As a result the wild buffalo is now almost extinct in Uganda and many species formerly abundant are now rare. Chimpanzees were among the targets and suffered widely from mutilation by snares. In 1991 local communities were wary of the Park being gazetted for fear of losing their use of it (Yeoman, 1992). In addition, the only trail to the highest peaks was being used beyond its carrying capacity (Loefler, 1997). The increase in visitor numbers to unsustainable levels of use in the 1990s brought trail erosion and widening, loss of vegetation and substrate, rubbish and unsanitary conditions on the main trails. The Park is not yet zoned and for long was not patrolled. Moreover, the high cost of central administration was beginning to pre-empt the use of funds for local projects.

The Park was closed in 2000 as civil unrest made it unsafe for both visitors and animals. In 2000 the local people still saw the Park as a major source of resources while the staff had no means of dealing with either challenge. Illegal logging, poaching and trafficking in small animals especially by local armed groups remained common (UNESCO, 2000). By the end of 2001 however, security had improved enough for the Park to be reopened to visitors (UNESCO, 2002). By 2003 illegal occupation had ceased and poaching had lessened noticeably. The staff were back in control though they still lacked funding for adequate management and for mapping land-mined zones (IUCN, 2003, 2004). Meanwhile, tourism revived though at the cost of damaging the main climbing trails (UNESCO, 2005). However, in 2005, a Management Plan was produced by the Wildlife Authority to guide a comprehensive policy for protection, for the development of local projects and for controlling the impact of tourism. It is UWA policy to return 20% of the entry fee revenue to benefit local communities. Six main areas need to be addressed to ensure better conservation and protection of the natural resources: community conservation, resource conservation and management, monitoring and research, park operations and maintenance, tourism development and regional cooperation (WHC-AS, 2004). There is still concern that the income generated by tourism is not enough to support local communities, whose only other source of income is agriculture. Moreover, the population density of the area surrounding the Park, already very high (between 150 and 430 persons per sq.km), is increasing and the consequent denudation and erosion of the foothills outside the Park boundary continue. Patrols in the park's lowlands limit illegal harvesting of resources, tree felling and poaching

STAFF

The Park is managed by a Chief Park Warden assisted by five senior staff. 12 senior rangers, 74 staff including 9 wardens and 60 rangers (UNESCO, 2009).

BUDGET

In 1991 USAID, working with the WWF and RMS, funded the Rwenzori Mountains Conservation & Development Project to improve the management of the natural resources. In 1997 WWF granted US\$772,976 and in 2001 the WHB approved US\$64,000 emergency assistance for equipment (UNESCO, 2002), in 2003 US\$32,249 for technical support and in 2005 US\$19,900 towards the annual operations plan. In 2004 the total funding granted was US\$96,249 (UNESCO, 2003; 2005). Government funding covers only 50% of park costs, supplemented to 2009 by WWF and GEF (UNESCO, 2009).

LOCAL ADDRESSES

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The Chief Warden, Rwenzori Mountains National Park, Nyakalengija, near Kasese, Uganda.

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